MANSTON AIRPORT DEVELOPMENT CONSENT ORDER EXAMINATION

ADDITIONAL SUBMISSION: COMMENTS ON RESPONSES RECEIVED FROM YORK AVIATION TO THE ExA's WRITTEN QUESTIONS AND PUBLISHED 8 JULY 2019

SUBMITTED BY LOCAL BUSINESS AND INTERESTED PARTY, FIVE10TWELVE LTD

1. We have noted York Aviation's submission to Deadline 11, [TR020002-004642], and wholly support their position.

2. As the ExA is aware, York Aviation is a leading aviation consultancy and advisor to a wide range of global clients, including but not limited to London Stansted Airport, Manchester Airport, London City Airport, London Luton Airport, Birmingham Airport, AIMCO, BTGPactual and the Department for Transport.

3. As the ExA is further aware, evidence and representations by York Aviation - both orally and in writing - has proved crucial in assisting both the ExA, ourselves and many other Interested Parties throughout this examination in providing an informed and balanced industry opinion on the Applicant's proposals, including but not limited to:

    - Applicant's unsubstantiated Need case
    - Applicant's NSIP justification
    - Applicant's business model
    - Crucial distinctions between belly freight, pure freight and whether a market need genuinely exists for the latter
    - Emerging business models - including integrator models
    - Fleet mix
    - Displacement and competition
    - Viability - especially important given oral representations of Dr Sally Dixon, author of the Azimuth Report, at Issue Specific Hearings when it was confirmed by Dr Dixon that neither Dr Dixon nor the Application has paid regard to viability in its busines forecasts and assumptions

4. As the ExA is aware, Altitude Aviation has also made significant contributions to the Examination, with a similarly high-level experience in the industry, specifically as it relates to funding, business model, investment and corporate structuring for the aviation sector.

5. Both York Aviation and Altitude Aviation have made significant and vital contributions to this Examination process as authoritative and unrivalled voices in the industry. This is a level of expertise that - as lay people - we have come to value and respect throughout this process.

6. At every stage, Five10Twelve has been in full agreement with Altitude Aviation and York Aviation's representations and we fully support and commend the contributions Louise Congdon, York Aviation and Altitude Aviation have made to the process. We are sure that we are by no means the only Interested or Affected Party to do so.

7. In light of the above, and York Aviation's submission to Deadline 11, we herewith commend to the Examination Library a resubmission of a selection of Altitude Aviation[1] and York Aviation's[2] representations and reports and respectfully ask that the ExA continues to consider this body of evidence, the considerable weight it carries and the light that it sheds on a range of Principal Issues.

[1] Appendices 01 - 02
[2] Appendices 03-09b

Appendix	Consultant	Description
File name: Appendix 1-2_Altitude.pdf		
01	Altitude Aviation	Analysis of the Freight Market Potential of a Reopened Manston Airport - Addendum
02	Altitude Aviation	Summary of oral submission of Seamus Kealey, presented at Compulsory Acquisition Hearing of 20 March 2019
File name: Appendix 3-9c_York.pdf		
03	York Aviation	Comments on Applicant's DL3 Responses to First Written Questions from the ExA (with York Aviation appendices A-F)
04	York Aviation	Updated critique of assessment of need and justification for the development of Manston Airport as an air freight hub - February 2019. (Originally submitted at DL3)
05	York Aviation	Comments on Applicant's DL6 Responses to Second Written Questions from the ExA
06	York Aviation	Supplementary Submission Following Hearings into Compulsory Acquisition and Need Held on 20 and 21 March 2019
07	York Aviation	Note of Oral Evidence given by York Aviation at the Noise Hearing 22nd March 2019
08	York Aviation	Note of Oral Evidence given by York Aviation at the Socio-Economic Hearing 5th June 2019
08a	York Aviation	Socio-Economic Hearing : YA Appendix The Social and Economic Impacts of Airports in Europe
08b	Oxford Economics	Socio-Economic Hearing : YA Appendix The Economic Impact of Luton Airport (Oxford Economics)
09	York Aviation	DL9: Supplementary Note in the Applicant's Summaries of Oral Evidence at ISH5 regarding Socio-Economics and CAH2 regarding Compulsory Acquisition
09a	York Aviation	York Aviation (DL9 Appendix B) East Midlands Airport Annual Report
09b	York Aviation	York Aviation (DL9 Appendix B) Ryanair UK Flights WB 24th June 2019
09c		(DL9 Appendix 2)

		Analysis of “Property Income” in the Applicant’s “Business Plan”

Appendix 01

Altitude Aviation
Analysis of the Freight Market Potential of a Reopened Manston Airport

Addendum
UK Regional Airport Financial Performance and Debt Funding Characteristics

February 2019

Appendix 03

York Aviation
Comments on Applicant's DL3 Responses to First Written Questions from the ExA

(With York Aviation Appendices A-F)

York Aviation

Manston Airport NSIP

Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority

Introduction

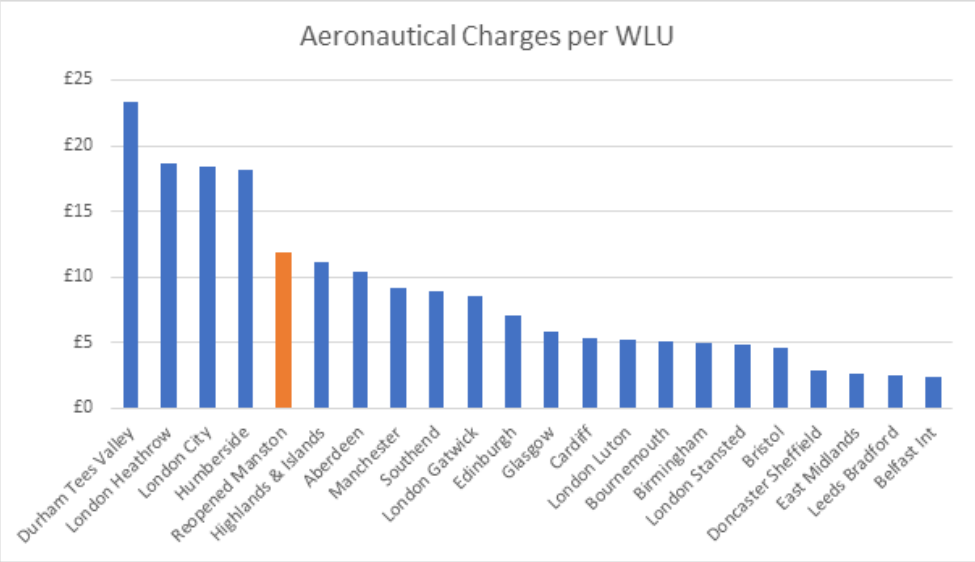
As with other submissions made by the Applicant, we note that the answers given are in places inconsistent and contradictory and this serves to undermine their credibility and to cast further doubt upon the overall robustness of the need case. Many of the responses simply repeat material already submitted and do not provide the further requested clarification nor, in some cases, respond to the question put.

We comment here on points of relevance to the need case and the forecasts of usage for the development that underpin the entire NSIP Justification, including the assessment of socio-economic impacts. We have referenced our answers to the ExA's question number but do not repeat in full the question and answer given. We cross refer as required to the York Aviation 2017 Report and the 2019 Update Report as required where points have already been addressed in our evidence. Where we have nothing to add to our previous analysis, we do not comment on the specific question and answer.

AQ.1.19	The question posed seeks justification for the assessed capability of the proposed cargo and passenger stands and questions whether the impacts of this level of usage have been assessed in the ES. It is clear that the claimed capability has not been assessed in the ES and the Applicant now proposes that there should be aircraft movement limits within the Noise Mitigation Plan. However, this would not be binding and could be varied by the Applicant when reviewed. The answer cross refers to calculations at OP.1.11, which provides no further insight into how the quantum of infrastructure has been justified. However, the more pertinent question is why, if this is the capability of the infrastructure, the totality of this infrastructure is required to handle the number of aircraft movements which are now proposed as the cap on activity. We address this at Section 6 of our 2019 Update Report and demonstrate that, even allowing for airlines operating at the times they prefer and for robustness and resilience, the maximum amount of development required would be around half of that applied for.
CA.1.4	We note that all of the Northern Grass area has been redefined as being for airport related works (Works 15-17). However, there remains no justification for why the totality of this area is required for airport related uses. The additional benchmarking of the requirements for such airport related uses from the Applicant, that was promised by Deadline 3, and as part of the updated NSIP Justification Statement has not been provided. To assist the ExA further in understanding the limited requirement for such non-airside airport related development, we would refer the ExA to a recent report prepared for East Midlands Airport in relation to a proposed change of use of a building formerly used for cargo activities from airport related to non-airport related uses. This report (attached as **Appendix A**) makes clear that there is no longer demand for

	airport-related landside accommodation even at the UK's main air freight hub. This would strongly suggest the same would be true at Manston.
CA.1.14	The response does not address the question adequately. Whilst members of the advisory team, (e.g. Viscount Aviation) may have experience of airport management and operations, the Applicant itself has no track record of successful airport operation and development in the UK. The only UK airport operated directly by the Applicant or its principals was Manston and its owner at the time, Wiggins Group (for whom Tony Freudmann was employed), and its successors all failed to secure a viable airport operation.
CA.1.15	The Application Documents are predicated on the Airport's first year of operation being 2020. This is highly unlikely to be achievable. As we discuss later (F.1.6), the amount of capital expenditure now cited as required to enable the Airport to be operational strongly suggests that opening in 2020 would not be physically achievable given the expected timeframe for a DCO decision. In any event, it is highly unlikely that the required airspace changes could be completed in time to allow the Airport to become operational before 2022 at the earliest. This would significantly narrow the gap between the time when the Airport might become operational and the delivery of additional runway capacity at Heathrow to facilitate cargo capacity growth there. The CAA's response to Question Ns.1.24 makes clear that it would normally likely to take at least 60-70 weeks from the initiation of the airspace change process to flight path options being defined. There then follows a CAA decision making process of at least 8 weeks. We note that the process was initiated on 14th January 2019, meaning that the earliest that the required airspace could be in place would theoretically be mid-2020, assuming no delays to the process as set out in the CAA document CAP1616, which outlines the process for delivering an airspace change. Heathrow has recently consulted on its design envelopes for achieving independent parallel approaches to its existing runways ahead of Runway 3. This consultation has just closed and Heathrow Airport expects to be able to consult on design options in 2020 and to submit its final options to the CAA in 2021 for approval, with implementation being in 2022 - https://afo.heathrowconsultation.com/wp-content/uploads/sites/4/2019/01/3625-HRW-2R-AIR-CON-1-3.1-3R-Consultation-Booklet-Update-1-AW-LR-pages.pdf. This would suggest that flightpath implementation in 2022 is the earliest possible date given the consultation requirements of the CAP1616 process, but we note that RSP has not yet commenced any of the consultation required regarding Design Principles or Design Envelopes that would be required ahead of the definition of the options and submission for approval. Furthermore, the Statement of Need, as published on the CAA Airspace Change website - https://airspacechange.caa.co.uk/PublicProposalArea?pID=112 links the change to the FASI S programme, which is a major airspace redesign exercise covering the whole of the South East of England, including inter alia the redesign of airspace required to facilitate the 3rd runway at Heathrow. It is our understanding that, because of the complex interactions between flightpaths serving all of the airports in the South East, consultation on flight path options across the full range of airports is planned to be concurrent to ensure that all of the interfaces are correctly identified. This is planned for 2022, with implementation of the new airspace arrangements in the period 2024-2026. It is entirely possible that new flightpaths for Manston could not be in place until this later date.
E.1.2	The Applicant's response to Question E.1.2 states that the information provided at Tables 3.7 and 3.8 of the ES represent the worst case for environmental assessment. However, as made clear in Table 3.1 of the York Aviation 2019 Update Report, the information in these tables does not match other information regarding the mix of aircraft types expected set out elsewhere in the Application Documentation. In particular, Appendix 3.3. of the ES, which purports to set out the forecasts used as the basis of the environmental assessment, shows a higher proportion of Code E aircraft in the fleet mix than the data in Tables 3.7 and 3.8, which would have the effect of increasing some aspects of the environmental impact. The ExA cannot be certain, therefore, that the worst case impacts have been consistently assessed.
E.1.3	We note that when considering the capability of the infrastructure proposed by RSP, we did not consider the capability provided by 3 tear down aircraft stands. In the absence of any clear justification for the provision of 3 full aircraft stands for such purposes, the provision of these

	stands simply adds to the overall degree to which there is over-provision of infrastructure even in the highly unlikely event of RSP's 'forecasts' being achievable.
F.1.5	The Applicant has appended a summary table of income and expenditure which it claims is the Business Model underpinning the whole investment of over £300m. For the reasons well explained in the 2019 Report from Altitude Aviation Advisory, this level of information will be wholly inadequate for any investor to contemplate investment in an airport, let alone such a high risk enterprise as the re-opening of Manston Airport. This cannot be considered as a Business Model without substantial further detail of the costs and revenues by specific line item (landing fees, passenger charges, freight throughput charges, handling charges, fuel income, commercial passenger income, rentals, car parking etc) and without detailed explanation and justification for the assumptions used line by line. This has not been provided by the Applicant. Based on the information provided by the Applicant, Aeronautical Revenues per Workload Unit (WLU) are projected as £17.27 in Year 1 falling to £11.29 in Year 20. This means that on average the expected aeronautical charges per WLU are around £12 over the period. This would imply a charge per passenger of around £12, which is much too high for a Ryanair/low fares airline dominated airport, or revenue per tonne of cargo of around £120. This is over 2.5 times higher than the airport is previously achieved when operational. To the extent that the effect of low fare airlines is to reduce the contribution of passenger revenues overall, then charges for cargo operations will be higher and are more likely to be around the £180 per tonne mark assumed for Year 1 before passenger operations are assumed to commence. This would be approaching 4 times what Manston previously earned per tonne of cargo. It is also worth comparing these charges to those observed elsewhere at UK airports using the UK Airports Performance Indicators 2016/17 produced by Leigh Fisher. This suggests that Manston would have amongst the highest aeronautical charges in the UK, substantially above a wide range of major and established UK airports. We note particularly that charges would be 4.5 times higher than what RSP consider to be the nearest comparator, East Midlands. It is important to note that aeronautical income per WLU figures are distorted at very small airports, such as Durham Tees Valley and Humberside, which have limited commercial passenger and freight operations but more substantial general aviation activities, including in the latter case helicopter operations serving the North Sea gas rigs. In both cases, the main airline operator carrying passengers is KLM, which will be willing to pay substantially higher airport charges than a low cost airline as many of the passengers will be transferring globally at Amsterdam and paying relatively higher fares to the airline overall. The only other airports which are projected to have higher charges than RSP propose for Manston are Heathrow and London City. This illustrates the extent to which the income assumed by RSP is unreasonable as Manston could not be expected to command the level of charges levied at the UK's main hub airport or at London City Airport, with its unique position serving the City and Canary Wharf.



As we made clear at para. 7.36 of our 2019 Update Report, charges at this level would make Manston totally uncompetitive, with the obvious implication that it would struggle to attract any users at all. Given the expected mix of traffic, it will need to charge at the levels seen at Stansted, Doncaster Sheffield and East Midlands to have any hope of attracting cargo operators and low cost airlines. Charges at this level would certainly not factor in any compensation to the airlines for switching costs or other cost factors identified by Azimuth as we discuss at para. 3.27 of our 2017 Report.

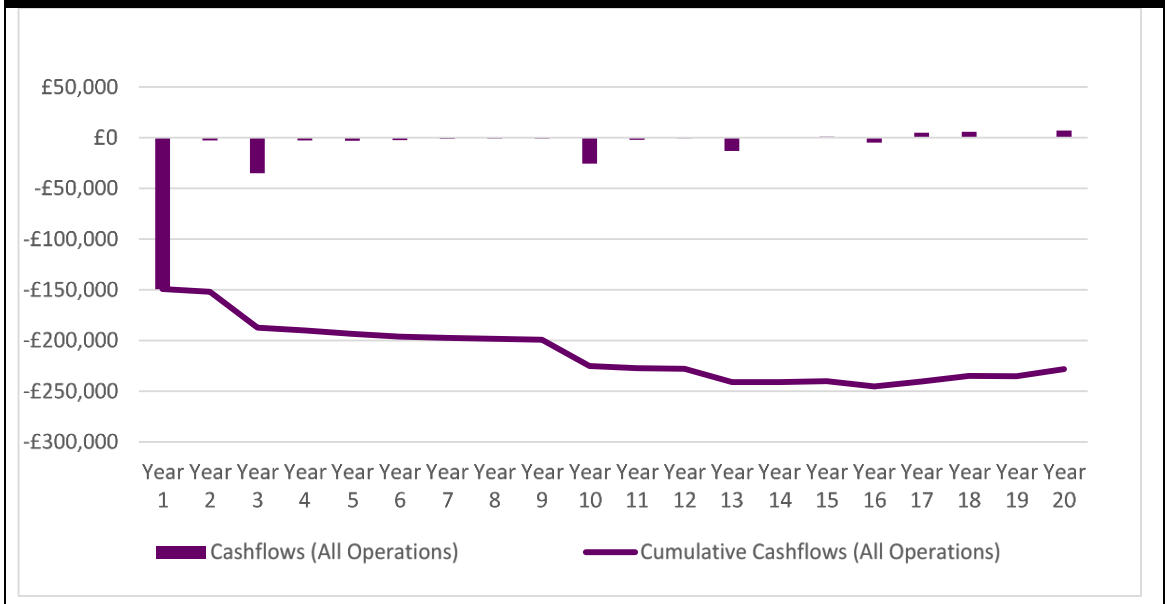
Total Revenue per Workload Unit is forecast as £27.39 in Year 1 falling to £18.82 in Year 20. This can be compared to East Midlands Airport, which is a highly successful air freight hub with passenger operations by mainly low cost airlines, which earned total revenue per WLU of £6.82 in 2016/7, the latest year for which data is available in the *Leigh Fisher Airport Performance Indicators*. The revenues assumed to be attainable in the 'Business Model' submitted by the Applicant are wholly unrealistic for a largely cargo/low cost airline operation. We would note that Aeronautical Revenue comparisons generally are more robust as the total revenues per WLU recorded for smaller airports can be heavily impacted by the extent to which broader property revenues may be included so creating a false picture of true airport related earnings.

It is unclear how the remaining revenue streams have been divided between 'Commercial Net Income' and 'Other Income' in terms of revenue from passengers and revenue derived from letting property on the Northern Grass.

Please note that there was an error in the definition of a Workload Unit given at reference 140 of our 2019 Update Report which should have read that 1 million Workload Units (WLU) comprises 1 million passengers or 100,000 tonnes of cargo per annum. The use of WLUs within our report was correct.

F.1.6	We note that the Applicant has now provided an updated assessment of the capex requirements to bring the Airport back into use. Although a more detailed schedule of areas is now provided, this remains inadequate to understand the costs involved in individual elements of the project. Nonetheless, it is significant that the Applicant now acknowledges that the cost involved in bringing the Airport back into use and for

	the initial two phases of capital investment are substantially greater than originally stated. The Phase 1 costs have risen from £100m to £186m and the Phase 2 costs from £45m to £69m, i.e. early years expenditure has increase from £145m to £255m. Excluding the £80m we originally assumed for the cost of developing the Northern Grass in line with the phased programme now presented, the net costs for the airport related development south of the road is expected to be incurred as follows: • Years 0/1 £144m • Years 3/4 £31m • Years 9/10 £25.2m • Year 13 £12.8m • Year 16 £6.4m • Year 19 £6.4m Of course, if the uses proposed for the Northern Grass are now assumed to be strictly airport-related, these uses would not be expected to generate significant commercial property income and so the net effect of allowing for the investment required to open up the Northern Grass is likely to materially worsen the financial position compared to more general business park uses which might have provided some element of cross subsidy to airport operations. Overall, the increased upfront costs have significant implications for the cumulative cashflow based on more realistic revenue assumptions as set out in Section 7 of our 2019 Update Report, even assuming RSP's demand 'forecasts' could be realised. We have updated **Figure 7.2** from

	our 2019 Update Report. This shows that on a cumulative cash flow basis, the amount of funding required from debt and equity is likely to reach £250m in around Year 16 before there is any possibility for debt to start to be repaid. It is important to note that interest charges are excluded from this analysis. **Figure 7.2: Scenario 1: RSP Proposals Cumulative Cashflows for Manston Airport (£ million)**  Source: York Aviation As with our previous assessment, we cannot calculate an IRR (internal rate of return) for the first 20 years of the project so our assessment remains that it is highly unlikely that rational investors could be persuaded to invest in the project.
F.1.15	As we noted in our 2019 Update Report (para. 7.4), RSP has committed to adhering to the principles set out in the Airports NPS of ensuring that its development is cost efficient and sustainable so as to minimise costs to airlines, passengers and freight users, albeit we recognise that these provisions of the Airports NPS may not be directly applicable other than to consideration of the 3rd runway at Heathrow. They are, nonetheless, highly relevant to the consideration of whether any airlines would actually choose to operate from Manston. The answer given by RSP is that *"The Business Model is predicated on being able to offer airport users competitive terms."* However, as we have demonstrated in Section 7 of our 2019 Update Report and in commenting on the response to Question F.1.5 above, this is far from the case and the anticipated revenues in RSP's Business Model are far in excess of what users would be willing to pay. There are two possible outcomes; either airlines will not operate to Manston and the expected passenger and freight volumes will not materialise, or the revenues earned will be materially less than set out in the submitted Business Model. Either way, the implication is that the development will not be cost efficient or viable and the operation is highly unlikely to be sustainable, as was the case with previous attempts to operate a commercial airport at Manston. Although

	the answer claims that there will be net benefits to users, these benefits have not been set out or quantified anywhere in the Application Documents.
F.1.16	The economic licensing regime referred to in the Airports NPS applies only to Heathrow and Gatwick currently. The application to other airports is subject to market power assessment. Based on our assessment of the likely market for Manston it is not plausible to assume it would attain a position of substantial market power.
F.1.17	It is important to note that the provisions of the Civil Aviation Act 2012 apply principally in relation to the economic licensing of airports with substantial market power. As this will not apply to Manston, the process of seeking an economic licence will not apply. In the response, the Applicant appears to confuse the process of applying for an Aerodrome Licence/EASA Certificate with the separate requirements of the Civil Aviation Act 2012. Schedule 8 of the Civil Aviation Act 2012 makes provision for airports with a turnover of greater than £1 million in two consecutive years to obtain a certificate conferring the status as a Statutory Undertaker. RSP will not be able to apply for such a certificate until they have been operational for 2 years and can demonstrate that the turnover threshold has been exceeded.
ND.1.1	The response to this question claims that the Airports Commission did not consider the potential role that Manston might play as a freight airport. In its response to the ExA's questions, the Civil Aviation Authority helpfully provides the submission made by the previous operator of the Airport to the Airports Commission. It is clear here that the proposition submitted by Manston was for a major freight airport (point b) of the submission, which we note was written by the Aviation Strategy and Policy Consultancy now part of Northpoint and one of RSP's current advisers. In the light of this, it is not credible to suggest that the Airports Commission did not consider Manston other than in terms of a role in meeting passenger demand. It is also disingenuous to say that the Airports Commission's Interim Report and shortlisting did not consider freight as benefits to freight users were extensively discussed throughout the Commission's Interim Report (Section 3) and formed part of the consideration of benefits, albeit these could not be specifically quantified (AC Interim Report, para. 3.100). The inclusion of air freight benefits as part of the Commission's Sift criteria is made clear at para. 3.7 of their *Guidance Document 02: Long Term Capacity Options: Sift Criteria May 2013*. Whilst there may have been further submissions on air freight by TfL on behalf of the Mayor of London (Ramboll/Oxford Economic Report *Impacts on the Air Freight Industry, Customers and Associated Businesses 2013)* later in the process, it is clear that the Airports Commission gave full consideration to the implications for the air freight sector in its shortlisting process. The proposal that Manston could act as a major freight airport to relieve congestion at the other airports was not followed through/rejected by the Airports Commission, which only mentioned Manston as a possible reliever airport for General Aviation (see our 2019 Update Report para. 2.21). RSP have added reference to passenger capacity in square brackets to quotation from Appendix 2 to the Airports Commission's Interim Report. This is not correct and seeks to mislead the reader. The quotation needs to be read in context of proposition submitted by the operator of Manston which put forward a major freight role. The Applicant also makes reference to the recent policy support for all airports making best use of their existing runways alongside the development of a 3rd runway at Heathrow. This policy still requires the case to be made for each specific airport. As we make clear in our 2019 Update Report (paras. 2.16, 2.17), this requires a realistic assessment to be made of the usage of each runway and the benefits deriving from that usage which can be balanced with any environmental harm that might arise. The policy cannot be taken in isolation without considering the extent to which there are net benefits from the level of usage proposed. The policy does not support safeguarding runways in perpetuity against some prospect of future use.

ND.1.2	The Applicant quotes extensively from the recent Aviation Strategy Green Paper in relation to the Government's support for the air freight sector. However, the Applicant fails to make reference to how the Government envisages the need to be met (para. 4.49 of the Green Paper): *"The government supports continued growth of the air freight sector particularly making best use of existing capacity at airports, to continue to facilitate global trade for UK businesses and consumers. It has already taken action by supporting the Northwest Runway scheme at Heathrow, which has been estimated to nearly double the capacity for freight at the airport to 3 million tonnes per year."* At para. 4.47, the Green Paper makes specific mention of *East Midlands and Stansted alongside Heathrow as the principal freight gateways.* It is important to note that the reference here is to *"existing capacity"* rather than existing runways as the means by which the growth of air freight is to be supported. The truth is that there is no specific support in policy for re-opening Manston as an air freight hub. Whilst policy is generally supportive of facilitating air freight, it does not follow that Manston is a solution.
ND.1.3	We note that the answer given here simply refers back to previously submitted Azimuth material. If the ExA had considered this sufficient, we presume that the question would not have been put. It is clear that the Applicant has not given adequate consideration of the alternatives for handling demand for air freight services across the UK.
ND.1.4	The Applicant's response completely fails to mention the clear position of Government that the requirement for more air freight capacity will principally be met by the provision of the new Northwest runway at Heathrow and through greater use of existing facilities, principally at East Midlands and Stansted. The analysis of the contribution of Heathrow at Section 5.2 of Azimuth's Vol I appears to proceed from the assumption that the new capacity will principally be used for low cost airlines offering little bellyhold capacity. This is completely at odds with the Airports NPS, which especially sees the 3rd runway as offering the potential for more global connectivity, including to points not currently served, and a doubling of capacity for air freight. Specifically, the Government sees the 3rd runway at Heathrow as: "*expected to lead to more long haul flights and connections to fast-growing economies, helping to secure the UK's status as a global aviation hub, and enabling it to play a crucial role in the global economy"* (Airports NPS, para. 3.18). It is these flights that will enable Heathrow to double its freight handling capability. Azimuth erroneously adopt a set of criteria for considering alternative airports in terms of their own asserted requirements for a freight focussed airport. The need for a new freight focussed airport is unsubstantiated by evidence, as we make clear in Section 4 of our 2019 Update Report. In our 2017 and 2019 reports, as well as our 2015 Report for TfL and the Freight Transport Association that Azimuth persist in wrongly interpreting, we make clear that the principal alternative likely to be used for any cargo that could not be accommodated at the Heathrow hub is bellyhold capacity at alternative airports.
ND.1.5	Examination of the Air Cargo World article cited by Azimuth at footnote 5 strongly suggests the information provided relates to rates for scheduled and bellyhold cargo in the run-up to Christmas. This is a transient phenomenon associated with the shipment of goods for Christmas. In any event, even if freight rates for bellyhold rise on a temporary basis, this may still be below the equivalent cost of a dedicated freighter operation as we set out at para. 4.7 of our 2019 Update Report. Given the difference in cost of dedicated freighter operations, these would not solve the problem. We note that the article at Footnote 6 makes clear that this problem was not just confined to the UK or Europe but affected routes between the Far East and the US suggesting that the high seasonal freight rates are a global issue rather than specific to the air freight sector in the UK. Increased bellyhold capacity at Heathrow is likely to be an effective means of ameliorating the seasonal issue in terms of freight rates to and from the UK.
ND.1.6	This response seeks to compare the situation at Frankfurt with that at Heathrow in terms of the number of freighter services operated/the proportion of freight handled on dedicated freighter aircraft rather than bellyhold. The proportions for Paris and Amsterdam are also stated. These four airports are the principal hub airports in Europe. The context for the greater number of dedicated freighter aircraft operated to

these airports is easily explained by the difference in bellyhold capacity offered for sale to non-European points at each of these airports. Based on the Official Airline Guide database (OAG), the tonnage capacity offered in bellyholds of departing passenger aircraft in the week beginning 4th March 2019 was:

- Heathrow - 41,275 tonnes
- Paris - 25,382 tonnes
- Amsterdam - 20,707 tonnes
- Frankfurt - 17,122 tonnes

The relative share of freight carried in dedicated freighter aircraft is in inverse proportion to the amount of bellyhold capacity available at each of the airports.

An important feature of these hub airports is that they have well developed freight forwarding infrastructure concentrated around them given the global connectivity offered by the hubs and the national airlines based there. This consolidation is driven in the first instance by the hub connectivity offered in the bellyhold of passenger aircraft but the existence of the freight forwarding and consolidation centres makes these airports the first choice for dedicated freighters to operate to the extent required to supplement any gaps in the network of bellyhold services available. These conditions are not replicable at other non-hub airports, other than for express freight/integrator operations for which Germany like the UK has specialist airports where such operations are based. Leipzig and Cologne serve as hubs for such operations in the same way as East Midlands serves as the UK main integrator hub. It is notable that, despite handling 44 million passengers a year with major global connections, Munich Airport only handled 3,807 freighters in 2018, despite Bavaria being a major manufacturing economy. This only serves to highlight the special circumstances which make Frankfurt attractive for dedicated freighter operations, notwithstanding its night closure period, and so long as it has available slots. Just as with Heathrow, the attraction of Frankfurt for freighter handling is simply not replicable elsewhere in Germany.

There are also important scale factors that apply to the position of Germany in terms of the total air freight market:

- the economy is around 30% larger than the UK;
- of which manufacturing's share is over 20% compared to 9% in the UK;
- the population is around 25% higher than the UK driving imports.

Hence, it is unsurprising that the need for air freight capacity is greater to and from Germany than to and from the UK. Furthermore, Germany's central location within Europe means as it acts as a distribution hub for much of Central Europe, well beyond its borders, in a manner that the UK could not hope to replicate. Hence, given the more limited bellyhold capacity available at Frankfurt, the need for more dedicated freighter operations is hardly surprising. The fact that they choose to operate to Frankfurt despite the night closure period is a sign of the power of the hub.

When the economic factors are properly considered, alongside recognition of the special characteristics that give rise to demand for cargo services to major national hub airports, the relative performance of Frankfurt and Heathrow is easily explained. The UK is currently adequately

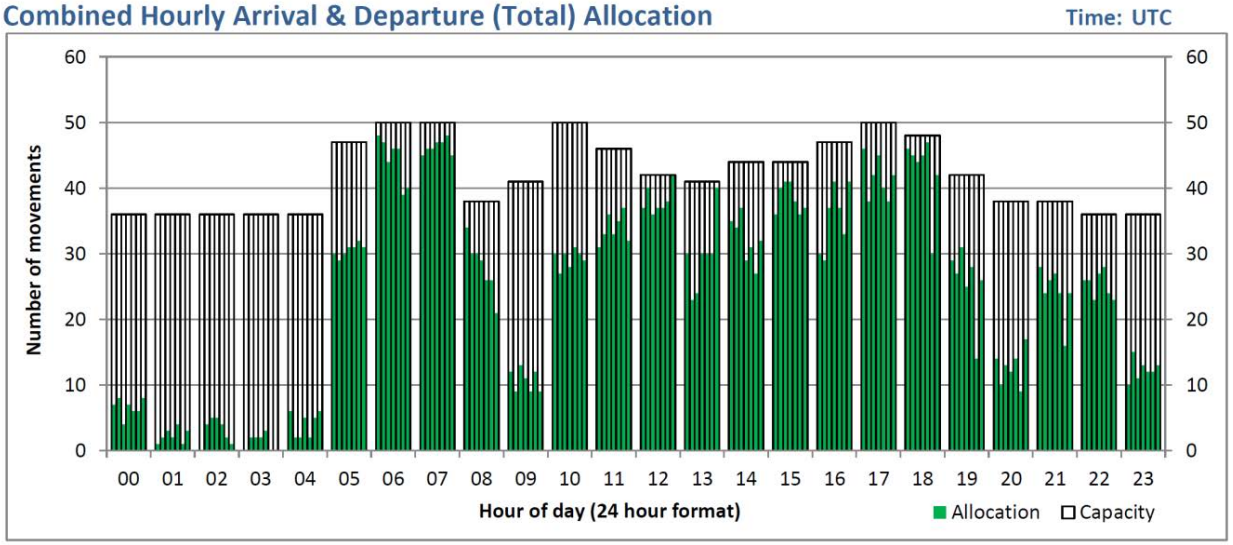
	served by the existing combination of bellyhold capacity and freighter capacity available at Heathrow, East Midlands, Stansted and other existing airports, as shown in Figure 4.7 of our 2019 Update Report. The situation at Frankfurt is simply not a relevant comparator with the key requirement being increased global connectivity at Heathrow, that the 3rd runway will provide, rather than an increase in capacity for dedicated freighter aircraft at a remote location.
ND.1.7	This response continues to rely erroneously on our work for TfL and the FTA. We previously corresponded with Dr Dixon of Azimuth Associates regarding their misinterpretation of this work (see correspondence attached at **Appendix B**). Azimuth's response explains our use of a gravity model approach to look at how any excess demand for air freight capacity might be dispersed in the event of there being a shortage of capacity across the main London airports. What the response fails to recognise is that the expected distribution of any air freight which could not use the London airports (see page 23 of our report for TfL and the FTA attached as **Appendix C**) was based not solely on access times but on the attractiveness of alternatives in terms of bellyhold and freighter capacity available. The share of the main European hubs is, thus, a reflection of the relative strength of their networks including bellyhold capacity, offering capacity at competitive freight rates; a competitive position that Manston would simply not be able to replicate. A dedicated freight airport would be expected to intercept no more than a small fraction of any displaced demand. The response goes on to wrongly ascribe diversion to Europe to lack of facilities at UK regional airports but the real issue is bellyhold capacity on long haul services coupled with the structural focus of the forwarding and consolidation sector adjacent to the main hub airports, including Heathrow. Manston would not address this structural issue, which is, indeed, one of the main reasons why Manston would fail. It should be noted that Heathrow is addressing the congestion in its cargo centre (See para. 4.21 of our 2019 Update Report) and there is no evidence that other UK airports have suffered from equivalent congestion issues such as to impact on their attractiveness.
ND.1.8	We would note that response the perhaps wrongly assumes, as Azimuth does throughout its reports, that air freight using the London airports is necessarily destined for London and the South East only. This table of comparative journey times set out in the response might be relevant for the fresh fruit and flowers market that Manston used to handle and might recapture if the price charged to airlines was low enough but it is not relevant for the bulk of cargo that Manston would need to attract if it were to seek to achieve the share of the UK market asserted by Azimuth. Our analysis, set out in Figures 4.4 and 4.5 of our 2019 Update Report, shows how widely dispersed across the UK the market for air freight is. Our analysis would suggest that only around half of UK air freight is destined for or originates in London and the South East but, despite this, regional airports handle only 23% of freight tonnage. This analysis would point to at least 1/3 of freight using London airports as having an origin or destination elsewhere in the country. Hence, the relevant journey times are not to specific distribution centres serving London (such as Sainsbury's local distribution centres) but to Heathrow where much of the total UK air freight is consolidated into economic loads and to the 'Golden Triangle' for UK distribution in the vicinity of East Midlands and the M1/M6 junction. Manston has no real advantage in the former case and is not an option in the latter. We would suggest that the contour maps provided by the Applicant in the appendices only serve to make this point. This response also contains the extraordinary claim that Stansted does not have a dedicated freight facility. The cargo facilities at Stansted are described at https://www.stanstedairport.com/about-us/cargo/. This states that Stansted has a 'World Cargo Centre' with 55,000m^2 of warehouse and office space. This facility is currently split over two warehouse units, the larger of which has been in operation since before 2000 with the second being added around that time. The second and smaller unit has been recently been extended and it is clear that Stansted has significant space safeguarded adjacent to the cargo facilities and cargo aprons to expand further. Stansted's dedicated cargo

	stands can simultaneously accommodate 4 x A380, 3 x B747-8F, 1 x B747-400F and 1 X B767-300 or up to 15 smaller code C aircraft. The scale of facilities is substantial as illustrated in the satellite picture below. 
ND.1.9	We note the explanation given regarding the difference between express freight or integrator operations and the more general air freight model. There is no evidence that the UK needs a dedicated freight hub for general air freight given the substantial bellyhold capacity available at Heathrow and growing bellyhold capacity at UK regional airports. Any growth in freighter aircraft movements in the UK in recent years is almost entirely within the integrator model.
ND.1.10	It is important to note that the table reproduced in the Azimuth Reports from the DfT's 2017 UK Aviation Forecasts reflects the position on the basis that no additional capacity is provided at any of the London airports. To a large extent, the identified constraints relate to passenger capacity defined in planning conditions. The table takes no account of consented increases in passenger capacity at Stansted, the third runway at Heathrow and any other capacity developments in the pipeline. Hence, this chart is of no relevance to considering the extent to which there would be capacity for more freighter movements across the London airports. Part ii) of the response contains another extraordinary statement that little additional terminal or runway capacity has been added at UK airports for decades. This appears to ignore the development of a second runway at Manchester, Terminal 5 at Heathrow, expansion at Gatwick and Stansted, Luton's expansion to 18 million passengers a year. The response claims that Manston is required because further expansion elsewhere will take time. However, as we have identified in our 2019 Update Report, there is no immediate shortage of air freight

	capacity. Even on the basis of the table referred to at i) of the answer, Stansted Airport would not be expected to be full until 2040 by which time R3 at Heathrow will have been in place for some time.
ND.1.11	The Applicant gives another extraordinary response that most freighter movements do not operate to a timetable and are ad hoc based on demand. This is wrong and misleading. Integrator operations all operate to timetables but these are not usually published in a central database. At Frankfurt, 18,000 of the 28,000 dedicated freighter movements in 2018 operated to a published timetable; of the rest, we would expect a substantial proportion to have been integrator movements also operating to a timetable but not published as such. The published freighter schedule is already in place for much of the next 12 months with over 15,000 movements are already timetabled (see timetable information extracted from OAG at **Appendix D**). The number of scheduled freighter movements in the UK is lower at over 7,000 dedicated freighter movements already scheduled for the next 12 months. It is important to note that the schedule will not be complete for the winter scheduling season (from Nov) at this point in time, so the final total of annual scheduled freighter movements will be greater. In the response, Azimuth Associates wrongly interprets the increase in cargo tonnage between Frankfurt and China as indicating an increase in trade. This is not necessarily so. Similarly, the Manchester study looked at increased cargo export figures from Manchester Airport once Hainan Airlines commenced the operation of a passenger flight offering bellyhold capacity but, whilst exports flown from Manchester to China increased, the total of UK exports fell negating the effect of any increase in exports flown to/from Northwest England. It is also relevant to note the Cathay Pacific example cited in our 2019 Update Report (para 4.19), where a dedicated freighter operation was replaced by bellyhold capacity as a more cost effective operation. The ability to carry bellyhold freight is integral to a route's viability but the overall route economics enable cargo capacity to be sold at a lower rate per tonne than dedicated freighter operations (see 2019 Update Report para. 4.7). The thrust of this response ultimately describes ad hoc freighter operations, which are largely charter operations, which made up around 36% of all freighter movements in the UK in 2017, i.e. c.19,000. Of these, over half are within the UK. This again serves to indicate the small scale of the market from which Manston hopes to attract a share. We have addressed the low probability of Manston attracting operations by Amazon's dedicated freighter fleet in our Update Report at para. 3.10.
ND.1.12	We note that the sample routes used in the freight rate graph do not relate to the UK. Indeed the market where rates show the most volatility is Hong Kong-North America where there is no suggestion that lack of airport capacity drives rates higher. The volatility in the rates on the European markets illustrated is less. Even so, the range of volatility looks to be around 2.5x, less than the 4.5x estimated cost differential of using a dedicated freighter compared to bellyhold capacity. Hence, these examples do not provide evidence that there is a role for dedicated freighters to be operated, even on an ad hoc basis at times of seasonal demand. Any relief role for Manston as asserted is likely to be limited. The Heathrow quotation referenced in the response points to the need for more bellyhold capacity on passenger routes, which R3 will permit, rather than a need for dedicated freighter aircraft.
ND.1.13	Much of the response simply repeats material already contained in the Azimuth Reports. As we have addressed in some detail in both of our reports, Azimuth's interpretation of UK air freight statistics is flawed and betrays a lack of understanding of the market dynamics. The fact that the UK is now experiencing strong air freight tonnage growth suggests that the performance of the sector is less related to congestion and more to underlying economic factors. There has been no shortage of capacity for freighters at airports other than Heathrow, specifically Stansted and EMA so, if anything, any restrictions in freighter growth reflect Heathrow specific issues, rather than a general constraint, which

Manston cannot address any more than the already well established airports. As we have pointed out in response to ND.1.6 above, the reason that a greater proportion of freight is carried in dedicated freighter aircraft at the Frankfurt hub is a result of the substantially lower volume of bellyhold capacity available rather than any constraint on dedicated freighter operations at Heathrow.

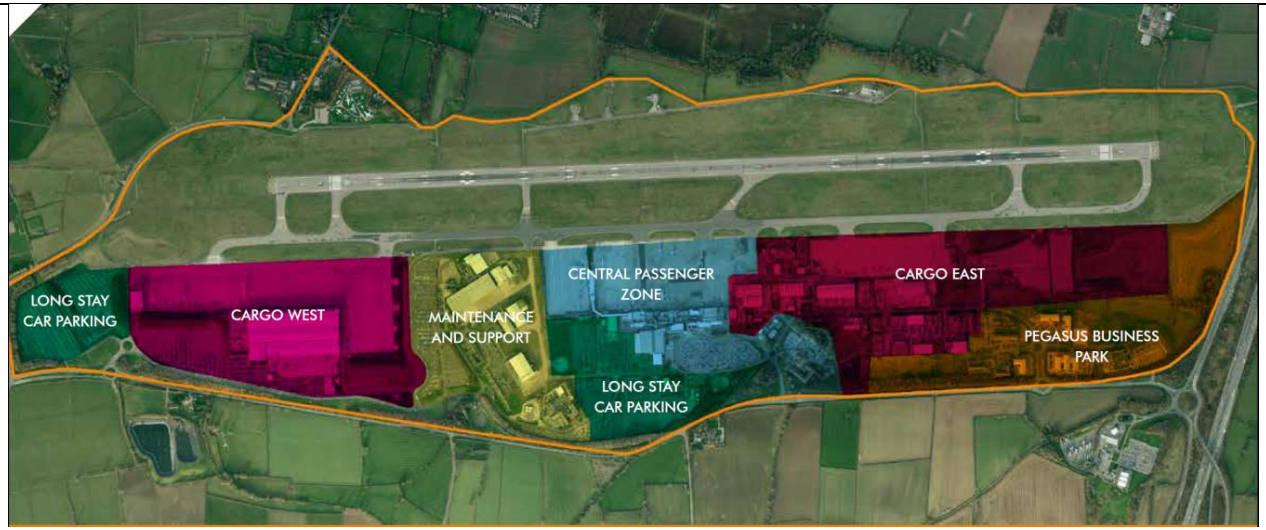
In terms of whether Stansted operates under capacity constraints for cargo aircraft, the Applicant tries to infer from growth in passenger aircraft movements (ATMs) and a fall in cargo ATMs that this can only be due to passenger aircraft crowding out cargo aircraft. First of all, as we have pointed out in response to ND.1.8 above, Stansted operates with dedicated freight aprons and so there is no conflict between the stand occupancy requirements of low cost carriers and those of cargo carriers. The quotation from Schiphol appears entirely irrelevant in this regard. The Applicant wrongly uses the initial raw slot demand at Stansted in the answer to ND.1.18 to suggest that Stansted Airport is more constrained than it actually is. The correct information to use is the pre-season allocation of slots which we illustrate below for Summer 2018 taken from the Airport Coordination Ltd Pre-Season Report https://www.acl-uk.org/wp-content/uploads/2018/03/STN_S18_SOS.pdf.



The graph above shows the actual spare runway capacity to accommodate additional freighter movements at Stansted at the start of the summer season in 2018. As can be seen there is ample spare capacity for additional ad hoc freighter movements to be scheduled if required (the already timetabled operations will be included in the chart).

The response also cites the recent Steer 2018 report for Airlines UK (see para. 4.6, 4.16-4.19 of our 2019 Update Report) in relation to recent airfreight growth to and from the UK compared to faster growth across Europe and, whilst acknowledging that this may be in part due to underlying economic factors, attempts to assert that it is someway due to constraints on dedicated freighter operations at Stansted. The evidence shows this to be simply nonsense.

ND.1.14	The Applicant has appended to this response its correspondence with the Department for Transport. Unsurprisingly, Azimuth Associates repeats its view that the Department's assumption that there will be no growth in dedicated freighter movements to and from the UK is wrong. Contrary to what is inferred in the response, the Department has not promised to produce a forecast of dedicated freighter movements, notwithstanding the current growth in cargo tonnage. What the Department actually said was: *"The Department is currently revaluating air freight policy as part of the developing Aviation Strategy, and you may have seen last July's Call for Evidence and the recent (April 2018) Next Steps response documents which set out some initial options……..We take your suggestion of conducting more detailed modelling of air freight on board and will consider it along with the other suggestions we have received as part of the strategy."* It is evident from the section on the Supporting Freight at paragraphs 4.45 to 4.50 of the Green Paper that the Department has not taken up the suggestion that detailed forecasts of dedicated freighter movements should be produced. Rather as covered in earlier responses, the Department has placed particular emphasis on the role of the existing airports Heathrow, East Midlands and Stansted and stressed the expected doubling of air freight capacity at Heathrow. In the context of the emphasis that the Department is placing overall on ensuring that the UK has sufficient airport capacity in the right places to support the broader economic growth agenda, it is inconceivable that they would not have factored into their analysis of the capacity requirements, as set out in the October *2017 UK Aviation Forecasts*, the need for more dedicated freighter aircraft if they believed it to be a likely requirement. In our discussions with the Department, we are not aware of any intention to produce forecasts of freighter aircraft movements in the near future.
ND.1.15	In this response, the Applicant attempts to assert that capacity for dedicated freighter aircraft at East Midlands Airport (EMA) is somehow constrained by capacity. At 76,000 annual aircraft movements in 2018 according to CAA Airport Statistics, EMA has ample spare runway capacity. A single runway can typically support well over 200,000 aircraft movements a year before significant constraints start to arise. The Airport's 2015 Sustainable Development Plan (https://live-webadmin-media.s3.amazonaws.com/media/2934/ema-sdp-2015-land-use.pdf) identifies land and facilities to support 10 mppa (up from 4.9 mppa) and 1.2 m tonnes of cargo (from 360,000 tonnes). The forecast tonnage is 700,000 tonnes by 2040, which the Applicant appears to have incorrectly construed as a capacity constraint. Land is clearly zoned for expansion in Cargo East and West as illustrated below.

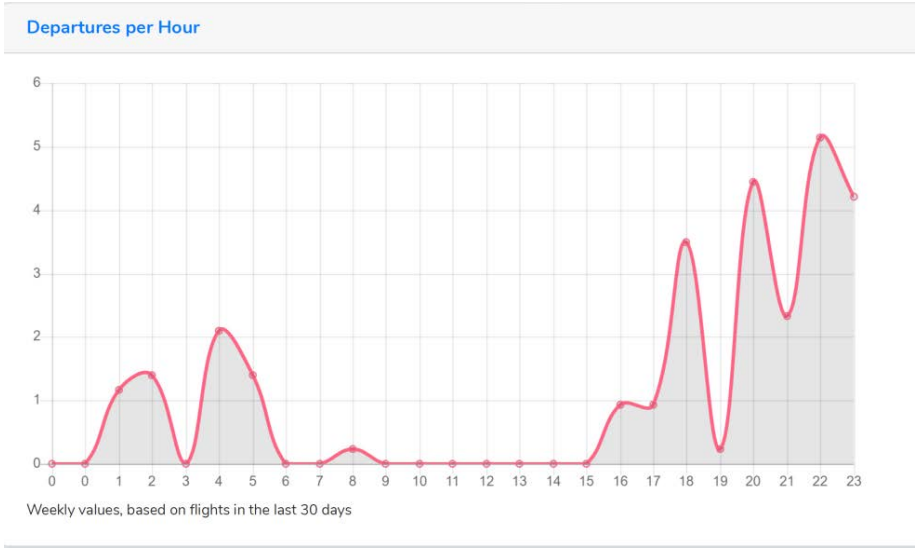


The reason why the EMA plan places emphasis on meeting integrator demand is because this is where there is demand for growth in dedicated cargo services. More general freighter movements could be accommodated if there was demand. Given the position of the Airport next to the East Midlands Gateway logistics park (https://www.slp-emg.com/c/location.php), it is highly unlikely that further expansion of cargo facilities at the Airport would be refused. Specifically, policy EC4 of the North West Leicestershire Local Plan supports growth at the Airport in line with its Master Plan (subject to environmental assessment):

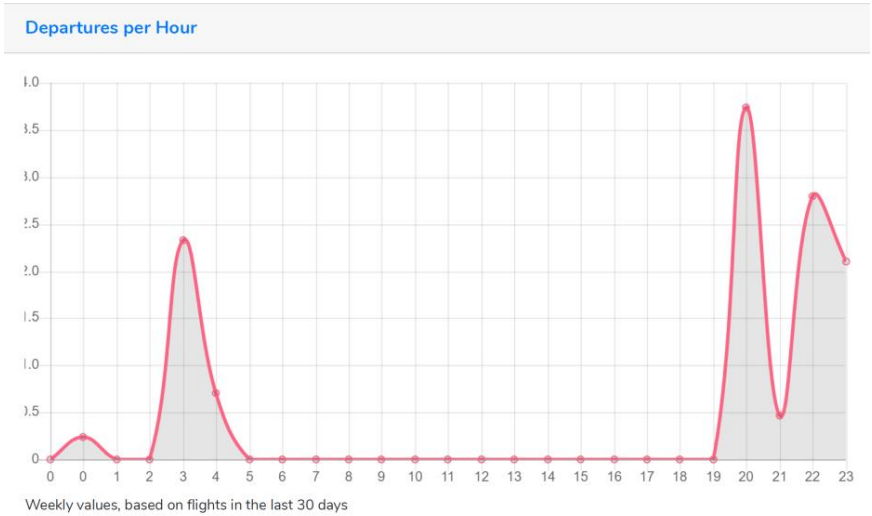
*"**Policy Ec4 – East Midlands Airport***
(1) The growth of East Midlands Airport will be supported provided development that gives rise to a material increase in airport capacity or capability:
(a) Is limited to that necessary to support an airport capable of handling up to 10 million passenger and 1.2 million tonnes of cargo per year; and
(b) Incorporates measures that will reduce the number of local residents affected by noise as a result of the airport's operation, as well as the impact of noise on the wider landscape; and
(c) Incorporates measures to ensure that local air quality satisfies relevant standards; and
(d) Is accompanied by improvements in public transport access to the airport and other measures that will reduce the level of airport-generated road traffic (per passenger); and (e) Will protect and enhance heritage assets within the vicinity of the airport."

In the light of this policy support, it is simply unreasonable to assert that EMA operates under any real or prospective constraint on its air freight operations for the foreseeable future.

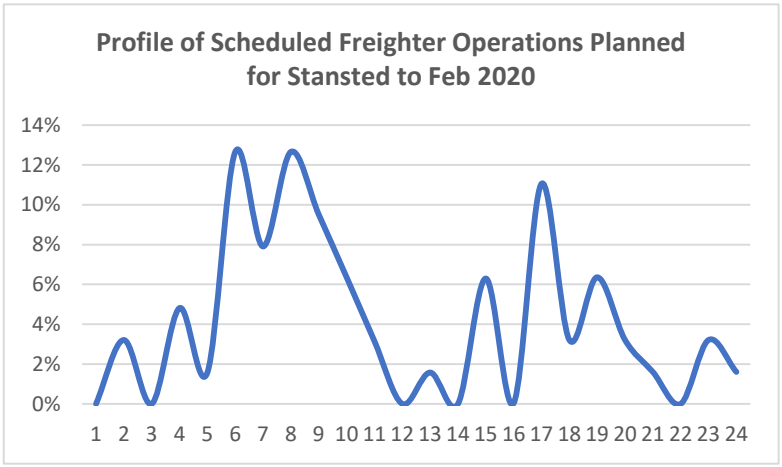
	The Applicant claims that it has taken the potential for EMA to increase from 360,000 tonnes of cargo to 1 million tonnes in its forecasts. It is totally unclear how this scale of growth has been factored in (see Figure 4.7 of our Update Report) as the Applicant's methodology for forecasting freight movements and tonnage is totally opaque.
ND.1.16	In this response, the Applicant claims night flying by integrators due to passenger flights crowding out movements during the day. This is patently untrue as the pattern of operation at EMA shows (see Table 3.2 of our 2019 Update Report). The response goes onto claim that it is not proposed for Manston to have an integrator base, yet the information provided in Appendix 3.3 to the ES shows that 48% of freighter aircraft movements in Year 20 (more in the earlier years) are expected to be operated by the integrators DHL or Fedex, including feeder flights by small aircraft which clearly implies the expectation of an integrator hub operation. At 8,327 integrator movements in Year 20 (as shown in the ES), Manston would be expecting to operate around 60% of the total number of integrator flights at East Midlands. By any measure, this implies some form of base or hub operation. Such an operation would only be possible if the airlines could operate a similar pattern of day/night movements as seen at EMA, as we outline at paras. 3.37-3.44 of our 2019 Update Report. Even if the operation was on a non-based basis, the pattern of day night movements would be very similar as it should be noted that EMA operates partly as a hub but also as a spoke to DHL's main operation at Leipzig. These movements would have to operate with timings based on late evening arrivals from the main hub and early hours' departures. The Applicant should be asked to clarify as a matter of urgency the intentions regarding integrator operations as, if these movements are removed from the forecasts, the number of predicted freighter aircraft movements is below the threshold for an NSIP (see para. 3.46 of our 2019 Update Report)
ND.1.17	The respondent does not actually answer the question posed. The answer deals with trucking of food, which is not an indication of high value air freight potential. As explained in Section 4 of our 2019 Update Report, trucking of freight between hubs is an integral part of the air freight system. The DfT figures referred to by the Applicant are travelling under an airway bill and will meet required delivery times for the high value/low weight model. Such freight is not a separate category of air freight and would normally be considered as part of the general air freight sector - see Steer Report for Airlines UK (http://airlinesuk.org/wp-content/uploads/2018/10/Assessment-of-the-value-of-air-freight-services-to-the-UK-economy-Final-Report-v22-Oct-2018-b-SENT.pdf) para 2.8ff for a description of different types of freight operation. This explains that the role of trucking is integral to general air freight handling (paras. 2.17-2.19) and not necessarily of itself any indication of capacity constraints but is simply a manifestation of how the market works.

ND.1.18	The answer refers to Stansted's previous passenger cap of 35 mppa but fails to recognise that this has been increased to 43 mppa. The response again confuses the DfT's 2017 presentation of the limiting capacity at each airport as being a movement limit not a passenger limit. It is clear from reading the DfT 2017 UK Aviation Forecasts, specifically Tables 63, 64 and Fig 7.4 (as reproduced at Fig 2 of Azimuth Vol I) that the limits reflected, particularly for Stansted, are based on passengers. Table 66 of the DfT UK Aviation Forecasts 2017 shows clearly that Stansted's peak forecast number of ATMs is 212,000 ATMs, i.e. the Airport is not projected to fully use its consented movement capacity of 274,000 ATMs, of which the limit for cargo flights is now 16,000 per annum as per new permission, i.e. 60% growth in cargo flights above current levels. It is simply wrong to assert any form of imminent constraint on the overall number of freighter aircraft movements at Stansted. The concept that MAG is favouring low cost airlines over freight at Stansted is pure speculation and without any foundation. Nor would air traffic control delay freighter operations to favour passenger flights but they would adhere to air traffic flow management slots as issued by Eurocontrol based on filed flight plans. In truth, there is no evidence that freighter operations are restricted at Stansted. Any short term fall in freight tonnage is almost certainly coincidental and related to underlying economic factors. As illustrated in response to ND.1.13, Stansted has recently extended its cargo facilities, which it would not have done so had it intended to force out freighter activity. As we have noted in response to ND.1.13 above, the Applicant uses the Stansted raw demand graph rather than the correct allocation chart. There is currently plenty of spare runway capacity at the times when the freight operators want to fly. We have looked at the times when the airlines currently want to fly (on the basis that there is no evidence that airlines are currently constrained from operating at the times they wish by any current capacity constraint at Stansted). The full details are given in **Appendix E**. Summary graphs are shown below: **Fedex** 

UPS



Scheduled Freighter Operations



It is clear that the integrators operate primarily at night with c.36% of all departures at night and a similar pattern for scheduled freighter operators. In overall terms, we estimate that around 45% of all non integrator freighter aircraft movements at Stansted operate with either an arrival or departure in the night period. If these operators had to move from Stansted due to the effect of night constraints, they would only

<table>
<tr><td></td><td>do so to an airport that could provide the flexibility to maintain current schedules, i.e. for Manston to be a candidate it would require to be able to operate a substantial number of night flights, well in excess of the proposed night quota in the Noise Mitigation Plan.

The situation at Amsterdam has also been misinterpreted by the Applicant. The 80% use it or lose it rule for slots has been in place under EU Regulation 95/93 for many years. This means that systematic off-schedule operations by any airline may result in some airlines losing their grandfathered slots and, with an airport at its overall annual movement limit, alternatives at a different could not be allocated as would have been the case before the limit was reached. This is not some new rule aimed at cargo carriers specifically but a part of EU law.</td></tr>
<tr><td>ND.1.19</td><td>It is interesting to note that the Applicant does not expect the position of most freight at Heathrow being carried bellyhold in long haul passenger aircraft to change once R3 opens. In terms of the balance of slot usage with R3, it is Government policy that the use of R3 should be focussed particularly on securing global connectivity and in ensuring improved regional domestic connectivity through the ringfencing of some slots (see Aviation Strategy Green Paper para. 3.52). On this basis, the Applicant's estimate of 85,000 of new slots being for long haul services is almost certainly conservative but would still represent an increase of c.50% in global connectivity compared to 2018 (c.175,000 long haul flights based on OAG data). The current bellyhold capacity offered for sale at Heathrow on long haul routes is c. 14 tonnes per sector on average (OAG). On this basis, 85,000 additional flights would equate to 1,200,000 tonnes, i.e. taking Heathrow to the 3 million tonnes total. It should be noted that this is a throughput estimate not a formal constraint so the tonnage achieved could be higher. Contrary to assertions made by Azimuth in its reports, newer aircraft types carry more tonnage per flight meaning that the future bellyhold capacity is likely to be greater on average per aircraft than today. Hence, Heathrow might well achieve more than 3 million tonnes of cargo once R3 is operational. We have extracted bellyhold tonnage capacities being offered for sale on average by aircraft type on 28th Feb 2019 to illustrate the high capacity offered by some newer types, in particular the Boeing B787:

<table>
<tr><th>Type</th><th>Bellyhold Tonnage</th></tr>
<tr><td>Airbus A330</td><td>11.0</td></tr>
<tr><td>Airbus A340</td><td>12.7</td></tr>
<tr><td>Airbus A350</td><td>20.0</td></tr>
<tr><td>Airbus A380 Passenger</td><td>20.2</td></tr>
<tr><td>Airbus Industrie A330</td><td>13.5</td></tr>
<tr><td>Airbus Industrie A350</td><td>20.0</td></tr>
<tr><td>Boeing 737 Passenger</td><td>5.4</td></tr>
<tr><td>Boeing 747 (Passenger)</td><td>15.2</td></tr>
<tr><td>Boeing 757 (Passenger)</td><td>7.1</td></tr>
<tr><td>Boeing 767 Passenger</td><td>13.9</td></tr>
<tr><td>Boeing 777 Passenger</td><td>23.2</td></tr>
<tr><td>Boeing 787</td><td>38.2</td></tr>
</table>
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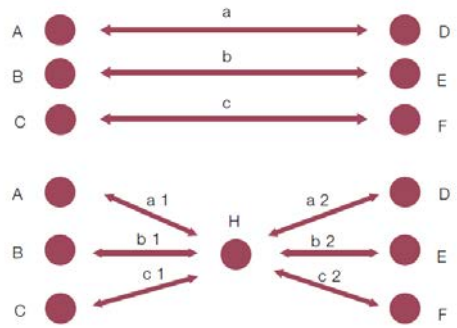
	We would also highlight that the Boeing industry reports, on which Azimuth seek to place substantial reliance throughout their reports, quotes lower (belly) hold capacity growth on passenger aircraft of 6% in their *World Air Cargo Forecast 2018-2037* (Executive Summary page 7) so Azimuth are simply wrong to speculate that the ability to carry bellyhold is reducing not increasing. We would reiterate para. 2.15 of our 2019 Update Report that Heathrow with R3 provides for growth for 31 years.
ND.1.20	This response seems to proceed from the premise that Heathrow could only attain 3 million tonnes of cargo per annum through extensive introduction of freighter flights. As we have demonstrated in response to ND1.19, this is easily deliverable from bellyhold capacity. Once again, the response is littered with speculation about the need to demolish Terminal 4 to provide more cargo aircraft stands, which is without substance. The fact that slots to use R3 may be released incrementally is not an issue as the release will be in line with demand. The Applicant again claims that it has taken account of growth in air freight capacity at Heathrow in its forecasts for Manston. Once again, this is totally opaque in the methodology. Our assessment (see Section 3 of our 2019 Update Report) is that there will be ample spare capacity. The remainder of the response asserts that, notwithstanding growth in capacity at Heathrow and elsewhere, there will be 400,000 tonnes of freight by 2050 which will require a dedicated freighter operation. This appears to be estimated by growing the current tonnage on dedicated freighters at the London airports by c.2% p.a. However, it does not follow that this freight would not be better suited to using the increased belly hold offer from Heathrow with a 3rd runway. As we have pointed out at paras. 4.4 and 4.19 of our 2019 Update Report, there is clear evidence of airlines discontinuing dedicated freighters when increased bellyhold capacity is available. Comparisons between Heathrow and Frankfurt (see ND.1.6) reinforce the point. Freighters, other than integrator operations and a small number of niche ad hoc/charter operations, fill the gap when bellyhold is not available rather than being a distinct market as the Applicant's response appears to suggest.
ND.1.21	We note the team experience cited. There is little here to give confidence that the team could bring Manston to profitable operations.
ND.1.22	Again, this answer appears to assume that freight is necessarily destined for Central London. Whilst this may be true for urgent documents carried by the integrators, is it not the case for the vast bulk of air freight. Otherwise, the Applicant's answer describes well the reasons why EMA is the main UK freight hub.
ND.1.23	We do not dispute that a 'No Deal' Brexit could lead to delays at the border for trucks in the short term until new systems and processes are put in place. However, the bigger issue with a 'No Deal' Brexit is likely to be the overall impact on the economy. Forecasts suggest that the economy could be up to 9.3% smaller than it would otherwise be in the event of 'No Deal' (https://www.bbc.co.uk/news/uk-politics-46366162). There would simply be less demand for freight transport so reducing any market that Manston might avail of. This is likely to be a much more significant factor in terms of the prospects for dedicated freighter operations at Manston than short term issues of customs clearance at the Channel crossings.
ND.1.24	The response that increased security measures could result in increased delays to cargo on passenger aircraft is pure speculation. The assertion is unsubstantiated and runs counter to the thrust of the Aviation Strategy Green Paper (Section 5) whereby the Government has set out a clear intention to improve the passenger experience.
ND.1.25	The advantages of dedicated freighter operations cited by the Applicant come at a cost which few shippers of general cargo are willing to pay. There is always an economic trade-off between time and cost so, for most air freight, the hub and spoke system works well as it does for passengers. Whilst Azimuth quotes *Boeing 2016 World Air Cargo Forecast* as saying 80% of cargo between Asia and Europe used dedicated

	freighters, the latest Boeing 2018 report (referred to earlier) shows this proportion has fallen to 75%. Hence, it is completely wrong for the Applicant to claim that there is not a general trend to a reducing share of cargo carried on dedicated freighter aircraft. The trend is clear and relates to the overall cost effectiveness of transporting goods. Boeing, in its 2018 report, stresses that dedicated freighters tend to concentrate on the main trade routes whilst bellyhold and hubbing provides the global reach. This contrasts with the view of the Applicant that some how dedicated freighters offer more flexibility to get goods from A to B. The response appears to cling to the belief that decline in freighter use is due to the lack of a dedicated freight airport, citing Leipzig and Liege as having few passengers and seeking to dismiss East Midlands and Stansted as freight airports because they handle more passengers than Leipzig and Liege. At 4.9 mppa, East Midlands is still a relatively small airport in passenger terms and remains able to focus largely on freight. It is frankly ludicrous to liken East Midlands Airport to Amsterdam Schiphol, which handled over 71 million passengers and nearly 500,000 ATMs in 2018. Reference again made to the potential for Amazon dedicated freighter operations. It is important to understand the purpose of Amazon's freighter operations in the context of the US market. The operation of their own aircraft is about feeding their distribution centres to keep them stocked with product https://aviationweek.com/commercial-aviation/amazon-air-seen-little-threat-incumbent-package-carriers. The circumstances in the US are very different and distances in the UK much shorter so delivery times can be met from depots in the centre of the country without the same need to fly between distribution centres.
ND.1.26	This answer again seeks to draw comparisons between Stansted, East Midlands and Amsterdam Schiphol Airports. We note that this answer correctly quotes the planning conditions at Stansted which were inaccurately cited earlier in the Applicant's responses. The response also states that constraints at East Midlands will be overcome when the new UPS handling facilities are operational. Whilst these facilities will enable UPS to grow to a scale to match DHL, we are not aware of any evidence that activity at East Midlands has been constrained to date.
ND.1.27	The response continues to assert that the decline in dedicated freighters in the UK is due day and night time slot constraints. This is not borne out by experience at the UK's unconstrained airports albeit this may have been a factor, in part, at Heathrow. However, to the extent that there has been any constraint at Heathrow, this has not manifested itself in growth in dedicated freighter movements elsewhere, despite both Stansted and East Midlands having ample spare capacity. There is no reason why the re-opening of Manston would make any difference to the clear trend. It should be noted that globally Boeing (2018) forecasts growth in freighters operating globally of 70% but 100% growth in freight. This suggests a global decline in the freighter share of the market of at least 17.5% over 20 years (and more if capacity of dedicated freighter aircraft were to increase relative to increase in bellyhold capacity). The decline in freighter operations is likely to be strongest in markets where there is strong growth in bellyhold capacity, as would be the case with a 3rd runway at Heathrow.
ND.1.28	This response again says that the focus of Manston will not be on integrator operations, yet such operations make up 48% of the Year 20 freighter movements (more in the early years) as set out in Appendix 3.3 of the ES. The Applicant appears not to understand its own evidence. The response says that other than the integrators, dedicated freighter operators do not depend on night flying. However, our analysis of non-integrator freighter operations at Stansted (see ND.1. 18) shows around 45% of operations were dependent on a night movement when either arriving or departing. Hence, the ability for airlines to operate a substantial proportion of their flights at night would be essential to Manston being able to attract such operations.

ND.1.30	This response is wrongly dismissive of the work of Aviasolutions for Thanet District Council (see Section 6 of our 2017 Report). The response also refers erroneously to a footnote on page 14 of Avia's 2017 commentary on Local Plan Consultation Responses, whereas the question refers to Aviasolutions earlier 2016 Report. As we point out in our 2017 Report (paras. 6.8 and 6.16), Aviasolutions correctly interprets our report for TfL and the FTA in 2015. Despite having been told in 2017 that they were misconstruing the meaning of the analysis contained in this report (see ND.1.7), the Applicant clings to its erroneous interpretation of our 2015 Report and quotes in this answer a claimed freight capacity shortfall of 2.1 million tonnes without any new runway or capacity across the London airports as the basis for its claim that Aviasolutions got it wrong. Our views and those of Aviasolutions do not diverge as the Applicant claims, they are in essence the same. The Applicant's view is where the error lies. It is important to note in relation to the role of trucking in the market that this is a matter of cost as well as speed. Dedicated freighter services would not address this issue. The Applicant continues with further criticisms of the Aviasolutions analysis and claims that out of date data has been used because Southend Airport is excluded from the analysis. As any experienced aviation consultant would be aware, Southend has not been included in the CAA Departing Passenger survey in the whole period since 1990, albeit it is being surveyed in 2019. Whilst we noted the Aviasolutions work in our 2017 Report, we have conducted our own analysis of the market from first principles. The Applicant asserts that, somehow, the performance of Manston will be different and claims to use more up to date data than used by Aviasolutions. However, this is not so, as much of the analysis set out in the Azimuth Reports relies on data and analysis used by the Airports Commission in 2013-2015 and fails to take into account subsequent developments and decisions. Once again, the answer states that the London system will be full by 2030 but, as pointed out numerous times in our Reports and responses, this relates to the circumstance where a 3rd runway is not built at Heathrow. Given that the question from the ExA relates to the Aviasolutions 2016 Report which did specifically address viability, it is important to note the conclusion of that report: "*7.3.9. Conclusion - The asset would require significant long term investment but would only generate a marginal return on the capital invested. These returns are also predicated on a large number of external variables over which the owner of Manston Airport has limited influence. It is AviaSolutions' view that based on this scenario there is no viable long term prospect of an economically viable airport being established at Manston".*
ND.1.31	This answer largely repeats earlier answers (ND1.18) that MAG has made a strategic choice to favour passengers over freight at Stansted. Nowhere in Section 5.1 of Azimuth Volume I does it quote MAG as saying it prefers passengers over freight, albeit Azimuth construes this to be the case. Paras 2.52, 2.53 of the Stansted Airport Ltd (STAL) Planning Statement (https://www.uttlesford.gov.uk/media/7748/Stansted-Airport-application-planning-statement/pdf/35__Planning_Statement__final_.pdf) for its recent planning application makes clear there are substantial aspirations for cargo growth: *"2.52 Today, Stansted is the third largest air freight centre in the UK, handling around 10% of the UK's air cargo market. In 2017, 260,000 tonnes of freight, worth over £12bn, were handled on c.12,000 dedicated freighter flights. This helps connect local firms, small and medium*

	sized enterprises in Essex and hi-tech companies in Cambridge, to global markets. In addition to dedicated air freight, the flights of DHL, FedEx, UPS and Royal Mail provide London with an express cargo hub for time critical, often overnight, deliveries. *2.53 Long haul services, such as those recently announced to the Middle East and North America, also bring trading benefits through the capacity to carry air freight. Belly-hold cargo is an important factor in maintaining the viability of long haul services, as well as giving local businesses easier access for importing or exporting goods. This new cargo capability will complement the existing 'all freight' services to, for example, Memphis and Qatar."* It is important to note, however, that STAL anticipates that more long haul scheduled services will be the principal means to drive throughput of cargo. We would further note in response to the Applicant's answer that there is no evidence that there was ever a shortage of capacity at Manston nor that its limited operations in the past were due to any shortfall in facilities. The past performance was reflective of market realities, which have not fundamentally changed.
ND.1.32	This response claims there were no facilities for handling outbound export cargo at Manston, which is absolutely incorrect. The response also restates unsupported expectations of cargo services by type of airline. As we note at para. of our 2019 Update Report, several of the airlines listed as operating in Appendix 3.3 to the ES do not have dedicated freighter aircraft in their fleets. To assist the Examining Authority, we have included the fleet lists of these airlines (from ch-aviation) at **Appendix F**. Freighter aircraft are denoted by an (F). We have included Qatar Airlines in the list where it is evident that they do operate a young fleet of freighter aircraft but, for the reasons we outline, they are highly unlikely to operate to Manston. We have addressed the shortcomings of the Business Model at F.1.5.
ND.1.33	This answer again is based on there being a shortage of capacity for dedicated freighter operations across the London airports. As we have demonstrated, this is not so. Elsewhere the response is muddled as, whilst it correctly identifies the potential of import of flowers from Africa, it claims that the UK will be importing of consumer goods from Pakistan and exporting clothing. This does not appear to be rational given the relatively limited clothing manufacture in the UK and limited consumer goods exported from Pakistan. The response is also unclear about China and implies that it would be a market for exports rather than the majority of trade currently being imports. In any event, there is no evidence that these markets or goods would be candidates for using dedicated freighters and would more likely seek bellyhold capacity (the experience at Manchester Airport with Hainan Airlines and Cathay Pacific would rather tend to prove this point.) We do not believe that the majority of these goods would be of such an urgent nature as to justify dedicated freighters, other than the fresh flower market that Manston historically handled.
ND.1.34	This answer continues to proceed on the basis that most air freight is to and from London. For the reasons already explained (see Section 4 of our 2019 Update Report), this is not the case.
ND1.35	It is not clear where the figure of 394 perishables flights per year comes from? The ES data at Appendix 3.3 shows 444 such flights (Cargolux from Africa/Nairobi in Year 20). Once again, there is lack of clarity of the basis upon which the application has actually been assessed, with different figures being quoted in different parts of the documentation.

ND1.36	The answer wrongly cites the proportion of KLM passengers within the total passenger forecast. This does not answer the ExA's question as to what proportion would be hubbing at Amsterdam. The answer given appears to mean that the route is assumed to carry 75,000 passengers per annum and does not grow through the period. This would equate to c.52 passengers per flight on average based on the 1,456 movements shown in Appendix 3.3 to the ES. KLM's smallest aircraft, the Embraer175 jet, has a capacity of 88 pax, implying a load factor of 60%. This is below a sensible viability threshold which we have assessed as 80% as an initial minimum rising to 88% (2019 Update Report para. 5.29). KLM's network wide load factor is 89.1% in 2018 (https://news.klm.com/klm-2018-traffic-results/) so the route is unlikely to be viable on the basis set out by the Applicant. We note that the response claims that there have been updated discussions with KLM in Feb 2019. We would not dispute that the airline may have expressed interest in recommencing the service but this may well depend on the support package available from RSP and from local authority stakeholders to support the re-introduction of the service. By way of comparison, our forecasts suggest that, if operated, the route could support 111,000 passengers in Year 20 with 67% connecting in Amsterdam. This would be roughly on a par with the number of passengers carried from Durham Tees Valley to Amsterdam in 2018.
ND.1.37	Part i) of the response fails to address the implications of limits on night flying on the prospects for Manston. In practice, the answer given simply demonstrates that a busy passenger schedule during the day is not an impediment to effective freighter operations as the Applicant has elsewhere tried to argue would be the case at Stansted. For the reasons we have set out at ND.1.6, to the extent that freighters are willing to confine their operations to day time hours at Frankfurt, this reflects the power of the hub and air freight consolidation at Frankfurt which would not be replicable at a small remote airport like Manston. Frankfurt is able to leverage its market power in the air freight sector in the same way as Heathrow.
ND.1.38	The response says that bellyhold freight is only cheaper where *"demand outstrips supply".* This is economically irrational as normally prices rise as demand outstrips supply. We have explained at ND.1.6 why Frankfurt has more dedicated freighter capacity than Heathrow. In terms of convenience for shippers, bellyhold is a more flexible option precisely because it uses hubbing to connect multiple points. Box 2b from the Airports Commission Interim Report 2013 illustrates the point. Hubs increase connectivity compared to point to point services.

	Box 2b: What are aviation hubs and how do they work? In a hub-and-spoke model, airlines and alliances focus their route networks on one or more key airports which maximise connecting opportunities for passengers. For example, an airline that operates direct services between three pairs of airports (A-D, B-E, and C-F) could instead route its flights via a hub (H) as shown below. This creates more route options, with passengers travelling from any airport in the network now able to access five different destinations (six, including the hub itself). Furthermore, the additional passengers transiting through the hub make it more viable for the airline to add new routes at that airport or increase frequencies on existing routes, bringing further connectivity benefits. On the other hand, such a model may incentivise airlines to replace some thinner direct routes with routes that involve a transfer, which is less convenient from the perspective of those passengers who travel on this particular route.  Dedicated freighters are inherently less flexible for shippers in terms of getting freight from A to D, E and F etc, and are a more expensive option. Hence, freighter services are being replaced as more bellyhold capacity comes on stream, other than on an ad hoc basis for special loads which can only be justified in limited circumstances.. This answer again makes reference to our 2015 Report for TfL and the FTA. The quotation cited makes clear that we were referring to constraints biting on bellyhold capacity at London not on capacity available for dedicated freighter operations. We have made clear to Azimuth for some time that they have been misrepresenting the conclusions of our 2015 Report. The Applicant asserts that e-commerce is creating a market for pure freighters to secure delivery times but this only works along narrow corridors of very dense demand. To the extent that such freighters are required (and there is little or no evidence that this is so in the UK context), there are choices as to how to serve London given the availability of capacity at Stansted today.
ND.1.39	The response claims that because of pent up demand for more freighters, movements at Manston will grow quickly. However, as noted earlier, over half of the initial movements are shown at Appendix 3.3 of the ES to operated by an integrator, which contradicts earlier

	statements that Manston will not be an integrator base. Hence, if an integrator base is not to be a feature at Manston (as we strongly believe), it is difficult to see where the initial growth might come from. In essence, this answer repeats much of the circumstantial material from earlier answers, including speculation about future operations at Stansted despite clear evidence of investment in increased air freight facilities there. Air freight operations from the dedicated facility do not impede the fast turnaround of low cost airlines, rather these airlines choose not to carry freight themselves as this would slow down their turnaround times. We would also note that when operating long sectors, Ryanair does not seek to operate 4 rotations within a day. All low cost airlines target their last arrivals late in the evening, with aircraft on the ground overnight.
ND.1.40	The answer says that mail flights are not included as they would require night operations. Again, this is different from the information shown at Appendix 3.3 of the ES which shows 770 annual movements on postal services with Boeing737 aircraft (4.5% of total freight movements). Once again, the information provided by the Applicant is contradictory.
ND.1.41	We note that the question did not highlight that the estimate of 18,000 non-domestic cargo ATMs for England and Wales was for day time ATMs only. Total non-domestic freighters in 2018 were 30,338 according to CAA Airport Statistics. 18,000 movements represents a robust estimate for the total number of non-domestic freighter ATMs across England and Wales. What is significant is that only 6,801 of these freighter movements were outside of the EU in 2018, yet Azimuth forecast Manston handling 2,746 such flights in its first year of operation rising to 4,698 in Year 3 (70% share of static market) and 7,785 by Year 20 based on the sector length and movement data in App 3.3 to the ES. This is simply not credible. The answer again claims that passenger flights will displace daytime freighters at EMA. The Applicant's assertions about capacity constraints at East Midlands are hardly borne out by the recent (18th Feb) notification by the Airport that it intends to build 1.4 hectares of apron for additional cargo activity (3-5 aircraft dependent on size) adjacent to the new UPS facility using its GPDO powers. https://www.leicestermercury.co.uk/news/business/ups-gets-green-light-114m-1277726 https://plans.nwleics.gov.uk/public-access/applicationDetails.do?activeTab=documents&keyVal=PNHJVCLR0L300. This suggests that to the extent that there is demand for additional freighters to serve the UK, EMA is already committed to providing the infrastructure required to handle them. It also would strongly suggest that growth is being driven by the integrator sector as the facility is adjacent to the new UPS distribution centre under construction. Of course, we are told elsewhere that it is not intended that Manston will be used by integrators.
ND.1.42	The Department for Transport (DfT) may not forecast freighter movements in detail but they have made a reasoned assumption based on the evidence that there is unlikely to be growth. In the context of considering the need for more airport capacity to ensure that aviation supports economic growth (see Airports NPS and Aviation Strategy Green Paper), it is not plausible to suggest that DfT would seek to understate the need. Contrary to what is stated in the response, the e-mail from the Department does not say that it is planning to produce a forecast for dedicated freighters using UK airports. What the DfT says is that it will take on board the suggestion that forecasts should be produced and consider this as part of the development of a new Aviation Strategy. The recent Aviation Strategy Green Paper does not take up the suggestion nor indicate that any forecasts are in prospect. It is our understanding that such forecasting work is not underway. The remainder of this response is pure speculation.
ND1.43	This response refers to the reference to Manston on the 2003 Future of Air Transport White Paper. We have addressed this at paras. 2.19 and 2.20 of our 2019 Update Report.

ND1.45	We recognise that discussions with airlines are likely to be commercially confidential but the lack of any commitment or documented support from any of the airlines cited as likely to operate, even in general terms, is a concern. We have set out reasons why we do not believe the list of air freight operators to be plausible in our 2019 Update Report.
ND1.46	This response simply repeats generic support for growth in the air transport sector. Policy still expects the specific need to be demonstrated for any development at an airport even within the principle of making best use of runways, other than in relation to Heathrow and the 3rd runway to which the Airports NPS applies. As we have noted in our 2019 Update Report (para. 2.21), any support for Manston within the Airports Commission work was as a reliever airport for local uses, business and general aviation.
Ns.1.24	See answer to CA1.15 above.
Ns.1.28	The response does not provide the requested information regarding the comparative size of night noise quotas at other airports where they exist.
SE.1.2	This answer asserts that there would be a 45% increase in staying visitors in the local area as a consequence of the Airport handling passenger flights. The calculation appears to be based on the assumption that 25% of 1.4 million passengers will stay overnight in the local area. It is important to note that 1.4 mppa passengers is only 700,000 people making an outward and a return journey. Based on the route network proposed for Manston, we would expect the vast majority of passengers to be outbound leisure largely from the local catchment area (as we set out in Section 5 of our 2019 Update Report). Only the routes to Amsterdam and Dublin might be expected to attract a material proportion of foreign visitors, and these routes make up 22% of our passenger forecast. Given that the Applicant's passenger forecast is overstated and, even assuming half of the passengers on these two routes were foreign resident, the impact on local staying visitors (other than connected with the possible ad hoc cruise charters) would be no more than ¼ of that suggested by the Applicant on the most optimistic basis that all of these passengers remained in the local area.
SE.1.3	No comment on response.
SE.1.5	This section provides little in terms of new information and, in fact, highlights some additional flaws in the Applicant's analysis. We refer the ExA to the analysis in our 2017 and 2019 reports. Direct employment – EMA is not an unreasonable comparator but as previously stated the figures for East Midlands are inflated by significant non-airport related employment on the Pegasus Business Park. We do not believe that this has been taken account of. The application of productivity growth only from Year 11 is illogical given the explanation provided. We would in fact expect productivity growth to be higher in the early years as an airport is getting established and growing as companies are able to benefit from rapid growth in economies of scale. Indirect/Induced Employment – this still does not address the issue of what study area is actually being examined and, hence, whether multipliers adopted are appropriate. Catalytic – we remain of the view that these multipliers are too high in the context of the operation of Manston, the surrounding area and the extent of alternatives. Again, there is still no consideration of the study area involved and the influence of this on any catalytic multiplier. In relation to construction labour available locally, while it would appear that RSP is seeking to make appropriate partnerships locally in terms of new entrants to the market, there is little evidence that they have considered how to work with existing construction firms operating in the area to try to ensure opportunities are recognised by and accessible to these firms.

	The appendices provide some more detail on the breakdown of on-site employment. It is difficult to comment further on these, particularly as it is not the breakdown of employment that is at question here but the overall scale, which is ultimately linked to the demand forecasts. However, in relation to freight employment, in particular, we note that no source for the employment density assumptions is provided and there may be double counting between the employment directly by the airport company and third party employment in this activity. Overall, this makes it difficult to comment on their validity or otherwise. We would, nonetheless, make the following observations: • if there are 507 direct airport employees related to cargo handling, what do the other 1,250 employed by other companies do? This appears to be based on the assumption of 50% express freight use (i.e. integrators), which again contradicts the other statements made in response that there will be no integrators operations based at the Airport. • 600 employees in MRO/aircraft dismantling is excessive. The demise of the Monarch Engineering heavy maintenance operation illustrates the problems in the market. http://www.travelweekly.co.uk/articles/320450/hundreds-of-jobs-lost-as-former-monarch-maintenance-arm-collapses. This operation employed 250 staff across two sites at Luton and Birmingham, excluding the line maintenance activities. These latter are associated with maintaining aircraft operations at busy airports so would not need to be replicated in hangarage at an airport like Manston. • If there are 40 staff employed in the FBO, what are the other 50 GA related staff. 40 staff in an FBO are likely to be excessive given the limited business aviation market in the vicinity of Manston given its remoteness from London? • Why would there be 50 staff associated with surface transport located at the Airport? Overall, we continue to believe that the employment density at Prestwick remains the most relevant comparator, noting that this includes Ryanair heavy maintenance activity and so may overstate the number of potential jobs if heavy maintenance or dismantling could not be attracted to Manston.
SE.1.6	This answer claims that there would be no displacement of activity from any other airport and that all the demand that Manston would attract would be unmet demand. This is at odds with claims in the Azimuth Report (see F.1.5 above) that consideration of the costs of switching operations for the airlines and forwarders has been taken into account, which would imply that at least some proportion of the 'forecast' demand is expected to have switched (been displaced) from elsewhere. For the reasons we have demonstrated, there is little or no unmet demand for additional dedicated freighter services to/from the UK and other airports have sufficient spare capacity to accommodate any requirements. Hence, given that the economic effects have, in essence, been quantified by Azimuth at the national level, given the multipliers used, the displacement effects relating to demand attracted to Manston that might otherwise have used Stansted or East Midlands in particular have to be accounted for.
SE.1.10	This answer simply reiterates Azimuth figures. No supporting evidence provided as to what export markets it is intended to serve or why the profile would be different from previously seen at Manston in terms of the import export balance (see our response to ND.1.32). The reference appendix is missing from the bundle but assumed to be FRAPORT report on activity in 2018 referred to elsewhere. The cited quote does not say anything about whether this was growth in imports or exports.
SE.1.13	We have commented on the employment assumptions at SE.1.5. The employment estimates provided by the Applicant are not robust for the reasons given in our 2017 and 2019 Reports. This is particularly so in terms of the local employment implications.

SE.1.15	We note that the question relates to the robustness of the assessment in terms of whether the 'worst case' has been identified. In so far as this question relates to the consequential implications of the levels of employment for the requirement for additional housing in the local area, this does represent very much of a 'worst case' as national level employment is construed as being realised locally. However, in terms of balancing of environmental costs and benefits, the overstatement of employment and GVA impact (see para. 3.54 of our 2019 Update Report) will mean that the balance may not have been correctly struck within the environmental assessment.

lc/7.3.19

Appendix A

Market Overview Demonstrating Market Demand for Office Space at East Midlands Airport and the Locality



Former DHL Offices
Unit 435 Air Cargo Centre
East Midlands Airport
Argosy Road
Castle Donington
DE74 2SE

Prepared for:-

Antonia Martin Wright
Anglo Scandinavian Estates 1 LLP c/o
Commercial Estates Group Limited

Prepared by:-

John Proctor BSc (Hons) MRICS FHP
Property Consultants

Prepared supplemental to a proposed Section 73 Planning Application to vary the current condition within the Planning Consent granted which limits occupation of the property to Airport related uses

FHP reference: JMP/HG
Date: 30th April 2018

FHP
www.fhp.co.uk

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Executive Summary

Commercial Estates Group on behalf of Anglo Scandinavian Estates 1 LLP (CEG) have owned the Air Cargo Centre in East Midlands Airport since 2012.

The Air Cargo Centre is a mixed office and warehouse park which is accessed from Beverley Road at East Midlands Airport.

One of the most substantial occupiers within the Air Cargo Centre has always been DHL who have expanded their distribution hub and representation on the Airport and vacated Unit 435 which comprises a two storey self contained detached office building of some 18,000ft² and adjacent warehouse accommodation.

The Air Cargo Centre principally, I would estimate, dates back to the late 1970s / 1980s and was evolved upon the basis that it would attract Airport related uses to help the expansion of the Airport.

Since that time the East Midlands Airport has grown organically to become an Airport of national and regional significance being stated as being the second largest freight Airport within the UK behind Heathrow and one of the major regional passenger Airports in Central England.

In the 1990s / 2000s East Midlands Airport recognised the need to widen the commercial base of the Airport and to improve its location as a business destination to complement the Airport related uses.

Between the late 1990s and the mid 2000s they actively promoted Pegasus Business Park as a prime Business Park of regional significance marketing the proposition into the national and regional markets and most particularly focusing upon its central location being equidistant between Nottingham and Derby and some 20 miles to the North of Leicester.

Pegasus Business Park was promoted through a joint venture with Wilson Bowden Developments but this came to an end in the mid 2000s, since which time there has been more limited development within the park and demand profile was in any event significantly affected by the recession.

When Pegasus Business Park was evolved some 137,000ft² of office buildings were developed over a four year period and in broad terms 70% of the occupation was to non Airport related uses and 30% of the occupation was to Airport related uses.

The non Airport related occupiers were all new inward investment relocations whereas the Airport related occupiers of UPS, The Immigration Service and Babcock were already represented onsite.

In order to bring the DHL office building up to date significant investment is required and it is clear that there is inadequate profile of demand to underwrite the investment required to refurbish the building if the building can only be offered to Airport related uses.

As a consequence, CEG are making a Planning Application to lift the current condition within the planning consent which limits the usage to Airport related occupiers.

This precedence has previously been considered in 2013 when BMI vacated the adjacent office building of 25,000ft² - planning consent was granted lifting this condition which enabled CEG to attract PKF to relocate their East Midlands Regional Office to the Airport.

As a consequence of the limited demand from Airport related uses which has been proven over the last 15 years the lack of provision of Grade A offices within the region we have concluded that the release of the condition will not be detrimental to the onward growth of the Airport but will complement its aspirations for the future and help continue to promote the Airport as a destination of regional significance.

1.0 Instructions and Introduction

1.1 Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group (CEG) own the freehold interest in the Former DHL Offices, Unit 435 Air Cargo Centre, East Midlands Airport, DE74 2SE.

1.2 The property was built in the late 1980s and has, since it was constructed, been occupied by DHL together with adjacent warehouse properties.

1.3 DHL have recently completed an extension to their Air Cargo hub within the Airport and have vacated the property.

1.4 It is understood that the original planning consent granted incorporates a condition which restricts the occupation of this building to Airport related uses.

1.5 The same condition was placed on a number of the surrounding buildings within the Airport boundary to ensure that as part of the evolution of the Airport that it was allowed to grow as a passenger and commercial Airport destination.

1.6 The Airport has grown substantially both as a commercial and passenger Airport but also as a commercial destination of significance within the East Midlands region.

1.7 The profile of occupiers and uses at Regional Airports has changed as Airport operators have realised that they need to ensure that their destinations are not entirely related upon Airport related uses.

1.8 As a consequence of its age and the fact that the property has since construction been occupied by DHL Unit 435 is now an outdated office facility in need of substantial refurbishment to upgrade the building to modern day use.

1.9 The report has been commissioned by CEG to accompany a Section 73 Planning Application which requests that the current condition limiting the use of the occupation for Airport related uses is widened to an open office use in line with Category B1(A) of the Use Classes Order 1987 (as amended).

1.10 [ ] Planning Consultants have requested a report which demonstrates the demand profile for offices within this location to consider whether or not there will be any detriment to the onward growth of the Airport in such event that the planning consent was widened.

1.11 A similar study was undertaken in June 2013 when the former offices of British Midland were vacated, this building has subsequently been refurbished to provide Grade A offices and is now the East Midlands HQ of PKF Cooper Parry. A similar Market Report and consideration of market conditions was commissioned and undertaken by myself, a copy of that report being attached within Appendix I.

1.12 This report therefore refocuses upon the office market, has due regard to the nature of the subject building and updates the market prognosis and characteristics over the period 2013 to 2018.

1.13 I am preparing this report in my capacity as a Director of FHP Property Consultants who are one of the leading Commercial Property Consultancy businesses within the East Midlands region.

1.14 In preparing the report I have the advantage / knowledge of having been personally involved in the evolution and marketing of Pegasus Business Park within the East Midlands Airport and subsequently in a number of the existing buildings both owned by Manchester Airport Group (East Midlands Airport) and in private ownership.

2.0 The Property

2.1 The property provides a 1980s constructed two storey detached self contained office building of brick elevations under pitched roof which is understood to provide approximately 1,672m² (18,000ft²) net of offices over two floors.

2.2 The property is located within the boundary of East Midlands Airport and forms part of the mixed office and warehouse development known as the Air Cargo Centre, the majority of which is still owned by CEG.

2.3 The property sits immediately adjacent to the former offices of British Midland which is now occupied by PKF Cooper Parry Chartered Accountants as their Regional East Midlands Office and is provided with a self contained car park for approximately 100 cars.

2.4 It is understood that the offices were originally constructed for DHL who vacated the premises in late 2017 having relocated this office function to their main distribution and office building which is also located within East Midlands Airport.

2.5 The building provides two floors of open plan offices. Photographs of the property both internally and externally are attached within Appendix II.

2.6 The property offers a tired and outdated internal specification as follows:-

- Entrance reception incorporating lift and stairs access fronting Bennerley Road
- Two floors of open plan offices
- Male, female and disabled WC facilities to each floor
- Solid floors with carpet finishes
- Suspended ceiling with inset lighting
- Aluminium powder coated double glazed windows

3.0 East Midlands Airport – Commercial Overview

3.1 It is my understanding that East Midlands Airport was opened in 1965 since which time it has established itself as the country's second largest Air Cargo Airport behind Heathrow.

3.2 In addition the Airport is one of the UK's recognised regional passenger Airports with approximately four million passengers reported to use the Airport on an annual basis.

3.3 FHP was formed in 1990s and it was during the 1990s that we first became involved with East Midlands Airport when at that time Hallam Land Management were seeking to promote Ginbro Farm and more latterly in the late 1990s when the East Midlands Airport sought to attract Joint Venture Developers to promote non core surplus land within the Airport's boundary to improve the Airport's relationship with the regional community and to promote a Regional Business Park which would be open to Airport and non Airport related uses.

3.4 The nature of the East Midlands Airport as a commercial destination as a consequence was transformed, in particular by:-

1. The planning consent which was granted on Ginbro Farm in the early 1990s and negotiated by Hallam Land Management – this released in excess of 100 acres in the south western quadrant of the Airport's boundary and was subsequently acquired by East Midlands Airport who attracted DHL to relocate their UK air freight headquarters to East Midlands Airport and enabled the implementation and expansion of additional long stay car parking in support of the Airport's growth.

2. The evolution and implementation of Pegasus Business Park through a Joint Venture Agreement between Wilson Bowden Developments and the East Midlands Airport which was entered into in or around 1997. Here I was personally involved in the evolution of Pegasus Business Park acting on behalf of Wilson Bowden Developments and East Midlands Airport which saw approximately 137,000ft² and buildings developed and occupied over the period 1999 to 2002.

3.5 Of these buildings approximately 32,000ft² was taken by Airport related users with UPS, Babcock and The Immigration Service taking the opportunity to relocate their existing offices within East Midlands Airport and upgrade to more modern facilities. The remaining 105,000ft² was taken by non Airport related users, namely Powergen (now Western Power), Regus and PWC as I onwardly summarise in greater detail.

4.0 Pegasus Business Park – Buildings Developed 1999 to 2002

Occupier	Size (net)	Nature of Business
United Parcel Services (UPS)	1,114m² (12,000ft²)	Airport related office serving the East Midlands Airport and the wider UPS network.
Babcock (originally Hunting Air Services)	929m² (10,000ft²)	Airport related occupier.
The Immigration Service	929m² (10,000ft²)	Airport related function.
Powergen (now Western Power)	4,180m² (45,000ft²)	Non Airport related.
Regus Serviced Office Centre	1,858m² (20,000ft²)	Non Airport related.
Price Waterhouse Coopers	3,716m² (40,000ft²)	Non Airport related regional office.

4.1 The evolution of Pegasus Business Park is fully summarised within our report dated 11th June 2013 commissioned to accompany the Section 73 Planning Application submitted on the adjacent building.

4.2 It shows that Pegasus enabled UPS, Babcock and the Immigration Office to upgrade their existing offices within the Airport but demonstrates that Pegasus was more widely regarded as a Regional Business Park which generated demand from the East Midlands from non Airport related occupiers.

4.3 Pegasus Business Park was extremely successful over its three / four years of active marketing and development and it would have continued to have grown had there not been a breakdown in the relationship between East Midlands Airport and Wilson Bowden Developments which prevented the park from being onwardly promoted and developed through the Joint Venture vehicle.

4.4 As summarised within the report of June 2013 subsequent development at East Midlands Airport has been more sporadic with the completion of the Holiday Inn Express and Premier Inn Hotels and two phases of offices implemented by Cannock Developments, the first phase being Cygnus Court - three smaller individual units of between 418m² (4,500ft²) and 743m² (8,000ft²) and Osprey House, a self contained building extending to 2,369m² (25,500ft²).

4.5 The evolution of the development of these properties and a summary of the marketing that was undertaken was summarised within our report June 2013.

4.6 The analysis undertaken in 2013 demonstrated that the majority of demand generated was from non Airport related uses.

5.0 Office Market Update - 2013 to 2018

5.1 Our report of June 2013 profiled the demand for offices at that time.

5.2 In the intervening period there has been little change in the occupational line up within the Airport albeit at the time of preparing the report PWC have recently downsized their East Midlands office on the park by approximately 50% with Savills (Nottingham) marketing approximately 18,000ft² within their office building.

5.3 A copy of the sales particulars of Savills is attached within Appendix III.

5.4 It is also appropriate and relevant to note that there has been significant new development within the distribution sector within the immediate locality, in particular with:-

1. Aldi choosing the Sawley Crossroads site approximately 2.5 miles to the North of the site and accessed from the A50 for their 1.5 million square feet two phase Midlands distribution facility.

2. The consent granted and the implementation of the East Midlands Gateway 600 acre distribution park being implemented by Segro and Roxhill where it is anticipated that ultimately 6 million square feet of distribution space will be provided, anchored by the first deals which have been announced to Amazon and Shop Direct.

5.5 The implementation of the distribution park complements the existing distribution focus, both within the Airport most particularly dominated by the DHL distribution facility and to the North of Castle Donington cantered on Willow Farm and more particularly the East Midlands Distribution Centre.

5.6 These developments improve the regional significance of the location which was already recognised as a strategic office location on the M1 corridor as previously highlighted.

5.7 It is understood, in speaking with Savills, that of the 18,000ft² which has been vacated by PWC within their building that terms have been agreed to let 6,000ft² to HBC for a non Airport related use and that the discussions are ongoing with a major service company for their East Midlands office to potentially relocate from Ashby, again a non Airport related use.

5.8 MAG have continued to market their surplus land within the boundary of East Midlands Airport and have the capacity to build additional new build offices both within Pegasus Business Park and adjacent to the National Grid building at the entrance to the park but so far as we are aware no significant interest has been attracted which can stimulate speculative development either from Airport or non Airport related uses.

5.9 The former DHL building is tired and in need of substantial refurbishment to attract an office occupier and initial cost estimates indicate that between £1,200,000 and £1,500,000 will need to be spent on the building to bring it up to modern day standards and to provide accommodation to a similar standard to that which has been offered by PWC within the PWC Building which has no restriction on user.

5.10 The marketing of the building will of course not exclude Airport related uses and this sector will, as part of the marketing, be targeted and therefore in such event that an Airport related user is in the market the building will still be available for occupation but having regard to the fact that the last Airport related office user was last attracted to the site when Pegasus was initially conceived in the early 2000s it is clear that it is more likely that the potential occupier for the site will be of a non Airport related use as opposed to being directly Airport related.

5.11 The vibrancy of the business element of the Airport is important both to increase the stature of the East Midlands Airport as a destination – attracting PKF Cooper Parry in 2013 to relocate their East Midlands office bringing together their offices from Nottingham, Derby and Leicester together with HSBC bringing a Regional Office into the park only helps to strengthen the business element of the Airport which of course, through both its passenger and freight traffic, highly dependent upon the business as well as the domestic markets.

5.12 Within our report of June 2013 we undertook a case study on the development of the last speculative office building within the East Midlands Airport, namely Osprey House. This is now occupied by National Grid.

5.13 There has been no speculative office development within the Airport, nor within the region, since that time of any significance.

5.14 The Airport is one of the most significant office locations within the North West Leicestershire District Council boundary with demand being generated from within the region with the average size of office occupier being larger than one finds elsewhere on the principle Business Parks which are located on the M1 corridor.

5.15 The East Midlands M1 corridor office market is dominated by the office parks of:-

1. Grove Park / Meridian Business Park, J21, M1

2. To a much lesser extent, Forest Business Park adjacent to the Bardon and Mount Park Distribution Parks at J22

3. Pride Park, Derby / Interchange Office Park, J25, M1

4. Nottingham Business Park / Phoenix Office Park, J26, M1

5. Sherwood Business Park, J27, M1

5.16 With the exception of Sherwood Business Park at J27 which is a former Enterprise Zone where there is an oversupply of offices there has been no significant speculative development undertaken since we last evaluated the market profile of the area.

5.17 The office market within the East Midlands area as a whole has relied upon the provision of Grade A refurbishment projects as there is inadequate confidence within the market nor has there been sufficient rental growth to underwrite speculative development.

5.18 It is our view that it is important that a building of this significance within the East Midlands Airport is brought back into use and provides Grade A offices which can be offered on an unrestrictive basis within the open market.

5.19 A building of this size should attract a further 150 to 250 employees to East Midlands Airport.

5.20 The fact that there has been no significant office occupier attracted to the Airport for some 15 years would indicate that by allowing the building to be marketed on an unconstrained basis will not have detriment impact upon the growth of the Airport and it is understood that the Airport themselves are supportive of the proposal.

5.21 In such event that the building was purely marketed and available for Airport related uses then CEG would be unable to commit to the expenditure to refurbish the building to provide a Grade A office and could only market the building on the basis that works would have to be held back until such time that an occupier for the majority of the building was identified to take the property on appropriate commercial terms.

5.22 As confirmed, the last lettings of significance to Airport related uses were to UPS (12,000ft^2), The Immigration Service (10,000ft^2) and Hunting Air Services (10,000ft^2).

5.23 All three occupiers were already located within the Airport and took the opportunity, as previously confirmed within both this report and the report of 2013, to upgrade their space from outdated facilities and since that time Hunting were acquired by Babcock and they have subsequently closed the office.

5.24 The letting prognosis and prospects of reletting the building to an Airport related use are therefore on this basis extremely low if not remote.

5.25 It is therefore for these reasons as summarised that it is appropriate to release the existing restrictive condition and allow the building to be brought back into use and provide a Grade A office facility to be provided on a speculative basis.

6.0 Further Information / Clarification

6.1 I would hope that the contents of this report are self explanatory – clarification / confirmation of any of the points arising can be provided if required.

Prepared by .....

John Proctor BSc (Hons) MRICS
FHP Property Consultants
10 Oxford Street
Nottingham
NG1 5BG

Dated 1st May 2018

Appendix I

Market Overview

Former BMI Offices
Unit 423 Air Cargo Centre
Argosy Road
East Midlands Airport
DE74 2SA

Market overview demonstrating market demand for office space at East Midlands Airport and the locality.

Prepared for:-

Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group and North West Leicestershire District Council



11 June 2013

Prepared by John Proctor BSc (Hons) MRICS – FHP

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Appendices

Appendix I	**FHP Property Particulars**
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Executive Summary;

This report has been prepared at the request of Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group as freehold owners of Building 423 Air Cargo Centre, Argosy Road, East Midlands Airport.

The building comprises a detached 1980s built two storey office building with a net internal area of approximately 25,500ft².

The report is prepared to accompany a Section 73 Planning Application to be submitted by Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group to accompany a Planning Application which is seeking to vary Condition 7 of the existing planning consent which currently allows the property to be used as offices but only upon the basis that the occupier is of an Airport related nature.

North West Leicestershire District Council have requested a report which demonstrates the demand profile for offices in this location to consider whether or not there would be any detriment to the onward growth of the Airport and the wider planning and economic strategies being evolved by North West Leicestershire to agree to the widening of the usage as requested.

This report has been provided by John M Proctor BSc (Hons) MRICS, a Director of FHP Property Consultants, and analyses the marketing which has been undertaken within the East Midlands Airport area for the past 15 years with particular reference to FHP's direct involvement in the evolution and implementation of Pegasus Business Park and more recently the marketing of individual buildings and most particularly Osprey House, a 25,000ft² building which was let to National Grid in April 2012.

The evidence indicates that there is little or no demand currently being generated from Airport related users for offices of this nature within this locality.

As a consequence the logical conclusion from FHP's perspective is that unless the planning consent in respect of the office development is widened, this office is likely to remain vacant for a considerable period of time.

The lack of demand would however by implication lead one to also conclude that widening the consent would not be of detriment to the onward growth of East Midlands Airport as a location as there is no current demand for space of this nature.

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1.0 Instructions and Introduction;

1.1 I, John Proctor, a Director of FHP Property Consultants have been instructed by Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group (CEG) as freehold owners of the Former BMI Baby Offices, Unit 423 Air Cargo Centre, East Midlands Airport to review the demand profile for offices of this nature.

1.2 This report is intended to accompany a Section 73 Planning Application requesting that the restricted use which limits the occupation of this building to Airport related users only can potentially be widened to an open office use in line with Use Category B1 (A) of the Use Classes Order 1987 (as amended).

1.3 I am preparing this report in my capacity as a Director of FHP Property Consultants who are recognised as one of the leading Commercial Property Consultancy businesses within the East Midlands region.

1.4 In preparing this report I have the advantage / knowledge of having marketed office properties at East Midlands Airport since the mid 1990s.

1.5 I head the Office and Industrial Agency Teams at FHP and over the past 15 years I have, by way of illustration, acted for Wilson Bowden Developments and East Midlands Airport in the evolution and implementation of Pegasus Business Park.

1.6 Here I was personally involved as Agent to Wilson Bowden Developments from 1997 until 2005 and personally agreed the letting and sale of buildings within Pegasus to occupiers such as Powergen (subsequently E-on and Western Power), Price Waterhouse Cooper (PWC), Regus, Babcock, The Immigration Office and UPS totaling some 137,000ft².

1.7 After the demise of the joint venture between Wilson Bowden Developments and East Midlands Airport FHP have subsequently acted for Cannock Developments and IM Properties and most recently concluded the 25,500ft² letting of Osprey House on behalf of IM Properties in April 2012.

1.8 I am currently instructed by Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group, advising them as freeholders of the former offices of BMI Baby which are still subject to a lease to BMI which terminates in July 2013 and I am providing strategic advice to Manchester Airport Group on both existing office and industrial premises and their undeveloped land within the Airport boundary.

1.9 I am able to provide my commentary set in the context of also having active involvement in the wider East Midlands Airport and most particularly the three major conurbations, Leicester, Derby and Nottingham.

2.0 The Property;

2.1 I attach in Appendix I the property particulars of FHP.

2.2 The document confirms that the building comprises a 1980s constructed two storey self contained office building of brick elevations under pitched roof providing approximately 25,500ft² of offices over two floors.

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2.3 It is my understanding that the offices were originally constructed for DHL and more recently have been used as the headquarters of BMI Baby who vacated the premises in early 2011.

2.4 The property is currently still held by BMI Baby on a lease which expires in July 2013.

2.5 Segro Estates owned the property until December 2012, the freehold interest now being owned by Commercial Estates Group.

2.6 Lambert Smith Hampton are currently advising BMI Baby and it is my understanding that they commenced marketing of the premises in September 2010 on a "soft" basis with active marketing commencing in January 2011.

2.7 FHP were originally invited to provide advice to Segro Estates in June 2012 to provide advice as to the potential marketability of the property once the BMI Baby lease terminated and onwardly their instruction was reconfirmed by Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group following their purchase of the building.

2.8 The building has been marketed since late 2010, by Lambert Smith Hampton and more recently in conjunction with soft marketing implemented by FHP and Innes England acting jointly for the freeholder.

2.9 The building provides open plan offices with its specification generally (modest modernisation and refurbishment is required) of a standard which meets the needs of an office occupier. Features of the specification include:-

- Entrance reception with lift and stairs access between the ground and first floors
- Two floors of open plan offices
- Male, female and disabled WC facilities to both floors
- Fully accessible raised floor within the office area
- Comfort cooling
- Plaster and emulsioned walls
- Aluminum powder coated double glazed windows
- Suspended ceiling within inset Category II light fittings

2.10 The property forms part of what is known as the Air Cargo Centre, a mixture of warehouse and office buildings which in themselves sit within the boundary of East Midlands Airport at Junction 23a of the M1.

2.11 East Midlands Airport opened, we believe, in 1965 and has established itself as the country's second largest air cargo operation, having grown by virtue of its central location in the UK.

2.12 In addition the Airport is one of the UK's recognised passenger airports with approximately

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4.3 million passengers using East Midlands Airport in 2012.

2.13 The growth of the Airport has naturally led to parallel growth of the supporting business space required to both serve the Airport and more recently its expansion as a recognised business destination within the East Midlands area and I understand approximately 6,500 people are employed at EMA.

2.14 From my own personal experience I am of the view that the interrelationship of the East Midlands Airport with the region as a business destination was transformed particularly by two major elements, namely:-

1. The planning consent granted to Gimbro Farm in the early 1990s negotiated by Hallam Land Management which released in excess of 100 acres in the south western quadrant of the Airport's boundary which attracted DHL to locate its UK Air Freight Headquarters at East Midlands Airport and enabled the implementation of additional long stay car parking in support of the Airport's growth.

2. The ultimate Joint Venture Agreement between Wilson Bowden Developments and East Midlands Airport which was originated in the mid 1990s and implemented I believe in 1997 to promote non core surplus land within the Airport's boundary as a regional business park open to both Airport and non Airport related users, leading to the evolution and implementation of Pegasus Business Park which saw buildings developed for UPS, Babcock, The Immigration Service, Regus, Powergen and Price Waterhouse Cooper totaling 137,000ft², these buildings being developed over the period 1999 to 2002.

2.15 A copy of the marketing literature dated Autumn 2000 is enclosed within Appendix II.

3.0 **Market Overview**;

3.1 I am providing this brief market overview within the context of having been directly involved in the marketing of both land and buildings at East Midlands Airport since the mid 1990s. In addition I, and the Office Agency Team at FHP, have advised both Land Owners, Developers, existing Owners and Tenants of office parks, existing office premises and new build schemes within the East Midlands region.

3.2 Market trends naturally change and most recently the impact of the economic downturn, the implementation of central and local Government policies in relation to transportation and general work practices linked to the onward maturity of the digital world have affected the profile of the office market.

3.3 In the broadest terms over the past 15 / 20 years we have witnessed the growth of the out of town office park market which was through my eyes conceived in the mid 1980s and in the East Midlands area a feature of development and workplace habits during the 1990s and the 2000s followed by the demise of the out of town office locations caused by the change in workplace habits, Government transportation strategies and the economic downturn most particularly.

3.4 These market trends are reflected by the phases of development which have been seen within East Midlands Airport.

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3.5 At the outset of the launch of Pegasus Business Park in the late 1990s / early 2000s there was strong demand at a time when there was:-

a) Latent demand within the area

b) A demand for out of town offices

As a consequence the development was kick started by the 44,000ft² presale to Powergen with Wilson Bowden Developments speculatively developing two buildings of 20,000ft² simultaneously which were let to The Immigration Office, Babcock and Regus.

3.6 Prelettings followed to UPS and PWC, these building being completed in 2001 / 2002. A copy of the marketing brochure prepared in 2000 is attached within Appendix III.

3.7 Onward development at Pegasus was constrained by the failing joint venture between Wilson Bowden and East Midlands Airport with the next phase of development being undertaken in 2005 / 2006 when the two budget hotels were completed and two phases of offices were implemented by Cannock Developments with the first phase being Cygnus Court, three smaller units of between 4,500ft² and 8,000ft² and latterly Osprey House, a self contained building of some 25,500ft² on which I onwardly provide detailed commentary demonstrating the demand for offices in this location from the period of 2007 to today's date.

3.8 Interestingly, and of relevance to the Planning Application, is the relationship of Airport and non Airport related occupiers who have taken space at the Airport.

3.9 In the initial phase of Pegasus there was Airport related occupation with UPS, Babcock (previously Hunting Aviation) and The Immigration Office all taking the opportunity to upgrade from their existing premises at the Airport.

3.10 Whilst I am not an expert in Airport related trends within the UK, FHP have been actively promoting offices within the Airport boundary since the mid 1990s, both within Pegasus where there are no restricted use provisions and also elsewhere within the Airport's boundary on behalf of MAG, Segro and now Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group where the restriction does exist.

3.11 What has become evident both through our own marketing and through our liaison with the Property Team at East Midlands Airport is that there has been ongoing centralisation of administrative facilities and merger of both passenger and Airport related airline providers / suppliers in parallel with the enhanced technological ways of modern working which have reduced the demand for offices at each and every Airport location.

3.12 This has been clearly illustrated by our marketing of Centennial House (marketing details attached in Appendix IV) – here we have acted for MAG for the past five years seeking to promote offices from 500ft² to 10,000ft² in a self contained two storey 1980s built office building with the space being available on flexible terms.

3.13 It has proven extremely difficult to attract occupiers and similarly other more peripheral offices within the Airport's Estate have also been vacated both within the terminal building and elsewhere within the Airport's boundary as this trend is continued.

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3.14 MAG themselves, through both the Property Teams at East Midlands Airport and Manchester, promote the availability of the land and are regularly in communication with the principal office occupiers and freight forwarders etc who occupy space at Airports through their existing portfolio and estate of their managed Airports throughout the UK and it is significant that there has not been a single notable inward investment of an Airport related occupier over and above the relocation / expansion of the offices of UPS, Babcock and The Immigration Service which occurred simultaneous with the implementation of the Pegasus Business Park proposals in the late 1990s.

3.15 This concern has been raised by MAG to both ourselves and Colliers who have been jointly appointed to promote surplus buildings and land at the Airport and they are now wishing to understand how they might be able to promote the Airport to a wider audience to help the onward growth of the Airport as a business destination.

4.0 Market Evidence of Occupational Trends / Demand at East Midlands Airport;

4.1 Office accommodation of this nature within the East Midlands Airport boundary has been actively marketed since the late 1990s.

4.2 The initial marketing was driven by the evolution and growth of Pegasus Business Park which grew quickly in the late 1990s / early 2000s at a time when out of town business parks were expanding quickly.

4.3 The growth of Pegasus was in part fuelled by the relocation of Airport based operators with UPS, The Immigration Service and Babcock all taking advantage of an upgrade in the standard of accommodation that they previously occupied on site.

4.4 Despite the fact that as part of the marketing all other Airport operators and Airport related users were identified, no other significant Airport related occupiers have been attracted to Pegasus albeit Heavyweight Air Express have took some 6,000ft² in Cygnus Court in 2009 expanding their existing operation which was previously located within a warehouse unit.

4.5 Marketing of Pegasus through the joint venture between Wilson Bowden and East Midlands Airport came to an end in 2004 / 2005 as East Midlands Airport retook control of marketing the site which coincides with the sale of the Airport to the National Express Group and subsequently to MAG.

4.6 Marketing of surplus land has however been onwardly undertaken by MAG and more recently FHP and Colliers International have been appointed on a Joint Agency basis (in 2012) to promote the land.

4.7 In the interim period Cannock Developments have implemented two schemes, namely Cygnus Court, a three unit scheme of two storey detached offices adjacent to the offices of PWC developed in 2004 and the development of Osprey house, a self contained 25,000ft² developed in 2006 / 2007.

4.8 The purpose of this report is to analyse the demand for Airport related users at East Midlands Airport in order that North West Leicestershire District Council should consider whether to continue to protect office buildings for Airport related uses.

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4.9 The best evidence is up to date market testing and whilst I have provided a brief overview on the wider marketing which has been undertaken at East Midlands Airport since 1995 the best evidence is the more recent marketing which has occurred on buildings offering similar size and nature of accommodation to that provided by the former BMI building.

4.10 I am able to provide that evidence by reference to:-

1. An analysis and summary of the marketing which was undertaken on Osprey House – a new build self contained three storey office of the same size as the BMI building where FHP acted as Joint Agents with Lambert Smith Hampton, marketing over the period 2007 to 2012 (the building ultimately being let to National Grid who are now in occupation).

2. The marketing of the first floor of Pembroke House by Lambert Smith Hampton which was marketed from January 2011 and let to Miranda Technologies in October 2012.

3. By reference to the marketing of the BMI building itself which has been undertaken by Lambert Smith Hampton over the period September 2010 to today's date and more latterly in conjunction with FHP acting on behalf of Anglo Scandinavian Estates 1 LLP c/o Commercial Estates Group where soft marketing commenced in the Autumn of 2012.

5.0 Osprey House – A Case Study;

5.1 I have attached as a separate document the marketing meeting minutes and enquiry schedules of both FHP and Lambert Smith Hampton over the period June 2007 to completion of the letting in April 2012.

Property Summary;

5.2 I attach in Appendix V three marketing brochures which were developed during the life of the marketing:-

a) The original brochure being prepared October 2005

b) The updated brochure prepared and issued early 2008

c) The final brochure completed and issued 2011

5.3 In summary, Lambert Smith Hampton and FHP were instructed in the Autumn of 2005 to jointly market the proposed speculative development of Osprey House on behalf of Cannock Developments.

5.4 Over the entire period from October 2005 until the letting concluded to National Grid the property was marketed in a structured way including:-

a) Erection of signage

b) Preparation of marketing brochures

c) Local and national advertising

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d) Continual and regular (in broad terms 3 to 6 monthly) mailing to Airport related occupiers, Property Agents and businesses within the East Midlands region

e) Registration on relevant websites including www.estatesgazette.com, www.novaloca.com, www.fhp.co.uk and www.lsh.co.uk

f) Preparation of flyers and postcards (both hard copy and more latterly digital)

g) Preparation of a dedicated website www.osprey-house.co.uk

5.5 The initiatives are summarised within the marketing meeting minutes enclosed within the separate document and the enquiries which were generated throughout the life of the marketing are summarised on the enquiry sheets.

5.6 For ease of reference I have summarised the key dates as follows:-

September 2007	Practical Completion of Osprey House.
November 2007	Onsite launch – Agents key occupiers invited.
March 2008	Detailed negotiations commenced with E-on.
May 2008	Draft Heads of Terms issued to E-on and agreed June 2009
February 2009	E-on withdrew from the negotiations
February 2009	Active marketing recommenced
April 2009	Detailed interest from i2 Limited, a serviced office occupier. Financial terms could not be agreed and i2 became nervous of the location.
Summer 2008 to Spring 2010	Osprey was considered as a potential relocation of Alstom Limited (commercial boilers division) to relocate facilities 12,000ft² from Derby and Ashby.
January 2010	Property considered by Games Warehouse (5,000ft² requirement) to occupy one floor.
April 2010 to September 2010	Osprey House / East Midlands Airport considered by Leicestershire Fire Authority for their headquarters.
April 2010	Initial interest received from Chinook Sciences (renewable regeneration specialists) for 12,000ft².
May 2010	Proposal submitted to Chinook Sciences.
June 2010	Redesign for the marketing package recommended. Relaunch of brochure commissioned June 2010.

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June 2010	Terms agreed with Chinook Sciences Limited.
June 2010	Relaunch of marketing package put on hold.
September 2010	Chinook withdrew from the transaction on HR grounds.
September 2010	Reactivated marketing campaign, i.e. new brochure, new signage, dedicated website, postcards and emailers.
December 2010	Interest received from Countrywide Surveyors (10,000ft²).
January / February 2011	Full relaunch of marketing, mailing and launch of website.
April 2011	Interest received from National Grid (25,000ft² requirement).
June – October 2011	Detailed negotiations with National Grid.
October 2011	Terms agreed with National Grid.
April 2012	Building let to National Grid.

5.7 The building was actively marketed for more than four years following Practical Completion.

5.8 The void period was exaggerated over and above what one would ordinarily expect to see for a building of this size and nature by virtue of the fact that completion of the building was shortly before the commencement of the economic downturn and the weakening for demand for out of town offices as previously summarised.

5.9 What is surprising is that if one analyses all of the enquiries that were received / entertained over the marketing period there is a distinct lack of demand from Airport related users. This profile of demand endorses the market commentary offered.

6.0 Pembroke House;

6.1 Pembroke House is a 20,000ft² self contained building which was developed and completed by Wilson Bowden Developments at the entrance of Pegasus Business Park and completed in 2000 – the building was originally let to The Immigration Service who still occupy the ground floor and Babcock who relocated from older 1970s offices within the Airport who had acquired Hunting Air who had a longstanding representation at EMA.

6.2 LSH commenced marketing in January 2011 and agreed a letting to Miranda Technologies (an IT company) who relocated from their offices in Stamford on Soar, Leicestershire (North of Loughborough) with lease completion being October 2012 (a marketing period of 22 months).

6.3 Details for Pembroke House are attached in Appendix VI.

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7.0 Unit 423;

7.1 BMI Baby commissioned soft marketing of this building in September 2010 appointing LSH to act upon their behalf – active marketing commenced in parallel with their vacation of the building in January 2011.

7.2 LSH actively marketed the building and I attach within Appendix VII both the original and more up to date marketing particulars of LSH.

7.3 The marketing included erection of signage, mailing and advertising with the property being fully exposed to the market in an active manner since the beginning of 2011.

7.4 I understand in speaking to Philip Quiggin at LSH who handled the enquiries that the levels of demand at the outset were poor albeit interest was received during 2011 from Miranda Technologies and Micros, both of whom are IT companies with regional offices based within the East Midlands region.

7.5 As the BMI lease comes to an end in July 2013 Segro (who previously owned the building prior to CEG's purchase) asked FHP and Innes England as Joint Agents to undertake parallel soft marketing of the space which commenced in the Autumn of 2012.

7.6 Since that time interest has been generated in the property (as previously confirmed) by a major corporate company and a regionally based professional services company.

7.7 The property has therefore been actively marketed now for more than 2.5 years and one would hope that the discussions with the professional company will yield to a successful letting as these discussions are advanced.

7.8 Over the 2.5 year period there has not been a single expression of interest however from an Airport related use.

8.0 <u>Demand Overview / Interpretation;</u>

8.1 From my own experience I have always seen East Midlands Airport as contributing to the East Midlands economy. It has the ability to provide a well accessed, high profile commercial location in a position which is equidistant between Nottingham and Derby and whilst accessible via the A1 from Leicester there is less linkage to Leicester from my own experience.

8.2 The occupiers who have been attracted to the Airport have cited these components as being the major reasons as to why they choose this location.

8.3 The original deal on Pegasus was the sale of 44,000ft² to Powergen. They brought together operations from Nottingham and Coventry.

8.4 PWC merged their East Midlands offices into Castle Donington with National Grid bringing together offices from Junction 26 of the M1 in North Nottingham and Rugby.

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8.5 The most recent occupier into the East Midlands Airport is Miranda Technologies who as previously confirmed occupy the first floor of Pembroke House in following Babcock's relocation (this letting completing some 22 months after marketing of the space commenced). Miranda were previously based in Stamford on Soar, a village approximately four miles North of Loughborough, who were bringing together more regional representation thereby requiring a strategically located office with easy access to both the East and West Midlands. Colliers International in Birmingham represented Miranda in their search for premises.

8.6 There are signs that there is a slight strengthening demand for offices on the M1 corridor, witnessed by the occupation of National Grid and Miranda, together with the level of interest which has more recently been generated on Building 423 itself.

8.7 As previously confirmed it is our understanding from LSH that the enquiries generated on this building through 2011 were relatively poor with a slight improvement during 2012 with interest expressed from Miranda Technologies (who took Pembroke House) and Micros, a software company, seeking to bring together their Leicester and Nottingham Offices into one building.

8.8 More recently, and in conjunction with the more active marketing implemented by FHP on behalf of Anglo Scandinavian Estates 1 LLP c/o Commercial Estate Group, there has been a higher level of interest with Building 423 being considered in detail by both a corporate company and a professional company who have representation in Nottingham, Derby and Leicester.

8.9 Negotiations with the professional company are at an advanced stage and there are strong prospects that terms may be agreed which would enable the professional company to locate their regional office in this location.

8.10 What is clear however is that there is very little evidence of Airport related demand for office occupiers at East Midlands Airport. This is proven by extensive marketing which has been undertaken over the past 15 years where FHP have either had a direct or indirect involvement. At the outset of the marketing of Pegasus there was latent demand from within the Airport which led to UPS, Babcock and The Immigration Office taking space within the initial development phases in late 1999 / early 2000s.

8.11 Since that time I cannot find evidence of substantial interest in EMA from Airport related users from the marketing which has been undertaken on space of a similar size and profile to Unit 423.

8.12 There is additional space within the Airports estate which is vacant together with the surplus development land which is being onwardly marketed.

8.13 If a significant occupier is attracted to EMA then their use can be accommodated on a design and build basis.

8.14 There is regular turnover of existing stock both within the East Midlands Airport property portfolio and within the separately owned buildings illustrated by the previous marketing of individual buildings and suites within Pegasus, at Osprey House and Cygnus Court.

8.15 My conclusion therefore having regard to the marketing evidence summarised within this report is that if the existing restriction remains that it is most likely that Building 423 will remain vacant for the foreseeable future.

8.16 The evidence of the marketing which I have summarised does indicate that by considering an open consent for office usage that this will not be detrimental to the growth of the office as the location is not currently generating demand from this sector.

8.17 Indeed one could argue that by widening the consent this will actually contribute to onward growth by enhancing the size and stature of this location regionally. Even when users are not Airport related they do use the facilities within both the Airport and the immediate vicinity.

8.18 I would hope that the contents of this report demonstrate that there has been both active marketing of the Subject Property since early 2011 which has confirmed that there is no interest from an Airport related user and that the evidence and case study of Osprey House and the overall market commentary linked to my involvement in Pegasus Business Park and other buildings within the East Midlands Airport over the past 15 years demonstrate similarly that there is very little market demand from Airport related users for this location.

Prepared by [redacted]...

John Proctor
FHP
[redacted]

Dated 24 June 2013

Appendix I

FHP Particulars

To Let

1,184m² (12,740ft²) - 2,375m² (25,561ft²)

High quality office with large open plan floor plate and excellent secure parking



Nearby facilities include:

east midlands airport
Nottingham · Leicester · Derby

Premier Inn · Radisson Blu Hotels & Resorts · M&S Simply Food · Costa Coffee · Burger King · moto · Holiday Inn Express · Travelodge · WHSmith

Nearby occupiers include:

pwc · e·on · ups

Argosy Road
Pegasus Business Park
Castle Donington
DE74 2SA

- Sought after business park address
- Easy access to Notts, Derby and Leicester
- Travel to London by train in 1hr 30min from East Midlands Airport
- High quality specification
- Excellent parking provision

Visit our website www.fhp.co.uk

0115 950 7577

Fisher Hargreaves Proctor Ltd | 10 Oxford Street Nottingham NG1 5BG

FHP PROPERTY CONSULTANTS

FHP PROPERTY CONSULTANTS

Office | Derbyshire, DE74 2SA







Argosy Road
Pegasus Business Park
Castle Donington
DE74 2SA

1,184m² (12,740ft²) to 2,375m² (25,561ft²)

+ An Outstanding Location

Pegasus Business Park is part of East Midlands Airport, making it one of the best located office parks in the East Midlands.

It offers almost instant access to the M1 at J23A and the A42. The A50 at J24A is within 5 minutes drive and East Midlands Parkway station is just 10 minutes drive away.

These unparalleled transport connections have already attracted a number of big names to this outstanding location.

+ The Property

The offices have been fitted out to a high standard by the current tenant. The accommodation is predominantly open plan together with a number of partitioned offices, meeting rooms, training rooms and canteen.

The property offers:

+ Air conditioning
+ Raised access floors
+ Passenger lift
+ Suspended ceiling
+ Category II lighting
+ 201 parking spaces
+ Passenger lift
+ Double glazing throughout

+ Service Charge

A small estate charge is applied to cover landscaping, road clearance and security issues.

More information is available upon application to the agents.

Visit our website www.fhp.co.uk

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FHP PROPERTY CONSULTANTS

Offices



+ Accommodation

We calculate the following Net Internal Areas:

Floor	M²	Ft²
Ground Floor	1,191	12,820
First Floor	1,184	12,740
Total NIA:	**2,375**	**25,560**

(This information is given for guidance purposes only and prospective tenants are advised to undertake their own measurements prior to contract)

+ Rent

Rent on application.

+ Business Rates

The property is current assessed for Rating purposes with a 2010 Rateable Value of £320,000. Please contact the agents for an outline of the Rates payable.

(This information is given for guidance purposes only and prospective tenants are advised to undertake their own enquires of the Local Authority)

+ A Day at Pegasus Business Park

7.30am	Quick work out in the gym at Raddison Blu.
8.15am	Grab a coffee on the way to work from Costa Coffee.
9.30am	First meeting of the day in the plush new meeting room.
11.00am	Back to the Raddison Blu for our sales seminar.
1.30pm	Lunch from M&S Food.
3.00pm	Informal team brainstorming session in the kitchen/breakout space – great brainstorming session.
6.00pm	Meet partner and go to the airport to catch flight to Barcelona. Great weekend and I didn't have to pay for airport parking.

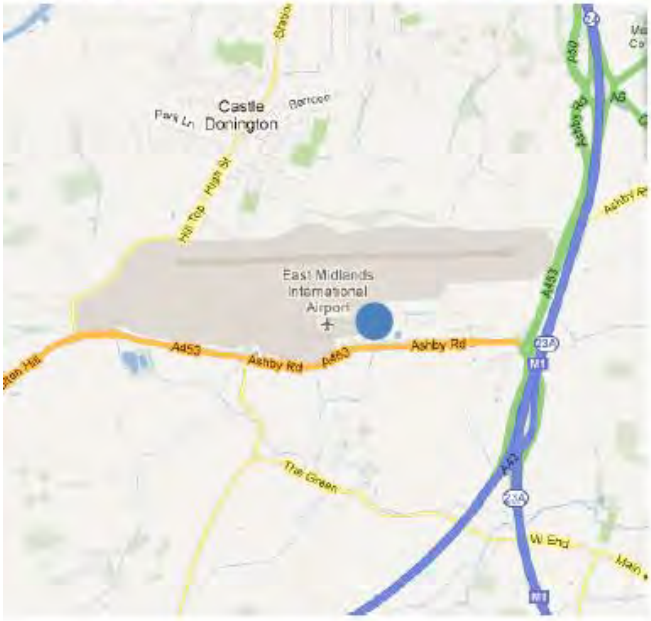
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Office | Derbyshire, DE74 2SA

Offices





+Journey Times

Destination	Time	Distance (Approx)
Nottingham	28 minutes	14 miles
Derby	22 minutes	15 miles
Leicester	32 minutes	19 miles
Birmingham	45 minutes	40 miles
Coventry	50 minutes	42 miles
Stoke	57 minutes	47 miles

+Nearby Transport Hubs

Destination	Time	Distance (Approx)
East Midlands Airport	2 mins	0.5 miles
East Midlands Parking	10 mins	7 miles
Birmingham Airport	41 mins	37 miles
London St Pancras	1hr 50 mins	By train from EMP

+ Interested

For further information or to make arrangements to view please contact:

James Hartley
FHP – Nottingham
T: 0115 9507577
M: 07887 787882
E: james@fhp.co.uk

George Dunnicliff
FHP – Derby
T: 01332 343222
M: 07876 396008
E: george@fhp.co.uk

Or contact our joint agents:

Tim Richardson
Innes England
T: 01332 362244
E: trichardson@innes-england.com

FHP, their clients and joint agents give notice that:
1 - They are not authorised to make or give any representations or warranties in relation to the property either here or elsewhere, either on their own behalf of their client or otherwise. They assume no responsibility for any statement that may be made in these particulars. These particulars do not form part of any offer or contact and must not be relied upon as statements or representations of fact.
2 - Any areas, measurements or distances are approximate. The text, photographs and plans are for guidance only and are not necessarily comprehensive. It should not be assumed that the property has all necessary planning, building regulation or other consents and FHP have not tested any service, equipment or facilities. Purchasers must satisfy themselves by inspection or otherwise. Figures quoted in these particulars may be subject to VAT in addition.

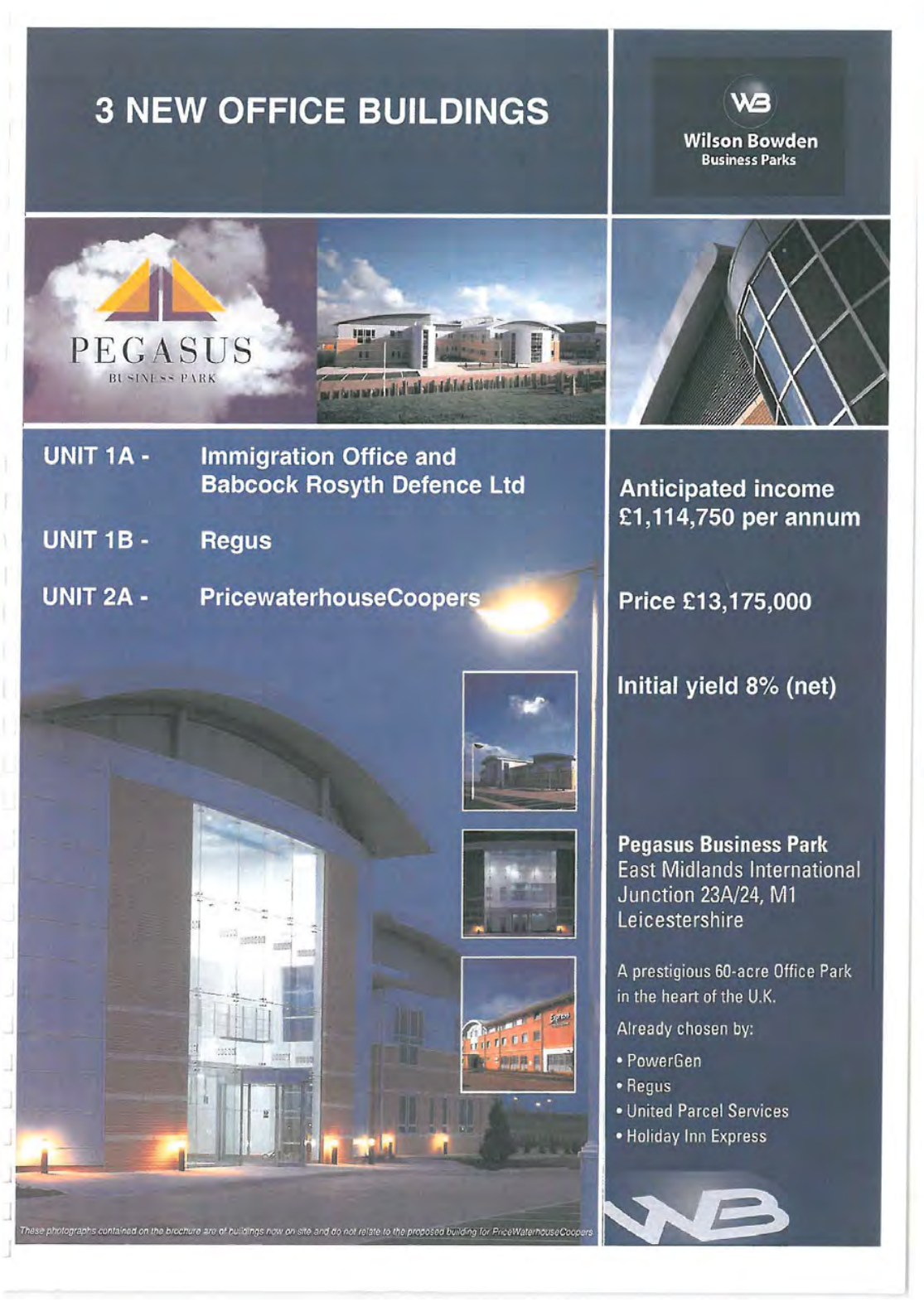
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Appendix II

Pegasus Business Park Marketing Literature dated Autumn 2000


3 NEW OFFICE BUILDINGS
Wilson Bowden
Business Parks
PEGASUS
BUSINESS PARK
UNIT 1A - Immigration Office and Babcock Rosyth Defence Ltd
UNIT 1B - Regus
UNIT 2A - PricewaterhouseCoopers
These photographs contained on the brochure are of buildings now on site and do not relate to the proposed building for PriceWaterhouseCoopers
Anticipated income £1,114,750 per annum
Price £13,175,000
Initial yield 8% (net)
Pegasus Business Park
East Midlands International
Junction 23A/24, M1
Leicestershire
A prestigious 60-acre Office Park in the heart of the U.K.
Already chosen by:
• PowerGen
• Regus
• United Parcel Services
• Holiday Inn Express

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

INVESTMENT CONSIDERATIONS

- Pegasus Business Park is a joint venture development by Wilson Bowden Developments Limited in conjunction with the East Midlands Airport.
- Pegasus Business Park provides a 62 acre masterplanned Business Park which is designed to provide upon completion a 60,385m² (650,000ft²) Office Park, hotels and creche facilities.
- The Park is situated immediately **adjacent to East Midlands Airport** accessed from **Junction 23A of the M1** central to Nottingham, Derby and Leicester.
- Conceived as the first regional Business Park for the East Midlands. Occupiers also include **Powergen, UPS and Express Holiday Inns.**
- Units 1A and 1B have recently been completed and let to the **Immigration Service, Babcock Rosyth Defence Limited** and **Regus Plc** and provide approximately 1,933m² (20,811ft²) and 2,221m² (23,912ft²) respectively.
- Terms have been agreed for **PricewaterhouseCoopers** to locate their new East Midlands Regional office to the Park. The 3,716m² (40,000ft²) building (2A) is due for completion September 2002 (term certain).
- New leases ranging between 11 years and 15 years 6 months.
- Rental levels ranging from £146.93/m² (£13.65/sqft) to £158.77/m² (£14.75/sqft).
- Minimum rental uplift of 2% per annum compounded at first review for the PricewaterhouseCoopers building.
- Anticipated total net income **£1,114,750 pa**
- Price - **£13,175,000** exclusive of VAT reflecting an initial yield of **8%** net of costs at 5.7625%
- Full unexploited Capital Allowances will be made available to the Purchaser.

Fisher Hargreaves Proctor 0115 950 7577 | FPDsavills | Wilson Bowden Developments

1

FHP PROPERTY CONSULTANTS

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

INTRODUCTION:

Wilson Bowden Developments Limited are developing the Pegasus Business Park with their joint venture partners the East Midlands Airport. Units 1A and 1B have recently been completed and have been let to the Immigration Service, Babcock Rosyth Defence Limited and Regus Plc.

Terms have been agreed to pre-let Unit 2A to P.W. & Co for the new East Midlands regional office of PricewaterhouseCoopers. A detailed planning application has been submitted for Unit 2A with the anticipated completion date being 10th September 2002.

Wilson Bowden Developments Limited and the East Midlands Airport are seeking to dispose of the three buildings subject to the occupational tenancies as a single package.

PEGASUS BUSINESS PARK – EVOLUTION:

The Park comprises a 62 acre masterplanned Business Park conceived to provide a regional Business Park serving the East Midlands region.

Work commenced on site in March 1999 since which time 9,929m² (106,882ft²) of offices have been completed together with the 90 bed Holiday Inn Express Hotel at the entrance to the Park.

The detailed planning application for the PwC building has been submitted and a further planning application is imminent for the next phase of speculative buildings.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

LOCATION:

Pegasus Business Park is situated adjacent to the East Midlands International Airport, which is strategically located in the centre of the country giving easy access to the immediate surrounding cities of Nottingham, Derby and Leicester.

- By road, Pegasus Business Park is easily accessed from Junction 23A or 24 of the M1 motorway, where the A42(M) and A50(T) all converge and is therefore central to Nottingham, Derby and Leicester. Excellent communications provides access to the following:

Birmingham	33 miles	Liverpool	91 miles
Bristol	118 miles	London	116 miles
Derby	12 miles	Manchester	73 miles
Leeds	81 miles	Nottingham	16 miles
Leicester	19 miles	Sheffield	48 miles

- Rail communications are good with Loughborough, Long Eaton, Nottingham and Derby stations all accessible via a short bus or taxi ride from Pegasus Business Park. These are all served by the main Inter-City trains operated by Midland Mainline and Central Trains. A new Midland Parkway mainline station is proposed to be developed by 2003 (subject to the outcome of the public enquiry) at Kegworth which is located only 2.5 miles to the north east.

- By air, Pegasus Business Park, due to it's location adjacent to East Midlands Airport, benefits from British Midland's scheduled flights to fourteen European destinations and on-ward destinations from Brussels, Amsterdam and Frankfurt.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

EAST MIDLANDS AIRPORT:

East Midlands Airport opened in 1965 and has now established itself as the country's second air cargo operation having exploited its central location in the UK. The airport currently handles more than 175,000 tonnes of freight and 14,000 tonnes of mail and is currently ranked in the Top 20 European Airports in terms of total cargo through-put. Figures produced in 2000 indicated that EMA handled 26% of the UK's cargo carried on dedicated freighter aircraft.

In addition, over 2.2 million passengers used East Midlands Airport in the year 2000. In the first half of 2001 passenger figures are up 7.3%. The largest growth has been in the inclusive tour and charter markets, particularly to the Greek Islands, Cyprus and Majorca. Direct flights to Orlando commence in summer 2002, which are expected to lead to a significant increase in passenger traffic.

The airport's runway was extended last year and is now the 6th longest in the UK giving the airport an excellent opportunity for further expansion.

THE BUILDINGS:

Units 1A and 1B have been completed and comprise detached 2 storey buildings whereas Unit 2A is designed over 3 storeys. The individual building specifications vary slightly but principally include:

- Feature 2 storey reception areas
- Comfort cooling and full air conditioning*
- Triple glazing
- Fully accessible metal encapsulated raised floors with three compartment floor boxes with power provision
- Suspended ceilings with Inset Category II lighting
- Passenger lifts
- Full carpeting
- Male and female WCs to each floor*

* The PwC building includes full air conditioning to include humidification and dehumidification.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

Floor plans (both to scale and reduced) together with copies of the agreed specifications are available upon request.

CAR PARKING:

The buildings are provided with a better than average level of car parking. The ratio for Units 1A and 1B is one space per 25m² (269ft²). The anticipated ratio for the PwC building is one space per 20m² (215ft²).

TENURE:

The freehold interest is being retained by the East Midlands Airport who are granting a new 150 year Headlease.

The ground rent payable under the Headlease is equivalent to 10% of the annual rents **received** under the Underlease.

TENANCIES:

Unit 1A:

Ground Floor:

Terms have been agreed for **The Secretary of State for The Environment Transport Local Government and The Regions** to enter into a new **15 year lease** drawn on effective full repairing and insuring terms via service charge provisions and incorporating 5 yearly upward only rent reviews.

The anticipated rental is **£152,662 pa (£158.77/m² - £14.75/ft²).**

The suite is to be occupied by the **Immigration Office**.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

First Floor:

The first floor is to be let to **Babcock Rosyth Defence Limited** on the basis of a **15 year lease** drawn on effective full repairing and insuring terms via service charge provision and incorporating 5 yearly upward only rent reviews.

The anticipated rental is **£146,552 pa (£150.74/m² - £14/sqft)**

Unit 1B:

The property is let to **Regus Business Centres (UK) Limited** on the basis of a **25 year lease** which incorporates a break clause at the end **of 15 years 6 months** which can be triggered by 12 months prior written notice.

The initial rent is **£359,397 pa (£15.03/ft²).** At rent review, the open market rental is uplifted by a further 10.11% to rentalise the financial contribution made by the developer towards the Regus fit out.

The base rent is therefore **£146.93/m² (£13.65/ft²)**

Unit 2A:

Heads of Terms have been agreed for the property to be let to **P.W. & Co** on the basis of a **15 year lease** drawn on full repairing and insuring terms with 5 yearly upward only rent reviews.

The lease incorporates a tenant only break clause operable at the end of the tenth year of the term by serving a minimum of 12 months prior notice in writing. This will trigger a 12 months rental penalty.

At first review the rental is subject to a **minimum rental uplift** calculated by applying growth at the rate of **2% per annum (compounded)**. Thereafter the reviews are upward only without indexation.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

The anticipated initial rent is **£580,000 pa (£156.08/m² - £14.50/ft²)***.

P.W. & Co have an option to request that the building is extended by a further 1,858m² (20,000ft²). The option is valid for 6 months following the exchange of the Agreement for Lease and would be let on terms consistent with those previously summarised.

* The rental is subject to a Confidentiality Agreement jointly binding on the Landlord & Tenant.

GROSS AND NET RENTAL INCOME:

The anticipated gross annual rental is	**£1,238,611 pa.**
The net rental income is anticipated as being	**£1,114,750 pa.**

TENANT'S CONVENANTS:

Unit 1A:

The Immigration Office are to occupy the ground floor suite. The Heads of Terms have been agreed and the Lease is to be taken in the name of The Secretary of State for The Environment Transport and The Regions.

Babcock Rosyth Defence Limited is principally engaged in the re-fit and repair of naval vessels and in heavy engineering and manufacture.

The office at Pegasus is to be occupied by Hunting Contract Services who provide administrative and facility contracts to the Ministry of Defence. In March 2000 Babcock Rosyth Defence Limited acquired the whole of the share capital of FBM Marine Holdings (UK) Limited and FBM Lairdside Limited. This business is now re-named FBM Babcock is Europe's leading supplier of fast passenger ferries to the expanding world market.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

Financial highlights for the year ending 31st March 2001 reputed turnover of **£172,408,000,** profit prior to taxation of **£9,903,000** and net assets (and shareholders funds) of **£9,625,000**.

Unit 1B:

Regus Plc (formerly Regus Business Centres Plc) successfully achieved the simultaneous listings on the London Stock Exchange and NASDAQ in October 2000.

Regus are providers of high quality business services to the global economy and their international network of adaptable business centres allows Regus customers to outsource, completely or in part their work space requirements. By December 2000, Regus operated 64,070 work stations in 335 centres across 48 countries.

The Regus Centre at East Midlands Airport provides 280 work stations.

Unit 2A:

The property is to be let to P.W. & Co which is an unlimited company wholly owned by the Partnership of PricewaterhouseCoopers. PricewaterhouseCoopers are the largest providers of financial services in the world.

RENTAL EVIDENCE:

Since its inception, Pegasus has demonstrated sustained demand.

Powergen's 4,180m² (45,000ft²) building was completed in April 2000 and purchased. The Regus letting was completed in 2001 and is structured off a base rent of £13.65/ft² reflecting the rental for the standard developer's specification with the rent uplifted to £15.03/ft² to rentalise the Regus fit-out.

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

Unit 2C comprises a 2 storey building of 1,594m² (17,159ft²) let to United Parcel Services (UPS) on a new 15 year lease. The building has been constructed to a differing specification which together with operational issues between the Airport and UPS reflects in the rental of £129.17/m² (£12/ft²).

Unit 1A was constructed on a speculative basis and completed in late 2001. The rental agreed with Babcock reflects £150.70m² (£14/ft²) and the letting to the Immigration Service reflects £158.77/m² (£14.75ft²).

The quoting rent on the park is now £166.85/m² (£15.50/ft²)

ESTATE MANAGEMENT COMPANY:

The roads within Pegasus are private and the upkeep and maintenance of all common areas within the Park are administered by the East Midlands Airport via service charge provisions.

Contributions to the service charge are calculated based on the ratio of the size of the plot in proportion to the whole park.

COLLATERAL WARRANTIES:

The tenant and the purchaser receive the benefit of collateral warranty documentation drawn under seal from the appointed professional team to include:

- Architects – Stephen George & Partners, Leicester
- Structural Engineers: BWB Engineers, Nottingham
- Sub-contractors with design responsibilities

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

CAPITAL ALLOWANCES:

Fully unexploited capital allowances will be available in respect of the properties and further details will be provided in due course.

VAT:

The developers have elected to waive the exemption to VAT which will be payable at standard rate.

FINANCIAL PROPOSAL:

Our clients are seeking **offers in respect of buildings 1A and 1B together with a forward commitment to purchase building 2A** in the order of:-

£13,175,000
(Thirteen Million One Hundred and Seventy Five Thousand Pounds)

Subject to contract and exclusive of VAT.

Our clients will seek to adopt an agreed multiplier which will be applied to the agreed rental for the PwC building to include the 1,858m² (20,000ft²) extension should this option be exercised.

INITIAL YIELD:

8.00% net of costs at 5.7625%

BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

FURTHER INFORMATION:

Further information is available by contacting:

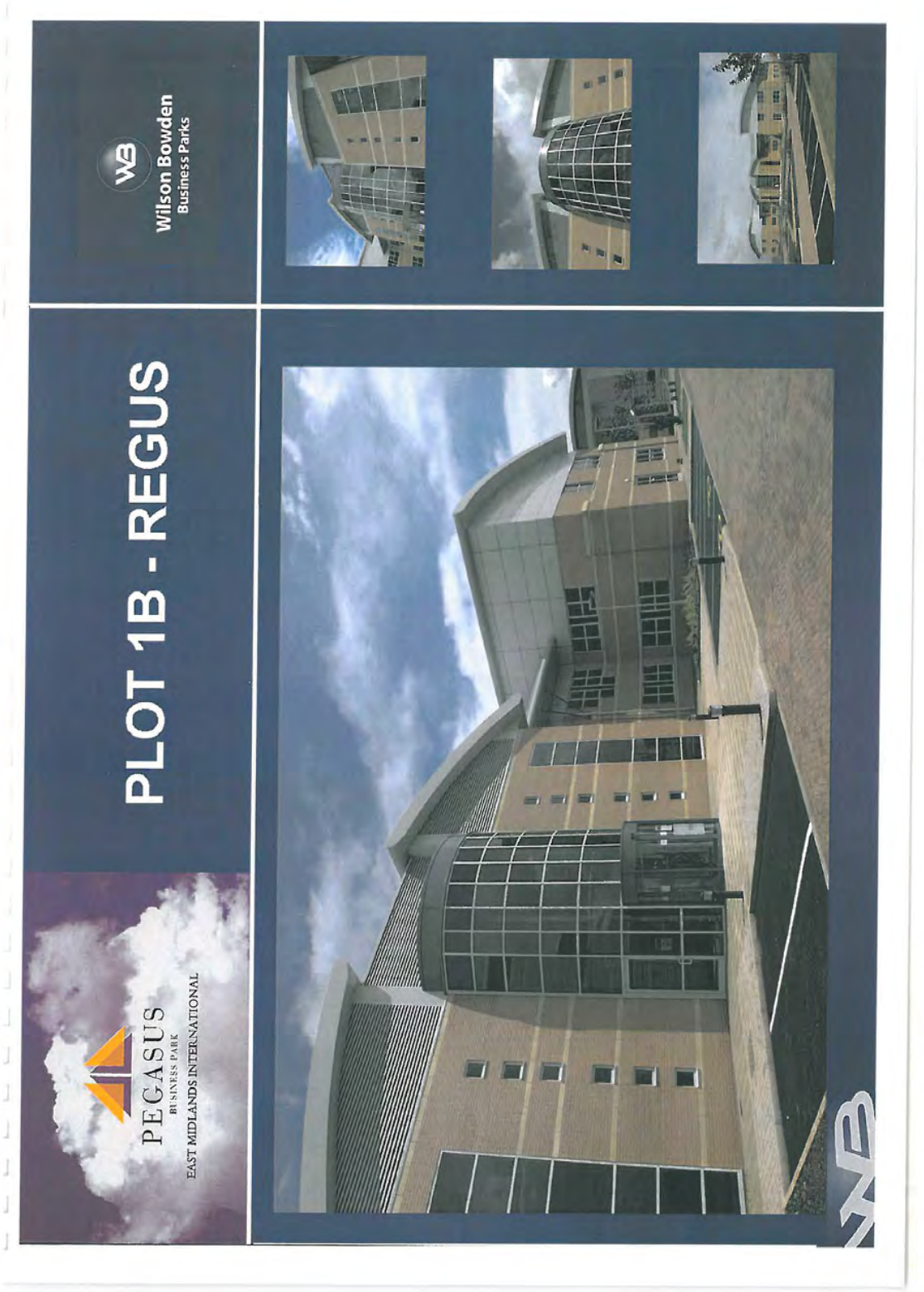
Scott Tyler	Philip Hunt	John Proctor
020 7409 8825	020 7409 8805	0115 8411130

FPDSavills Commercial Limited
20 Grosvenor Hill
London
W1K 3HQ
Fax: 020 7409 2635

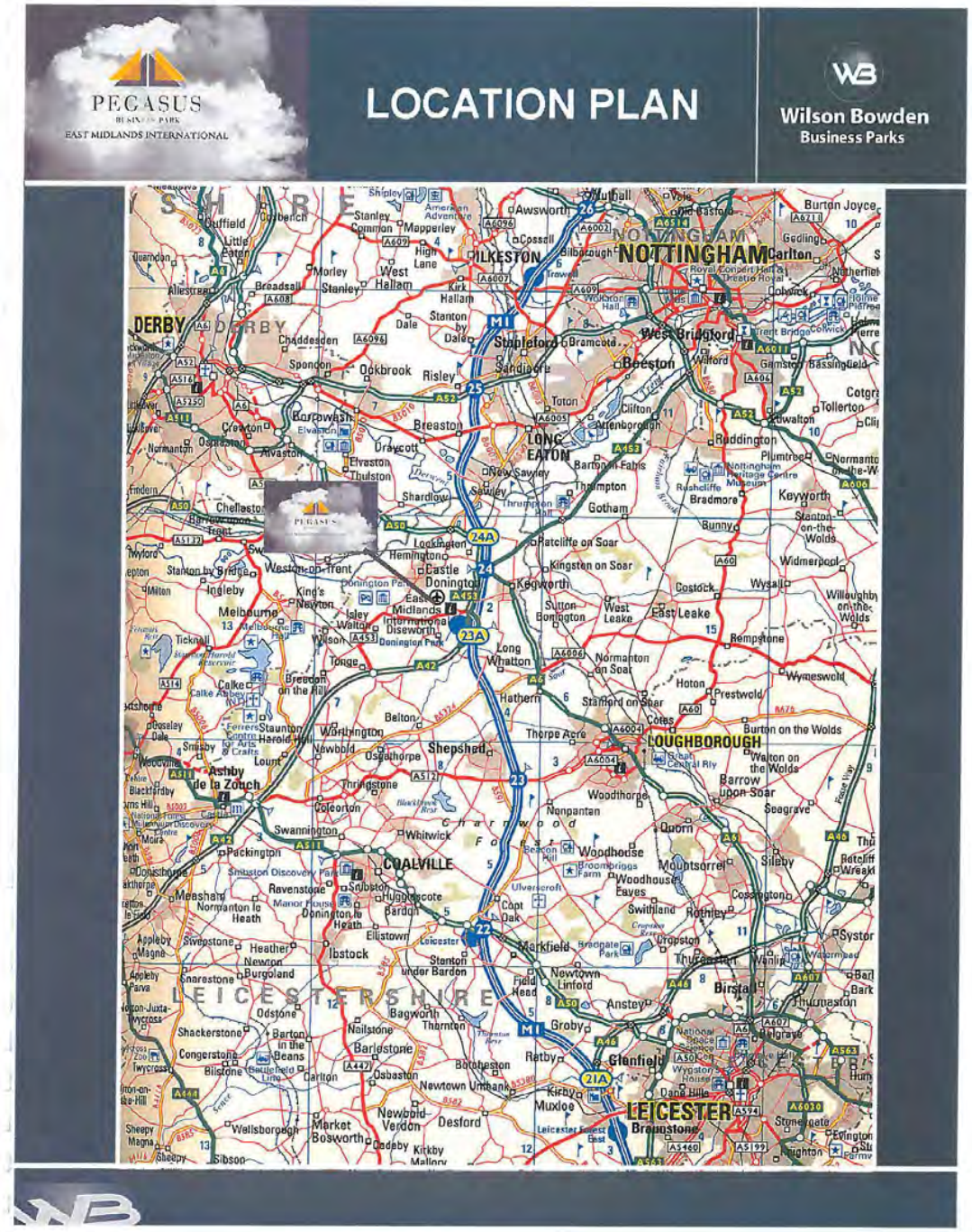
Fisher Hargreaves Proctor
10 Oxford Street
Nottingham
NG1 5BG
Fax:0115 950 7688


CURRENT MASTERPLAN
Wilson Bowden
Business Parks
PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
Already chosen by:
POWERGEN
Regus
UPS
Express
Coming soon
5 Star Hotel
PRICEWATERHOUSECOOPERS
To Junction 24, M1
Junction 23A
Granada Services
and Hotel
To the Airport
Retail Facilities
Airport Main Entrance

PLOT 1A
First floor - Babcock Rosyth Defence Ltd
Ground floor - Immigration Office
Wilson Bowden
Business Parks
PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL


PLOT 1B - REGUS
Wilson Bowden
Business Parks
PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL


PLOT 2A
PricewaterhouseCoopers
Wilson Bowden
Business Parks
PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
SOUTH ELEVATION
EAST ELEVATION
PEGASUS BUSINESS PARK · 40,000sqft + 20,000sqft expansion · ELEVATIONS 7119FH01/a
STEPHEN GEORGE AND PARTNERS ARCHITECTS AND PLANNERS 170 LONDON ROAD LEICESTER LE2 1ND 0116 2470537


PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
LOCATION PLAN
Wilson Bowden
Business Parks
DERBY
NOTTINGHAM
LOUGHBOROUGH
COALVILLE
LEICESTER
LONG EATON
ILKESTON
Stapleford
Beeston
West Bridgford
Ashby de la Zouch
Shepshed
Castle Donington
East Midlands International Diseworth
Kegworth
Sutton Bonington
Melbourne
Derby
Nottingham
Leicester
M1
A50
A42
A453
A6
A52
A46
A511
A512
A447
A444
A563
A6004
A6006
A6005
A6096
A6007
A6002
A6514
A6211
A6011
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A6030
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A6011
A6211
A6514
A6002
A6007
A6096
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A6006
A6004
A512
A511
A444
A447
A563
A46
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A6
A52
A50
A453
A50

TENANCY SCHEDULE
Units 1A, 1B & 2A
Pegasus Business Park

Wilson Bowden
Business Parks

Unit	Tenant	Size	Initial Rent p.a.	Initial Rent per sq.ft.	Lease Terms
1A Ground Floor	The Secretary of State for the Environment, Transport Local Government and the regions.	10,350 ft² 961.5 m²	£152,662	£14.75	15 year lease effective FRI. 5-yearly upward only rent reviews.
1A First Floor	Babcock Rosyth Defence Ltd	10,468 ft² 972.4 m²	£146,552	£14.00	15 year lease effective FRI. 5 yearly upward only rent reviews.
Unit 1B	Regus Business Centres (UK) Ltd	23,912 ft² 2,221.4 m²	£359,397	£15.03 (*1)	25 year lease incorporating tenant break clause at the end of 15 years 6 months drawn on FRI terms with 5 yearly, upward only rent reviews. At review the open market rental value is uplifted by 10.11% to reflect rentalisation of a capital contribution to the Regus fit out.
Unit 2a	P.W. & Co (*2)	40,000 ft² 3,716 m²	£580,000 (*4)	£14.50 (*5)	15 year lease, FRI with 5 yearly upward only rent reviews incorporating a tenant-only break clause at the end of the 10th year triggered by 12 months notice and a 12-month rent penalty. Minimum (Rental growth at the first review with initial rent indexed by 2% p.a. compounded)
		84,730 ft² 5,871.3 m²	£1,238,611 (*6)		

NOTES

1. The rental of £15.03 includes an uplift.
2. P.W & Co. are an unlimited company wholly owned by the Partnership of P. W & Co. The building is to be the East Midlands regional office of PWC.
3. P.W & Co. have the benefit of an option to extend from 3,716 m² (40,000 ft²) to 5,574 m² (60,000 ft²). The option is for 6 months following exchange of The Agreement for Lease.
4. The figure of £580,000 p.a. is the anticipated annual rental which will be calculated by applying £14.50 per ft² to the agreed Net Internal Floor Area prior to the issue of the Certificate of Practical Completion.
5. The initial rental is subject to minimum rental growth at the first review.
6. The figure of £1,238,611 is the gross rental payable. The buildings are to be sold subject to a 150-year ground lease with 10% ground rent payable. The net initial rent is therefore £1,114,750.

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BUILDINGS 1A, 1B and 2A PEGASUS BUSINESS PARK
JUNCTION 23A, M1 LEICESTERSHIRE

DISCLAIMER

FPDSavills Commercial Limited and Fisher Hargreaves Proctor themselves and for the Vendors of the property whose Agents they are give notice that:

- Particulars are set out as a general outline only for the guidance of intending purchasers and do not constitute, nor constitute part of, an offer or contract;
- All descriptions, dimensions, references to conditions and necessary permissions for use and occupation and their details are given in good faith and are believed to be correct but any intending purchaser should not rely on them as statements or representations of fact but must satisfy themselves by inspection or otherwise as to the correctness of each of them;
- No person in the employment of FPDSavills Commercial Limited and Fisher Hargreaves Proctor has any authority to make or give any representations or warranty whatever in relation to these properties or their particulars nor enter into any contract relating to the property on behalf of FPDSavills Commercial Limited and Fisher Hargreaves Proctor nor any contract on behalf of the vendors;
- No responsibility can be accepted for any expenses incurred by intending purchasers in inspecting properties which have been sold or withdrawn.
- FPDSavills Commercial Limited and Fisher Hargreaves Proctor have not made any investigations into the existence or otherwise of any issues concerning pollution and potential land, air or water contamination. The purchaser is responsible for making his own enquiries in this regard.
- *FPDSavills Commercial Limited and Fisher Hargreaves Proctor have not measured the property and have relied on those areas supplied by the landlord.*

September 2001

Fisher Hargreaves Proctor 0115 950 7677

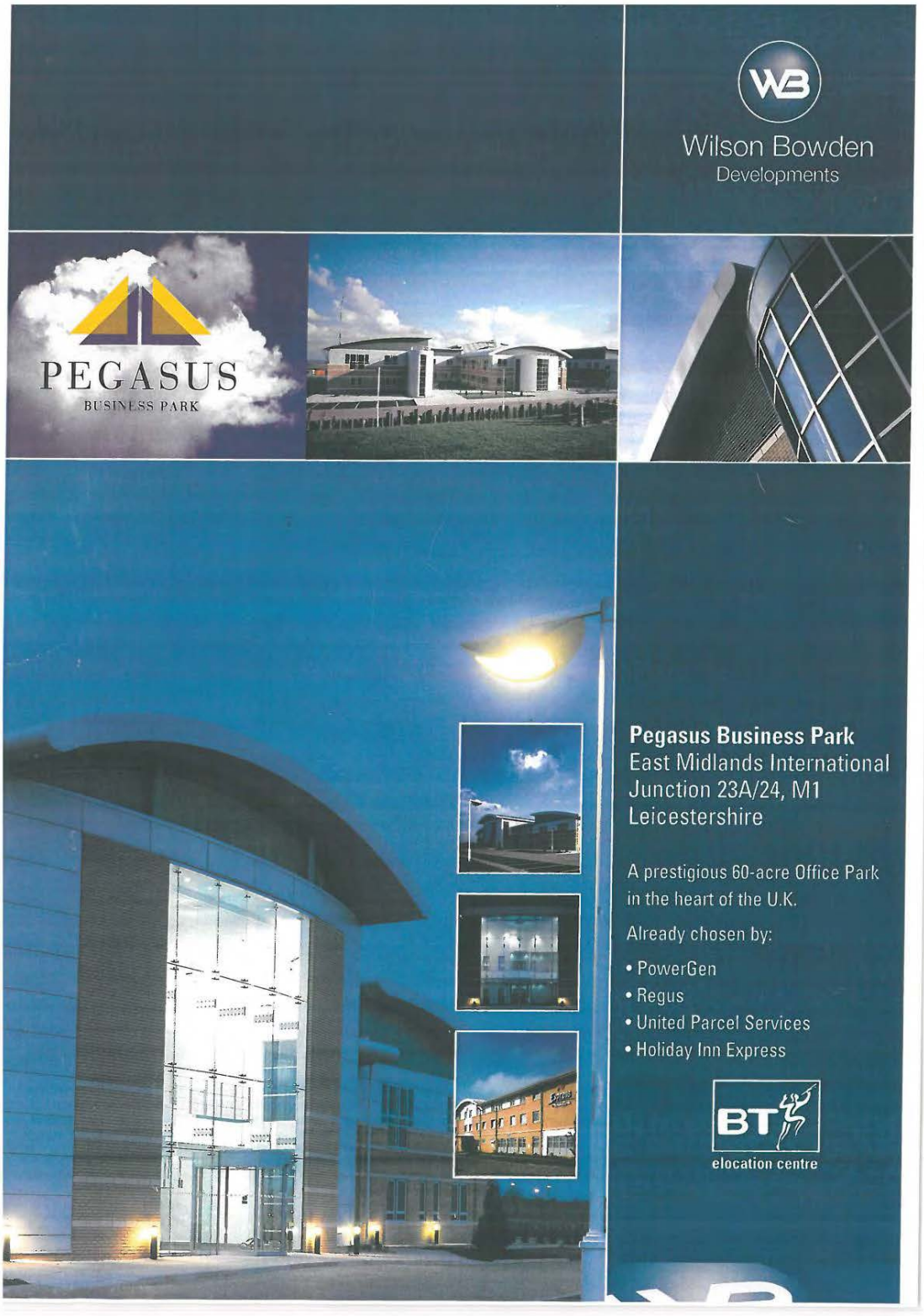
FPDsavills

Wilson Bowden Developments

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Appendix III

Marketing Brochure for Pegasus Business Park from 2000



FHP PROPERTY CONSULTANTS





At the Heart of the United Kingdom

The Vision

Pegasus was conceived to meet the demand for a Regional Business Park at the heart of the U.K. and central to the East Midlands.

Since on-site construction commenced in April 1999, the Park has established itself as a proven location being chosen by major office and hotel users with an active ongoing rolling development programme.

Communications

The Park offers unrivalled infrastructure by road, rail, air and e-commerce.

The M1, A42(M) and A50(T) all converge on Pegasus. The new Midland Parkway Mainline Station is under construction at Kegworth, 2.5 miles from the site and regular bus services link to Nottingham, Derby, Leicester and Loughborough. The park is also adjacent to East Midlands Airport.

Pegasus is a BT e-location with the Park being provided with access to the highest level of bandwidth, which can carry voice and data communications utilising the very latest technology.

Complementary Facilities

Retail and leisure facilities add to the vitality of the Park with two major hotel groups choosing Pegasus, which compliment the existing retail and leisure facilities. Three further health and fitness clubs are located within 2.5 miles of the site.









"Pegasus provides us with a strategic location in relation to our customer base, combined with access to excellent communications"

John Whale
Head of Property,
4,087.6m² (44,000 ft²)
PowerGen

By Road

	time	distance (miles)
Birmingham	43 mins	38
Bristol	1 hr 58 mins	127
Derby	23 mins	17
Leeds	1 hr 17 mins	81
Leicester	26 mins	20
Liverpool	2 hrs	95
London	1 hr 57 mins	117
Manchester	1 hr 44 mins	80
Nottingham	20 mins	13
Sheffield	52 mins	53

By Air

	time
Aberdeen	1 hr 25 mins
Amsterdam	1 hr
Belfast	1 hr 10 mins
Brussels	1 hr 30 mins
Dublin	1 hr
Edinburgh	55 mins
Guernsey	1 hr 15 mins
Jersey	1 hr
Paris	1hr 10 mins

80% (approximately)* of the UK's population is within 2 hours drive.

**source: Experian*

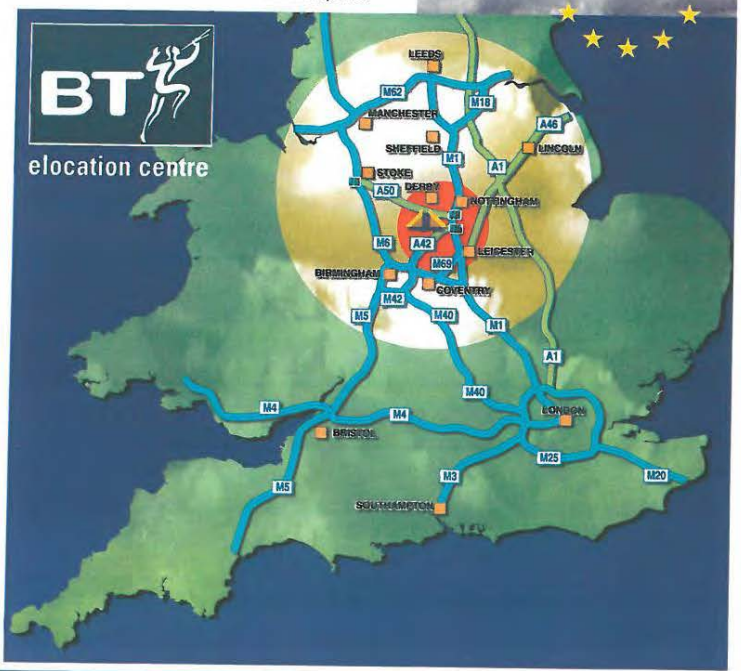
East Midlands Airport



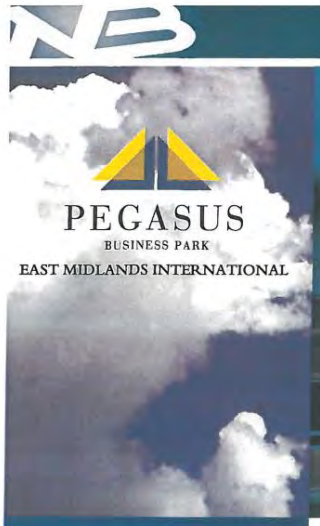




BT elocation centre



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A Masterplanned Regional Business Park

Masterplanning of the buildings, infrastructure and landscaping has produced a high quality environment.

Set in over 60 acres, Pegasus will ultimately provide up to 60,387 m² (650,000 ft²) of efficient and flexible accommodation being developed on a rolling development programme or bespoke to meet specific requirements. Each building is designed to be complimentary yet individual with generous on-site car parking available. The standard specification includes raised floors and comfort cooling with full air-conditioning available if required.

Schematic and financial proposals can be provided for units ranging in size from 929 m² (10,000 ft²) upwards.

Buildings, Environment and Quality

Chosen by East Midlands Airport as their joint development partner, Wilson Bowden Properties' proven track record has resulted in a cohesive, masterplanned office environment which will further evolve through designing specific office buildings and undertaking a rolling programme of speculative development. The quality of Pegasus is endorsed by the early success of the scheme.

Holiday Inn Express
150 bed hotel.

United Parcel Services
1,579 m² (17,000 ft²)


PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
"As the UK's largest operator of business centres, the new centre at Pegasus Business Park is part of our strategic expansion plans for the East Midlands and the final stage of our plans to have a business centre at all of the UK's regional airports. Our centres prove attractive to both new start-ups and large multinationals alike and I'm sure this new centre will prove equally attractive by providing a wide range of businesses instant access to the East Midlands marketplace."
Mark Dixon
Regus
2,208 m² (23,778 ft²)
Regus
Mark Dixon



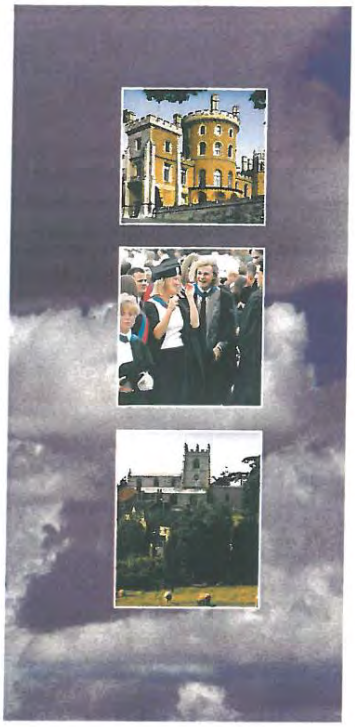


People and Lifestyle

Pegasus Business Park is central to the East Midlands within the heart of the UK, an area which offers unrivalled communications, a highly skilled workforce and an excellent quality of life.

The proximity of the Peak District and The Vale of Belvoir complement the vibrance of the principal towns and cities with a full range of shopping, leisure and cultural facilities close at hand.

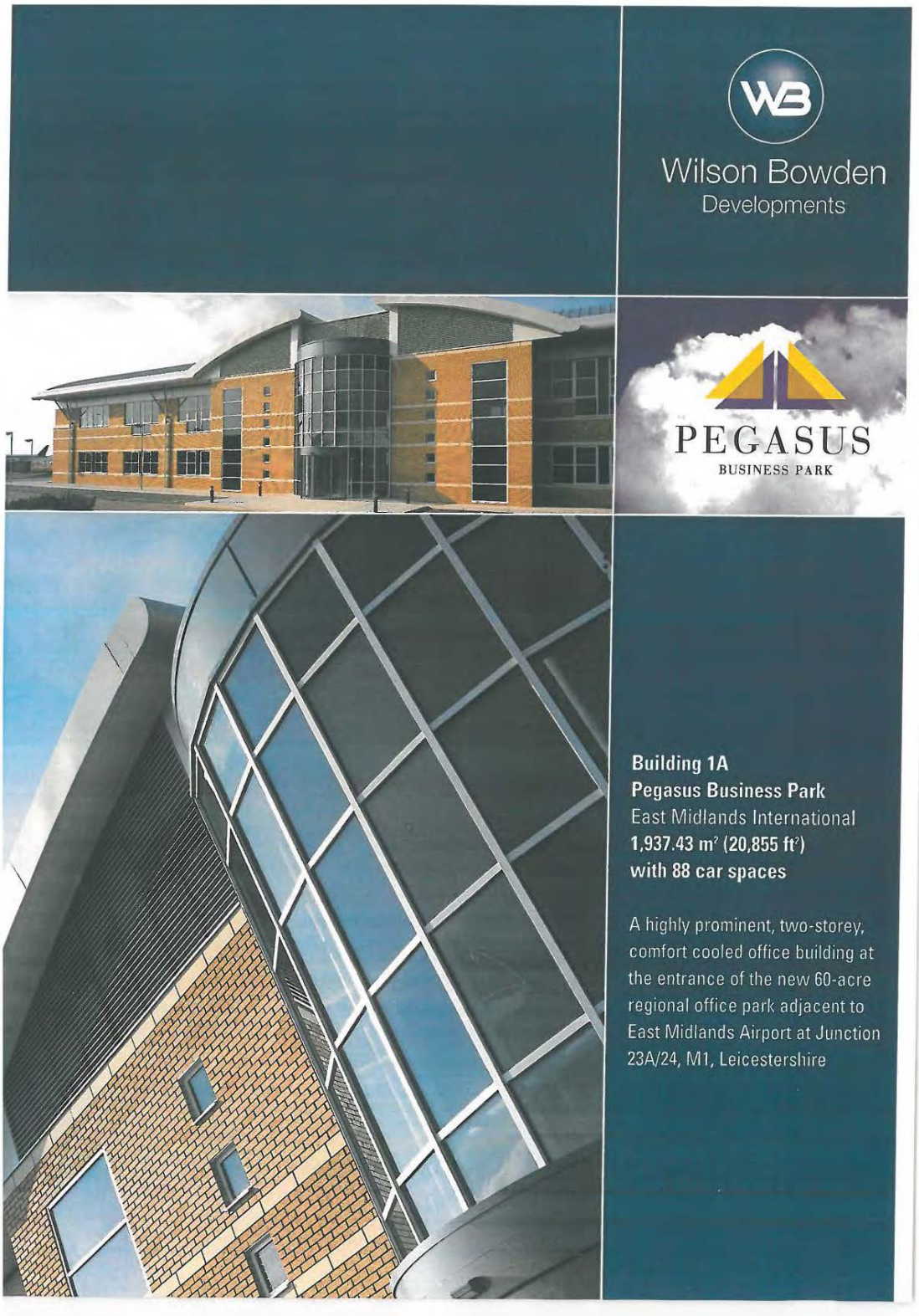
A comprehensive choice of competitively priced housing and schools are to be found within the area. In terms of higher education, the East Midlands has seven universities, which inter-relate with the commercial and social infrastructure of the Region.



Major Employers within the East Midlands include:

- Boots
- Woolworths
- Powergen
- Egg
- Capital One
- Alliance and Leicester
- Astra Zeneca
- Fisher Scientific
- Pedigree Masterfoods
- Pepsico
- Rolls Royce




Wilson Bowden
Developments
PEGASUS
BUSINESS PARK
Building 1A
Pegasus Business Park
East Midlands International
1,937.43 m² (20,855 ft²)
with 88 car spaces
A highly prominent, two-storey, comfort cooled office building at the entrance of the new 60-acre regional office park adjacent to East Midlands Airport at Junction 23A/24, M1, Leicestershire



Building Unit 1A

Situated at the entrance of Pegasus, Building Unit 1A is the first speculative office building within the Park.

The building provides approximately 1,937.43 m² (20,855 ft²) net office space together with 88 on-site car spaces.

On-Site Facilities

On and off-site retail and leisure facilities add to the vitality of the Park. There are three health and fitness centres within one mile, extensive hotel and conference facilities and established public transport links to Nottingham, Derby, Leicester and Loughborough.

Specification

- Feature double height reception
- Comfort cooled environment
- Full access raised floors
- Full carpeting
- Suspended ceiling with category-II lighting
- 8 person passenger lift
- Double glazed sound attenuated windows
- 88 on-site car spaces

PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL





At the heart of the UK



Terms

The premises are available on lease terms by negotiation, drawn on full repairing and insuring terms and incorporating 5-yearly rent reviews.

V.A.T

V.A.T will apply.

Wilson Bowden Developments
Forest Business Park, Bardon Hill
Leicestershire, LE67 1UB
Tel 01530 276276 • Fax 01530 814810

In partnership with East Midlands Airport

Sole agents

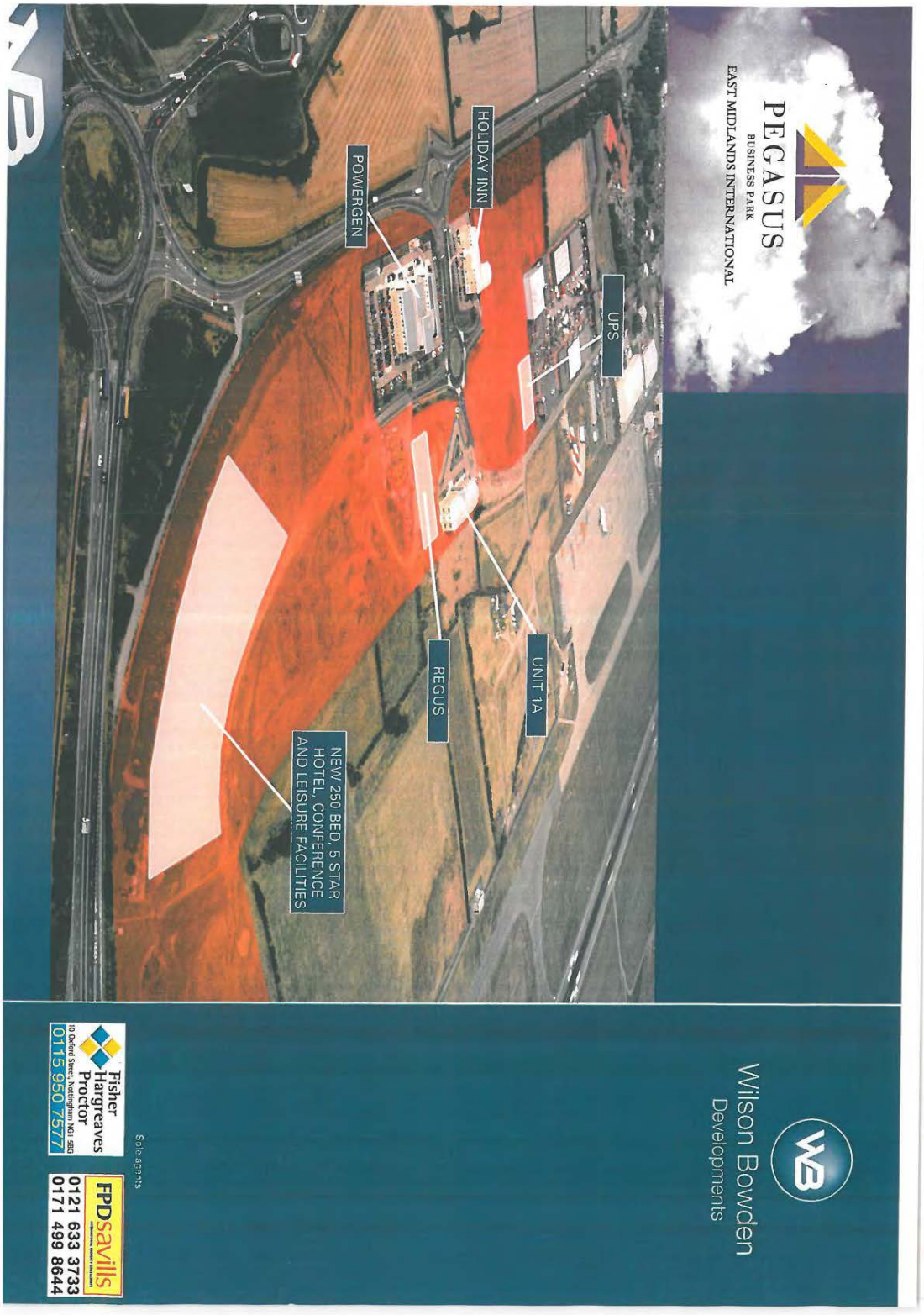
Fisher Hargreaves Proctor
10 Oxford Street, Nottingham NG1 5BG
0115 950 7577
John Proctor

FPDsavills
0121 633 3733
0171 499 8644
Birmingham: Nick Williams

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PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
Wilson Bowden
Developments
Already chosen by:
Regus
ups
Express
Unit 1a
Coming soon
5 Star Hotel
Airport Main Entrance
To the Airport
Retail Facilities
Granada Services
and Hotel
Junction 23A
To Junction 24, M1


PEGASUS
BUSINESS PARK
EAST MIDLANDS INTERNATIONAL
HOLIDAY INN
POWERGEN
UPS
UNIT 1A
REGUS
NEW 250 BED, 5 STAR HOTEL, CONFERENCE AND LEISURE FACILITIES
Wilson Bowden Developments
Fisher Hargreaves Proctor
10 Oxford Street, Nottingham NG1 5BG
0115 950 7577
Sole agents
FPDsavills
0121 633 3733
0171 499 8644

Appendix IV

Centennial House Details

FHP PROPERTY CONSULTANTS

Offices | Derby, DE74 2SA

Offices

To Let

19m² (200ft²) to 186m² (2,000ft²)

Flexible offices with excellent parking.









Centennial House
Beverley Road
East Midlands Airport
DE74 2SA

+ Two miles to Junction 23a M1 Motorway
+ Flexible lease terms
+ Good access to public transport

Visit our website www.fhp.co.uk

01332 343222

Fisher Hargreaves Proctor | 8 Riverside Court Pride Park Derby DE24 8JN

FHP PROPERTY CONSULTANTS

FHP PROPERTY CONSULTANTS

Office | Derby, DE74 2SA

Offices



+ The Location

Centennial House forms part of East Midlands Airport. East Midlands Airport is centrally located between Nottingham, Derby and Leicester approximately two miles from Junction 23a of the M1 Motorway. In addition the area affords excellent access to the A50 trunk road which in turn links the M1 and M6 Motorways.

+ The Property

Centennial House is a multi let office building arranged over ground and first floor. The offices provide a range of cellular and open plan accommodation and the specification benefits from:-

- Lift
- Communal WC
- Kitchen facilities
- Painted plaster walls
- Category II lighting
- Perimeter trunking
- Carpets
- Car park to the rear

Fisher Hargreaves Proctor | www.fhp.co.uk
8 Riverside Court Pride Park Derby DE24 8JN

+ Accommodation

Office	M²	Ft²	Rent pa
1	65	700	£8,400
2	46	500	£6,000
4	63	681	£8,172
9	135	1,456	£14,560
11	39	420	£5,040
12	68	735	£8,820
13	77	829	£9,948
16	19	200	£2,600
17	19	200	£2,600
18	186	2,000	£20,000

(this information is given for guidance purposes only)

+ Lease Terms

The offices are available to lease by way of a new flexible full repairing and insuring leases. Rental details are available upon request from the agent.

+ Service Charge

A service charge will be levied to cover the maintenance, utilities and upkeep of the communal areas at Centennial House. Further details of the service charge are available upon request from the agents.

+ VAT

Each party is to be responsible for their own legal costs incurred with this transaction.

+Planning

We await confirmation from the local planning authority but assume the premises are suitable for B1a (office) use.

(This information is given for guidance purpose only and perspective tenants are advised to verify this information with Northwest Leicestershire Local Authority on 01530 454545).

+ Service Charge

Each party is to be responsible for their own legal costs incurred with this transaction.

+ Business Rates

The offices are separately assessed for business rates purposes and further details are available upon request from the agents.

(This information is given for guidance purposes only and perspective tenants are advised to verify this information with Northwest Leicestershire Local Authority on 01530 454545).

+ Interested

For further information or to make arrangements to view please contact:

George Dunnicliff
FHP Derby
T: 01332 343222
E: george@fhp.co.uk

FHP www.fhp.co.uk 01332 343 222

Property Misdescriptions Act 1991. All statements contained within this brochure have been provided in good faith and are understood to be correct. Accuracy in respect of all statements cannot be guaranteed as we rely on information provided and they do not form part of any contract or warranty and accordingly: 1) Dimensions, distances and floor areas are approximate and given for guidance purposes only. Potential purchasers should satisfy themselves as to the validity of the guide figures given. 2) Information on tenure of vacancies is provided in good faith and prospective purchasers should have this information verified by their solicitors prior to purchase. 3) Information on rating assessments, availability of services and Town and Country planning matters have been obtained by an oral enquiry to the appropriate planning authority. Fisher Hargreaves Proctor do not warrant that there are no connection charges inherent in the availability of services to the unit. Prospective purchasers should obtain written confirmation prior to entering into any contract for purchase or lease. 4) Detailed tests have not been undertaken on services, central heating installations, plumbing installations, electrical installations, etc. and purchasers/lessees should undertake independent tests as to the condition of all services and mechanical engineering installations. 5) All guide price and rental figures are quoted exclusive of VAT unless expressly stated to the contrary. FHP 06/09. E&OE.

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Appendix V

Three Sets of Osprey House Details

NOW COMPLETE

2,345 m² (25,250 sq ft) - Grade A Offices

PEGASUS BUSINESS PARK, EAST MIDLANDS AIRPORT, LEICESTERSHIRE, DE74 2UZ



To Let

●● OspreyHouse ●●●

●● OspreyHouse ●●●

Location

Pegasus Business Park is part of the East Midlands Airport. It enjoys separate access off the A453 before you reach the airport coming from the M1 Motorway.

Pegasus Business Park is situated around half a mile from Junction 23a of the M1, with Junction 24 and 24a, the A42 and A50 all being within 2 miles. The building is at the heart of the East Midlands being virtually equidistant from the cities of Nottingham, Leicester and Derby.

Pegasus has fantastic road connections, is situated next to an international airport and also has the benefit of an excellent bus service with buses every 30 minutes from Derby, Nottingham and Loughborough stopping at Pegasus Business Park only a short walk from Osprey House.







Description

Osprey House is a stunning three storey Headquarters Building which offers grade A office space in an outstanding location with excellent car parking.

Companies such as PricewaterhouseCoopers, Babcock International, Regus and E.ON have all been attracted to Pegasus with its range of on and off site retail and leisure facilities.

The specification includes:

- Full air conditioning
- Fully accessible raised floors
- Broadband enabled location
- Suspended ceiling with LG3 lighting
- 8 person passenger lift
- 104 car parking spaces

●●

FHP PROPERTY CONSULTANTS

OspreyHouse

Floor Areas

We have measured the building and calculate that the net internal floor area is as follows.

Ground floor	805 sq m	8,650 sq ft
First floor	770 sq m	8,300 sq ft
Second floor	770 sq m	8,300 sq ft
Total	2,345 sq m	25,250 sq ft
104 car parking spaces		



Indicative Upper Floor Plan



Ground Floor Plan





Rateable Value

The building will be assessed for rating purposes upon occupation. An estimate of business rates payable can be obtained from the agents.

Estate Charge

A small estate charge is applied on Pegasus Business Park as a whole to cover landscaping, road clearance and security issues. Details are available from the agents.

VAT

VAT will be payable on the rent and service charge.

Disposal Terms

The property is available as a whole or in part on the basis of a fully repairing and insuring lease with 5 yearly rent reviews. For quoting terms please contact the agents.

Viewing and Further Details

Plans, elevations and specification are available from the agents:

OspreyHouse

Fisher Hargreaves Proctor
10 Oxford Street
Nottingham
NG1 5BG

Contact: Edward Hine
Tel: 0115 841 1134
Email: edwardh@fhp.co.uk
Web: www.fhp.co.uk

Lambert Smith Hampton
17-21 Hounds Gate
Nottingham
NG1 7DR

Contact: Philip Quiggin
Tel: 0115 976 6603
Email: pquiggin@lsh.co.uk
Web: www.lsh.co.uk





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OspreyHouse

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Pegasus has fantastic road connections, is situated next to an international airport and also has the benefit of an excellent bus service with buses every 30 minutes from Derby, Nottingham and Loughborough stopping at Pegasus Business Park only a short walk from Osprey House.

The recently completed East Midlands Parkway rail station now offers high frequency connections to London, Derby, Leicester and Nottingham, with a shuttle service to the Osprey House site every 10-15 minutes.







Description

Osprey House is a stunning three storey Headquarters Building which offers grade A office space in an outstanding location with excellent car parking.

Companies such as PricewaterhouseCoopers, Babcock International, Regus and E.ON have all been attracted to Pegasus with its range of on and off site retail and leisure facilities.

The specification includes:

- Full air conditioning
- Fully accessible raised floors
- Broadband enabled location
- Suspended ceiling with LG3 lighting
- 8 person passenger lift
- 104 car parking spaces (overspill spaces available)

FHP PROPERTY CONSULTANTS

OspreyHouse

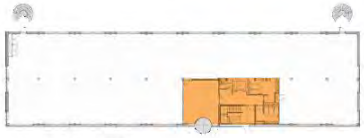
Floor Areas

We have measured the building and calculate that the net internal floor area is as follows.

Ground floor	780 sq m	8,392 sq ft
First floor	783 sq m	8,426 sq ft
Second floor	783 sq m	8,426 sq ft
Total	2,345 sq m	25,244 sq ft
104 car parking spaces (overspill spaces available)		



Indicative Upper Floor Plan



Ground Floor Plan





Rateable Value

The building will be assessed for rating purposes upon occupation. An estimate of business rates payable can be obtained from the agents.

Estate Charge

A small estate charge is applied on Pegasus Business Park as a whole to cover landscaping, road clearance and security issues. Details are available from the agents.

VAT

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OspreyHouse

FISHER HARGREAVES PROCTOR
0115 950 7577

Fisher Hargreaves Proctor
10 Oxford Street
Nottingham
NG1 5BG

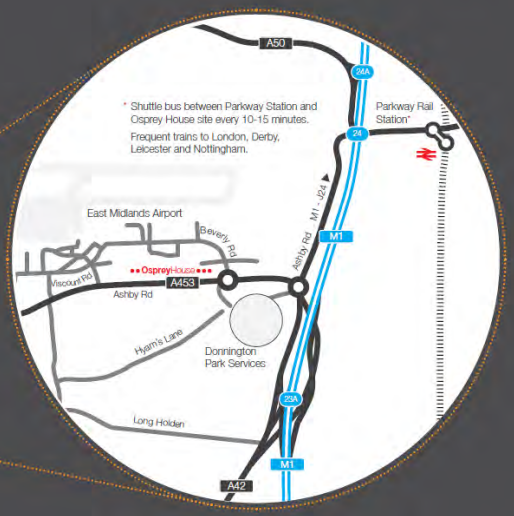
Contact: Edward Hine
Tel: 0115 841 1134
Email: edwardh@fhp.co.uk
Web: www.fhp.co.uk

Lambert Smith Hampton
0115 950 1414

Lambert Smith Hampton
17-21 Hounds Gate
Nottingham
NG1 7DR

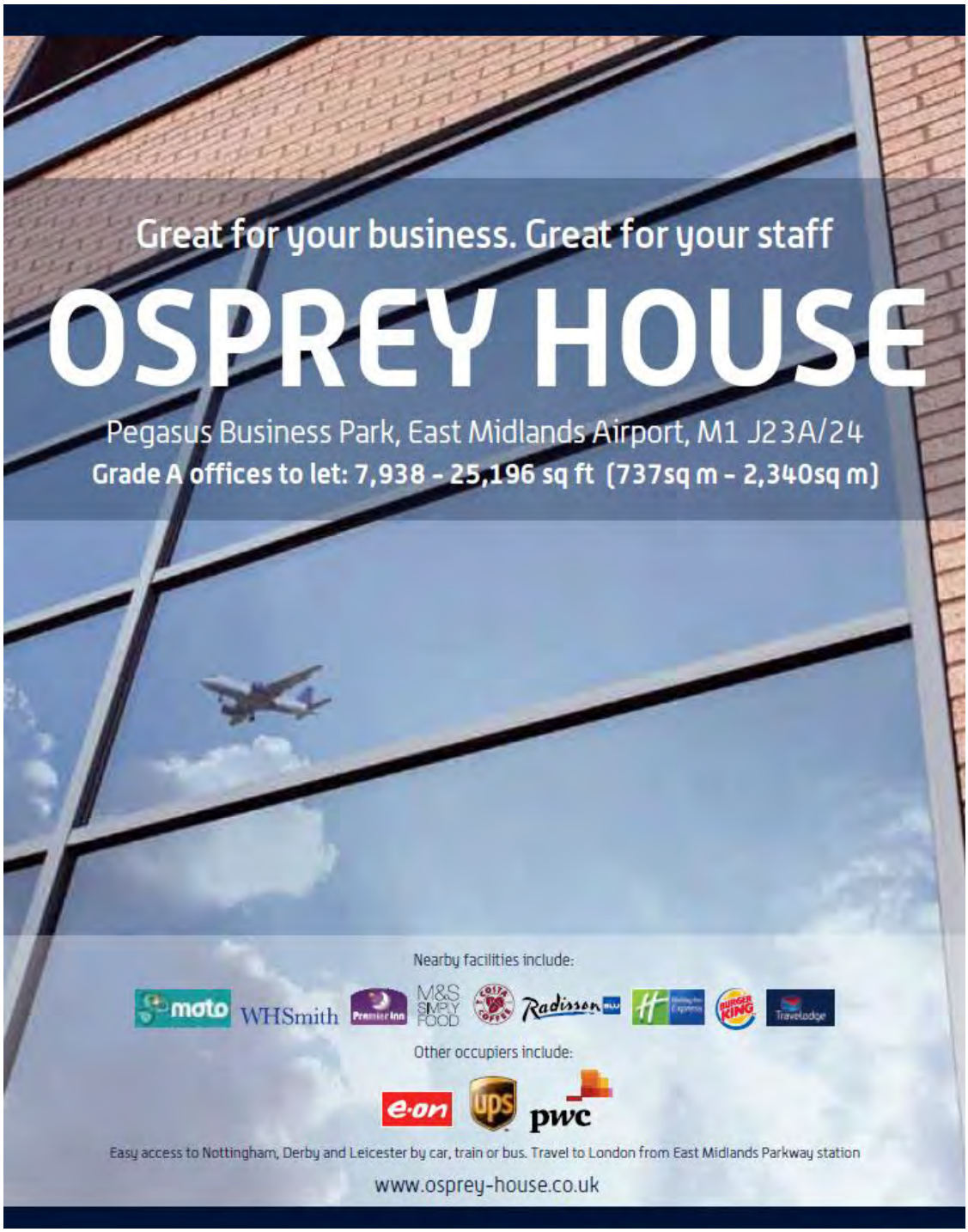
Contact: Philip Quiggin
Tel: 0115 976 6603
Email: pquiggin@lsh.co.uk
Web: www.lsh.co.uk



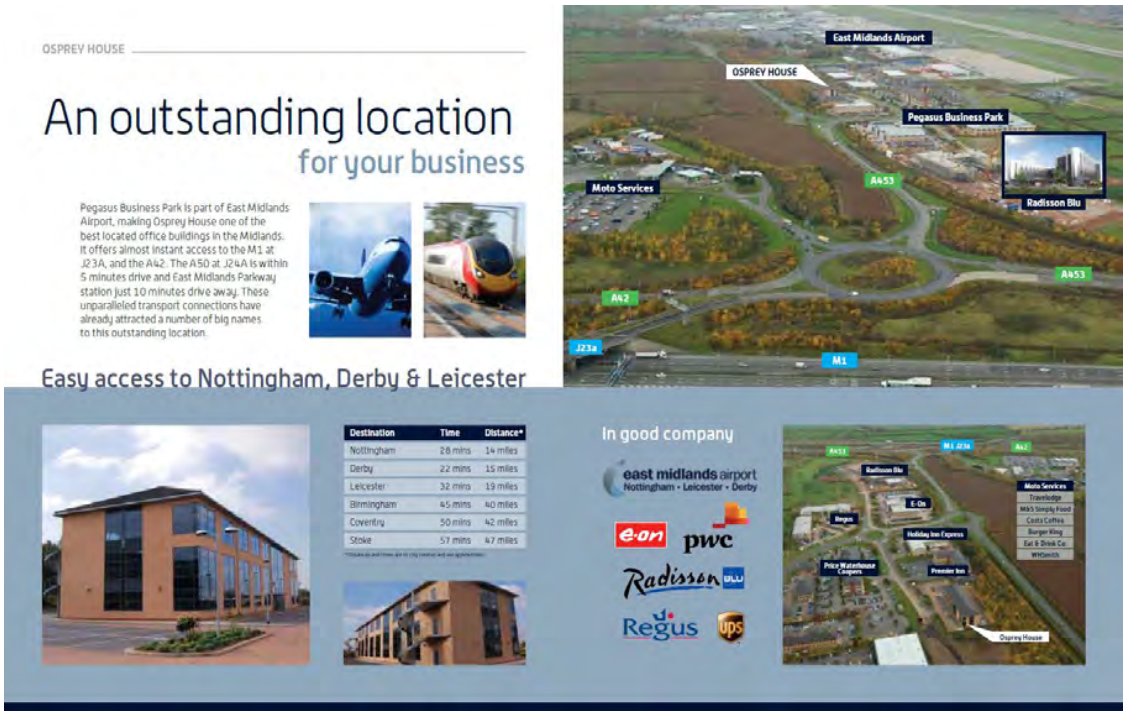


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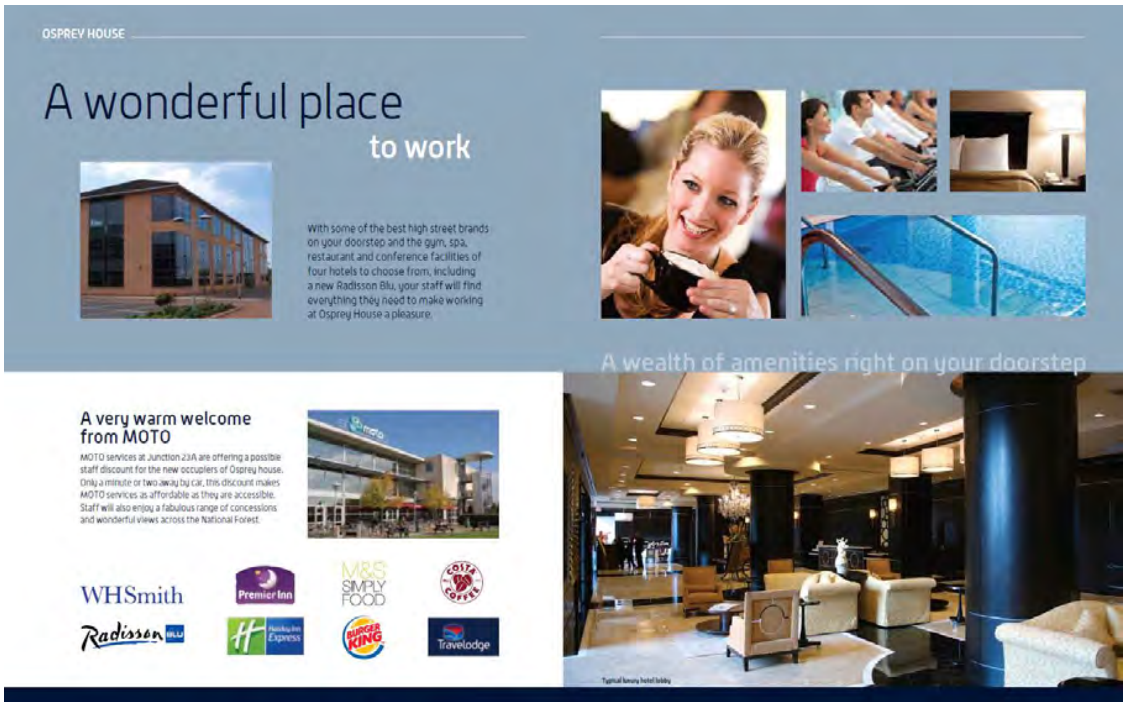


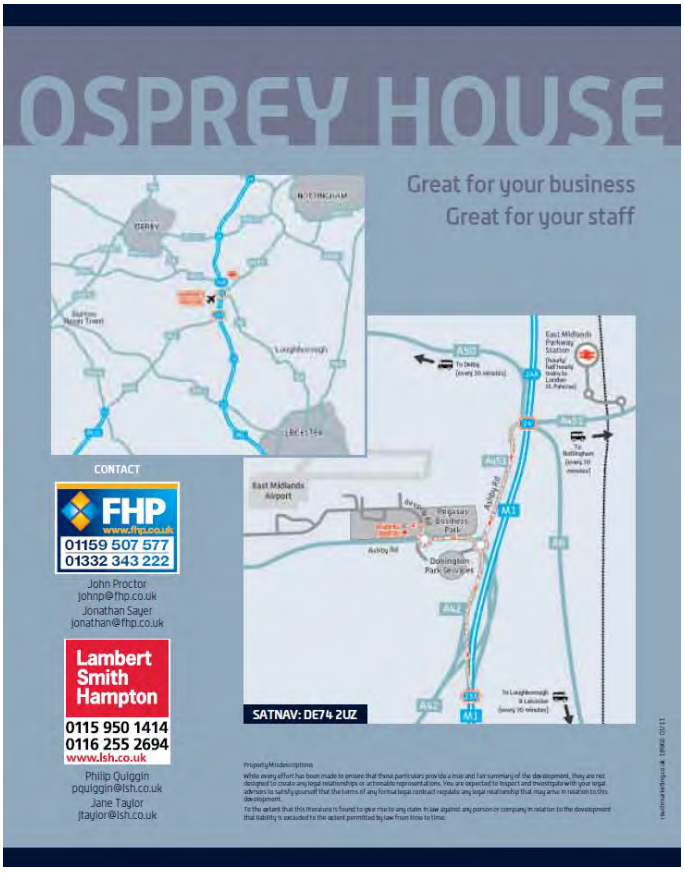
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OSPREY HOUSE
A wonderful place
to work
With some of the best high street brands on your doorstep and the gym, spa, restaurant and conference facilities of four hotels to choose from, including a new Radisson Blu, your staff will find everything they need to make working at Osprey House a pleasure.
A wealth of amenities right on your doorstep
A very warm welcome from MOTO
MOTO services at Junction 23A are offering a possible staff discount for the new occupiers of Osprey house. Only a minute or two away by car, this discount makes MOTO services as affordable as they are accessible. Staff will also enjoy a fabulous range of concessions and wonderful views across the National Forest.
WHSmith
Premier Inn
M&S SIMPLY FOOD
COSTA COFFEE
Radisson BLU
Holiday Inn Express
BURGER KING
Travelodge


OSPREY HOUSE
Great for your business
Great for your staff
CONTACT
FHP
www.fhp.co.uk
01159 507 577
01332 343 222
John Proctor
johnp@fhp.co.uk
Jonathan Sayer
jonathan@fhp.co.uk
Lambert Smith Hampton
0115 950 1414
0116 255 2694
www.lsh.co.uk
Philip Quiggin
pquiggin@lsh.co.uk
Jane Taylor
jtaylor@lsh.co.uk
East Midlands Airport
SATNAV: DE74 2UZ

Appendix VI

Pembroke House Details

Office Property

Lambert Smith Hampton
0115 950 1414
17/21 HOUNDS GATE NOTTINGHAM NG1 7DR

Grade A Offices

To Let

1st Floor, Pembroke House, Pegasus Business Park, Castle Donington, Derbyshire DE74 2TU



- 486 - 971 sq m (5,225 - 10,450 sq ft)
- Premier Business Park location
- Easy access to Nottingham, Derby & Leicester
- Grade A Specification

www.lsh.co.uk

FHP PROPERTY CONSULTANTS

1st Floor, Pembroke House, Pegasus Business Park, Castle Donington, Derbyshire DE74 2TU

Location



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Pembroke House forms part of Pegasus Business Park which is located immediately adjacent to East Midlands Airport near Castle Donington.

Pegasus Business Park benefits from excellent road communication links with Junction 23A of the M1, approximately 1 mile away. Other major arterial routes in the immediate vicinity include the A50, A453, A42 and A6 providing direct links to all the major centres across the Midlands.

Pegasus Business Park is a well established office location with a number of major companies having a presence on site, including PricewaterhouseCoopers and E.On.

Description

The premises comprise the entire first floor of a two storey construction, with brick elevations and curved panel roofs. The building incorporates double glazed windows, passenger lift and a two-storey glazed reception. Internally the suite is constructed to a Grade A specification.

The premises benefit from the following facilities/specifications:

- Air Conditioning
- Raised access floors
- Passenger Lift
- Suspended ceiling with inset CAT II Lighting
- Extensive parking

Accommodation

The accommodation has been fitted out to a high standard by the current tenant. The offices are predominantly open plan together with a number of full-height glazed partition offices, meeting rooms, reception and break out areas.

Net Internal Floor Area	Sq M	Sq Ft
Total NIA	971	10,450

VAT

All prices, premiums and rents etc. are quoted exclusive of VAT at the prevailing rate.

Legal Costs

Each party to be responsible for their own legal costs incurred in any transaction.

Business Rates

The property is currently assessed for rating purposes with a 2010 Rateable Value of £138,000. Please contact the agents for an outline of the rates payable.

Service Charge

A small estate charge is applied on Pegasus Business Park as a whole to cover landscaping, road clearance and security issues. In addition a service charge is levied to cover the costs of maintaining the building, shared with the ground floor tenant. More information is available upon application to the agents.

Terms

The premises are held on a FRI lease to expire 17th September 2016. The first floor office is available as a whole or in parts, by way of assignment or sublease(s) at a rent based on £14.00 per sq ft per annum exclusive.

Viewing and Further Information

Viewing strictly by prior appointment with the joint agents:

Jane Taylor
Lambert Smith Hampton
Tel: 0116 255 2694
jtaylor@lsh.co.uk

Phil Quiggin
Lambert Smith Hampton
Tel: 0115 950 1414
pquiggin@lsh.co.uk

Jan 2011

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Lambert Smith Hampton
0116 255 2694
24 DE MONTFORT STREET LEICESTER LE1 7GB

Lambert Smith Hampton
0115 950 1414
1721 HOUNDS GATE NOTTINGHAM NG1 7DR

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Appendix VII

Original and Up To Date Marketing Particulars of LSH for Unit 423

Lambert Smith Hampton

0115 950 1414
www.lsh.co.uk

To Let

Office Property

High Quality HQ Office Building

BMI Baby HQ, Argosy Road, Pegasus Business Park, Castle Donnington, Derbys, DE74 2SA



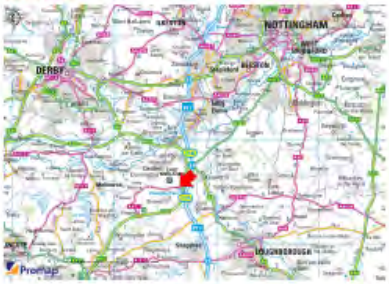
- 2,375 Sq M (25,561 Sq Ft)
- Premier Business Park location
- Easy access to Nottingham, Derby & Leicester
- High quality spec & vastly superior parking ratio

Lambert Smith Hampton
17/21 Hounds Gate, Nottingham NG1 7DR **T** +44 (0)115 950 1414

FHP PROPERTY CONSULTANTS

BMI Baby HQ, Argosy Road, Pegasus Business Park, Castle Donnington, Derbys, DE74 2SA

Location



Situated at Pegasus Business Park, which is located immediately adjacent to East Midlands Airport near Castle Donnington, benefiting from excellent road links with Junction 23A of the M1 approximately 1 mile away. In additon, East Midlands Parkway Railway Station is 4 miles away.

Pegasus Business Park is a well established office location with a number of major companies on-site including Pricewaterhouse Coopers and E.On.

Description

The premises comprise a two-storey construction, with brick elevations and pitched tiled roof. The building incorporates double-glazed windows, lift and reception facilities.

The premises benefit from the following facilities/specification:

- Air Conditioning
- Raised access floors
- Passenger Lift
- Suspended ceiling with insert CAT II lighting
- 201 car parking spaces

Accommodation

The accommodation has been fitted out to a high standard by the current tenant. The offices are predominantly open plan together with a number of partitioned offices, meeting rooms, training rooms and canteen.

Net Internal Floor Area	Sq Ft	Sq M
Ground Floor	12,820	1,191
First Floor	12,740	1,184
Total Net Internal Area	25,561	2,375

VAT

All prices, premiums and rents etc. are quoted exclusive of VAT at the prevailing rate.

Business Rates

The property is currently assessed for rating purposes with a 2010 Rateable Value of £320,000. Please contact the Agents for an outline of the rates payable.

Terms

The premises are held on a FRI lease to expire July 2018, subject to a tenant's option to break in July 2013. The property is available by way of assignment or sublease at the passing rent of £320,000 per annum exclusive. Alternatively, consideration will be given to a new lease on terms to be agreed.

Service Charge

A small estate charge is applied to cover landscaping, road clearance and security issues. More information is available upon application to the agents.

Planning

The use of the premises shall be restricted to offices and any use of the building shall be airport related, unless otherwise agreed in writing with the Local Planning Authority.

Viewing and Further Information

Viewing strictly by prior appointment with the sole agent:

Phil Quiggin
Lambert Smith Hampton
0115 9766603
07803 835138
pquiggin@lsh.co.uk

Jenny Clarke
Lambert Smith Hampton
0115 9766610
07720 084760
jclarke@lsh.co.uk

Mar 2012

Lambert Smith Hampton

0115 950 1414
www.lsh.co.uk

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(vi) In the case of new development or refurbishment, prospective buyers or tenants should not rely on any artists' impressions or architects' drawings or specification or scope of works or amenities, infrastructure or services or information concerning views, character or appearance and timing concerning availability or occupation and prospective buyers or tenants must take legal advice to ensure that any expectations they may have are provided for direct with the seller or landlord and LSH shall have no liability whatsoever concerning any variation or discrepancy in connection with such matters.

FHP PROPERTY CONSULTANTS

Office Property

Lambert Smith Hampton
0115 950 1414
17/21 HOUNDS GATE NOTTINGHAM NG1 7DR

High Quality HQ Office Building

To Let

BMI Baby HQ, Argosy Road, Pegasus Business Park, Castle Donington, Derbyshire DE74 2SA



- 2,375 sq m (25,561 sq ft)
- Premier Business Park location
- Easy access to Nottingham, Derby & Leicester
- High quality spec & vastly superior parking ratio
- Short or long term lease options

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BMI Baby HQ, Argosy Road, Pegasus Business Park, Castle Donington, Derbyshire DE74 2SA

Location



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The subject property forms part of Pegasus Business Park which is located immediately adjacent to East Midlands Airport near Castle Donington.

Pegasus Business Park benefits from excellent road communication links with Junction 23A of the M1, approximately 1 mile away. In addition Nottingham Parkway rail station is situated adjacent to Ratcliffe-on-Soar power station, approximately 4 miles away, and offering connecting trains to Derby, Nottingham, London and beyond.

Pegasus Business Park is a well established office location with a number of major companies having a presence on site, including PricewaterhouseCoopers and E.On.

Description

The premises comprise a two storey construction, with brick elevations and pitched tiled roof. The building incorporates double glazed windows, passenger lift and reception facilities. Internally the accommodation is constructed to a Grade A specification, albeit now requiring some cosmetic refurbishment.

The premises benefit from the following facilities/specification:

- Air Conditioning
- Raised access floors
- Passenger Lift
- Suspended ceiling with inset CAT II Lighting
- 201 parking spaces (almost 8 spaces per 1,000 sq ft)

Accommodation

The accommodation has been fitted out to a high standard by the current tenant. The offices are predominantly open plan together with a number of partitioned offices, meeting rooms, training rooms and canteen.

Net Internal Floor Area	Sq M	Sq Ft
Ground Floor	1,191	12,820
First Floor	1,184	12,740
Total Net Internal Area	2,375	25,561

VAT

All prices, premiums and rents etc. are quoted exclusive of VAT at the prevailing rate.

Business Rates

The property is currently assessed for rating purposes with a 2010 Rateable Value of £320,000. Please contact the agents for an outline of the rates payable.

Service Charge

A small estate charge is applied to cover landscaping, road clearance and security issues. More information is available upon application to the agents.

Terms

The premises are held on a FRI lease to expire July 2018, subject to a tenant's option to break in July 2013. The property is available by way of assignment or sublease at the passing rent of £320,000 per annum exclusive.

Alternatively considertaion will be given to a new lease on terms to be agreed.

Planning

The use of the premises shall be restricted to offices and any use of the building shall be airport related, unless otherwise agreed in writing with the Local Planning Authority.

Viewing and Further Information

Viewing strictly by prior appointment with the sole agent:

Jane Taylor
Lambert Smith Hampton
Tel: 0116 255 2694
jtaylor@lsh.co.uk

Phil Quiggin
Lambert Smith Hampton
Tel: 0115 950 1414
pquiggin@lsh.co.uk

Jan 2011

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(ii) Any description, dimension, distance or area given or any reference made to condition, working order or availability of services or facilities, fixtures or fittings, any guarantee or warranties or statutory or any other permission, approval or reference to suitability for use or occupation, photograph, plan, drawing, aspect or financial or investment information or tenancy and title details or any other information set out in these particulars or otherwise provided shall not be relied on as statements or representations of fact or at all and any prospective buyer or tenant must satisfy themselves by inspection or otherwise as to the accuracy of all information or suitability of the property.
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(vi) In the case of new development or refurbishment prospective buyers or tenants should not rely on any artists' impressions or architects' drawings or specification or scope of works or amenities, infrastructure or services or information concerning views, character or appearance and timing concerning availability or occupation and prospective buyers or tenants must take legal advice to ensure that any expectations they may have are provided for direct with the seller or landlord and LSH shall have no liability whatsoever concerning any variation or discrepancy in connection with such matters.

Lambert Smith Hampton
0115 950 1414
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Appendix II






Fire exit






10

Appendix III



DONINGTON COURT
UNIT 2A DONINGTON COURT | PEGASUS BUSINESS PARK
CASTLE DONINGTON | DE74 2UZ

savills


M1
23a
east midlands airport
SECRETARY OF STATE
Regus
Radisson
WESTERN POWER DISTRIBUTION
DONINGTON COURT
DC
Premier Inn
PKF Cooper Parry
nationalgrid
DHL
Royal Mail

Investment Summary

- **Strategically located** within the UK with **access directly from the M1 motorway** and within close proximity of the A42 and A50 Dual Carriageways
- **Next to East Midlands International Airport**, one of the UK's most strategically important airports
- **Prime Business Park environment** with high profile branding opportunity
- With close proximity of **SEGRO Logistics Park**, East Midlands, Gateway and **Rail Freight Interchange**
- High Specification purpose built office building extending to **43,847 sq ft** (NIA) (4,073.60 sq m)
- Excellent parking ratio of **6.75 spaces per 1,000 sq ft**
- Passing net rent of **£355,135** per annum
- Potential gross rent **£624,782** per annum (net £561,904 per annum)
- Let in part to PriceWaterhouseCoopers Services Limited and HSBC Bank plc
- Low capital value **£170** per sq ft
- Long leasehold
- Seeking offers in excess of **£7,265,000 (Seven Million, Two Hundred & Sixty Five Thousand Pounds)**, subject to contract providing a net initial yield of **7.25%**, assuming purchasers' costs at **6.66%**
- A rental guarantee equivalent to one year, **£229,744 per annum** and the corresponding rental equivalent to the residue rent free granted to HSBC Bank plc, will be deducted from the purchase price



Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

Location

Donington Court is located on Pegasus Business Park, within the boundary of East Midlands International Airport, one of the UK's most strategically important airports outside London.

East Midlands International Airport accommodates 4.3 million passengers each year offering routes to over 80 leisure and business destinations. The Airport is the second busiest cargo airport in the UK (after Heathrow) and handles over 310,000 tonnes of air freight every year. It is the UK hub for DHL and UPS and acts in support of operations for TNT and Royal Mail as well as a number of distribution companies that have bases in the area. The world-famous Donington Park motor racing circuit is also near by.

Demographics

The East Midlands has an excellent track record for attracting flourishing world class companies in the transport, healthcare, professional services, food and drink and environmental sectors. The area offers a competitive environment supported by world leading research and development capabilities, a highly skilled workforce and it also benefits from being at the centre of the UK transport network.

> EAST MIDLANDS AIRPORT IS SITUATED ADJACENT TO JUNCTION 23A OF THE M1 MOTORWAY BENEFITING FROM IMMEDIATE ACCESS TO THE NATIONAL MOTORWAY NETWORK AND A DIRECT ROUTE TO LONDON









Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

Connectivity

In addition to air travel, East Midlands Airport is situated adjacent to Junction 23A of the M1 Motorway benefiting from immediate access to the national motorway network and a direct route to London (2 hour drive time) and Leeds (1.5 hour drive time). The Airport also benefits from direct access to Birmingham via the A42 (40 miles to the south west). The A50 dual carriageway, situated directly to the north of the Airport, provides direct access to the M6 Motorway.

East Midlands parkway station is a short 10 minute taxi ride away from the property providing frequent direct trains to London St Pancras International Station in under 1 hour and 30 minutes.

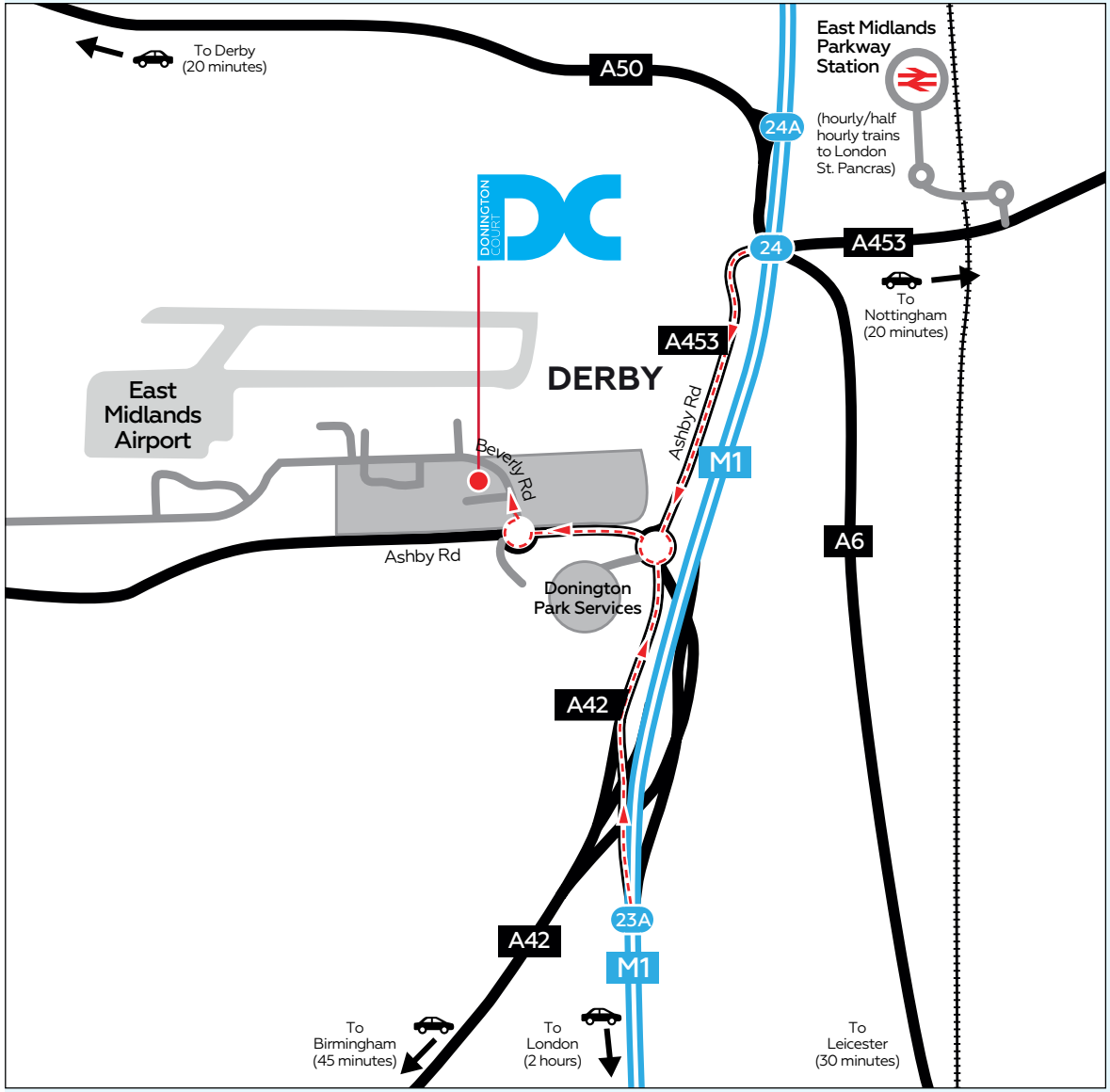
Logistics

The property is within close proximity of SEGRO Logistics Park East Midlands Gateway (SLPEMG) which is a 700 acre development with planning consent for up to 6,000,000 sq ft of logistics accommodation. The development incorporates a 50 acre Strategic Rail Freight Interchange (SRFI) which will include a rail freight terminal, capable of handling up to sixteen 775m rail freight trains per day, container storage and HGV parking.

Extensive infrastructure works are currently underway. These works include improvements to Junction 24 and 24A of the M1 including the introduction of a smart motorway system by Highways England, safer access to the A50 at Lockington and Hemington and the new Kegworth Bypass.

Situation

Donington Court occupies a prominent position within Pegasus Business Park on one of the principle airport boundary roads leading to the passenger terminal and numerous cargo facilities. Surrounding office occupiers include HSBC, Regus, Nikon, PKF Cooper-Parry, National Grid, PWC, UPS and Home Office and there also are several hotels nearby including Premier Inn, Holiday Inn Express, Radisson Blu and Thistle.



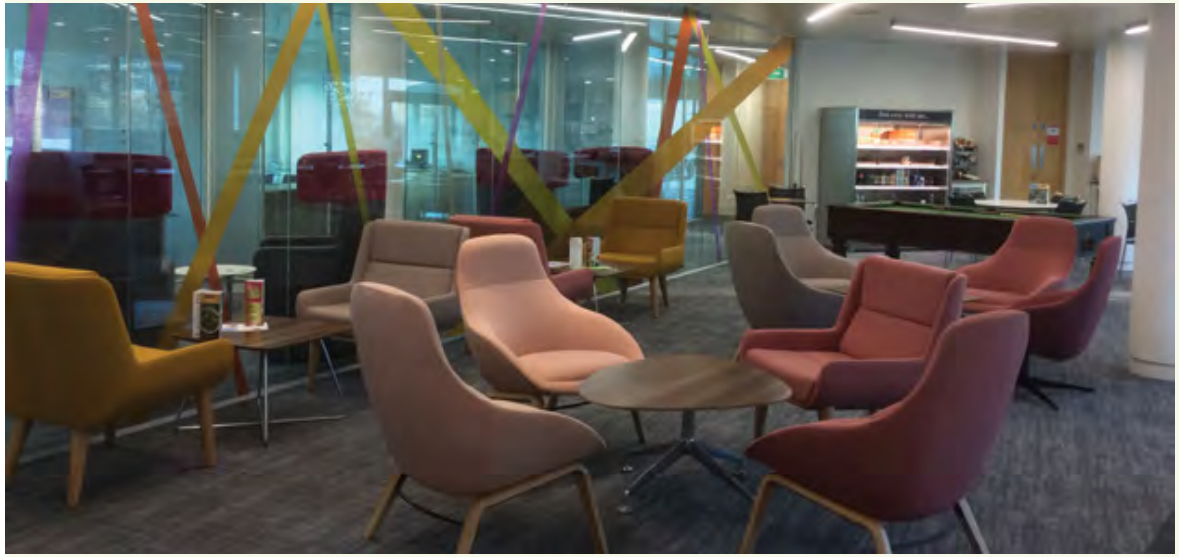
Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

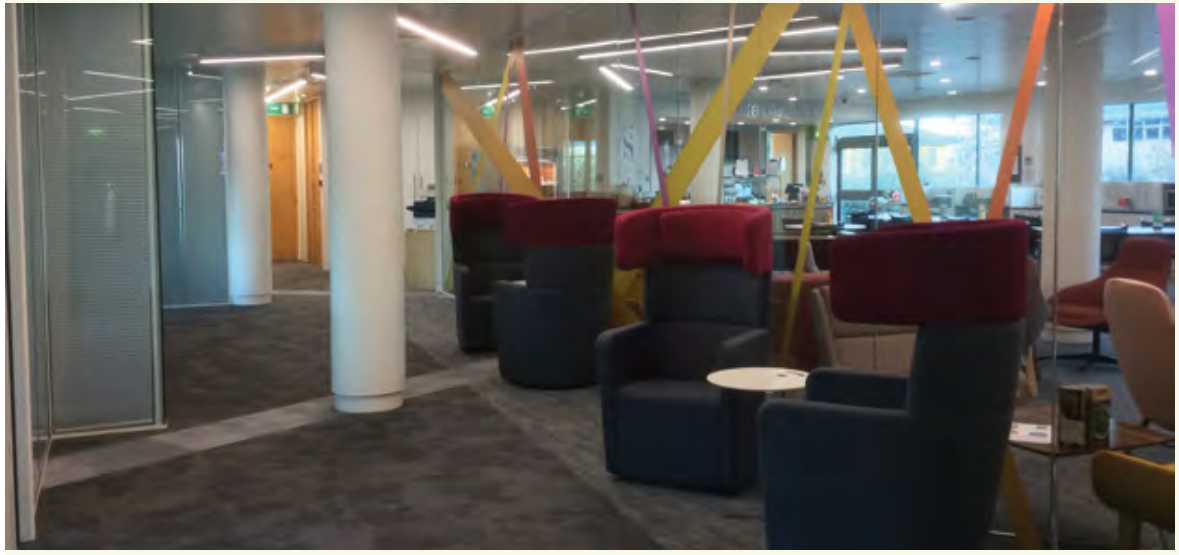
Description

Donnington Court was constructed in 2002 to provide high specification Grade A headquarters offices primarily arranged over ground, first and second floor.

The building provides the following amenities:

- Air conditioning
- Fully accessed raised floors.
- Suspended ceilings with recessed integral lighting
- Feature double height reception
- Excellent parking ratio with 265 secure parking spaces and more potentially available (6.75 spaces per 1,000 sq ft)
- Fully refurbished and with the benefit of an attractive Concierge Reception
- Passenger lift(s)
- Dedicated kitchen and WC facilities
- DDA compliant
- 24 hour access and CCTV monitoring





Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

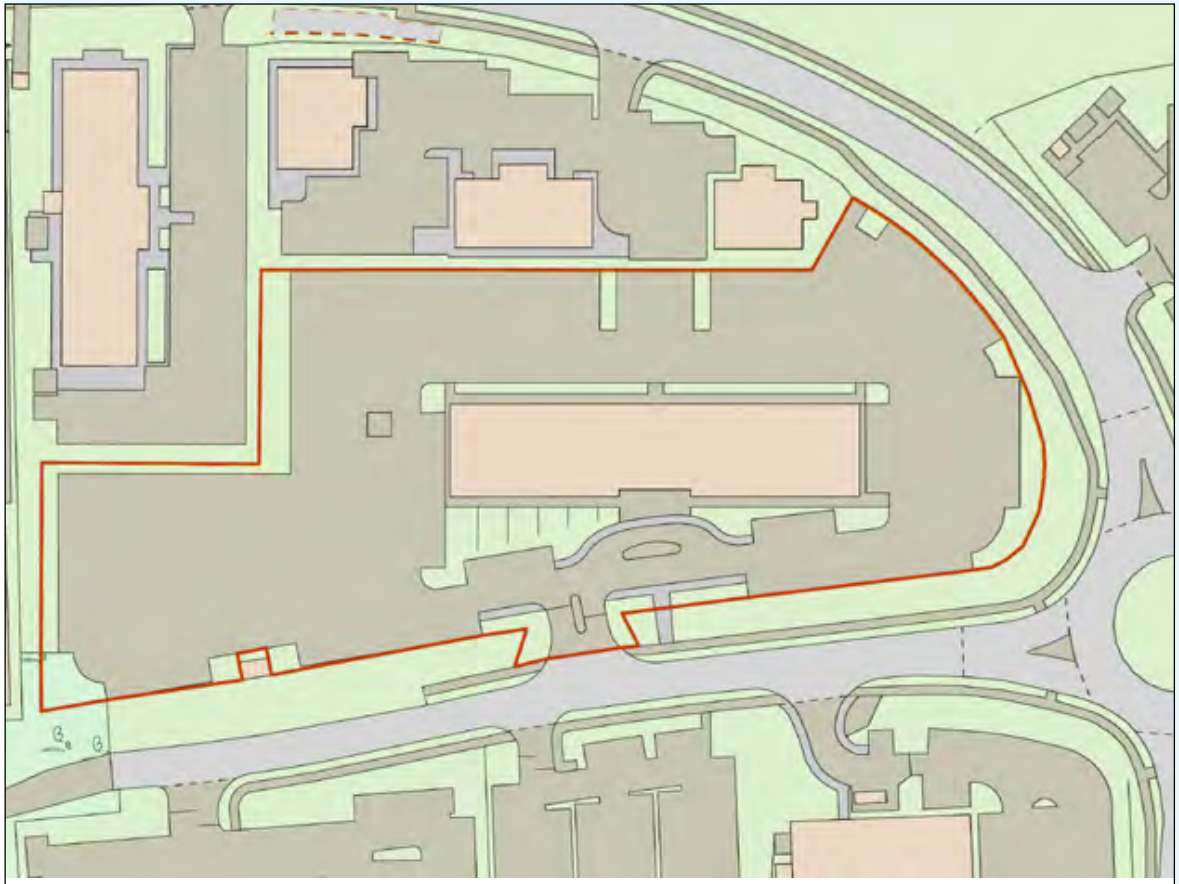
Accommodation

Net Internal Area	Size (Sq Ft)	Size (Sq M)
Ground Floor	13,520	1,256.1
First Floor	13,245	1,230.5
Second Floor	13,558	1,259.6
Roof	3,524	327.4
Total	**43,847**	**4,073.6**

The property has been measured in accordance with the RICS Code of Measuring Practice, published in 2007 (6th Edition). We have not measured the property nor have we calculated the floor areas in accordance with IPMS 3 – Offices. The site extends to approximately 3.209 acres (1.299 hectares).







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Tenure

The property is held on a long leasehold from East Midlands International Airport Limited for a term of 150 years from 26 November 2002, subject to a head rent equivalent to 10% of rents received and £400 ground rent.

After deduction of the head rent and ground rent, the net rent received is £355,135 per annum.

The property is let on two full repairing and insuring leases, in part, as follows:

Ground Floor Left Wing (6,469 sq ft) let to PriceWaterhouseCoopers Services Limited – 10 years with effect from 26 November 2017, subject to rent review in the 5th year of the term, 26 November 2022, and tenant break clause on 26 November 2022, at a rental of £98,465 per annum, reflecting £15.22 per sq ft.

First Floor Left and Right Wings (13,245 sq ft) let to PriceWaterhouseCoopers Services Limited – 10 years with effect from 26 November 2017, subject to rent review in the 5th year of the term, 26 November 2022 and tenant break clause on 26 November 2022, at a rental of £201,535 per annum, reflecting £15.22 per sq ft.

Second Floor West Wing (6,232 sq ft) let to HSBC Bank plc – 10 years with effect from 6 April 2018, subject to rent review in the 5th year of the term and tenant break clause on 6 April 2023 at a rental of £95,038 per annum, reflecting £15.25 per sq ft.

Vacant space

Reflecting the above tenancies, two suites remain vacant and are currently being marketed as follows:

Ground Floor Right Wing (Office B) 5,976 sq ft (555.19 sq m)

Second Floor Right Wing (Office B) 7,326 sq ft (680.60 sq m)

In addition to the above, there is ancillary storage in the roof void extending to 3,524 sq ft (327.4 sq m).

Based on the above tenancies we are of the opinion that an ERV of £15.25 per sq ft would be applicable on the remaining two suites and 50% of the main space rate of £7.63 per sq ft on ancillary storage providing an additional gross rental of £229,744 per annum.





Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

Covenants

PriceWaterhouseCoopers Services Limited
D&B Rating of 4A1 – represents minimum risk of business failure score

	Fiscal Non consolidated GBP 30 Jun 2016 (000's)	Fiscal Non consolidated GBP 30 Jun 2015 (000's)	Fiscal Non consolidated GBP 30 Jun 2014 (000's)
Sales Turnover	1,832,831	1,708,763	1,534,690
Profit / (Loss) Before Taxes	102,337	93,223	59,600
Tangible Net Worth	16,374	71,519	29,027
Net Current Assets (Liabilities)	(161,798)	(110,152)	(157,900)

HSBC Bank plc
D&B Rating of 5A1 – represents minimum risk of business failure score

	Fiscal Consolidated GBP 31 Dec 2016 (000's)	Fiscal Consolidated GBP 31 Dec 2015 (000's)	Fiscal Consolidated GBP 31 Dec 2014 (000's)
Sales Turnover	20,041,000	18,630,000	18,313,000
Profit / (Loss) Before Taxes	874,000	2,971,000	1,953,000
Tangible Net Worth	34,195,000	30,486,000	28,784,000
Net Current Assets (Liabilities)	65,577,000	42,025,000	38,543,000

EPC

The property has an Energy Performance Rating of:

D81
C71.

VAT

The property is elected for VAT. We would anticipate the transaction being treated as a Transfer of a Going Concern (TOGC), however prospective purchasers should make their own enquiries.

Proposal

We are seeking offers in excess of **£7,265,000 (Seven Million, Two Hundred & Sixty Five Thousand Pounds)**, subject to contract providing a net initial yield of **7.25%**, assuming purchaser's costs at **6.66%**.

A rental guarantee equivalent to one year, **£229,744 per annum** and the corresponding rental equivalent to the residue rent free granted to HSBC Bank plc, will be deducted from the purchase price.

Donington Court | Unit 2A Donington Court
Pegasus Business Park Castle Donington | DE74 2UZ

Savills Nottingham

Enfield Chambers, 18 Low Pavement,
Nottingham NG1 7DG
+44 (0) 115 934 8000
nottingham@savills.com

Contacts

Strictly by appointment only with the Sole Agent Savills.

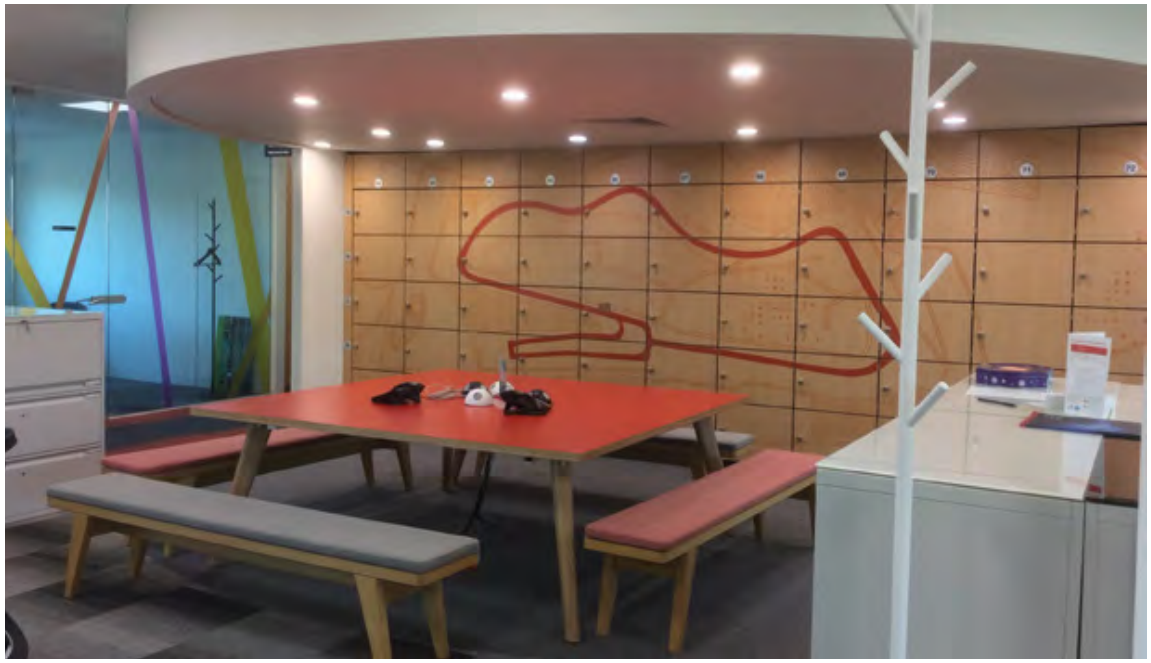
Victor Ktori
T: +44 (0) 115 9348171
E: vktori@savills.com

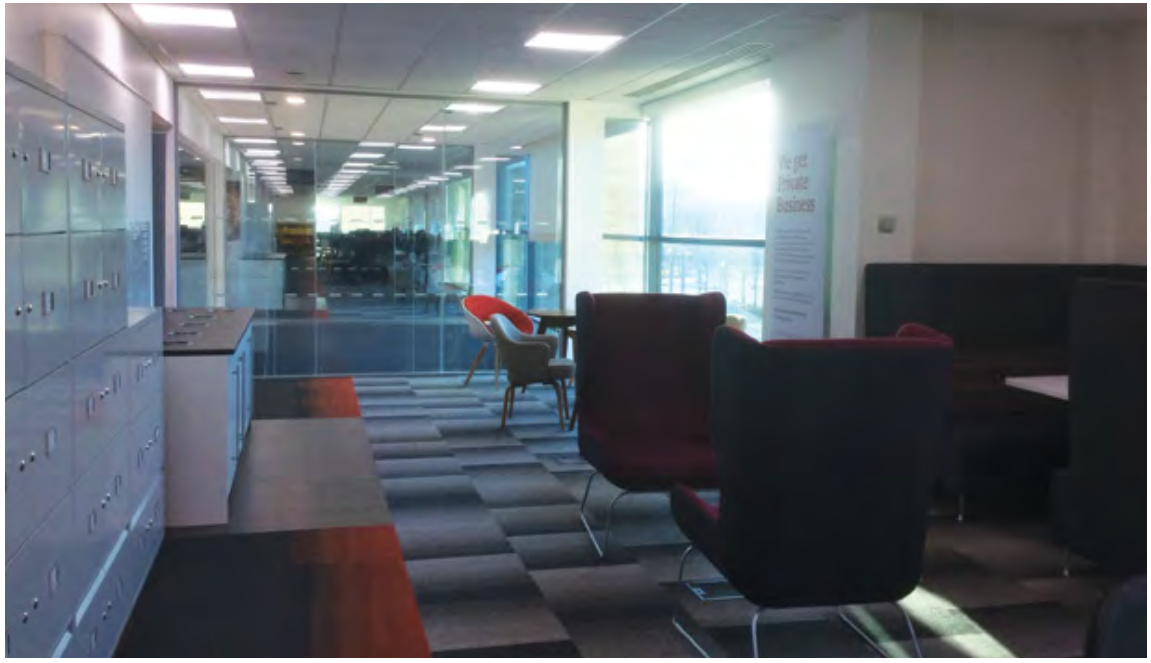
Christine Thorn
T: +44 (0) 115 934 8152
E: cthorn@savills.com





Important information
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2. Any areas, measurement or distances are approximate. The text, images and plans are for guidance purposes only and are not necessarily comprehensive. It should be assumed that the property has all necessary planning, building regulation or other consents and Savills have not tested any services, equipment or facilities. Purchasers must satisfy themselves by inspection or otherwise. February 2018.







TO LET

UNIT 2A DONINGTON COURT , PEGASUS BUSINESS PARK, CASTLE DONINGTON , DE74 2UZ



SUMMARY

- Strategically located within the UK with access directly from the M1 motorway and within close proximity of the A42 and A50 Dual Carriageways
- Next to East Midlands International Airport, one of the UK's most strategically important airports
- Prime Business Park environment with high profile branding opportunity
- High specification Grade A offices , forming part of a Headquarters office building , available as a whole or individual suites of 6,040 sq ft (561.17 sq m) and 13,672 sq ft (1,270.19 sq m)
- Excellent parking ratio with 111 secure parking spaces and more potentially available
- Fully refurbished and with the benefit of an attractive Concierge Reception

savills

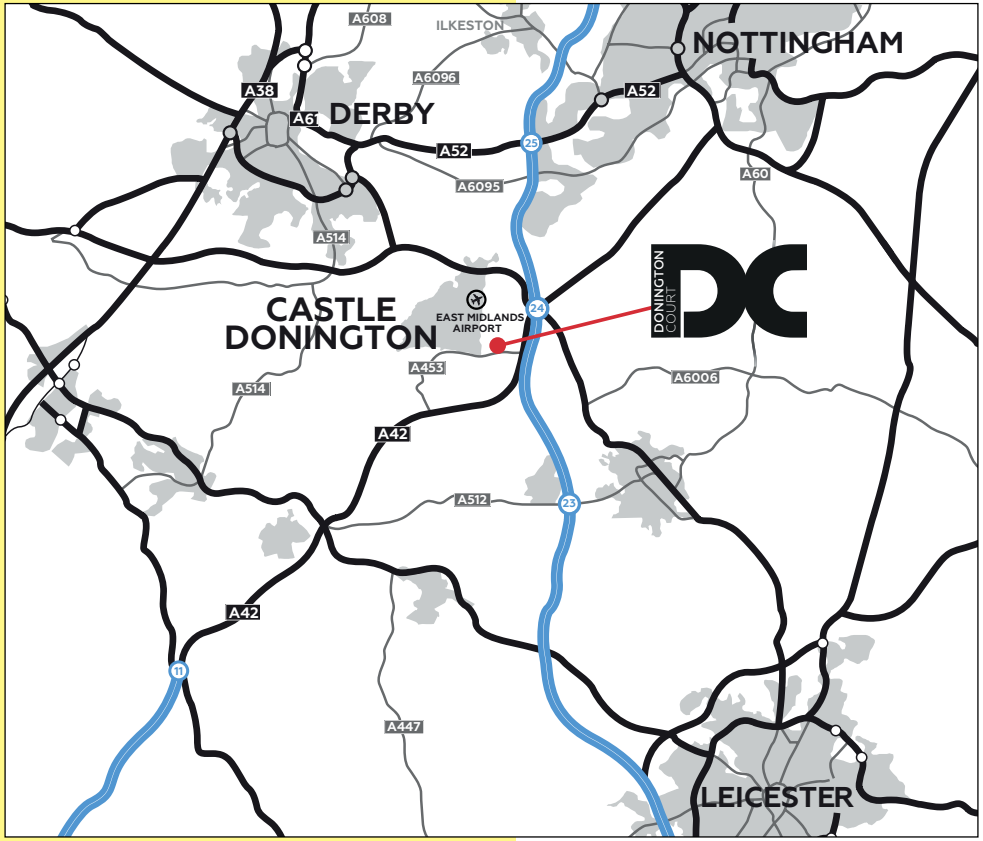
LOCATION

Donington Court is located on Pegasus Business Park, within the boundary of East Midlands International Airport, one of the UK's most strategically important airports outside London.

East Midlands International Airport accommodates 4.3 million passengers each year offering routes to over 80 leisure and business destinations. The Airport is the second busiest cargo airport in the UK (after Heathrow) and handles over 310,000 tonnes of air freight every year. It is the UK hub for DHL and UPS and acts in support of operations for TNT and Royal Mail as well as a number of distribution companies that have bases in the area. The world-famous Donington Park motor racing circuit is also near by.

DEMOGRAPHICS

The East Midlands has an excellent track record for attracting flourishing world class companies in the transport, healthcare, professional services, food and drink and environmental sectors. The area offers a competitive environment supported by world leading research and development capabilities, a highly skilled workforce and it also benefits from being at the centre of the UK transport network.










M1
23a
east midlands airport
SECRETARY OF STATE
Regus
Radisson
WESTERN POWER DISTRIBUTION
DONINGTON PARK
DC
Premier Inn
PKF Cooper Parry
nationalgrid
DHL
Royal Mail

UNIT 2A DONINGTON COURT , PEGASUS BUSINESS PARK, CASTLE DONINGTON , DE74 2UZ

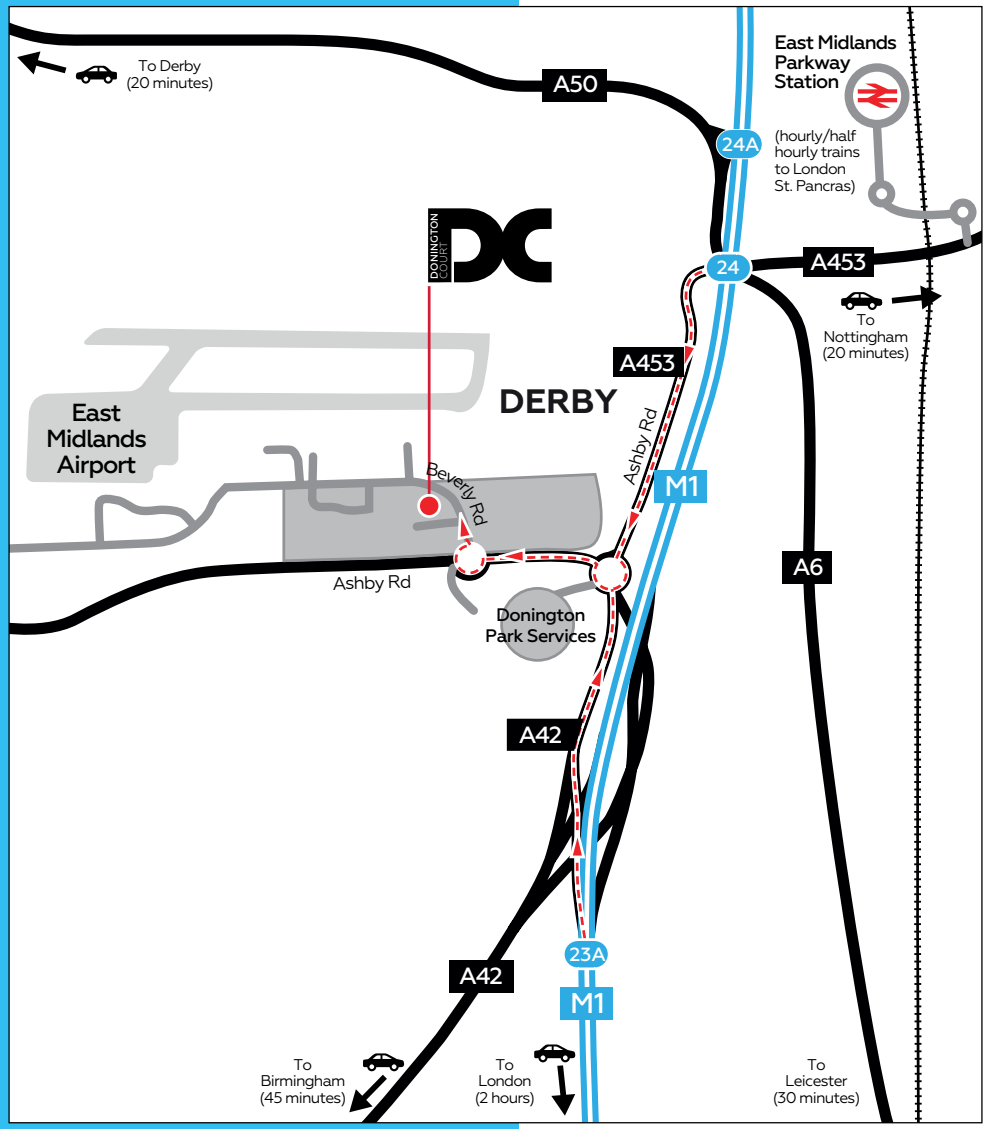
CONNECTIVITY

In addition to air travel, East Midlands Airport is situated adjacent to Junction 23A of the M1 Motorway benefiting from immediate access to the national motorway network and a direct route to London (2 hour drive time) and Leeds (1.5 hour drive time). The Airport also benefits from direct access to Birmingham via the A42 (40 miles to the south west). The A50 dual carriageway, situated directly to the north of the Airport, provides direct access to the M6 Motorway.

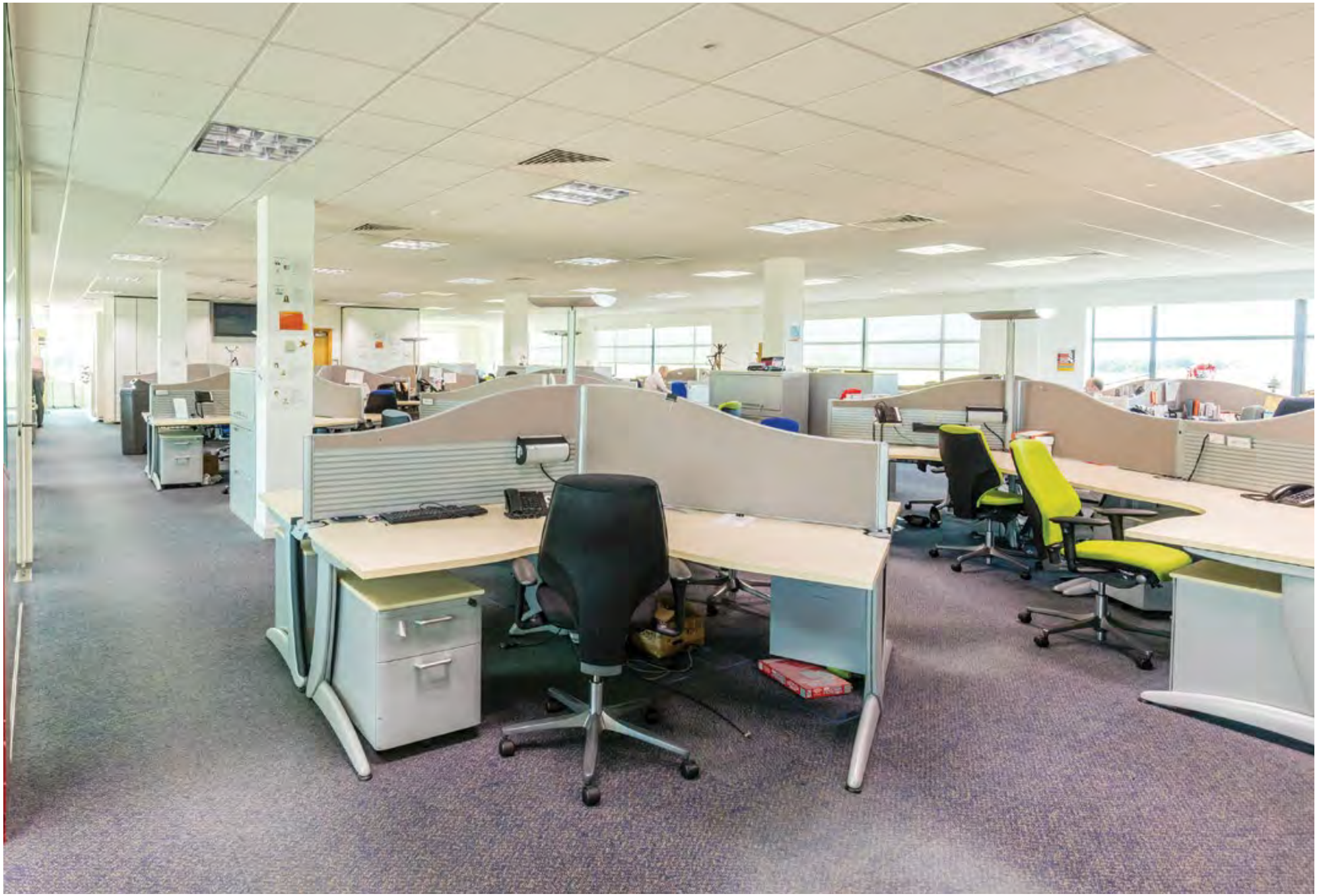
East Midlands parkway station is a short 10 minute taxi ride away from the property providing frequent direct trains to London St Pancras International Station in under 1 hour and 30 minutes.

SITUATION

Donington Court occupies a prominent position within Pegasus Business Park on one of the principle airport boundary roads leading to the passenger terminal and numerous cargo facilities. Surrounding office occupiers include Regus, Nikon, PKF Cooper-Parry, National Grid, PWC, UPS and Home Office and there also are several hotels nearby including Premier Inn, Holiday Inn Express, Radisson Blu, and Thistle.



EAST MIDLANDS INTERNATIONAL AIRPORT ACCOMMODATES 4.3 MILLION PASSENGERS EACH YEAR OFFERING ROUTES TO OVER 80 LEISURE AND BUSINESS DESTINATIONS



DESCRIPTION

Donington Court was constructed in 2002 to provide high specification Grade A Headquarters offices arranged over the ground amenities:

- Air conditioning
- Fully accessed raised floors.
- Suspended ceilings with recessed integral lighting
- Feature double height reception
- Excellent parking ratio with 111 secure parking spaces and more potentially available
- Fully refurbished and with the benefit of an attractive Concierge Reception
- Passenger lift(s)
- Dedicated kitchen and WC facilities
- DDA compliant
- 24 hour access and CCTV monitoring





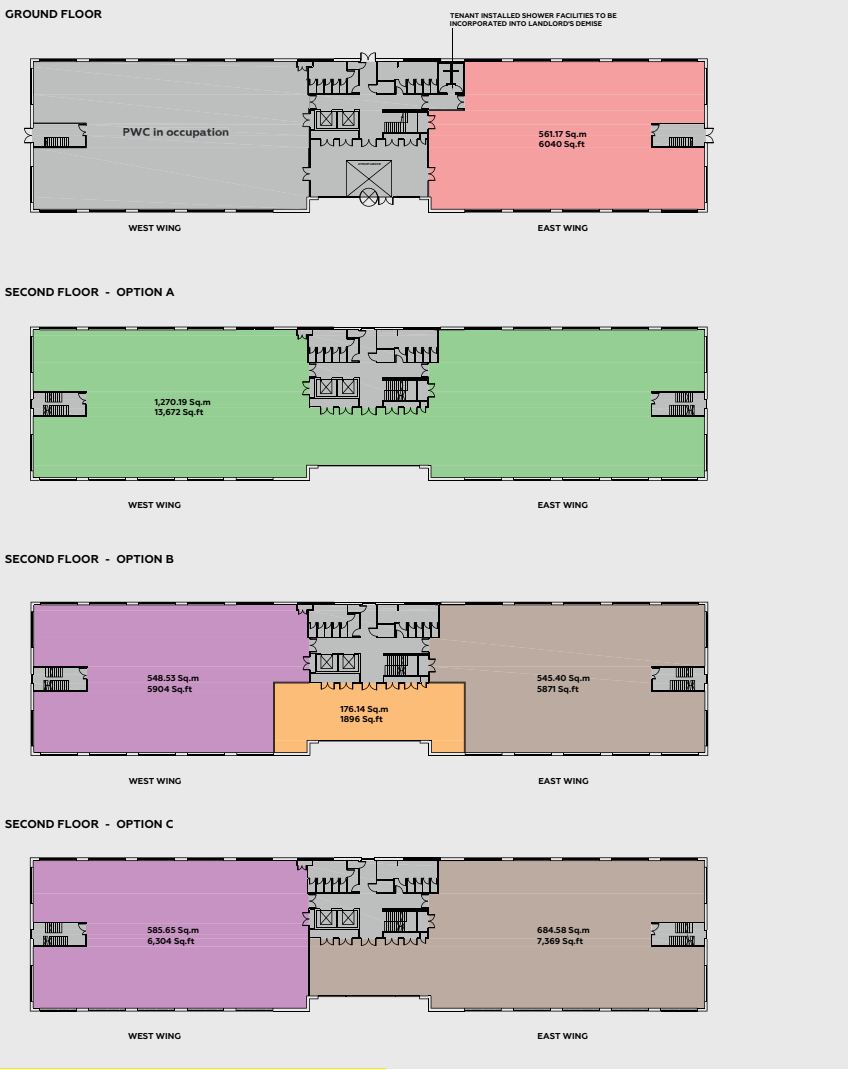
“THE AREA OFFERS A COMPETITIVE ENVIRONMENT SUPPORTED BY WORLD LEADING RESEARCH AND DEVELOPMENT CAPABILITIES”


strategy&
pwc
Everyone plays a part
Advice into action
pwc
pwc

ACCOMMODATION

Net Internal Area	Size (Sq Ft)	Size (Sq M)
Ground Floor	6,040	561.17
Second Floor	13,672	1,270.19
Total	**19,712**	**1,831.36**

The second floor can be sub-divided.



> EAST MIDLANDS AIRPORT IS SITUATED ADJACENT TO JUNCTION 23A OF THE M1 MOTORWAY BENEFITING FROM IMMEDIATE ACCESS TO THE NATIONAL MOTORWAY NETWORK AND A DIRECT ROUTE TO LONDON



BUSINESS RATES

The current rating assessment is for the whole building and an appeal is due to be submitted splitting the ground and second floors.

For guidance purposes the current assessment adopts a base rate Rateable Value of £125 per sq m, namely £5.56 per sq ft payable.

TERMS

The property is offered on flexible new full repairing and insuring terms.

RENT

£16.50 per sq ft exclusive.

VAT

VAT will be applicable to this transaction.

LEGAL COSTS

Each party will be responsible for their own legal costs involved in this transaction.





> THE PROPERTY OCCUPIES A PROMINENT POSITION WITHIN DONINGTON COURT ON ONE OF THE PRINCIPLE AIRPORT BOUNDARY ROADS LEADING TO THE PASSENGER TERMINAL



SAVILLS NOTTINGHAM

Enfield Chambers, 18 Low Pavement,
Nottingham NG1 7DG
+44 (0) 115 934 8000
nottingham@savills.com

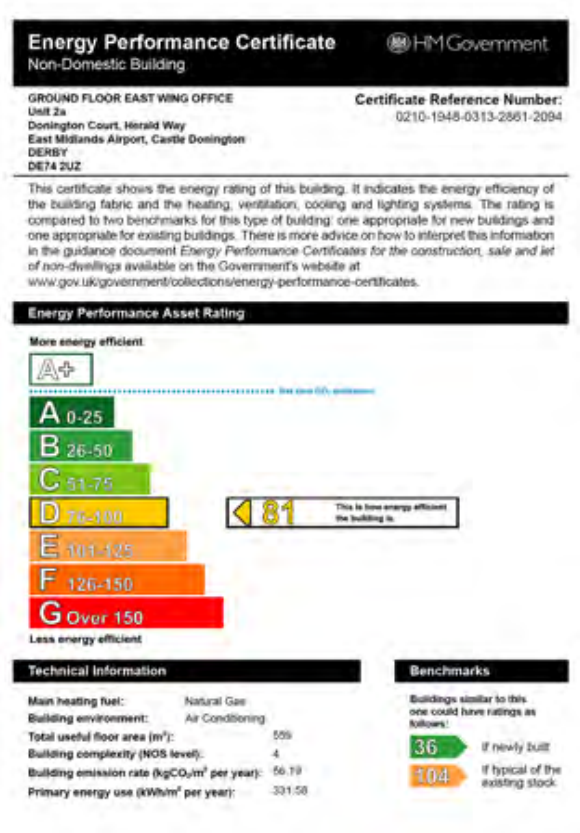
VIEWING

Strictly by appointment only with the Sole Agent Savills.

Victor Ktori
T: +44 (0) 115 9348171
E: vktori@savills.com

Christine Thorn
T: +44 (0) 115 934 8152
E: cthorn@savills.com

EPCs



Energy Performance Certificate
Non-Domestic Building
HM Government

GROUND FLOOR EAST WING OFFICE
Unit 2a
Donington Court, Herald Way
East Midlands Airport, Castle Donington
DERBY
DE74 2UZ

Certificate Reference Number:
0210-1948-0313-2861-2094

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

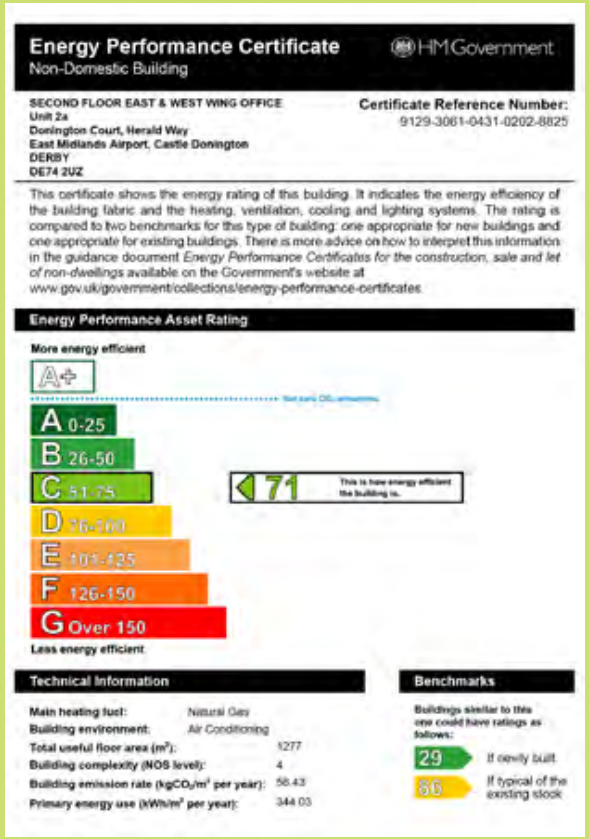
More energy efficient
A+
A 0-25
B 26-50
C 51-75
D 76-100
E 101-125
F 126-150
G Over 150
Less energy efficient
81 This is how energy efficient the building is.

Technical Information

Main heating fuel:	Natural Gas
Building environment:	Air Conditioning
Total useful floor area (m^2):	559
Building complexity (NOS level):	4
Building emission rate ($kgCO_2/m^2$ per year):	56.19
Primary energy use (kWh/m^2 per year):	331.58

Benchmarks

Buildings similar to this one could have ratings as follows:
36 If newly built
104 If typical of the existing stock



Energy Performance Certificate
Non-Domestic Building
HM Government

SECOND FLOOR EAST & WEST WING OFFICE
Unit 2a
Donington Court, Herald Way
East Midlands Airport, Castle Donington
DERBY
DE74 2UZ

Certificate Reference Number:
9129-3061-0431-0202-8825

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient
A+
A 0-25
B 26-50
C 51-75
D 76-100
E 101-125
F 126-150
G Over 150
Less energy efficient
71 This is how energy efficient the building is.

Technical Information

Main heating fuel:	Natural Gas
Building environment:	Air Conditioning
Total useful floor area (m^2):	1277
Building complexity (NOS level):	4
Building emission rate ($kgCO_2/m^2$ per year):	58.43
Primary energy use (kWh/m^2 per year):	344.03

Benchmarks

Buildings similar to this one could have ratings as follows:
29 If newly built
86 If typical of the existing stock

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2. Any areas, measurement or distances are approximate. The text, images and plans are for guidance purposes only and are not necessarily comprehensive. It should be assumed that the property has all necessary planning, building regulation or other consents and Savills have not tested any services, equipment or facilities. Purchasers must satisfy themselves by inspection or otherwise. September 2017

savills

York Aviation

Appendix B

York Aviation LLP
Primary House
Spring Gardens
Macclesfield
Cheshire SK10 2DX
Tel: 01625 614051
Fax: 01625 426159
E-mail: louise.congdon@yorkaviation.co.uk
www.yorkaviation.co.uk

Sally Dixon,
Azimuth Associates,
17 Island Wall,
Whitstable,
Kent CT5 1EP.
19th October 2017

Dear Ms Dixon,

Manston Airport

I am in receipt of your letter of 18th October, to which you requested a response by 20th October. I will deal with the points that you raise.

i. James Brass correctly stated, in October 2016, that, as our work for the FTA was in the public domain, we would have no difficulty with you properly citing it in your work, nor his letter, and that we stood over the conclusions of that work. However, we did not expect that it would be used as a primary consultation document and placed on RSP's website as such, giving the impression that we were working for RSP. This was the reason for the concern that I have expressed.

ii. In relation to the so-called TfL paper on Freight Connectivity, I am unsure what hard copy version was provided to you by TfL but it is quite clear from the Freedom of Information disclosure made by TfL that the note referred to in your proposed DCO application documentation was that prepared by ourselves and to which I refer. The FOI disclosure is at:
https://tfl.gov.uk/corporate/transparency/freedom-of-information/foi-request-detail?referenceId=FOI-0891-1718
You will see that the note is identical to that which you quote and is clearly marked with our logo.

iii. The reports upon which we have expressed concern are indeed Volumes I, II and III as placed on RSP's website. I cannot comment on TfL's views on these reports but at no time did they consult with ourselves in relation to these reports and their reliance on our earlier work.

iv. We have had no communication with Ros McIntyre and cannot comment on any views expressed.

v. In relation to your interpretation of our earlier work, the position remains as set out in my previous letter. This will be set out more fully in our report which you will be able to review in due course.

vi. Whilst our report is not yet finalised, we have, of course, discussed the matters with Pinsent Masons and they reflected our views in their letter to PINS.

vii. Pinsent Masons did not demand that your reports are withdrawn, rather the paragraph quoted states that our report will be part of the evidence to be submitted in the event that RSP's proposal is not withdrawn from the DCO process.

In the light of the formality of the process in which we are engaged, I would suggest that future correspondence should be routed through the correct channels, via PINS as appropriate.

Yours faithfully,

[redacted]

Managing Partner

AZIMUTH
ASSOCIATES

Ms L. Congdon,
York Aviation,
Primary House, Spring Gardens,
Macclesfield, Cheshire SK10 2DX

18th October 2017

Dear Louise,

Manston Airport - Pinsent Masons letter to the Planning Inspectorate

Thank you for your letter dated 17th October. In response to the points you raise I would like to draw your attention to the following:

a) Your statement that the reports written on behalf of RSP did not have your clearance

The York Aviation report I cite is in the public domain and therefore, I believe, does not require your clearance. For clarity, this is:

> York Aviation (2015), *Implications for the Air Freight Sector of Different Airport Capacity Options*. Available from http://content.tfl.gov.uk/air-freight-implications-from-new-capacity.pdf

However, I would remind you that both Tony Freudmann and I spoke to your colleague, James Brass, on the 10th October 2016, specifically to discuss your 2015 report. We subsequently received a letter dated 13th October 2016 confirming that you continued to stand by your report. It was made clear during our discussions that I would be citing your work and you raised no objections at that time. Indeed, Tony Freudmann, in his email to you dated 13th October said, "*Can I ask if you would have a problem with this going into the public domain?*" The reply from James Brass on the same date was, "*No problem from my perspective. It only says what we would say publicly anyway*." I regard that as sufficient clearance, as well as confirmation that it is in the public domain.

In your letter dated 17th October 2017, you make reference to the "earlier" work for Transport for London. **I am unclear as to what this refers and would be grateful for your clarification**. During a heated discussion at a meeting of the Combined Churches of Herne Bay on Monday evening, Ms Ros McIntyre of No Night Flights referred to your involvement in the hard copy report provided to me by Transport for London. Indeed, she was most insistent and I am able to provide the venue's recording of what she alleges. However, there is absolutely no mention of York Aviation contained within the report provided to me by TfL and I was specifically told by them that TfL had produced the report in-house.

For your reference, the TfL report is entitled 'Note on Freight Connectivity' and commences with the sentence:

"*This note explains the approach taken to estimating the number of pure freighter air transport movements at the London airports in 2050 under three different scenarios of capacity growth:*

- *Maximum use of existing capacity;*
- *2+2+2 - additional runways at each of Gatwick and Stansted;*

Sally Dixon
MBA PhD MRAeS
01227 772 086
07973 523 898
sally@azimuthassociates.co.uk
www.azimuthassociates.co.uk
17 Island Wall Whitstable Kent CT5 1EP

AZIMUTH
ASSOCIATES

- *New 4 runway hub*."

On the 23rd February 2017 I sent a copy of volumes I, II and III of my work to Transport for London and they have made no complaint. **I would be grateful for your clarification that we are discussing the same report.** Ros McIntyre also insisted that **York Aviaton now believe that Stansted has ample capacity for freighters and I would be grateful for your confirmation or rebuttal of her statement** (recording and/or transcript of this is also available at your request).

b) Your claim of selective and incomplete quotations used in my reports

I absolutely refute this allegation **and would ask you to provide specific examples**. My understanding of your 2015 report and your subsequent clarifications is that there will be a substantial shortage of capacity for air freighters in the South East by 2050. This is the point I make, backed up by your report as well as a number of others. I do not use your report for any other purpose. Conclusions about Manston Airport are drawn from my research.

I note from your letter of the 17th October that you are currently working on a report that will form part of Stone Hill Park's evidence to PINS in due course. Since the report is as yet unfinished, **I would be interested to know your position in regard to why Pinsent Masons have drawn the preemptive conclusions detailed in their letter to the Planning Inspectorate dated 11th October 2017**. Indeed, it is surprising that Pinsent Masons have demanded that this evidence is withdrawn from the RSP proposals forthwith without having received the findings from your report or waiting for you to clarify the exact nature of the alleged incorrect citation. For clarity, the Pinsent Masons letter states at 1.8.6 that:

> "*It is worth noting that PSP's aviation consultant, Dr Sally Dixon of Azimuth Associates, has incorrectly cited York Aviation's work in support of its proposals, which York Aviation will be dealing with as part of SHP's evidence to deal with the RSP proposals in the event that they are not withdrawn forthwith*."

I do hope you understand why I am persisting with this matter. A number of agencies have identified that the UK will increasingly suffer economically from a lack of airport capacity in the South East. I believe, based on my research, that the re-opening of Manston Airport could provide much-needed relief, particularly for freighters. Manston Airport is situated in an area of considerable deprivation and the jobs that could result from the airport operation outlined by RSP would do much to address this long-term problem. At a personal level, my reputation is being questioned in a public arena. Your allegations may have serious professional ramifications, which is why I cannot allow them to go unchallenged.

Due to the seriousness of this matter, I would ask that you respond as soon as possible and certainly before Friday 20th October 2017.

Yours sincerely,

Sally Dixon

Sally Dixon
MBA PhD MRAeS
01227 772 086
07973 523 898
sally@azimuthassociates.co.uk
www.azimuthassociates.co.uk
17 Island Wall Whitstable Kent CT5 1EP

York Aviation

York Aviation LLP
Primary House
Spring Gardens
Macclesfield
Cheshire SK10 2DX
Tel: 01625 614051
Fax: 01625 426159
E-mail: louise.congdon@yorkaviation.co.uk
www.yorkaviation.co.uk

Sally Dixon,
Azimuth Associates,
17 Island Wall,
Whitstable,
Kent CT5 1EP.

17th October 2017

Dear Ms Dixon,

Manston Airport

I am in receipt of your letter of 16th October, to which you requested a response within 2 days. I will deal with the points that you raise.

We were alerted by Pinsent Masons in early September this year to the reliance being placed by yourself, on behalf of RSP, on both our report for the Freight Transport Association (FTA) and also earlier work for Transport for London. Although there had been earlier correspondence (October 2016) regarding our 2015 work for FTA, where we confirmed that we considered it to be *"a robust and sensible analysis of the potential future development of the air cargo market in London ……if additional runway capacity is not provided within the London system"*, we were very surprised to find that:

a) the reports were being presented as primary evidence by RSP in its consultation documentation this summer without any clearance by or notification to ourselves; and

b) that there were repeated instances in your reports where the views expressed in our reports had been selectively and incompletely quoted, without proper context, with conclusions drawn from our work which go beyond those that could reasonably be made when the reports are read and understood in totality.

This view is reflected in Pinsent Masons' letter to the Planning Inspectorate.

When James Brass responded to you in 6th October, he made clear that we now had a conflict of interest in relation to Manston but, nonetheless, he provided you with guidance as to the applicability of our 2004 work for ACI EUROPE. In the circumstances of our engagement by Stonehill Park, it would have been inappropriate at that point to raise the specific areas of concern in relation to the use of our past work.

In terms of your accusation that we have supplied a copy of our report to 'Manston Pickle', I can assure you that we have had no communication with that organisation, nor any knowledge of the report to which they refer, unless it is one of those posted on RSP's website.

As noted in the Pinsent Masons' letter to PINS, we are working on a report which will form part of Stonehill Park's evidence to PINS in due course.

Yours faithfully,

[redacted]

Louise Congdon
Managing Partner

AZIMUTH
ASSOCIATES

Ms L. Congdon,
York Aviation,
Primary House,
Spring Gardens,
Macclesfield,
Cheshire SK10 2DX

16th October 2017

Dear Louise,

Manston Airport - Pinsent Masons letter to the Planning Inspectorate

I have recently read the letter from Pinsent Masons on behalf of Stone Hill Park, your client, to the Planning Inspectorate dated 11th October. I am writing to you with reference to paragraph 1.8.6 of their letter, which states that I have incorrectly cited your work.

On the 3rd of October I had occasion to contact your colleague, James Brass, on a different matter. He replied to me on the 6th October but made no mention of my alleged incorrect citation of your work.

More recently it appears that you have provided a copy of your report concerning Manston to a small group of protestors working under the banner of No Night Flights and operating a Facebook page with the name "Manston Pickle". Their posting on the 12th of October says:

> *And did you see the little jibe in the media report in which this appeared (see below) that RSP has misrepresented a report by York Aviation? Who says so? York Aviation says so. Now, we already knew this 'cos a little bird sent the York Aviation report to contacts of ours recently. And, as misrepresentations go, we think it's pretty bare-faced*.

I am disappointed that you did not contact me immediately, out of professional courtesy, when you concluded that there had been an error in my understanding of your work. I can assure you that I had no intention of any such discourtesy and, if you would provide me with the details of the error as you see it, I will make any adjustments that are necessary.

Since the way you have handled this situation is potentially damaging to my career, I am currently taking advice from Counsel on how to proceed. I look forward to hearing from you at your earliest possible convenience and in any event within the next two days.

Yours sincerely,

Sally Dixon

Sally Dixon
MBA PhD MRAeS
01227 772 086
07973 523 898
sally@azimuthassociates.co.uk
www.azimuthassociates.co.uk
17 Island Wall Whitstable Kent CT5 1EP

AZIMUTH
ASSOCIATES

York Aviation LLP
Primary House
Spring Gardens
Macclesfield
Cheshire SK10 2DX

Tel: 01625 614051
Fax: 01625 426159
E-mail: james.brass@yorkaviation.co.uk
www.yorkaviation.co.uk

Tony Freudmann
RiverOak Investment Corp.,
LLC One Atlantic Street,
Suite 703 Stamford,
CT 06901 U.S.A.

13 October 2016

Dear Tony

Freight Demand in the London Area and Manston Airport

Following our conversation the other day regarding the recent report produced by AviaSolutions on the Commercial Viability of Manston Airport, I promised to write to you in relation to our current views on the work undertaken by York Aviation for the Freight Transport Association and Transport for London and entitled *"Implications for the Air Freight Sector of Different Airport Capacity Options"* and published in January 2015. I can confirm that we continue to stand by the content of this report and believe it to be a robust and sensible analysis of the potential future development of the air cargo market in London. This includes our analysis of the growth in the demand for air freight moving forward and the potential constraints facing the market if additional runway capacity is not provided within the London system.

Best regards

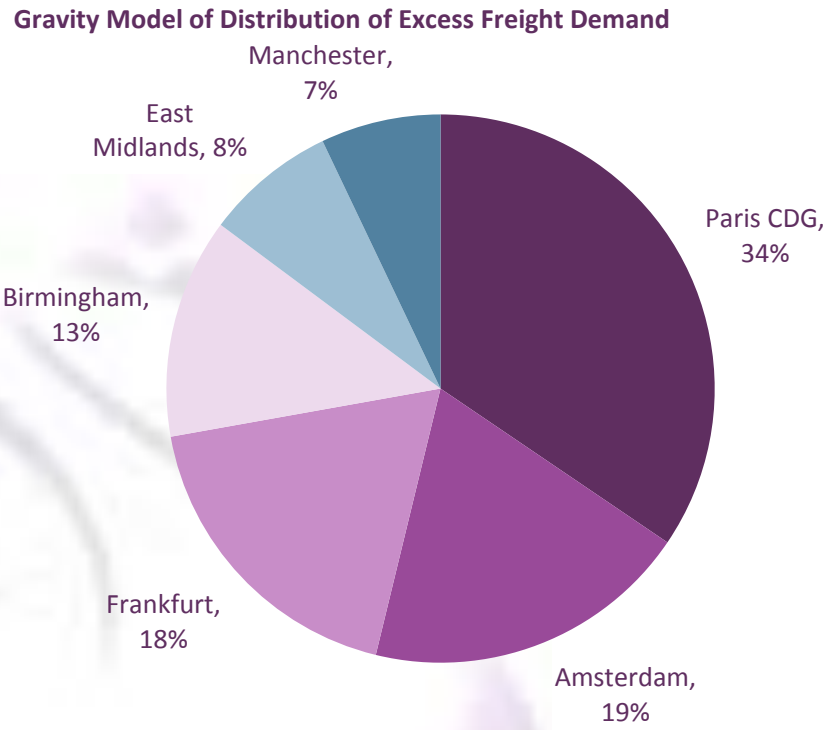
[redacted]

James Brass
Partner

Gravity Model of Distribution of Excess Demand

Appendix C

- In considering how excess air freight demand from the London system might be served by trucking to other airports in the UK and on the continent, we have developed a basic gravity model to estimate the distribution.
- The model includes three UK airports: the national freight hub at East Midlands and the two primary regional long haul passenger gateways at Manchester and Birmingham. It also includes the three main European hub airports, which all have a significant freight presence now and are likely to grow both bellyhold and freighter capacity in to the future.
- The attraction factor within this model is forecast workload units (a workload unit is one passenger or 100kg of freight) at each airport in 2050 based on the Airports Commission traffic forecasts in its Interim Report. Passenger numbers have been adjusted to reflect the proportion of long haul passengers. Freight is assumed to grow from current levels through to 2050 in line with passenger numbers.
- The distance decay factor within the model is the road haulage cost of transporting a truck load of freight to the relevant airport from London. Freight rates have been derived from data provided by the Freight Transport Association. Distances have been derived from the fastest road route to the destination airport from Google Maps.
- This demonstrates that we would anticipate that a significant proportion of the excess demand will be trucked overseas to the major continental hub airports to take advantage of their extensive long haul networks.
- UK regional airports, despite being substantially closer to London in most cases, cannot match the level of attractiveness offered by the continental hubs and their wider global networks. Consequently, other UK airports are only expected to handle around 28% of any excess demand.



Appendix D

OAG ANALYSER
VERSION: 2.0.1. Data load date: 24 Feb 2019

SEARCH ATTRIBUTES/PARAMETERS:
Report Type: Schedules Power Table
Dimensions: [Carrier Name, Dep Airport Name, Arr Airport Name, Local Dep Time, Local Arr Time, Local Days Of
Metrics: [Frequency, FreightTons (Total)]
Type of Operation: Published carrier, Operating Flights
Carrier Category: All
Include alliance affiliates: false
To/From: Airport(s) Included[FRA]
Flight Type: All
Service type: A,F,M,Q
Include Surface: false
Non-stop: true
Equipment Group: A,H,J,JN,JW,P,RJ,T,
Period: Month 01Feb2019 to 29Feb2020
TimeSeries: true

MONTHLY DATED AT 2 2019
REPORT DATED AT: Feb 28-2019. TIME: 11:07 (GMT)

Carrier Nai	Dep Airpor	Arr Airport	Local Dep T	Local Arr T	Local Days	Frequency	FreightTon	Time series
Air China	Frankfurt I	Tianjin	1930	0650	4 6	8	800.0	201912
Air China	Zhengzhou	Frankfurt I	1030	1505	5	5	500.0	201903
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201903
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201904
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201907
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201910
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	5	700.0	201903
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0	201909
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	5	700.0	201903
AirBridgeC	Frankfurt I	Milan Mal	1440	1620	1	4	440.0	201910
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	4	440.0	201912
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	202001
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	5	700.0	201906
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	5	700.0	201910
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201904
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0	201906
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201908
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	202002
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201908
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201902
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201909
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	201904
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201902

AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	5	700.0	202001
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	5	700.0	201906
AirBridgeC	Moscow Sl	Frankfurt I	0555	0730	1	4	440.0	202001
AirBridgeC	Moscow Sl	Frankfurt I	0605	0740	1	5	550.0	201907
AirBridgeC	Moscow Sl	Frankfurt I	0630	0805	1	1	110.0	201902
AirBridgeC	Moscow Sl	Frankfurt I	0825	1000	4	5	700.0	202001
AirBridgeC	Moscow Sl	Frankfurt I	1120	1255	5	4	440.0	201912
AirBridgeC	Moscow Sl	Frankfurt I	1220	1355	6	4	440.0	201907
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	9	900.0	201903
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	9	900.0	201910
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201911
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	201912
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201910
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	5	269.5	202001
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	202002
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201905
British Airv	London Lu	Frankfurt I	1040	1315	34	9	485.1	201907
British Airv	London Lu	Frankfurt I	1040	1315	34	10	539.0	201910
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	202001
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	9	405.0	201903
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201906
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201912
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	5	269.5	201910
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201902
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	202002
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	5	550.0	201907
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	5	550.0	201910
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201902
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	201910
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	202002
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201907
Air China	Frankfurt I	Tianjin	1930	0650	4 6	8	800.0	201904
Air China	Frankfurt I	Tianjin	1930	0650	4 6	8	800.0	201907
Air China	Zhengzhou	Frankfurt I	1030	1505	5	5	500.0	201911
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	5	700.0	202002
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201902
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201902
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	5	700.0	201908
AirBridgeC	Frankfurt I	Milan Mal	1440	1620	1	4	440.0	201902
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	4	440.0	201907
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	201903
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	202001
AirBridgeC	Frankfurt I	Moscow Sl	1855	0015	5	5	550.0	201905
AirBridgeC	Frankfurt I	Moscow Sl	1910	0030	3	4	560.0	201906
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	5	700.0	201904
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201904
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	5	700.0	201904

AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	5	700.0	201903
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201904
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	5	700.0	201911
AirBridgeC	Moscow Sl	Frankfurt I	0555	0730	1	5	550.0	201909
AirBridgeC	Moscow Sl	Frankfurt I	0605	0740	1	4	440.0	201905
AirBridgeC	Moscow Sl	Frankfurt I	0605	0740	1	4	440.0	201908
AirBridgeC	Moscow Sl	Frankfurt I	1220	1355	6	4	440.0	201912
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	10	1,000.0	202001
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	12	1,200.0	201902
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201908
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	202001
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	14	1,400.0	201910
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201909
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201912
British Airv	Frankfurt I	London Lu	0750	0820	34	10	539.0	201910
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201908
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201907
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	202002
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201902
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201910
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201911
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201912
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201907
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201910
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201905
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201911
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201904
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201906
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201909
Cargologic	Frankfurt I	London Sta	1535	1610	6	5	550.0	201903
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	5	700.0	201908
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	1	140.0	201902
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	5	700.0	201911
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	5	540.0	202002
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1	4	432.0	201908
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0	201905
Cathay Pac	Frankfurt I	Mumbai	1540	0420	5	5	540.0	201903
China Sout	Frankfurt I	Guangzhou	1440	0815	7	5	500.0	201912
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201906
China Sout	Frankfurt I	Guangzhou	1520	0740	5	5	500.0	201908
China Sout	Frankfurt I	Guangzhou	1520	0740	5	5	500.0	201911
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201903
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	202002
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	201904
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	5	700.0	201911
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	2	5	700.0	201904
AirBridgeC	Frankfurt I	Moscow Sl	1855	0015	5	4	440.0	201910

AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	5	700.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	5	700.0	201910
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	5	700.0	201905
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	5	700.0	201911
AirBridgeC	Frankfurt I	Oslo Garde	1420	1625	2	1	110.0	201902
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	5	700.0	201908
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	5	700.0	201905
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201904
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	5	700.0	201907
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201902
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201912
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	5	550.0	201907
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	201910
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	5	550.0	201908
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	8	800.0	201904
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201909
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	14	1,400.0	201912
British Airv	Frankfurt I	London He	2020	2100	6	5	269.5	201908
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201904
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	201904
British Airv	Frankfurt I	Nottinghar	2000	2035	7	5	269.5	201912
British Airv	London He	Frankfurt I	1700	1925	6	5	269.5	201906
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201911
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	5	269.5	202001
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	5	550.0	201908
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201906
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201906
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	5	550.0	201911
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201906
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201904
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201910
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201906
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201912
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	4	560.0	201907
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201909
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	5	540.0	201907
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0	201912
Cathay Pac	Frankfurt I	Dubai Al M	1630	0140	6	4	528.0	201903
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	5	700.0	202001
China Sout	Frankfurt I	Guangzhou	1355	0815	2 4 6	12	1,200.0	201902
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0	202002
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	201907
Emirates	Dubai Al M	Frankfurt I	0140	0530	7	4	412.0	201902
Emirates	Dubai Al M	Frankfurt I	1240	1630	7	4	412.0	201902
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	1	103.0	201903
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0	201907
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	4	412.0	201902

Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	201911
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	202002
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201912
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201904
Air China	Zhengzhou	Frankfurt I	1215	1650	3	5	500.0	202001
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201906
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	5	700.0	201909
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	5	700.0	201912
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201903
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	5	550.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	5	700.0	201905
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201911
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201905
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	202002
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0	201909
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	5	700.0	201906
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201912
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201909
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	201911
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201911
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	4	440.0	201906
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	4	440.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	201907
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	14	1,400.0	201910
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	14	1,400.0	201912
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201904
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201904
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201911
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	201908
British Airv	Frankfurt I	Nottinghar	2000	2035	7	5	269.5	201903
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	5	550.0	202001
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201912
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201903
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201908
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201907
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201911
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	5	550.0	202001
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	5	550.0	201907
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201905
Cargologic	Frankfurt I	London Sta	1535	1610	6	5	550.0	201911
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	202001
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201907
Cathay Pac	Delhi	Frankfurt I	0215	0645	4	3	324.0	201903
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	1	108.0	201903
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	5	540.0	201912

Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	5	700.0 201911
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	4	432.0 201909
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	4	560.0 201904
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0 201903
Cathay Pac	Frankfurt I	Paris Charl	1145	1305	4	4	432.0 201904
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	4	432.0 201910
China Sout	Frankfurt I	Guangzhou	1355	0815	2 4 6	12	1,200.0 201903
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	14	1,400.0 201903
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0 202001
China Sout	London Sta	Frankfurt I	0835	1055	4 6	8	800.0 201904
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0 201903
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0 201910
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0 201905
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0 202002
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	5	700.0 201908
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	5	700.0 201904
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0 201912
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0 201912
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0 202002
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	2	5	700.0 201912
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	2	4	560.0 202002
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0 201903
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	5	550.0 201908
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0 201911
AirBridgeC	Frankfurt I	Moscow Sh	1935	0055	7	3	390.0 201902
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0 201903
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	2	280.0 201902
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0 201903
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0 201906
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0 201905
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	5	700.0 201910
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0 201910
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0 201912
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	4	440.0 202001
British Airv	Frankfurt I	London He	2020	2100	6	5	269.5 201906
British Airv	Frankfurt I	London Lut	0750	0820	34	8	431.2 201906
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6 201906
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6 201909
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6 201907
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6 202001
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2 201906
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0 201904
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0 202002
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	5	550.0 201908
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0 201912
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0 201912
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0 201906

Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201911
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	202001
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201906
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201909
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	202002
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	5	700.0	202001
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	4	432.0	201906
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	5	540.0	201909
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	201905
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201910
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	5	540.0	201906
Cathay Pac	Frankfurt I	Dubai Al M	1920	0430	6	1	140.0	201902
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	5	540.0	201903
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1	5	540.0	201909
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	5	540.0	201909
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	5	540.0	201912
Cathay Pac	Mumbai	Frankfurt I	0935	1420	6	5	540.0	201903
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201909
China Sout	Guangzhou	Frankfurt I	0555	1220	1	5	500.0	201904
China Sout	Guangzhou	Frankfurt I	0555	1220	1	5	500.0	201907
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201910
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	5	700.0	201904
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	5	700.0	201906
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	2	5	700.0	201907
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201912
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	5	700.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	5	700.0	202001
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201904
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	5	700.0	201904
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	201910
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	5	700.0	201905
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201911
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	5	700.0	202001
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201908
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	5	700.0	201905
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	5	700.0	201911
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	5	700.0	202002
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	5	550.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	4	440.0	202001
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201907
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201908
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201905
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	9	900.0	201911
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	5	269.5	201907
British Airv	London He	Frankfurt I	1700	1925	6	5	269.5	201903
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201909

British Airv	London Lu	Frankfurt I	1040	1315	34	10	539.0 202001
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6 202002
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	10	450.0 201905
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6 201911
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	5	550.0 201903
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0 201906
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	5	550.0 201911
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	5	550.0 201904
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	5	550.0 201907
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	5	550.0 201910
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0 201906
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	5	550.0 201910
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0 201911
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0 202001
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0 201904
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0 201911
Cargologic	London Sta	Frankfurt I	1250	1525	3	5	550.0 202001
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0 201902
Cathay Pac	Frankfurt I	Amsterdan	1145	1305	4	4	432.0 201910
Cathay Pac	Frankfurt I	Dubai Al M	1620	0130	6	1	140.0 201903
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	5	540.0 201908
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1	4	432.0 201904
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	3	420.0 201902
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	5	540.0 201906
Cathay Pac	Mumbai	Frankfurt I	1240	1725	6	5	540.0 202002
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0 201905
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0 201911
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0 201904
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0 201905
China Sout	Guangzhou	Frankfurt I	0100	0600	7	5	500.0 201912
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0 201910
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0 201907
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0 201907
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	5	550.0 201904
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3	5	700.0 202001
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0 201905
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0 201904
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0 201911
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	5	550.0 201903
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0 201904
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0 201903
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	5	550.0 201909
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	5	700.0 201908
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	5	700.0 201907
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0 201906
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0 201905
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0 202001

AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	201907
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201911
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201905
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	5	700.0	201907
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	201910
AirBridgeC	Moscow Sl	Frankfurt I	0555	0730	1	5	550.0	201904
AirBridgeC	Moscow Sl	Frankfurt I	0825	1000	4	5	700.0	201910
AirBridgeC	Moscow Sl	Frankfurt I	1255	1430	5	5	550.0	201911
AirBridgeC	Moscow Sl	Frankfurt I	1255	1430	5	5	550.0	202001
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201906
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	12	1,200.0	202002
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	202001
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	10	1,000.0	201905
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	9	900.0	201908
British Airv	Frankfurt I	London He	2020	2100	6	5	269.5	201911
British Airv	Frankfurt I	London Lu	0750	0820	34	9	485.1	201907
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201905
British Airv	London Lu	Frankfurt I	1440	1720	7	5	269.5	201906
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201902
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201908
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201902
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201909
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201912
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	5	550.0	201912
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	202002
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	201908
Cargologic	Houston G	Frankfurt I	1245	0515	7	5	550.0	201903
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	202002
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	3	324.0	201904
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	5	700.0	201905
Cathay Pac	Frankfurt I	Amsterdan	1145	1305	4	4	432.0	201907
Cathay Pac	Frankfurt I	Amsterdan	1145	1320	4	1	108.0	201906
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	5	540.0	201908
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	5	700.0	201908
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	5	540.0	201911
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	202001
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	5	540.0	201904
China Carg	Frankfurt I	Shanghai P	1710	1120	1 4	8	800.0	201903
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201904
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201906
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201909
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201908
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201902
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201908
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0	201904
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	5	700.0	202001
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201905

AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	201908
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3	5	700.0	201907
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	5	700.0	201911
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	5	700.0	201905
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201909
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	5	550.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201910
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201903
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201909
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	5	700.0	201907
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	201906
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	202002
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201906
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	5	700.0	201909
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	5	700.0	201912
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	202002
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	5	700.0	201910
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	202001
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201906
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	4	440.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	4	440.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	560.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	201912
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201904
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	201904
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	9	900.0	201907
British Airv	Frankfurt I	London He	2020	2100	6	5	269.5	202002
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201911
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201910
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201912
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	5	550.0	201903
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201904
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201907
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201908
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	5	550.0	201905
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201912
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201903
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201906
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201908
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201905
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201907
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	201902
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	4	432.0	201905
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	201911
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201909
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	4	560.0	201909

Air China	Zhengzhou	Frankfurt I	1030	1505	5	5	500.0	202001
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201903
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201912
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	5	700.0	201907
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201905
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	202001
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	5	700.0	201911
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	5	700.0	202001
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	5	700.0	201908
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	5	550.0	202001
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201907
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201906
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	5	700.0	201904
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	5	700.0	201907
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	201911
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201909
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	202002
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	201906
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	5	700.0	201908
AirBridgeC	Moscow Sh	Frankfurt I	0400	0520	5	1	110.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	201906
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	202002
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	10	1,000.0	201905
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	5	500.0	201909
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	5	500.0	201912
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201902
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201903
British Airv	London Lu	Frankfurt I	1440	1720	7	5	269.5	201903
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201910
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	9	405.0	201911
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	202002
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201904
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	5	550.0	201912
Cargologic	London Sta	Frankfurt I	1250	1525	3	5	550.0	201910
Cathay Pac	Amsterdar	Frankfurt I	1200	1310	5	5	540.0	201903
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201912
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	4	432.0	201908
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	5	700.0	202001
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201905
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201912
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1	4	432.0	201905
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0	201908
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0	201911
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201906

Cathay Pac	Mumbai	Frankfurt I	0935	1420	6	2	216.0	201902
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	4	432.0	201905
China Sout	Frankfurt I	Guangzhou	0900	0245	7	5	500.0	201909
China Sout	Frankfurt I	Guangzhou	0900	0245	7	5	500.0	201912
China Sout	Frankfurt I	Guangzhou	1440	0815	7	5	500.0	201909
China Sout	Frankfurt I	Guangzhou	1520	0740	5	5	500.0	201905
China Sout	Frankfurt I	Guangzhou	1520	0740	5	5	500.0	202001
China Sout	Guangzhou	Frankfurt I	0555	1240	5	5	500.0	201908
China Sout	Guangzhou	Frankfurt I	0555	1240	5	5	500.0	201911
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201907
Air China	Zhengzhou	Frankfurt I	1215	1650	3	5	500.0	201905
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	5	700.0	201912
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201905
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201911
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	201902
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	202002
AirBridgeC	Frankfurt I	Krasnoyars	1920	0910	7	4	440.0	201902
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	5	550.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201909
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201912
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	201905
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201908
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	201908
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	5	700.0	201903
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201910
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	4	440.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	5	550.0	201909
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201909
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	5	550.0	201911
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	5	550.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	201906
AirBridgeC	Moscow Sh	Frankfurt I	1530	1705	7	4	560.0	201903
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	8	800.0	201906
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	8	800.0	201912
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201904
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201903
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201907
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201910
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	201906
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201909
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201912
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201903
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	9	405.0	201910
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201907
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	5	550.0	201904

Cargologic	Chicago O'	Frankfurt I	1400	0535	1	5	550.0	201907
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201909
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201911
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	5	550.0	202001
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	5	550.0	201904
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	5	550.0	201905
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201909
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201903
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201912
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	5	700.0	201905
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201907
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201909
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0	202002
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201903
Cathay Pac	Mumbai	Frankfurt I	1240	1725	6	4	432.0	202001
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201905
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201912
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	202002
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	201903
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201902
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201905
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201902
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	202001
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	5	700.0	201907
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	5	700.0	202002
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	201906
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	5	550.0	202001
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201910
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	5	550.0	201911
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0	201909
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	5	550.0	201904
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	201907
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	5	700.0	201910
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201906
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201909
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	202002
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201904
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	5	550.0	201912
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	202002
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	4	440.0	201907
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	5	550.0	201908
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	12	1,200.0	201911
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201906
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	9	900.0	201903
British Airv	Frankfurt I	London Lut	0750	0820	34	8	431.2	202002
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201910

British Airv	London He	Frankfurt I	1700	1925	6	5	269.5	201911
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201909
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201907
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201907
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201909
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	5	550.0	202001
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201909
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	5	550.0	201912
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	5	550.0	201911
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	5	550.0	201906
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	5	550.0	201905
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	202002
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201912
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201911
Cargologic	Houston G	Frankfurt I	1245	0515	4	5	550.0	202001
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201911
Cathay Pac	Delhi	Frankfurt I	0535	1005	1	4	432.0	201902
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0	201907
Cathay Pac	Dubai Al M	Frankfurt I	0300	0705	7	4	496.0	201902
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	201908
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	4	560.0	201906
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	5	540.0	201906
Cathay Pac	Frankfurt I	Milan Mal	0905	1025	7	4	528.0	201903
Cathay Pac	Frankfurt I	Milan Mal	0920	1035	1	4	432.0	201906
Cathay Pac	Frankfurt I	Milan Mal	1230	1355	1	4	432.0	201906
Cathay Pac	Frankfurt I	Mumbai	1540	0420	5	4	432.0	201902
Cathay Pac	Mumbai	Frankfurt I	1240	1725	6	5	540.0	201911
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201912
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	202002
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	4	560.0	201909
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	5	700.0	201908
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	5	700.0	201908
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	4	440.0	201904
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	5	700.0	201910
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201904
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	201908
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201904
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	201904
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	5	700.0	201910
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	201912
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	5	700.0	201912
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201907
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201910
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	5	550.0	202002
AirBridgeC	Moscow Sh	Frankfurt I	1530	1705	7	3	390.0	201902
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	9	900.0	201908

Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	9	900.0	201911
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	5	500.0	201906
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	202002
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	201903
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	5	269.5	201910
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	202001
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201904
British Airv	London Lu	Frankfurt I	1040	1315	34	10	539.0	201905
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201912
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201904
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201910
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201902
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201902
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201902
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	5	550.0	201905
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201902
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201902
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	201905
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	202002
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201910
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201904
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201907
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201902
Cargologic	Houston G	Frankfurt I	1245	0515	4	5	550.0	201905
Cargologic	London Sta	Frankfurt I	1250	1525	3	5	550.0	201907
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	5	700.0	201905
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	202002
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	5	700.0	201908
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201906
Cathay Pac	Frankfurt I	Amsterdan	1145	1305	4	3	324.0	201906
Cathay Pac	Frankfurt I	Amsterdan	1145	1305	4	4	432.0	201909
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	4	432.0	201907
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201909
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	202002
China Sout	Frankfurt I	Guangzhou	0900	0245	7	5	500.0	201903
China Sout	Frankfurt I	Guangzhou	0900	0245	7	5	500.0	201906
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	201910
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201910
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201908
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201902
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	5	700.0	201911
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	201908
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	201909
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	5	700.0	201903
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201909
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	201903
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	5	550.0	201909

AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	5	550.0	201908
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	201906
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	201909
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201903
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	201906
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	201909
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201906
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	5	700.0	201912
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201911
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201903
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201903
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201906
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201903
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	4	440.0	201906
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201912
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	202002
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	8	800.0	201909
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201909
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	202002
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201904
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201906
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201906
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201902
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201908
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	5	550.0	201907
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	5	550.0	201903
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201909
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	5	550.0	202002
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	5	550.0	202001
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201902
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201902
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201905
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	5	700.0	201908
Cathay Pac	Frankfurt I	Amsterdan	1145	1305	4	5	540.0	201908
China Sout	Frankfurt I	Guangzhou	1500	0815	1	5	500.0	201909
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201905
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	201910
China Sout	London Sta	Frankfurt I	0835	1055	4 6	10	1,000.0	201908
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	202001
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	201911
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201911

AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	202001
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	5	700.0	201904
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201911
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	5	700.0	201905
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	5	700.0	201911
AirBridgeC	Frankfurt I	Krasnoyars	0750	2040	5	1	110.0	201902
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	201905
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	4	440.0	201910
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3	5	700.0	201910
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	5	700.0	201908
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	5	550.0	201908
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	5	550.0	201911
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	201905
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201903
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	5	700.0	201907
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	5	700.0	201910
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	5	700.0	201910
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	202001
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201907
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	4	560.0	201909
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	201903
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	5	550.0	201911
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	5	550.0	202001
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	4	440.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	5	550.0	201905
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	8	800.0	201902
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201905
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201907
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	5	500.0	201903
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	9	900.0	201910
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201904
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201902
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	10	450.0	202001
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	5	269.5	201905
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201905
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	202001
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	202002
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	202002
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	202001
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	5	550.0	201908
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201910
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201903
Cargologic	Houston G	Frankfurt I	1245	0515	4	5	550.0	201908
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	4	560.0	201904
Cathay Pac	Delhi	Frankfurt I	0535	1005	1	4	432.0	201903

Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	201904
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	202001
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	202002
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	4	432.0	201904
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	4	432.0	201910
Cathay Pac	Frankfurt I	Dubai Al M	1630	0140	6	2	280.0	201902
Cathay Pac	Frankfurt I	Milan Malp	0905	1025	7	4	496.0	201902
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	201905
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	202001
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201902
Air China	Zhengzhou	Frankfurt I	1215	1650	3	5	500.0	201907
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	5	700.0	201907
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6	5	700.0	201903
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	5	700.0	201909
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	5	700.0	201912
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0	201910
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	201910
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201904
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	202001
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	5	550.0	201903
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	4	440.0	201906
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3	4	560.0	201908
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	5	550.0	201906
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	4	440.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	201906
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	202002
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	5	700.0	201910
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201903
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	4	560.0	201909
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0	201908
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0	201911
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	3	420.0	201902
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	5	700.0	201908
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	202001
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	5	700.0	201908
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	4	440.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	4	440.0	201909
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	5	550.0	201908
AirBridgeC	Moscow Sh	Frankfurt I	1515	1650	7	4	440.0	201903
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	12	1,200.0	201911
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201908
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	10	1,000.0	202001
British Airv	London Lu	Frankfurt I	1040	1315	34	9	485.1	201908
British Airv	London Lu	Frankfurt I	1440	1720	7	5	269.5	201909
British Airv	London Lu	Frankfurt I	1440	1720	7	5	269.5	201912

Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201909
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	5	550.0	201909
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	202002
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	5	550.0	202001
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201903
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201909
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	5	550.0	201903
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	202001
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	5	550.0	201903
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201907
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201909
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201904
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201906
Cathay Pac	Frankfurt I	Milan Mal	1005	1120	7	1	140.0	201903
Cathay Pac	Frankfurt I	Milan Mal	1230	1355	1	5	540.0	201907
Cathay Pac	Frankfurt I	Paris Charl	1145	1305	4	5	540.0	201905
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	4	432.0	201909
Air China	Zhengzhou	Frankfurt I	1215	1650	3	4	400.0	201911
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0	202002
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201910
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	4	470.0	201902
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	201905
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	560.0	201911
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201909
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	202002
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5	5	550.0	201903
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	4	560.0	201911
AirBridgeC	Frankfurt I	Moscow Sh	1910	0030	3	5	700.0	202001
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2	4	560.0	202001
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	4	560.0	202002
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	5	700.0	201909
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	5	700.0	201912
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	5	700.0	201911
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201911
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	4	560.0	202001
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201902
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	5	700.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	0500	0635	1	4	440.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1	4	440.0	201908
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	4	560.0	201911
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5	4	440.0	201910
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	12	1,200.0	202002
British Airv	Frankfurt I	London Lu	0750	0820	34	10	539.0	201905
British Airv	Frankfurt I	London Lu	0750	0820	34	9	485.1	201908
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	5	269.5	201905
British Airv	Frankfurt I	Nottinghar	2000	2035	7	5	269.5	201909

British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201902
British Airv	London He	Frankfurt I	1700	1925	6	4	215.6	201912
British Airv	London He	Frankfurt I	1700	1925	6	5	269.5	202002
British Airv	London Lu	Frankfurt I	1040	1315	34	8	431.2	201904
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201905
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	5	550.0	201905
Cargologic	Chicago O'	Frankfurt I	1400	0535	1	4	440.0	201910
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201907
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	5	550.0	201905
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201912
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201910
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201910
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	4	440.0	201908
Cargologic	Frankfurt I	London Sta	1535	1610	6	5	550.0	201908
Cargologic	Houston G	Frankfurt I	1245	0515	7	5	550.0	201909
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201908
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	4	560.0	201906
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	4	560.0	201907
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	4	432.0	201904
Cathay Pac	Mumbai	Frankfurt I	1240	1725	6	2	216.0	201902
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201904
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	201907
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201905
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201911
China Sout	Frankfurt I	Guangzhou	1520	0740	5	5	500.0	201903
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201903
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201909
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	202002
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201909
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201912
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	202002
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201906
AirBridgeC	Chicago O'	Frankfurt I	1635	0810	1	4	560.0	202002
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201910
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5	4	560.0	201906
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5	4	560.0	201906
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	201907
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	4	440.0	202002
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	2	4	560.0	201908
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6	4	560.0	201909
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6	4	440.0	201910
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2	5	700.0	201912
AirBridgeC	Frankfurt I	Zaragoza A	0645	0900	2	5	700.0	201912
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	5	700.0	201912
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	4	560.0	202002
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201906
AirBridgeC	Leipzig/Ha	Frankfurt I	1720	1850	5	5	700.0	202001

AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	5	700.0	201904
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	202002
AirBridgeC	Moscow D	Frankfurt I	1135	1305	3	4	560.0	201908
AirBridgeC	Moscow Sl	Frankfurt I	0555	0730	1	4	440.0	201911
AirBridgeC	Moscow Sl	Frankfurt I	0825	1000	4	5	700.0	201908
AirBridgeC	Moscow Sl	Frankfurt I	1055	1230	7	4	440.0	201902
AirBridgeC	Moscow Sl	Frankfurt I	1120	1255	5	5	550.0	201903
AirBridgeC	Moscow Sl	Frankfurt I	1120	1255	5	4	440.0	201909
AirBridgeC	Moscow Sl	Frankfurt I	1220	1355	6	4	440.0	201910
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2 4 7	13	1,300.0	201903
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	13	1,300.0	201905
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	202001
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	201902
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	201909
British Airv	Frankfurt I	London Lu	0750	0820	34	10	539.0	202001
British Airv	Frankfurt I	Nottinghar	2000	2035	7	5	269.5	201906
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201902
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201908
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	202002
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	4	215.6	201904
British Airv	Madrid Ad	Frankfurt I	1715	1945	3	5	269.5	201907
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	202002
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201909
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	201912
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5	4	440.0	202002
Cargologic	Frankfurt I	London Sta	1535	1610	6	4	440.0	201902
Cargologic	Houston G	Frankfurt I	1245	0515	7	5	550.0	201906
Cargologic	Houston G	Frankfurt I	1245	0515	7	5	550.0	201912
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	5	700.0	201903
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	5	540.0	201909
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	4	432.0	202002
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201904
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201904
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201907
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201910
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201907
Air China	Frankfurt I	Tianjin	1930	0650	4 6	8	800.0	201902
Air China	Frankfurt I	Tianjin	1930	0650	4 6	10	1,000.0	201908
Air China	Zhengzhou	Frankfurt I	1030	1505	5	5	500.0	201905
Air China	Zhengzhou	Frankfurt I	1030	1505	5	5	500.0	201908
Air China	Zhengzhou	Frankfurt I	1215	1650	3	5	500.0	201910
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	5	700.0	201910
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201906
AirBridgeC	Frankfurt I	London Sta	1925	1905	6	4	560.0	202001
AirBridgeC	Frankfurt I	Milan Malp	1440	1620	1	4	440.0	201911
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5	4	440.0	201909
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3	5	700.0	201905

AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201911
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	5	550.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	1935	0055	7	4	560.0	201903
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	5	700.0	202001
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	201902
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201905
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	201908
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	202001
AirBridgeC	Krasnoyars	Frankfurt I	1235	1255	2	4	560.0	201902
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	4	560.0	201902
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	5	700.0	202001
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6	4	560.0	201909
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	4	440.0	201911
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	5	550.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	5	550.0	201903
AirBridgeC	Moscow Sh	Frankfurt I	1220	1355	6	5	550.0	201906
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3 5	9	900.0	201907
Asiana Airl	Vienna Int	Frankfurt I	1500	1640	7	4	400.0	201902
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201905
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	202001
British Airv	Frankfurt I	Nottinghar	2000	2035	7	4	215.6	201902
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	10	450.0	201908
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	201906
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	4	440.0	202002
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	4	440.0	201906
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201909
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	5	550.0	201909
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	5	550.0	201912
Cargologic	Frankfurt I	Dubai Al M	1425	2345	6	4	440.0	201904
Cargologic	Frankfurt I	Dubai Al M	1620	0135	3	5	550.0	201907
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201903
Cathay Pac	Amsterdar	Frankfurt I	1200	1310	5	4	432.0	201902
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	4	560.0	201910
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	1	140.0	201903
Cathay Pac	Delhi	Frankfurt I	0215	0645	4	2	248.0	201902
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0	202002
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	3	324.0	201907
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7	3	324.0	201910
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	5	700.0	201905
Cathay Pac	Frankfurt I	Amsterdan	0900	1025	5	4	560.0	201912
Cathay Pac	Frankfurt I	Amsterdan	1845	2005	6	4	432.0	201905
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	5	700.0	201905
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	5	700.0	201905
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	5	700.0	201908
Cathay Pac	Mumbai	Frankfurt I	1240	1725	6	4	432.0	201912
China Carg	Shanghai P	Frankfurt I	0920	1410	3 7	8	800.0	201903
Air China	Frankfurt I	Tianjin	1930	0650	4 6	9	900.0	201906

Air China	Frankfurt I	Tianjin	1930	0650	4 6	8	800.0	201909
Air China	Zhengzhou	Frankfurt I	1030	1505	5	4	400.0	201906
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0500	2	4	560.0	201909
AirBridgeC	Frankfurt I	Abu Dhabi	1300	2215	1	4	560.0	201903
AirBridgeC	Frankfurt I	Krasnoyars	1920	0810	7	4	440.0	201903
AirBridgeC	Frankfurt I	Milan Mal	1440	1620	1	5	550.0	201907
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	5	5	550.0	201905
AirBridgeC	Frankfurt I	Milan Mal	1455	1635	2	4	530.0	201902
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201902
AirBridgeC	Frankfurt I	Milan Mal	1505	1645	3	4	560.0	201912
AirBridgeC	Frankfurt I	Moscow Sh	0445	1005	7	1	140.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1230	1750	4	4	560.0	201907
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1	4	440.0	201910
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	3	420.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	2050	0210	5	4	560.0	201909
AirBridgeC	Houston G	Frankfurt I	1610	0800	7	5	700.0	201903
AirBridgeC	Houston G	Frankfurt I	1710	1000	4	4	560.0	202002
AirBridgeC	Krasnoyars	Frankfurt I	1135	1255	2	4	560.0	202002
AirBridgeC	Los Angele	Frankfurt I	2015	1640	2	5	700.0	201907
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1	5	700.0	201904
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201909
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5	4	560.0	201912
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1	4	440.0	201910
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4	5	700.0	201905
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5	4	440.0	202002
Asiana Airl	London Sta	Frankfurt I	1610	1830	2 4 7	12	1,200.0	201902
Asiana Airl	Vienna Int	Frankfurt I	1620	1800	3 5	8	800.0	202002
British Airv	Frankfurt I	London He	2020	2100	6	4	215.6	201907
British Airv	Frankfurt I	London Lu	0750	0820	34	8	431.2	201902
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	201902
British Airv	Frankfurt I	Madrid Ad	1725	2005	3	4	215.6	201911
British Airv	London Lu	Frankfurt I	1440	1720	7	4	215.6	201911
British Airv	Madrid Ad	Frankfurt I	1620	1855	45	8	360.0	201909
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	5	550.0	201908
Cargologic	Atlanta Ha	Frankfurt I	2025	1125	5	5	550.0	201911
Cargologic	Chicago O'	Frankfurt I	1400	0535	5	5	550.0	201905
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201904
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5	4	440.0	201910
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	201911
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2	4	440.0	202001
Cargologic	Frankfurt I	Atlanta Ha	1835	2255	3	4	440.0	201904
Cargologic	Frankfurt I	Chicago O'	0815	1100	5	4	440.0	201902
Cargologic	Frankfurt I	Chicago O'	0815	1100	1	4	440.0	201903
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	5	550.0	201904
Cargologic	Houston G	Frankfurt I	1245	0515	4	5	550.0	201910
Cathay Pac	Amsterdar	Frankfurt I	1205	1315	5	4	560.0	201909
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	4	560.0	201904

Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5		4	560.0	201906
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5		4	560.0	201909
Cathay Pac	Dubai Al M	Frankfurt I	0300	0705	7		4	528.0	201903
Cathay Pac	Dubai Al M	Frankfurt I	0305	0805	7		5	540.0	201906
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1		5	540.0	201907
Cathay Pac	Frankfurt I	Milan Malp	0920	1035	1		3	324.0	201910
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1		4	432.0	201910
China Sout	Frankfurt I	Guangzhou	1440	0815	7		4	400.0	201904
AirBridgeC	Abu Dhabi	Frankfurt I	0115	0600	6		4	560.0	202001
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5		4	560.0	201902
AirBridgeC	Frankfurt I	Abu Dhabi	1500	2315	5		5	700.0	201905
AirBridgeC	Frankfurt I	Chicago O'	1835	2120	5		4	560.0	201912
AirBridgeC	Frankfurt I	London Sta	1925	1905	6		5	700.0	201906
AirBridgeC	Frankfurt I	Milan Malp	1455	1635	5		5	550.0	201911
AirBridgeC	Frankfurt I	Milan Malp	1505	1645	3		4	560.0	201906
AirBridgeC	Frankfurt I	Moscow D	2000	0135	6		4	560.0	201904
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6		4	440.0	201905
AirBridgeC	Frankfurt I	Moscow Sh	1650	2210	6		4	440.0	202001
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	5		4	560.0	201902
AirBridgeC	Frankfurt I	Moscow Sh	1855	0015	1		4	440.0	202001
AirBridgeC	Frankfurt I	Oslo Garde	1225	1430	2		4	560.0	202002
AirBridgeC	Frankfurt I	Zaragoza A	0630	0830	2		4	560.0	202001
AirBridgeC	Frankfurt I	Zaragoza A	2030	2245	1		4	560.0	201902
AirBridgeC	Houston G	Frankfurt I	1610	0800	7		4	560.0	201902
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1		4	560.0	201905
AirBridgeC	Moscow D	Frankfurt I	0810	0940	1		4	560.0	201908
AirBridgeC	Moscow D	Frankfurt I	1045	1215	5		4	560.0	201906
AirBridgeC	Moscow D	Frankfurt I	1610	1740	6		4	560.0	201907
AirBridgeC	Moscow Sh	Frankfurt I	0555	0730	1		4	440.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1		5	550.0	201912
AirBridgeC	Moscow Sh	Frankfurt I	0605	0740	1		4	440.0	202002
AirBridgeC	Moscow Sh	Frankfurt I	0825	1000	4		4	560.0	201902
AirBridgeC	Moscow Sh	Frankfurt I	1120	1255	5		4	440.0	201910
AirBridgeC	Moscow Sh	Frankfurt I	1255	1430	5		4	440.0	201909
Asiana Airl	Frankfurt I	Seoul Inch	2000	1430	3	5	8	800.0	202002
Asiana Airl	Frankfurt I	Seoul Inch	2015	1400	2	4 7	13	1,300.0	201907
British Airv	Frankfurt I	London He	2020	2100	6		5	269.5	201903
British Airv	Frankfurt I	Madrid Ad	1725	2005	3		4	215.6	201912
British Airv	London He	Frankfurt I	1700	1925	6		5	269.5	201908
British Airv	Madrid Ad	Frankfurt I	1715	1945	3		4	215.6	201903
Cargologic	Chicago O'	Frankfurt I	1400	0535	5		5	550.0	201908
Cargologic	Chicago O'	Frankfurt I	1400	0535	5		5	550.0	201911
Cargologic	Frankfurt I	Atlanta Ha	1305	1725	5		5	550.0	201903
Cargologic	Frankfurt I	Atlanta Ha	1430	1850	2		4	440.0	201905
Cargologic	Frankfurt I	Chicago O'	0815	1100	5		5	550.0	202001
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5		5	550.0	201908
Cargologic	Frankfurt I	Dubai Al M	1455	0015	5		5	550.0	201911

Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	4	440.0	201903
Cargologic	Frankfurt I	Dubai Al M	1920	0440	1	5	550.0	201909
Cargologic	Frankfurt I	London Sta	1535	1610	6	5	550.0	201906
Cargologic	Frankfurt I	London Sta	1535	1610	6	5	550.0	202002
Cargologic	Houston G	Frankfurt I	1245	0515	7	4	440.0	201908
Cargologic	Houston G	Frankfurt I	1245	0515	4	4	440.0	201904
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0	201904
Cathay Pac	Dubai Al M	Frankfurt I	0300	0700	5	4	560.0	201910
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	5	700.0	201910
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	5	540.0	201908
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201902
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	201910
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201902
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201906
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	12	1,200.0	201902
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	12	1,200.0	202002
Emirates	Maastricht	Frankfurt I	1040	1155	6	5	515.0	202002
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	5	519.5	201905
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201907
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	5	257.0	201910
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	5	700.0	201908
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	5	700.0	201911
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	4	415.6	201906
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	4	560.0	201907
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	9	935.1	202001
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201909
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	5	500.0	201903
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201902
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7	4	400.0	202001
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	201904
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	202001
Lufthansa	Almaty	Frankfurt I	0950	1320	7	4	340.0	201904
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	5	425.0	201907
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	5	425.0	201904
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	12	1,020.0	201909
Lufthansa	Chicago O'	Frankfurt I	2215	1320	6	1	85.0	201903
Lufthansa	Chicago O'	Frankfurt I	2230	1335	1	1	103.9	201902
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	4	415.6	201904
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	4	415.6	201908
Lufthansa	Dallas Dall	Frankfurt I	0310	1930	7	1	85.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	4	415.6	201909
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	2 6	1	103.9	201906
Lufthansa	Dallas Dall	Frankfurt I	1410	0530	6	2	170.0	201903
Lufthansa	Dallas Dall	Frankfurt I	1410	0630	6	1	85.0	201903
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	4	340.0	201907
Lufthansa	Frankfurt I	Ashgabat	0510	1430	6	3	255.0	201902
Lufthansa	Frankfurt I	Atlanta Ha	1620	2015	2	1	103.9	201902

Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	10	1,039.0 201910
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	4	340.0 201904
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	5	425.0 201907
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	3	255.0 201908
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	4	340.0 201905
Lufthansa	Frankfurt I	Chicago O'	1935	2220	5	1	85.0 201902
Lufthansa	Frankfurt I	Dakar Blais	2115	0220	1	4	340.0 201902
Lufthansa	Frankfurt I	Dammam	1350	2125	1	1	85.0 201902
Lufthansa	Frankfurt I	Dammam	1425	2110	1	4	340.0 201907
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	4	340.0 201908
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	4	340.0 201908
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	3	311.7 201904
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	3	311.7 201910
Lufthansa	Frankfurt I	Mumbai	1550	0420	34	8	680.0 201903
Lufthansa	Frankfurt I	New York J	2120	2355	3	5	425.0 201907
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	7	595.0 201909
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	8	680.0 201910
Lufthansa	Frankfurt I	Riyadh Kin	0840	1610	7	4	340.0 201903
Lufthansa	Frankfurt I	Seattle-Tac	0845	1010	5	5	425.0 201905
Lufthansa	Frankfurt I	Shanghai P	0720	0105	1 3	6	623.4 201902
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	8	831.2 201906
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	23	2,389.7 201905
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2100	2	1	103.9 201902
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0 201911
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0 202001
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0 202001
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0 201911
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0 201911
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0 201911
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0 201902
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0 201912
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	4	412.0 201902
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	4	412.0 201909
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0 201912
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0 201910
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0 201909
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0 201912
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6 201909
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0 201906
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0 202002
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0 201909
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6 201910
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0 201905
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0 201912
Korean Air	Moscow Sh	Frankfurt I	0520	0635	1	4	415.6 202001
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	4	415.6 201910
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	5	700.0 201903

LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	5	500.0	201908
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7	5	500.0	201906
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	201910
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	5	500.0	201907
Lufthansa	Buenos Air	Frankfurt I	0205	1950	6	4	415.6	201902
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	4	340.0	201906
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	4	340.0	201905
Lufthansa	Chicago O'	Frankfurt I	1410	0515	5	1	85.0	201902
Lufthansa	Dakar Blais	Frankfurt I	0835	1635	6	1	85.0	201906
Lufthansa	Dallas Dall	Frankfurt I	0335	1945	1	4	340.0	201902
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	5	425.0	201908
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	4	415.6	201908
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	5	425.0	201904
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	5	425.0	201907
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	4	340.0	201910
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201906
Lufthansa	Frankfurt I	Beijing Cap	1200	0435	2	2	207.8	201903
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	4	340.0	201907
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	4	340.0	201908
Lufthansa	Frankfurt I	Chicago O'	0855	1110	3	3	255.0	201902
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	4	340.0	201906
Lufthansa	Frankfurt I	Chicago O'	2020	0005	34	6	623.4	201903
Lufthansa	Frankfurt I	Chicago O'	2020	2305	34	2	170.0	201902
Lufthansa	Frankfurt I	Chicago O'	2040	0025	5	3	255.0	201903
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	5	519.5	201906
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	4	340.0	201907
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	4	340.0	201908
Lufthansa	Frankfurt I	Johannesb	0555	1640	2 4	4	340.0	201905
Lufthansa	Frankfurt I	Kuwait	1550	2310	4	4	340.0	201903
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	4	340.0	201904
Cargologic	London Sta	Frankfurt I	1250	1525	3	4	440.0	201902
Cargologic	London Sta	Frankfurt I	1250	1525	3	5	550.0	201905
Cathay Pac	Delhi	Frankfurt I	0215	0640	4	5	700.0	201910
Cathay Pac	Delhi	Frankfurt I	0230	0740	1	3	324.0	201910
Cathay Pac	Frankfurt I	Amsterdar	0900	1025	5	5	700.0	201908
Cathay Pac	Frankfurt I	Amsterdar	0900	1025	5	5	700.0	202001
Cathay Pac	Frankfurt I	Dubai Al M	1745	0205	5	4	560.0	201910
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201904
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201911
Cathay Pac	Mumbai	Frankfurt I	1130	1645	6	4	432.0	201907
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201906
China Sout	Frankfurt I	Shanghai P	1520	0650	1 4 6	12	1,200.0	201902
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201906
China Sout	Guangzhou	Frankfurt I	0555	1240	5	5	500.0	201903
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201906
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	1	103.0	201903
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201906

Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201907
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	201907
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0	202001
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	5	515.0	202001
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201906
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201909
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201909
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	5	519.5	202002
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	201902
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	201909
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	5	257.0	202001
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	5	257.0	201906
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	5	257.0	202001
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	201911
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	4	415.6	202002
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	4	560.0	202001
Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	9	935.1	201904
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	5	700.0	202001
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	5	500.0	201906
Lufthansa	Almaty	Frankfurt I	0950	1320	1 4 6	12	1,020.0	201907
Lufthansa	Atlanta Ha	Frankfurt I	1720	0740	3	2	207.8	201902
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6	4	415.6	201905
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	13	1,350.7	201904
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	10	1,039.0	201910
Lufthansa	Beijing Cap	Frankfurt I	0655	1025	3	1	103.9	201902
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	4	415.6	201904
Lufthansa	Buenos Air	Frankfurt I	2115	1540	6	2	207.8	201910
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	4	340.0	201905
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	3	255.0	201908
Lufthansa	Dakar Blais	Frankfurt I	0240	0940	4	3	255.0	201903
Lufthansa	Dakar Blais	Frankfurt I	1315	2115	3	1	85.0	201904
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	3	292.8	201910
Lufthansa	Dallas Dall	Frankfurt I	0225	1845	3	4	340.0	201902
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	4	415.6	201909
Lufthansa	Frankfurt I	Atlanta Ha	1055	1550	3	3	311.7	201903
Lufthansa	Frankfurt I	Atlanta Ha	1345	1740	7	3	255.0	201902
Lufthansa	Frankfurt I	Beijing Cap	0905	0140	5	2	207.8	201902
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	5	425.0	201906
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	11	935.0	201906
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	12	1,020.0	201909
Lufthansa	Frankfurt I	Tokyo Nari	2110	1655	2	4	415.6	201903
Lufthansa	Frankfurt I	Tokyo Nari	2115	1655	7	4	415.6	201902
Lufthansa	Guadalajar	Frankfurt I	0100	2020	7	1	103.9	201904
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	4	415.6	201905
Lufthansa	Houston G	Frankfurt I	1955	1245	2	4	340.0	201910
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	9	765.0	201904
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	5	425.0	201905

Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7		12	1,020.0	201908
Lufthansa	Los Angele	Frankfurt I	0150	2050	1		3	255.0	201903
Lufthansa	Los Angele	Frankfurt I	1730	1320	5		4	340.0	201910
Lufthansa	Los Angele	Frankfurt I	2050	1700	6		1	85.0	201903
Lufthansa	Mumbai	Frankfurt I	0735	1235	1		5	425.0	201904
Lufthansa	Mumbai	Frankfurt I	0735	1235	1		3	255.0	201910
Lufthansa	New York J	Frankfurt I	0005	1330	1		1	85.0	201902
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7		5	425.0	201906
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6		4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4		3	255.0	201906
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3		4	340.0	201908
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3		1	103.9	201910
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2	7	9	935.1	201907
Lufthansa	Shanghai P	Frankfurt I	0935	1435	2	7	5	519.5	201902
Qatar Airw	Doha	Frankfurt I	0720	1240	1		4	415.6	201902
Qatar Airw	Doha	Frankfurt I	0720	1240	1		4	415.6	202002
Qatar Airw	Doha	Frankfurt I	1225	1745	2		4	415.6	202002
Qatar Airw	Doha	Frankfurt I	1310	1830	6		4	415.6	201910
Qatar Airw	Doha	Frankfurt I	1355	1915	7		5	519.5	201906
Qatar Airw	Frankfurt I	Doha	1735	0025	4		5	519.5	201905
Qatar Airw	Frankfurt I	Doha	1735	0025	4		5	519.5	201908
Qatar Airw	Frankfurt I	Doha	1945	0235	2		4	415.6	201909
Qatar Airw	Frankfurt I	Doha	2020	0320	3		4	260.0	201903
Qatar Airw	Frankfurt I	Doha	2020	0320	3		4	260.0	201906
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3		4	440.0	201902
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3		4	440.0	202002
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1		4	400.0	201905
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5		5	550.0	201908
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5		5	550.0	202001
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4		4	260.0	201907
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5		4	260.0	201902
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4		4	260.0	201907
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5		12	481.2	201902
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5		14	561.4	201905
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7		4	260.0	201902
Emirates	Dubai Al M	Frankfurt I	1055	1445	4		4	412.0	201912
Emirates	Dubai Al M	Frankfurt I	1055	1445	4		4	412.0	202002
Emirates	Dubai Al M	Frankfurt I	1240	1630	4		4	412.0	201904
Emirates	Dubai Al M	Frankfurt I	1240	1630	4		5	515.0	201910
Emirates	Dubai Al M	Frankfurt I	1320	1710	5		4	412.0	201910
Emirates	Frankfurt I	Dubai Al M	0830	1735	7		4	412.0	201902
Emirates	Frankfurt I	Dubai Al M	0930	1735	7		4	412.0	201905
Emirates	Frankfurt I	Dubai Al M	1940	0445	4		4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1940	0445	4		4	412.0	201907
Emirates	Frankfurt I	Mexico Cit	1810	2325	4		4	412.0	201912
Emirates	Frankfurt I	Mexico Cit	1810	2325	4		4	412.0	202002
Emirates	Frankfurt I	Mexico Cit	2125	0140	7		4	412.0	201911

Emirates	Maastricht	Frankfurt I	0815	0930	3	5	515.0	202001
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	4	205.6	201904
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	5	257.0	201903
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201911
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	201905
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201904
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201907
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	9	935.1	201912
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	202002
Lufthansa	Atlanta Ha	Frankfurt I	0200	1630	67	5	519.5	201902
Lufthansa	Atlanta Ha	Frankfurt I	0255	1640	1	3	255.0	201903
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	5	519.5	201905
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	14	1,454.6	201907
Lufthansa	Buenos Air	Frankfurt I	2115	1540	6	3	311.7	201904
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	5	425.0	201907
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	14	1,190.0	201907
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	4	415.6	201910
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	5	519.5	201907
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	5	519.5	201907
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	4	415.6	201906
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	4	415.6	201909
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	5	425.0	201906
Lufthansa	Frankfurt I	Atlanta Ha	1830	2225	4	3	255.0	201902
Lufthansa	Frankfurt I	Beijing Cap	1030	0305	4 7	1	103.9	201902
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	4	340.0	201906
Lufthansa	Frankfurt I	Cairo Inter	2110	0155	7	4	340.0	201902
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	9	935.1	201906
Lufthansa	Frankfurt I	Chengdu	1045	0305	1 6	5	519.5	201902
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	5	425.0	201905
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	4	415.6	201908
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	4	340.0	201909
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	4	340.0	201904
Lufthansa	Frankfurt I	Los Angele	1450	1755	6	2	170.0	201903
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	5	519.5	201908
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	3	255.0	201910
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	4	340.0	201905
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	3	311.7	201910
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	4	415.6	201904
Lufthansa	Frankfurt I	Sao Paulo '	2210	0725	6	2	207.8	201902
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	9	935.1	201905
Lufthansa	Frankfurt I	Tokyo Nari	2115	1655	4 6	9	935.1	201903
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	5	425.0	201904
Cathay Pac	Frankfurt I	Dubai Al M	1925	0445	6	4	432.0	201902
Cathay Pac	Frankfurt I	Milan Malp	1230	1355	1	4	432.0	201902
Cathay Pac	Frankfurt I	Paris Charl	0840	1010	4	4	560.0	201912
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201908
China Sout	Guangzhou	Frankfurt I	0100	0600	7	5	500.0	201903

China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201905
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201908
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	202001
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0	201911
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	201906
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	202001
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	201905
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	201908
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201904
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	202002
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	202002
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	5	515.0	201905
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	202002
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0	201910
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	4	412.0	201905
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	202002
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0	201903
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0	202002
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	202002
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	201910
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	5	257.0	201903
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0	201909
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	5	257.0	201911
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201903
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201909
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201912
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2	201911
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	9	935.1	202001
Korean Air	Moscow Sh	Frankfurt I	0520	0635	1	4	415.6	201905
Korean Air	Moscow Sh	Frankfurt I	0520	0635	1	4	415.6	201908
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	4	415.6	201907
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	9	935.1	201912
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201903
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201907
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201910
LATAM Cai	Frankfurt I	Sao Paulo	1940	0335	3	4	400.0	201904
Lufthansa	Almaty	Frankfurt I	0950	1220	7	1	85.0	201910
Lufthansa	Almaty	Frankfurt I	0950	1320	1 6	3	255.0	201908
Lufthansa	Almaty	Frankfurt I	0950	1320	1 4 6	13	1,105.0	201906
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	4	415.6	201904
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	4	415.6	201910
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	5	425.0	201906
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6	4	415.6	201907
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	14	1,190.0	201905
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	13	1,105.0	201908
Lufthansa	Chicago O'	Frankfurt I	1420	0525	1	1	85.0	201902
Lufthansa	Chicago O'	Frankfurt I	2215	1220	6	2	207.8	201903

Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	4	415.6	201905
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	5	519.5	201908
Lufthansa	Dakar Blais	Frankfurt I	2315	0715	1	1	85.0	201904
Lufthansa	Frankfurt I	Almaty	0635	1805	7	3	255.0	201902
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	3	255.0	201909
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	1	85.0	201903
Lufthansa	Frankfurt I	Chicago O'	1135	1420	2	4	340.0	201902
Lufthansa	Frankfurt I	Chicago O'	1135	1520	2	3	255.0	201903
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	5	425.0	201908
Lufthansa	Frankfurt I	Chicago O'	1420	1735	2	3	255.0	201903
Lufthansa	Frankfurt I	Chicago O'	1710	1955	1	1	103.9	201902
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	4	415.6	201904
Lufthansa	Frankfurt I	Dakar Blais	0930	1340	2	1	85.0	201904
Lufthansa	Frankfurt I	Dakar Blais	0930	1340	2	1	85.0	201910
Lufthansa	Frankfurt I	Dakar Blais	2205	0215	7	1	85.0	201910
Lufthansa	Frankfurt I	Dallas Dall	1155	1600	3	4	340.0	201902
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	4	340.0	201907
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	5	425.0	201907
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	4	340.0	201909
Lufthansa	Frankfurt I	Mexico Cit	1525	2120	3	1	103.9	201905
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	4	340.0	201904
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	4	340.0	201907
Lufthansa	Frankfurt I	New York J	1950	2225	3	3	255.0	201902
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	4	340.0	201908
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	2	207.8	201910
Lufthansa	Frankfurt I	Sao Paulo '	2210	0625	6	2	207.8	201902
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	4	340.0	201906
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	9	935.1	201906
Lufthansa	Frankfurt I	Shanghai P	1335	0720	2345 7	21	2,181.9	201903
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	8	831.2	201906
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	18	1,870.2	201907
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	5	425.0	201907
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	4	340.0	201910
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	6	623.4	201904
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	8	831.2	201907
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	3	255.0	201907
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201902
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	4	340.0	201909
Lufthansa	Mumbai	Frankfurt I	0735	1235	1	4	340.0	201908
Lufthansa	New York J	Frankfurt I	0110	1440	5	5	425.0	201905
Lufthansa	New York J	Frankfurt I	0130	1455	6	4	340.0	201907
Lufthansa	New York J	Frankfurt I	0130	1500	3	5	425.0	201907
Lufthansa	New York J	Frankfurt I	0305	1635	4	4	340.0	201906
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	5	425.0	201908
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	4	340.0	201907
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	5	519.5	201906
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	11	1,142.9	201910

Lufthansa	Shanghai P	Frankfurt I	0530	1030	5 7	9	935.1	201903
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	23	2,389.7	201905
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	202001
Qatar Airw	Doha	Frankfurt I	1310	1830	5	5	519.5	202001
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201902
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201908
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201904
Qatar Airw	Frankfurt I	Doha	2020	0320	3	5	325.0	201907
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201907
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	5	500.0	201905
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201910
China Sout	London Sta	Frankfurt I	0835	1055	4 6	8	800.0	201902
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	201905
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	201912
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	201907
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	5	515.0	201909
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	5	515.0	201911
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	5	515.0	201910
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	5	515.0	201911
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	5	515.0	202001
Emirates	Frankfurt I	Mexico Cit	2025	0140	7	4	412.0	201902
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	5	515.0	201912
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0	202002
Emirates	Maastricht	Frankfurt I	0815	0930	3	5	515.0	201910
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201904
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	5	519.5	201908
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	202001
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201903
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	5	519.5	201911
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201909
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	201902
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	201912
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201912
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	201906
Korean Air	Frankfurt I	Seoul Inch	1725	1055	2 5 7	5	519.5	201902
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	5	700.0	201903
Korean Air	Moscow Sh	Frankfurt I	0520	0635	1	4	415.6	201910
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23 7	2	207.8	201902
LATAM Cai	Frankfurt I	Sao Paulo	1920	0325	7	4	400.0	201910
LATAM Cai	Frankfurt I	Sao Paulo	1920	0325	6	5	500.0	202002
Lufthansa	Almaty	Frankfurt I	0950	1320	7	5	425.0	201909
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6	5	519.5	201908
Lufthansa	Beijing Cap	Frankfurt I	0525	0855	1 5	5	519.5	201903
Lufthansa	Beijing Cap	Frankfurt I	0525	0855	1 3 5	5	519.5	201903
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	5	519.5	201908
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	4	340.0	201906

Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	5	425.0	201909
Lufthansa	Dakar Blais	Frankfurt I	0630	1430	1	1	85.0	201909
Lufthansa	Dallas Dall	Frankfurt I	0325	1845	3	3	255.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	3	311.7	201910
Lufthansa	Dallas Dall	Frankfurt I	1310	0530	6	4	340.0	201902
Lufthansa	Frankfurt I	Almaty	0730	1830	5 7	1	85.0	201909
Lufthansa	Frankfurt I	Atlanta Ha	1520	1905	6	1	85.0	201910
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	4	340.0	201908
Lufthansa	Frankfurt I	Atlanta Ha	1930	0025	7	3	255.0	201903
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	3	255.0	201909
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	4	340.0	201904
Lufthansa	Frankfurt I	Chicago O'	1350	1605	6	4	340.0	201902
Lufthansa	Frankfurt I	Chicago O'	1540	1855	4	3	255.0	201903
Lufthansa	Frankfurt I	Chicago O'	2030	2315	1	1	85.0	201903
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	4	415.6	201907
Lufthansa	Frankfurt I	Dakar Blais	0445	0855	6	1	85.0	201906
Lufthansa	Frankfurt I	Dallas Dall	1530	2035	5	3	255.0	201903
Lufthansa	Frankfurt I	Dammam	1425	2110	1	4	340.0	201906
Lufthansa	Frankfurt I	Dammam	1425	2110	1	5	425.0	201909
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201910
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	201908
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201902
China Sout	Guangzhou	Frankfurt I	0555	1220	1	5	500.0	201912
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	202002
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201912
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0	201902
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	201910
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201904
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	5	515.0	201906
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	5	515.0	201908
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	5	515.0	201903
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	5	515.0	201905
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	5	515.0	201905
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	5	515.0	201908
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	5	515.0	201908
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	5	515.0	202001
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201911
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201910
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	10	450.0	201905
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	5	257.0	201907
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2	201908
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	4	415.6	201909
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	8	831.2	201911
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201906
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	5	500.0	201909
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201912

LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3		4	400.0	202002
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7		4	400.0	201902
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7		4	400.0	201905
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7		4	400.0	201908
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7		4	400.0	201911
Lufthansa	Almaty	Frankfurt I	0245	0630	7		1	85.0	201903
Lufthansa	Almaty	Frankfurt I	0950	1320	1	4 6	12	1,020.0	201905
Lufthansa	Almaty	Frankfurt I	0950	1320	1	4 6	9	765.0	201908
Lufthansa	Atlanta Ha	Frankfurt I	0055	1540	5		1	85.0	201903
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3		4	415.6	201909
Lufthansa	Atlanta Ha	Frankfurt I	1720	0745	3		2	207.8	201902
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6		3	255.0	201909
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6		5	519.5	201906
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6		4	415.6	201909
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6		4	340.0	201905
Lufthansa	Frankfurt I	Chengdu	0935	0110	1	6	7	727.3	201910
Lufthansa	Frankfurt I	Chicago O'	1830	2045	6		1	85.0	201902
Lufthansa	Frankfurt I	Chicago O'	2040	2325	5		1	85.0	201903
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7		4	415.6	201905
Lufthansa	Frankfurt I	Dakar Blais	0450	0900	7		1	85.0	201909
Lufthansa	Frankfurt I	Dakar Blais	0930	1340	2		1	85.0	201906
Lufthansa	Frankfurt I	Los Angele	1230	1530	3		5	425.0	201905
Lufthansa	Frankfurt I	Los Angele	1520	1820	6		4	340.0	201910
Lufthansa	Frankfurt I	Mexico Cit	1325	1920	6		1	103.9	201903
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4		3	311.7	201904
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1		4	415.6	201905
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1		4	415.6	201908
Lufthansa	Frankfurt I	Mumbai	1735	0605	1		4	340.0	201902
China Sout	London Sta	Frankfurt I	0835	1035	2		4	400.0	201905
China Sout	London Sta	Frankfurt I	0835	1035	2		4	400.0	201908
China Sout	London Sta	Frankfurt I	0835	1055	4	6	9	900.0	202002
China Sout	Shanghai P	Frankfurt I	0650	1220	1	4 6	14	1,400.0	201908
Emirates	Dubai Al M	Frankfurt I	1240	1630	4		5	515.0	201905
Emirates	Frankfurt I	Dubai Al M	0930	1735	7		1	103.0	201903
Emirates	Frankfurt I	Dubai Al M	1355	2300	6		4	412.0	201912
Emirates	Frankfurt I	Dubai Al M	1500	0005	3		4	412.0	201903
Emirates	Frankfurt I	Dubai Al M	1500	0005	3		4	412.0	201912
Emirates	Frankfurt I	Dubai Al M	1500	0005	3		4	412.0	202002
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4		5	519.5	202001
Etihad Airv	Frankfurt I	Barbados	1020	1330	6		4	415.6	201904
Iberia	Frankfurt I	Madrid Ad	1715	1945	3		4	205.6	201906
Iberia	Frankfurt I	Madrid Ad	1715	1945	3		4	205.6	201909
Iberia	Frankfurt I	Madrid Ad	1715	1945	3		4	205.6	201912
Iberia	Frankfurt I	Madrid Ad	1715	1945	3		4	205.6	202002
Iberia	Madrid Ad	Frankfurt I	1620	1955	45		9	405.0	201903
Iberia	Madrid Ad	Frankfurt I	1725	2005	3		4	205.6	201906
Korean Air	Frankfurt I	Seoul Inch	0820	0150	1		1	103.9	201902

Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	201903
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	3	420.0	201902
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	9	935.1	201904
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	4	415.6	201911
LATAM Ca	Amsterdar	Frankfurt I	1630	1840	3	5	500.0	201905
LATAM Ca	Frankfurt I	Sao Paulo	1920	0325	7	4	400.0	202002
Lufthansa	Almaty	Frankfurt I	0950	1320	1 4 6	12	1,020.0	201909
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6	4	415.6	201904
Lufthansa	Beijing Cap	Frankfurt I	0250	0710	6	3	311.7	201910
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	13	1,350.7	201909
Lufthansa	Chicago O'	Frankfurt I	0200	1705	6	1	85.0	201903
Lufthansa	Dakar Blais	Frankfurt I	1040	1840	3	1	85.0	201910
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	3	311.7	201905
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	5	519.5	201908
Lufthansa	Dallas Dall	Frankfurt I	0630	2150	4	3	255.0	201903
Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	4	340.0	201910
Lufthansa	Frankfurt I	Atlanta Ha	1520	1905	6	1	85.0	201909
Lufthansa	Frankfurt I	Beijing Cap	1030	0305	2 4	2	207.8	201902
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	4	340.0	201904
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	5	425.0	201904
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	5	425.0	201907
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	4	340.0	201910
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	5	425.0	201905
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	4	340.0	201908
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	9	935.1	201904
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	9	935.1	201907
Lufthansa	Frankfurt I	Chicago O'	1555	1940	6	3	292.8	201903
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	15	1,275.0	201907
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	1	103.9	201903
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	4	415.6	201909
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	4	340.0	201904
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	2	170.0	201905
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	4	340.0	201906
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	4	415.6	201909
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	3	311.7	201904
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	5	519.5	201905
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201907
China Sout	London Sta	Frankfurt I	0835	1035	2	5	500.0	201904
China Sout	London Sta	Frankfurt I	0835	1035	2	5	500.0	201907
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	201905
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	14	1,400.0	201912
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	201904
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201911
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201908
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201911
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	201906
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	201909

Emirates	Frankfurt I	Dubai Al M	0930	1735	7	5	515.0	201912
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	5	515.0	201907
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	5	515.0	201910
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	5	515.0	201906
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	202002
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201905
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	5	519.5	201910
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	5	519.5	201908
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201912
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	202002
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	5	519.5	201912
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	5	519.5	201907
Korean Air	Moscow Sl	Frankfurt I	1245	1455	2 5 7	5	519.5	201902
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	5	700.0	202002
Korean Air	Moscow Sl	Frankfurt I	1345	1500	3 7	2	207.8	201902
Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	8	831.2	201909
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201911
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201907
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	5	500.0	201906
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	201912
Lufthansa	Almaty	Frankfurt I	1840	2215	7	1	85.0	201903
Lufthansa	Atlanta Ha	Frankfurt I	0205	1630	67	2	207.8	201902
Lufthansa	Atlanta Ha	Frankfurt I	0400	1825	6	1	103.9	201902
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	4	415.6	201908
Lufthansa	Atlanta Ha	Frankfurt I	1820	0740	3	3	311.7	201903
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	4	340.0	201907
Lufthansa	Beijing Cap	Frankfurt I	0400	0730	6	5	519.5	201903
Lufthansa	Buenos Air	Frankfurt I	0205	1950	6	5	519.5	201903
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	13	1,105.0	201904
Lufthansa	Chicago O'	Frankfurt I	1630	0750	7	1	85.0	201906
Lufthansa	Dakar Blais	Frankfurt I	0110	0810	5	1	85.0	201903
Lufthansa	Dakar Blais	Frankfurt I	1120	1920	4	1	85.0	201905
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	4	415.6	201904
Lufthansa	Dallas Dall	Frankfurt I	0700	2220	5	3	255.0	201903
Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	4	340.0	201909
Lufthansa	Frankfurt I	Atlanta Ha	0835	1230	5	1	103.9	201902
Lufthansa	Frankfurt I	Atlanta Ha	1920	2325	56	2	207.8	201902
Lufthansa	Frankfurt I	Beijing Cap	0905	0140	5	5	519.5	201903
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	4	415.6	201906
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	3	311.7	201910
Lufthansa	Frankfurt I	Beijing Cap	1030	0305	4 7	4	415.6	201903
Lufthansa	Frankfurt I	Bengaluru	0505	1830	2	3	255.0	201902
Lufthansa	Frankfurt I	Cairo Inter	1910	0005	5	5	425.0	201903
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	9	935.1	201908
China Sout	Guangzhou	Frankfurt I	0555	1240	5	5	500.0	201905
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	201904
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201903

Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	201911
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201910
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	5	515.0	201911
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	5	515.0	202001
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	201902
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201909
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0	201904
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201902
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201909
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	5	519.5	201910
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201910
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201902
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	4	205.6	201902
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	5	257.0	201905
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201904
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	10	450.0	202001
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201904
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	9	405.0	201910
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201904
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	5	519.5	201904
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	9	935.1	201905
Korean Air	Moscow Sl	Frankfurt I	0415	0620	1	1	103.9	201902
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	1	103.9	201902
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	5	519.5	201909
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	5	519.5	201903
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	4	560.0	201910
Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	8	831.2	201908
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201912
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	202002
Lufthansa	Almaty	Frankfurt I	0245	0530	4	2	170.0	201902
Lufthansa	Almaty	Frankfurt I	0950	1320	7	4	340.0	201907
Lufthansa	Atlanta Ha	Frankfurt I	0200	1630	67	3	311.7	201903
Lufthansa	Atlanta Ha	Frankfurt I	1550	0615	1	1	103.9	201902
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	4	415.6	201906
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	14	1,454.6	201905
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	13	1,350.7	201908
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	4	340.0	201904
Lufthansa	Cairo Inter	Frankfurt I	0600	0920	1 3 6	12	1,020.0	201902
Lufthansa	Chicago O'	Frankfurt I	0135	1640	4	1	85.0	201902
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	11	935.0	201906
Lufthansa	Chicago O'	Frankfurt I	0235	1640	45	6	623.4	201903
Lufthansa	Chicago O'	Frankfurt I	0710	2230	5	1	85.0	201906
Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	4	340.0	201904
Lufthansa	Frankfurt I	Almaty	0715	1845	3	4	340.0	201903
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	4	340.0	201904
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	5	519.5	201905
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	4	340.0	201907

Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	5	519.5	201905
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	5	519.5	201908
Lufthansa	Frankfurt I	Beijing Cap	1030	0305	2 4 7	6	623.4	201902
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	4	340.0	201909
Lufthansa	Frankfurt I	Chengdu	0850	0110	6	1	103.9	201903
Cathay Pac	Frankfurt I	Milan Mal	1230	1355	1	4	432.0	202001
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201903
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201902
China Sout	Guangzhou	Frankfurt I	0100	0600	7	5	500.0	201906
China Sout	London Sta	Frankfurt I	0835	1055	4 6	8	800.0	201909
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201905
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201908
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	202001
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	202001
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	5	515.0	201909
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	5	515.0	201912
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	201912
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	201906
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201904
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	5	515.0	201910
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	1	103.0	201903
Emirates	Maastricht	Frankfurt I	1040	1155	6	5	515.0	201906
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201911
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201904
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	5	519.5	201911
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201909
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201912
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	4	205.6	201903
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201905
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	201906
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	5	700.0	202002
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	202002
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23 7	2	207.8	201902
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	5	700.0	201906
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	9	935.1	201905
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	8	831.2	202002
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	5	700.0	201910
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	5	500.0	201911
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	202001
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201908
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201911
LATAM Cai	Frankfurt I	Sao Paulo	1920	0325	7	5	500.0	201909
LATAM Cai	Frankfurt I	Sao Paulo	1920	0325	6	4	400.0	201907
LATAM Cai	Frankfurt I	Sao Paulo	1940	0335	3	5	500.0	201910
Lufthansa	Almaty	Frankfurt I	0310	0555	3	4	340.0	201903
Lufthansa	Atlanta Ha	Frankfurt I	1645	0730	3	5	519.5	201907
Lufthansa	Atlanta Ha	Frankfurt I	2140	1225	6	1	85.0	201909

Lufthansa	Beijing Cap	Frankfurt I	0525	0855	1 3 5	7	727.3	201902
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	4	415.6	201905
Lufthansa	Chicago O'	Frankfurt I	1635	0755	4	1	85.0	201906
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	5	519.5	201909
Lufthansa	Dallas Dall	Frankfurt I	0435	1945	1	3	255.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0530	2150	4	1	85.0	201903
Lufthansa	Frankfurt I	Almaty	0715	1845	3	4	340.0	201902
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	12	1,020.0	201909
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	5	425.0	201906
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	4	415.6	201907
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	5	425.0	201905
Lufthansa	Frankfurt I	Chengdu	1045	0305	1	1	103.9	201902
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	14	1,190.0	201904
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	4	415.6	201904
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201908
China Sout	Frankfurt I	Guangzhou	1440	0815	7	5	500.0	201903
China Sout	Frankfurt I	Guangzhou	1500	0815	1	5	500.0	201912
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	202002
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	14	1,400.0	201912
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	201904
China Sout	London Sta	Frankfurt I	0835	1035	2	5	500.0	201910
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	202002
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	5	515.0	201905
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	5	515.0	201908
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	5	515.0	201903
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	5	515.0	201906
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	5	515.0	201908
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	4	412.0	202001
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201904
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201903
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	5	515.0	201909
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201910
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201912
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	5	257.0	201907
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	5	257.0	201910
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201905
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	5	257.0	202002
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	5	257.0	202002
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	10	450.0	201905
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201902
Iberia	Madrid Ad	Frankfurt I	1725	2005	3	4	205.6	201909
Korean Air	Frankfurt I	Seoul Inch	1725	1055	6	2	280.0	201902
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201903
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201906
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	10	1,039.0	201910
Korean Air	Moscow Sh	Frankfurt I	1245	1455	6	2	280.0	201902
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	4	560.0	201912

Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	8	831.2	201903
Korean Air	Vienna Int	Frankfurt I	0800	0930	2	2	207.8	201902
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201904
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201904
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7	5	500.0	201903
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	5	500.0	202001
Lufthansa	Almaty	Frankfurt I	0245	0530	6	5	425.0	201903
Lufthansa	Beijing Cap	Frankfurt I	0645	1015	5	1	103.9	201903
Lufthansa	Buenos Air	Frankfurt I	2115	1540	6	4	415.6	201906
Lufthansa	Dakar Blais	Frankfurt I	0130	0830	5	1	85.0	201902
Lufthansa	Dakar Blais	Frankfurt I	0240	1040	6	1	85.0	201906
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	4	396.7	201906
Lufthansa	Dallas Dall	Frankfurt I	0335	1945	1	1	85.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	4	415.6	201908
Lufthansa	Frankfurt I	Almaty	0525	1655	5	5	425.0	201903
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	12	1,020.0	201907
Lufthansa	Frankfurt I	Ashgabat	0445	1405	6	1	85.0	201903
Lufthansa	Frankfurt I	Atlanta Ha	1930	2325	7	1	85.0	201903
Lufthansa	Frankfurt I	Beijing Cap	1150	0425	4	1	103.9	201903
Lufthansa	Frankfurt I	Bengaluru	1300	0225	6	4	340.0	201903
Lufthansa	Frankfurt I	Chennai	1715	0600	3	4	340.0	201908
Lufthansa	Frankfurt I	Chicago O'	1220	1450	4	1	85.0	201906
Lufthansa	Frankfurt I	Chicago O'	1420	1645	2	2	170.0	201902
China Carg	Frankfurt I	Shanghai P	1710	1120	1 4	8	800.0	201902
China Carg	Shanghai P	Frankfurt I	0920	1410	3 7	8	800.0	201902
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201911
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	202001
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	202001
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201910
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	201908
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0	201903
China Sout	London Sta	Frankfurt I	0835	1055	4 6	8	800.0	201907
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	14	1,400.0	201903
Emirates	Dubai Al M	Frankfurt I	0140	0530	7	4	412.0	201903
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	201907
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	4	412.0	201907
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201907
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201910
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201902
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201909
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0	201908
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0	202001
Emirates	Maastricht	Frankfurt I	1040	1155	6	5	515.0	201911
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201904
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	201912
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	4	205.6	201911

Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0	201904
Korean Air	Frankfurt I	Oslo Garde	1345	1555	2	1	103.9	201902
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	201908
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0	201904
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0	201907
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	4	415.6	201903
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	5	519.5	201905
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	5	700.0	201905
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	5	700.0	201908
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201911
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201902
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7	4	400.0	201904
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	201905
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	5	500.0	201905
Lufthansa	Almaty	Frankfurt I	0950	1320	7	4	340.0	201908
Lufthansa	Atlanta Ha	Frankfurt I	0055	1540	5	3	255.0	201902
Lufthansa	Beijing Cap	Frankfurt I	0525	0855	1 5	2	207.8	201902
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	4	415.6	201907
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	3	311.7	201910
Lufthansa	Buenos Air	Frankfurt I	2115	1540	6	4	415.6	201907
Lufthansa	Chicago O'	Frankfurt I	0300	1705	6	3	255.0	201903
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	4	415.6	201907
Lufthansa	Dakar Blais	Frankfurt I	0400	1200	5	1	85.0	201910
Lufthansa	Dakar Blais	Frankfurt I	0435	1135	3	4	340.0	201902
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	5	519.5	201904
Lufthansa	Dallas Dall	Frankfurt I	0525	2150	2	3	311.7	201910
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	8	680.0	201908
Lufthansa	Frankfurt I	Atlanta Ha	1055	1450	3	4	415.6	201902
Lufthansa	Frankfurt I	Atlanta Ha	1520	1915	2	1	103.9	201903
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201904
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	4	340.0	201906
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	201907
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201904
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	201911
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201906
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201909
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	12	1,200.0	202002
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	5	515.0	202001
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	201909
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	202001
Emirates	Frankfurt I	Dubai Al M	0830	1735	7	4	412.0	201903
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0	202002
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201906
Emirates	Maastricht	Frankfurt I	0815	0930	3	5	515.0	201907
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	5	519.5	201905
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	202001
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201902

Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201912
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	9	405.0	201903
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	202002
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	5	519.5	201909
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0	201909
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	10	1,039.0	201907
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	5	519.5	201904
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	5	519.5	201908
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	5	519.5	202001
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	2	280.0	201902
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	4	560.0	201905
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201904
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	4	560.0	201907
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	202001
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	5	500.0	201907
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	5	500.0	201910
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	4	400.0	201909
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201911
Lufthansa	Almaty	Frankfurt I	0950	1320	1 4 6	11	935.0	201910
Lufthansa	Almaty	Frankfurt I	1615	1900	4	4	340.0	201903
Lufthansa	Atlanta Ha	Frankfurt I	1720	0740	3	1	103.9	201903
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	4	340.0	201904
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	3	255.0	201910
Lufthansa	Beijing Cap	Frankfurt I	0320	0740	1 3 5	12	1,246.8	201906
Lufthansa	Cairo Inter	Frankfurt I	0530	0950	3	4	340.0	201909
Lufthansa	Chicago O'	Frankfurt I	0250	1655	2	3	255.0	201903
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	3	311.7	201906
Lufthansa	Dakar Blais	Frankfurt I	1120	1920	7	1	85.0	201910
Lufthansa	Dallas Dall	Frankfurt I	0225	1845	3	1	85.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	4	415.6	201907
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	2 6	1	103.9	201905
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	4	340.0	201909
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	5	519.5	201907
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	4	340.0	201905
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201908
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	4	340.0	201910
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	4	340.0	201907
Lufthansa	Frankfurt I	Cairo Inter	2110	0155	7	4	340.0	201903
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	8	831.2	201905
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	202002
China Sout	Frankfurt I	Guangzhou	1440	0815	7	5	500.0	201906
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	202002
China Sout	Guangzhou	Frankfurt I	0100	0600	7	5	500.0	201909
China Sout	Guangzhou	Frankfurt I	0555	1220	1	4	400.0	201911
China Sout	Guangzhou	Frankfurt I	0555	1240	5	5	500.0	202001
China Sout	London Sta	Frankfurt I	0835	1055	4 6	8	800.0	201912
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	12	1,200.0	201902

Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201907
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	5	515.0	201906
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	4	412.0	201902
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	5	515.0	202002
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	4	412.0	201906
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	201909
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201902
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	5	515.0	201905
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	5	515.0	201908
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201907
Emirates	Frankfurt I	Mexico Cit	2025	0140	7	4	412.0	201903
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0	201906
Emirates	Maastricht	Frankfurt I	1040	1155	6	5	515.0	201903
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	5	519.5	201908
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201907
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	4	415.6	201906
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	4	415.6	201907
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	5	257.0	201906
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0	201912
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	5	257.0	201908
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	202001
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	2	280.0	201902
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	4	415.6	201904
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	2	207.8	201902
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201904
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	5	500.0	202001
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7	5	500.0	201912
Lufthansa	Almaty	Frankfurt I	0950	1320	7	5	425.0	201906
Lufthansa	Buenos Air	Frankfurt I	2115	1540	6	4	415.6	201909
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	4	340.0	201908
Lufthansa	Dakar Blais	Frankfurt I	0435	1135	3	4	340.0	201903
Lufthansa	Dakar Blais	Frankfurt I	0930	1630	1	4	340.0	201903
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	4	340.0	201905
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	3	255.0	201909
Lufthansa	Frankfurt I	Atlanta Ha	1930	0025	56	5	519.5	201903
Lufthansa	Frankfurt I	Atlanta Ha	1930	2325	56	6	623.4	201902
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	1	103.9	201903
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201909
Lufthansa	Frankfurt I	Cairo Inter	1950	0045	2	4	340.0	201903
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	5	425.0	201908
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	4	340.0	201910
Lufthansa	Frankfurt I	Johannesb	0455	1640	1 7	8	680.0	201902
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	3	311.7	201904
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	8	680.0	201906
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	9	765.0	201909
Lufthansa	Frankfurt I	New York J	1950	2325	34	6	510.0	201903
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5	3	255.0	201908

Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	13	1,105.0 201907
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0 201909
Emirates	Dubai Al M	Frankfurt I	1240	1630	7	4	412.0 201903
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0 201908
Emirates	Frankfurt I	Dubai Al M	0930	1735	7	4	412.0 201911
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0 201911
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6 201903
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	5	519.5 201906
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	5	257.0 201911
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	10	450.0 201908
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	1	103.9 201902
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6 202001
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2 201903
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2 201906
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2 201909
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	8	831.2 202002
Korean Air	Moscow Sl	Frankfurt I	1340	1455	5	4	415.6 201912
Korean Air	Moscow Sl	Frankfurt I	1345	1500	6	5	700.0 201908
Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	10	1,039.0 201907
Korean Air	Moscow Sl	Frankfurt I	1345	1500	23	10	1,039.0 201910
Korean Air	Vienna Int	Frankfurt I	1325	1455	4	3	420.0 201902
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0 201905
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0 202002
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	5	500.0 201903
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0 201909
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0 201903
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0 201912
Lufthansa	Almaty	Frankfurt I	0245	0530	6	4	340.0 201902
Lufthansa	Almaty	Frankfurt I	0245	0530	4 7	8	680.0 201903
Lufthansa	Almaty	Frankfurt I	0950	1320	7	4	340.0 201905
Lufthansa	Atlanta Ha	Frankfurt I	0155	1640	1	1	85.0 201903
Lufthansa	Atlanta Ha	Frankfurt I	0300	1630	67	6	623.4 201903
Lufthansa	Atlanta Ha	Frankfurt I	1500	0545	5	1	103.9 201902
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	4	340.0 201905
Lufthansa	Atlanta Ha	Frankfurt I	2225	1310	6	5	425.0 201908
Lufthansa	Beijing Cap	Frankfurt I	0400	0730	6	2	207.8 201902
Lufthansa	Cairo Inter	Frankfurt I	0600	0920	1 3 6	13	1,105.0 201903
Lufthansa	Chicago O'	Frankfurt I	0135	1640	45	3	292.8 201903
Lufthansa	Chicago O'	Frankfurt I	0145	1705	234	12	1,020.0 201910
Lufthansa	Dakar Blais	Frankfurt I	1120	1920	7	1	85.0 201906
Lufthansa	Dakar Blais	Frankfurt I	2130	0530	1	4	415.6 201904
Lufthansa	Dallas Dall	Frankfurt I	0410	1930	7	3	255.0 201903
Lufthansa	Dallas Dall	Frankfurt I	0600	2220	5	2	170.0 201903
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	4	340.0 201909
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	4	340.0 201904
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	4	415.6 201909
Lufthansa	Frankfurt I	Chengdu	0935	0110	1 6	9	935.1 201909

Lufthansa	Frankfurt I	Chennai	1515	0445	4		4	340.0	201902
Lufthansa	Frankfurt I	Chicago O'	1420	1635	2		1	85.0	201903
Lufthansa	Frankfurt I	Chicago O'	1540	1755	4		4	340.0	201902
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2		3	311.7	201906
Lufthansa	Frankfurt I	Dakar Blais	0445	0855	6		1	85.0	201910
Lufthansa	Frankfurt I	Dammam	1400	2125	1		2	170.0	201902
Lufthansa	Frankfurt I	Johannesb	0455	1630	6		4	340.0	201902
Lufthansa	Frankfurt I	Johannesb	0545	1630	7		4	340.0	201905
China Sout	Frankfurt I	Guangzhou	1500	0815	1		4	400.0	201908
China Sout	Frankfurt I	Shanghai P	1520	0650	2	5 7	13	1,300.0	201909
China Sout	Guangzhou	Frankfurt I	0100	0600	7		4	400.0	201911
China Sout	London Sta	Frankfurt I	0835	1035	2		4	400.0	201906
China Sout	Shanghai P	Frankfurt I	0650	1220	2	5 7	13	1,300.0	201910
China Sout	Shanghai P	Frankfurt I	0650	1220	1	4 6	13	1,300.0	201906
Emirates	Dubai Al M	Frankfurt I	1055	1445	4		4	412.0	201909
Emirates	Dubai Al M	Frankfurt I	1320	1710	5		4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1355	2300	6		4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1355	2300	6		4	412.0	201910
Emirates	Frankfurt I	Dubai Al M	1500	0005	3		4	412.0	201904
Emirates	Frankfurt I	Dubai Al M	1500	0005	3		4	412.0	201911
Emirates	Frankfurt I	Mexico Cit	2125	0140	7		4	412.0	201905
Emirates	Maastricht	Frankfurt I	0815	0930	3		4	412.0	201904
Emirates	Maastricht	Frankfurt I	1040	1155	6		4	412.0	201905
Emirates	Maastricht	Frankfurt I	1040	1155	6		5	515.0	201908
Emirates	Maastricht	Frankfurt I	1040	1155	6		4	412.0	202001
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6		4	415.6	201912
Etihad Airv	Frankfurt I	Barbados	0850	1200	4		4	415.6	201907
Etihad Airv	Frankfurt I	Barbados	1020	1330	6		4	415.6	201905
Etihad Airv	Frankfurt I	Barbados	1020	1330	6		5	519.5	202002
Iberia	Frankfurt I	Madrid Ad	2020	2300	6		5	257.0	201908
Iberia	Frankfurt I	Madrid Ad	2020	2300	6		4	205.6	202001
Iberia	Frankfurt I	Madrid Ad	2030	2250	45		8	360.0	201907
Iberia	Madrid Ad	Frankfurt I	1620	1955	45		9	405.0	201911
Iberia	Madrid Ad	Frankfurt I	1620	1955	45		10	450.0	202001
Iberia	Madrid Ad	Frankfurt I	1725	2005	3		5	257.0	201905
Iberia	Madrid Ad	Frankfurt I	1725	2005	3		4	205.6	201908
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6		4	560.0	201910
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4		5	700.0	201910
Korean Air	Moscow Sh	Frankfurt I	0520	0635	1		4	415.6	201906
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5		2	207.8	201902
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6		5	700.0	201911
Korean Air	Vienna Int	Frankfurt I	1315	1445	4		1	140.0	201902
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7		5	500.0	201912
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3		4	400.0	201906
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	7		4	400.0	201907
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6		4	400.0	201902
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6		5	500.0	201908

LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201902
Lufthansa	Almaty	Frankfurt I	0245	0530	2	3	255.0	201902
Lufthansa	Almaty	Frankfurt I	0310	0555	3	3	255.0	201902
Lufthansa	Almaty	Frankfurt I	0950	1320	1 4 6	13	1,105.0	201904
Lufthansa	Cairo Inter	Frankfurt I	0600	1015	1	3	255.0	201910
Lufthansa	Chicago O'	Frankfurt I	2115	1220	6	1	103.9	201903
Lufthansa	Dakar Blais	Frankfurt I	0930	1630	1	2	170.0	201902
Lufthansa	Dallas Dall	Frankfurt I	0310	1930	7	4	340.0	201902
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	2 6	2	207.8	201910
Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	5	425.0	201905
Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	5	425.0	201908
Lufthansa	Frankfurt I	Atlanta Ha	0905	1310	1	1	103.9	201902
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	4	415.6	201906
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	4	340.0	201909
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	5	425.0	201909
Lufthansa	Frankfurt I	Chennai	1715	0600	3	4	340.0	201904
Lufthansa	Frankfurt I	Chicago O'	2125	2355	3	1	85.0	201906
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	12	1,200.0	201902
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	4	412.0	201902
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	201903
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	4	412.0	201906
Emirates	Dubai Al M	Frankfurt I	1240	1730	7	4	412.0	201905
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	4	412.0	201903
Emirates	Maastricht	Frankfurt I	1040	1155	6	4	412.0	201907
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201902
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	4	415.6	201902
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	9	405.0	201910
Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201902
Korean Air	Frankfurt I	Oslo Garde	1330	1540	2	1	103.9	201902
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	4	415.6	202002
Korean Air	Frankfurt I	Seoul Inch	1735	1105	4	1	140.0	201902
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	5	700.0	201906
Korean Air	Moscow Sh	Frankfurt I	1340	1455	5	5	519.5	201911
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	4	560.0	201909
Korean Air	Moscow Sh	Frankfurt I	1345	1500	23	8	831.2	201906
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	4	400.0	201908
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201910
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	5	500.0	201903
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201908
Lufthansa	Almaty	Frankfurt I	0950	1320	1 6	1	85.0	201909
Lufthansa	Atlanta Ha	Frankfurt I	0300	1745	7	1	85.0	201903
Lufthansa	Beijing Cap	Frankfurt I	0655	1025	3	2	207.8	201903
Lufthansa	Chicago O'	Frankfurt I	0135	1640	45	2	170.0	201902
Lufthansa	Chicago O'	Frankfurt I	0150	1655	2	1	85.0	201903
Lufthansa	Chicago O'	Frankfurt I	2315	1450	6	1	85.0	201902
Lufthansa	Dakar Blais	Frankfurt I	0100	0900	6	4	415.6	201909
Lufthansa	Dakar Blais	Frankfurt I	0240	0940	4	4	340.0	201902

Lufthansa	Dallas Dall	Frankfurt I	2230	1500	4	4	340.0	201906
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	12	1,020.0	201904
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	11	935.0	201910
Lufthansa	Frankfurt I	Ashgabat	0510	1430	6	4	340.0	201903
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	4	415.6	201904
Lufthansa	Frankfurt I	Atlanta Ha	1035	1415	3	4	415.6	201910
Lufthansa	Frankfurt I	Atlanta Ha	1520	2015	2	3	311.7	201903
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	4	340.0	201905
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	5	425.0	201908
Lufthansa	Frankfurt I	Atlanta Ha	1930	2325	56	4	415.6	201903
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201905
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	4	340.0	201906
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	4	340.0	201904
Lufthansa	Frankfurt I	Cairo Inter	2105	0100	5	4	340.0	201907
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	3	255.0	201910
Lufthansa	Frankfurt I	Chengdu	1045	0305	1 6	8	831.2	201903
Lufthansa	Frankfurt I	Chennai	1715	0600	3	5	425.0	201905
Lufthansa	Frankfurt I	Chicago O'	0810	1055	1	1	85.0	201902
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	4	340.0	201910
Lufthansa	Frankfurt I	Dakar Blais	1845	2350	2	4	340.0	201902
Lufthansa	Frankfurt I	Dakar Blais	2125	0135	3	1	85.0	201910
Lufthansa	Frankfurt I	Dakar Blais	2155	0205	7	1	85.0	201906
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	4	340.0	201910
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	5	425.0	201907
China Sout	Frankfurt I	Guangzhou	0900	0245	7	4	400.0	201907
China Sout	Frankfurt I	Guangzhou	1500	0815	1	5	500.0	201904
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201904
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201907
China Sout	Frankfurt I	Shanghai P	1520	0650	1 4 6	12	1,200.0	201903
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	201902
China Sout	Guangzhou	Frankfurt I	0555	1220	1	5	500.0	201909
China Sout	London Sta	Frankfurt I	0835	1035	2	4	400.0	201909
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	5	515.0	201912
Emirates	Dubai Al M	Frankfurt I	1240	1630	4	5	515.0	202001
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	4	412.0	201909
Emirates	Frankfurt I	Dubai Al M	1940	0445	4	5	515.0	202001
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	5	515.0	201903
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201912
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	4	412.0	201911
Emirates	Frankfurt I	Mexico Cit	2125	0140	7	4	412.0	201907
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0	201902
Emirates	Maastricht	Frankfurt I	0815	0930	3	5	515.0	201905
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201904
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	5	519.5	201908
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	5	519.5	201903
Etihad Airv	Frankfurt I	Barbados	1020	1330	6	5	519.5	201906
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	9	405.0	201911

Iberia	Madrid Ad	Frankfurt I	1620	1840	6	4	205.6	201910
Korean Air	Frankfurt I	Seoul Inch	0900	0330	1	5	519.5	201907
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	5	700.0	201905
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	5	700.0	201908
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	4	560.0	201911
Korean Air	Frankfurt I	Seoul Inch	1735	1205	3 7	2	207.8	201902
Korean Air	Frankfurt I	Seoul Inch	1735	1205	23	2	207.8	201902
Korean Air	Moscow Sh	Frankfurt I	1345	1500	6	4	560.0	201904
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	7	5	500.0	201906
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201909
LATAM Cai	Frankfurt I	Sao Paulo '	1920	0325	6	5	500.0	201911
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201903
Lufthansa	Buenos Air	Frankfurt I	0115	1940	4	4	415.6	201906
Lufthansa	Dakar Blais	Frankfurt I	0130	0830	5	4	340.0	201903
Lufthansa	Dallas Dall	Frankfurt I	0530	2150	4	4	340.0	201902
Lufthansa	Dallas Dall	Frankfurt I	0605	2230	6	4	415.6	201905
Lufthansa	Frankfurt I	Almaty	0525	1655	5	2	170.0	201902
Lufthansa	Frankfurt I	Almaty	0635	1805	7	4	340.0	201903
Lufthansa	Frankfurt I	Ashgabat	0445	1305	6	4	340.0	201910
Lufthansa	Frankfurt I	Atlanta Ha	1605	1950	6	3	255.0	201910
Lufthansa	Frankfurt I	Beijing Cap	0950	0120	2 4 7	13	1,350.7	201907
Lufthansa	Frankfurt I	Bengaluru	1230	0055	6	5	425.0	201908
Lufthansa	Frankfurt I	Bengaluru	1335	0200	3	4	340.0	201910
Lufthansa	Frankfurt I	Chennai	1515	0445	4	4	340.0	201903
Lufthansa	Frankfurt I	Chennai	1715	0600	3	4	340.0	201910
Lufthansa	Frankfurt I	Chicago O'	1000	1345	7	3	255.0	201903
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	4	340.0	201909
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	11	935.0	201906
Lufthansa	Frankfurt I	Dakar Blais	1845	2350	2	4	340.0	201903
Lufthansa	Frankfurt I	Dallas Dall	1530	1935	5	2	170.0	201903
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	5	425.0	201908
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	4	415.6	201908
Lufthansa	Frankfurt I	Mexico Cit	1735	2230	4	1	103.9	201904
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	201902
China Sout	Frankfurt I	Guangzhou	1440	0815	7	4	400.0	202001
China Sout	Frankfurt I	Guangzhou	1500	0815	1	5	500.0	201907
China Sout	Frankfurt I	Guangzhou	1500	0815	1	4	400.0	201910
China Sout	Frankfurt I	Guangzhou	1520	0740	5	4	400.0	201907
China Sout	Frankfurt I	Shanghai P	1520	0650	2 5 7	13	1,300.0	201910
China Sout	Guangzhou	Frankfurt I	0100	0600	7	4	400.0	202002
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	201902
China Sout	Guangzhou	Frankfurt I	0555	1240	5	4	400.0	202002
China Sout	London Sta	Frankfurt I	0835	1035	2	5	500.0	201912
China Sout	London Sta	Frankfurt I	0835	1055	4 6	9	900.0	201903
China Sout	Shanghai P	Frankfurt I	0650	1220	2 5 7	13	1,300.0	201907
China Sout	Shanghai P	Frankfurt I	0650	1220	1 4 6	13	1,300.0	201910
Emirates	Dubai Al M	Frankfurt I	0140	0630	7	5	515.0	201909

Emirates	Dubai Al M	Frankfurt I	0140	0630	7	4	412.0	202002
Emirates	Dubai Al M	Frankfurt I	1055	1445	4	5	515.0	201910
Emirates	Dubai Al M	Frankfurt I	1320	1710	5	5	515.0	201908
Emirates	Frankfurt I	Dubai Al M	1355	2300	6	5	515.0	201906
Emirates	Frankfurt I	Dubai Al M	1500	0005	3	4	412.0	201908
Emirates	Frankfurt I	Dubai Al M	2010	0515	5	4	412.0	201906
Emirates	Frankfurt I	Mexico Cit	1810	2325	4	5	515.0	201905
Emirates	Maastricht	Frankfurt I	0815	0930	3	4	412.0	201908
Etihad Airv	Abu Dhabi	Frankfurt I	0105	0600	4	4	415.6	201907
Etihad Airv	Abu Dhabi	Frankfurt I	0235	0730	6	5	519.5	201903
Etihad Airv	Frankfurt I	Barbados	0850	1200	4	5	519.5	202001
Iberia	Frankfurt I	Madrid Ad	1715	1945	3	4	205.6	201908
Iberia	Frankfurt I	Madrid Ad	2020	2300	6	4	205.6	201907
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	8	360.0	201902
Iberia	Frankfurt I	Madrid Ad	2030	2250	45	10	450.0	201908
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	201904
Iberia	Madrid Ad	Frankfurt I	1620	1955	45	8	360.0	201907
Korean Air	Frankfurt I	Seoul Inch	1735	1205	6	4	560.0	202001
Korean Air	Frankfurt I	Seoul Inch	1735	1205	4	5	700.0	202001
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	5	519.5	201912
Korean Air	Moscow Sl	Frankfurt I	0520	0635	1	4	415.6	202002
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201905
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	4	400.0	201912
LATAM Cai	Amsterdar	Frankfurt I	1610	1820	6	5	500.0	202002
LATAM Cai	Amsterdar	Frankfurt I	1630	1840	3	4	400.0	201902
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201906
LATAM Cai	Frankfurt I	Sao Paulo '	1940	0335	3	4	400.0	201909
Lufthansa (	Almaty	Frankfurt I	0245	0530	4 7	3	255.0	201902
Lufthansa (	Almaty	Frankfurt I	0245	0530	2	4	340.0	201903
Lufthansa (	Almaty	Frankfurt I	0950	1320	7	3	255.0	201910
Lufthansa (	Buenos Air	Frankfurt I	0115	1940	4	4	415.6	201909
Lufthansa (	Buenos Air	Frankfurt I	2115	1540	6	4	415.6	201905
Lufthansa (	Buenos Air	Frankfurt I	2115	1540	6	5	519.5	201908
Lufthansa (	Cairo Inter	Frankfurt I	0530	0950	3	4	340.0	201910
Lufthansa (	Chicago O'	Frankfurt I	0055	1600	6	1	85.0	201902
Lufthansa (	Dakar Blais	Frankfurt I	0110	0810	5	3	255.0	201902
Lufthansa (	Dakar Blais	Frankfurt I	1040	1840	3	1	85.0	201906
Lufthansa (	Dakar Blais	Frankfurt I	2130	0530	1	4	415.6	201905
Lufthansa (	Dallas Dall	Frankfurt I	0525	2150	2	4	415.6	201906
Lufthansa (	Dallas Dall	Frankfurt I	0600	2220	5	4	340.0	201902
Lufthansa (	Dallas Dall	Frankfurt I	1310	0530	6	2	170.0	201903
Lufthansa (	Dallas Dall	Frankfurt I	2230	1500	4	4	340.0	201907
Lufthansa (	Frankfurt I	Mexico Cit	1745	2230	1	1	103.9	201904
Lufthansa (	Frankfurt I	Moscow D	2100	0210	5	4	340.0	201902
Lufthansa (	Frankfurt I	Mumbai	1745	0520	34	9	765.0	201908
Lufthansa (	Frankfurt I	New York J	2005	2240	4	5	425.0	201908
Lufthansa (	Frankfurt I	New York J	2020	2300	56	9	765.0	201905

Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	4	340.0	201907
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	5	4	415.6	201909
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	7	727.3	201910
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	12	1,020.0	201905
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	13	1,105.0	201908
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	5	519.5	201906
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	18	1,870.2	201909
Lufthansa	Frankfurt I	Toronto Le	1440	1720	1	1	85.0	201903
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	9	935.1	201905
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	4	340.0	201906
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	5	425.0	201907
Lufthansa	Los Angele	Frankfurt I	1830	1320	5	3	255.0	201903
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	4	340.0	201904
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	4	340.0	201907
Lufthansa	Mumbai	Frankfurt I	0735	1235	1	5	425.0	201909
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	8	680.0	201910
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	4	340.0	201904
Lufthansa	Shanghai P	Frankfurt I	0335	0835	2 4	8	831.2	201903
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	8	831.2	201907
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	22	2,285.8	201907
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201908
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201902
Qatar Airw	Doha	Frankfurt I	0935	1455	4	5	519.5	201905
Qatar Airw	Doha	Frankfurt I	0935	1455	4	5	519.5	201908
Qatar Airw	Doha	Frankfurt I	1225	1745	2	5	519.5	201910
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201906
Qatar Airw	Doha	Frankfurt I	1310	1830	6	5	519.5	201906
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201909
Qatar Airw	Frankfurt I	Doha	1440	2130	1	5	519.5	201907
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	202002
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201908
Qatar Airw	Frankfurt I	Doha	1945	0235	2	5	519.5	201912
Qatar Airw	Frankfurt I	Doha	2030	0320	6	5	519.5	201906
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201902
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201907
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201904
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	5	500.0	201911
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	5	500.0	201908
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201911
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	5	550.0	201905
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	5	550.0	202001
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	202002
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	5	500.0	201904
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201911
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201902
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	12	481.2	201909

Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201909
Lufthansa	Frankfurt I	Toronto Le	1400	1630	5	1	85.0	201903
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	4	415.6	201906
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	4	415.6	201910
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	5	425.0	201908
Lufthansa	Hyderabad	Frankfurt I	1135	1640	2	4	340.0	201903
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	12	1,020.0	201907
Lufthansa	Mumbai	Frankfurt I	0655	1125	45	9	765.0	201903
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	13	1,105.0	201906
Lufthansa	New York J	Frankfurt I	0130	1455	6	4	340.0	201910
Lufthansa	New York J	Frankfurt I	0130	1500	3	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	4	340.0	201905
Lufthansa	Novosibirs	Frankfurt I	0510	0530	5	1	85.0	201903
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	13	1,105.0	201904
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	13	1,105.0	201907
Lufthansa	Novosibirs	Frankfurt I	1220	1240	4	3	255.0	201902
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	5	425.0	201905
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3	2	207.8	201906
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	1	103.9	201903
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	17	1,766.3	201909
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	8	831.2	201905
Lufthansa	Shanghai P	Frankfurt I	0935	1435	2 7	8	831.2	201903
Lufthansa	Shanghai P	Frankfurt I	0935	1435	1 3456	22	2,285.8	201903
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201906
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201905
Qatar Airw	Doha	Frankfurt I	1255	1820	3	5	325.0	202001
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201904
Qatar Airw	Frankfurt I	Doha	1945	0235	2	5	519.5	201910
Qatar Airw	Frankfurt I	Doha	2030	0320	6	5	519.5	201911
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201911
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201909
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	5	500.0	201906
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201906
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	5	500.0	201904
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	5	550.0	201903
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201904
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201907
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201903
Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201904
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	1	85.0	201903
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	13	1,105.0	201906
Lufthansa	Frankfurt I	Atlanta Ha	1520	1915	2	1	85.0	201902
Lufthansa	Frankfurt I	Beijing Cap	0930	0100	5	4	415.6	201904
Lufthansa	Frankfurt I	Beijing Cap	1030	0305	2 4 7	5	519.5	201903
Lufthansa	Frankfurt I	Bengaluru	0505	1830	2	4	340.0	201903
Lufthansa	Frankfurt I	Chennai	1715	0600	3	4	340.0	201906
Lufthansa	Frankfurt I	Chennai	1715	0600	3	4	340.0	201909

Lufthansa	Frankfurt I	Chicago O'	0840	1055	3	1	85.0	201902
Lufthansa	Frankfurt I	Chicago O'	1540	1755	4	1	85.0	201903
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	11	935.0	201910
Lufthansa	Frankfurt I	Dakar Blais	1040	1450	5	1	85.0	201906
Lufthansa	Frankfurt I	Dallas Dall	1530	1935	5	4	340.0	201902
Lufthansa	Frankfurt I	Dammam	1425	2110	1	3	255.0	201910
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	4	340.0	201904
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	5	519.5	201908
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1	5	519.5	201907
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1	3	311.7	201910
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	4	340.0	201909
Lufthansa	Frankfurt I	New York J	1930	2305	6	1	85.0	201903
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	3	255.0	201910
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	5	519.5	201909
Lufthansa	Frankfurt I	Shanghai P	0720	0105	1 3	8	831.2	201903
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	10	1,039.0	201908
Lufthansa	Frankfurt I	Shanghai P	0915	0300	4 6	9	935.1	201903
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2200	6	1	85.0	201903
Lufthansa	Frankfurt I	Tokyo Nari	2110	1655	1 3 5	12	1,246.8	201902
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	9	935.1	201904
Lufthansa	Frankfurt I	Toronto Le	1440	1720	5	1	85.0	201902
Lufthansa	Frankfurt I	Toronto Le	1440	1820	1	3	255.0	201903
Lufthansa	Houston G	Frankfurt I	2345	1625	2	2	170.0	201902
Lufthansa	Hyderabad	Frankfurt I	0950	1455	5	5	425.0	201903
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	9	765.0	201908
Lufthansa	New York J	Frankfurt I	0220	1445	3	3	311.7	201903
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	4	340.0	201910
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3	3	311.7	201905
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	4	415.6	201905
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	202001
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201911
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201910
Qatar Airw	Frankfurt I	Doha	1440	2130	1	5	519.5	201904
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	2020	0320	3	5	325.0	201905
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201909
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	5	500.0	202001
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	5	550.0	201905
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	5	550.0	202001
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	5	500.0	202001
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201902
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	5	500.0	201909
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201912
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201910
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	5	500.0	201908
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	5	500.0	202001

Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201912
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201903
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201906
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	5	500.0	201907
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201910
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	202002
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	5	500.0	201910
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	5	325.0	201905
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	5	325.0	201908
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	12	481.2	201902
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	14	561.4	201905
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201910
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	13	521.3	201904
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	5	325.0	201906
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	5	325.0	201906
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	8	680.0	201906
Lufthansa	Frankfurt I	New York J	2005	2240	4	4	340.0	201904
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	9	765.0	201907
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	1	85.0	201903
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	5	4	415.6	201905
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	8	831.2	201909
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	22	2,285.8	201908
Lufthansa	Frankfurt I	Tel Aviv-ya	1115	1610	2	1	85.0	201908
Lufthansa	Frankfurt I	Tokyo Nari	2110	1655	1 3 5	13	1,350.7	201903
Lufthansa	Houston G	Frankfurt I	2340	1620	5	4	340.0	201902
Lufthansa	Hyderabad	Frankfurt I	0950	1455	5	4	340.0	201902
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201908
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	4	340.0	201908
Lufthansa	Nairobi Jor	Frankfurt I	0130	0750	12 5 7	14	1,190.0	201902
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	14	1,190.0	201907
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 5 7	9	765.0	201905
Lufthansa	New York J	Frankfurt I	0110	1440	5	4	340.0	201909
Lufthansa	New York J	Frankfurt I	0130	1500	3	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	1140	1300	7	1	85.0	201903
Lufthansa	Novosibirs	Frankfurt I	1220	1240	7	3	255.0	201902
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	8	680.0	201907
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	4	415.6	201907
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	14	1,454.6	201905
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	14	1,454.6	201908
Lufthansa	Seoul Inch	Frankfurt I	0215	0605	1 4 6	13	1,350.7	201903
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	8	831.2	201909
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	7	727.3	201910
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	21	2,181.9	201906
Lufthansa	Tel Aviv-ya	Frankfurt I	1445	1815	6	1	85.0	201902
Qatar Airw	Doha	Frankfurt I	1225	1745	2	5	519.5	201912
Qatar Airw	Doha	Frankfurt I	1255	1820	3	5	325.0	201910

Qatar Airw	Doha	Frankfurt I	1355	1915	7	5	519.5	201912
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	202002
Qatar Airw	Frankfurt I	Doha	1735	0025	4	5	519.5	202001
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	202002
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201909
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201910
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201906
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201909
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201902
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201912
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	202002
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201911
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201910
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	4	160.4	201902
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	4	160.4	201905
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	5	325.0	201908
Turkish Air	Lagos	Frankfurt I	0240	1120	5	5	325.0	201903
Lufthansa	Frankfurt I	Istanbul At	2130	0230	6	1	85.0	201902
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	1	85.0	201903
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	5	425.0	201906
Lufthansa	Frankfurt I	Los Angele	1210	1515	3	1	85.0	201903
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	4	415.6	201905
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	3	311.7	201906
Lufthansa	Frankfurt I	Mexico Cit	1750	2345	6	1	103.9	201910
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	4	415.6	201910
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	8	680.0	201904
Lufthansa	Frankfurt I	Sao Paulo	0445	1155	5	3	311.7	201906
Lufthansa	Frankfurt I	Sao Paulo	0845	1555	3	4	415.6	201905
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	3	255.0	201907
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	10	1,039.0	201907
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	21	2,181.9	201906
Lufthansa	Frankfurt I	Tel Aviv-ya	1000	1455	5	1	85.0	201906
Lufthansa	Frankfurt I	Tokyo Nari	2115	1655	4 6	8	831.2	201902
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	4	340.0	201908
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	8	831.2	201909
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	4	340.0	201910
Lufthansa	Istanbul At	Frankfurt I	0445	0540	7	1	85.0	201902
Lufthansa	Los Angele	Frankfurt I	0050	2050	1	1	85.0	201903
Lufthansa	Los Angele	Frankfurt I	2025	1620	6	3	255.0	201902
Lufthansa	New York J	Frankfurt I	0055	1420	45	2	170.0	201903
Lufthansa	New York J	Frankfurt I	0130	1500	7	1	85.0	201903
Lufthansa	New York J	Frankfurt I	0900	2225	2	4	340.0	201902
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	4	340.0	201905
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	4	340.0	201907
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	4	340.0	201906

Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	4	340.0	201908
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	4	415.6	201909
Lufthansa	Seoul Inch	Frankfurt I	0205	0520	7	1	103.9	201910
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	15	1,558.5	201910
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	13	1,350.7	201906
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	9	935.1	201904
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	9	935.1	201907
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	21	2,181.9	201904
Qatar Airw	Doha	Frankfurt I	0720	1240	1	5	519.5	201904
Qatar Airw	Doha	Frankfurt I	0720	1240	1	5	519.5	201907
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201909
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201912
Qatar Airw	Doha	Frankfurt I	1310	1830	6	5	519.5	201908
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	202001
Qatar Airw	Doha	Frankfurt I	1310	1830	5	5	519.5	201908
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201904
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201911
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201905
Qatar Airw	Frankfurt I	Doha	2030	0320	6	5	519.5	202002
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	202002
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201905
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	5	500.0	201908
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	5	500.0	201911
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1	4	415.6	201904
Lufthansa	Frankfurt I	Mumbai	1550	0420	34	8	680.0	201902
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	10	850.0	201905
Lufthansa	Frankfurt I	Mumbai	2040	0915	2	2	170.0	201902
Lufthansa	Frankfurt I	New York J	2005	2240	4	5	425.0	201905
Lufthansa	Frankfurt I	New York J	2120	2355	3	4	340.0	201908
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	10	850.0	201905
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	9	765.0	201908
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	4	415.6	201909
Lufthansa	Frankfurt I	Seattle-Ta	0825	1100	5	3	255.0	201903
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	5	425.0	201909
Lufthansa	Frankfurt I	Seattle-Ta	1525	1800	7	3	255.0	201903
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	9	935.1	201905
Lufthansa	Frankfurt I	Shanghai P	1335	0720	2345 7	20	2,078.0	201902
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	4 6	2	170.0	201910
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	4	415.6	201907
Lufthansa	Houston G	Frankfurt I	1955	1245	2	5	425.0	201904
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	13	1,105.0	201909
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201904
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201910
Lufthansa	Los Angele	Frankfurt I	2025	1615	6	1	85.0	201902

Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 5 7	17	1,445.0	201904
Lufthansa	New York J	Frankfurt I	0055	1420	45	1	85.0	201902
Lufthansa	New York J	Frankfurt I	0110	1440	5	4	340.0	201910
Lufthansa	New York J	Frankfurt I	0120	1445	3	1	85.0	201902
Lufthansa	New York J	Frankfurt I	0130	1455	6	4	340.0	201905
Lufthansa	New York J	Frankfurt I	0900	2225	2	1	85.0	201903
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	5	425.0	201905
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	4	340.0	201905
Lufthansa	Novosibirs	Frankfurt I	0450	0510	5	1	85.0	201902
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	8	680.0	201910
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	4	340.0	201907
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	2	207.8	201905
Lufthansa	Seoul Inch	Frankfurt I	0155	0545	2	4	415.6	201902
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	9	935.1	201905
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	9	935.1	201908
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	8	831.2	201904
Lufthansa	Shanghai P	Frankfurt I	0530	1130	7	1	103.9	201903
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201903
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	202002
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201912
Qatar Airw	Doha	Frankfurt I	1310	1830	5	5	519.5	201903
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201905
Qatar Airw	Frankfurt I	Doha	2020	0320	3	5	325.0	202001
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201906
Qatar Airw	Frankfurt I	Doha	2115	0405	7	5	519.5	201909
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	5	500.0	202002
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201911
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201904
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201908
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	5	500.0	201912
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	5	550.0	201911
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	5	550.0	201905
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	5	500.0	201907
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	4	340.0	201907
Lufthansa	Frankfurt I	Chicago O'	1555	1840	6	1	103.9	201903
Lufthansa	Frankfurt I	Chicago O'	2020	2305	3	1	85.0	201902
Lufthansa	Frankfurt I	Dakar Blais	0815	1320	7	4	340.0	201903
Lufthansa	Frankfurt I	Dammam	1400	2125	1	4	340.0	201903
Lufthansa	Frankfurt I	Istanbul At	2115	0115	2	2	170.0	201910
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	5	425.0	201909
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	4	340.0	201910
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	1	85.0	201903
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	9	765.0	201907
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	4	340.0	201910
Lufthansa	Frankfurt I	New York J	2005	2240	4	4	340.0	201909
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	12	1,020.0	201904
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	8	680.0	201909

Lufthansa	Frankfurt I	Riyadh Kin	0840	1610	7	3	255.0	201902
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	4	340.0	201904
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	5	4	415.6	201910
Lufthansa	Frankfurt I	Sao Paulo '	0735	1600	5	1	103.9	201902
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	4	415.6	201906
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	1	85.0	201903
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	9	935.1	201904
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	8	831.2	201907
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	8	831.2	201910
Lufthansa	Frankfurt I	Shanghai P	0915	0300	4 6	7	727.3	201902
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2100	2 4 6	8	680.0	201902
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	13	1,105.0	201904
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	9	935.1	201905
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	17	1,766.3	201906
Lufthansa	Houston G	Frankfurt I	2345	1625	2	1	85.0	201903
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	4	340.0	201904
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	8	680.0	201910
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201906
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	1	85.0	201903
Lufthansa	Mumbai	Frankfurt I	0655	1125	45	8	680.0	201902
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	1220	1240	4	4	340.0	201903
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	3	255.0	201910
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	4 6	2	207.8	201908
Lufthansa	Seoul Inch	Frankfurt I	0215	0605	1 4 6	12	1,246.8	201902
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201910
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201906
Qatar Airw	Doha	Frankfurt I	1225	1745	2	5	519.5	201907
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201902
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201908
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201902
Qatar Airw	Doha	Frankfurt I	1310	1830	6	5	519.5	201911
Qatar Airw	Doha	Frankfurt I	1310	1830	5	5	519.5	201905
Qatar Airw	Frankfurt I	Doha	2030	0320	5	5	519.5	201905
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	202002
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201902
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	5	550.0	201910
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201906
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201910
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201909
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201911
Lufthansa	Frankfurt I	Chennai	1715	0600	3	5	425.0	201907
Lufthansa	Frankfurt I	Chicago O'	1350	1605	6	2	170.0	201903
Lufthansa	Frankfurt I	Chicago O'	1350	1705	6	2	170.0	201903
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	13	1,105.0	201909
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	4	415.6	201908
Lufthansa	Frankfurt I	Dakar Blais	2040	0050	7	1	85.0	201903

Lufthansa	Frankfurt I	Johannesb	0445	1630	4	4	340.0	201902
Lufthansa	Frankfurt I	Johannesb	0455	1630	6	5	425.0	201903
Lufthansa	Frankfurt I	Johannesb	0455	1640	1 7	8	680.0	201903
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	4	340.0	201905
Lufthansa	Frankfurt I	Johannesb	0555	1640	2 4	9	765.0	201904
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	5	425.0	201908
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	4	340.0	201907
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	4	415.6	201907
Lufthansa	Frankfurt I	Mexico Cit	1805	2300	5	1	103.9	201904
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	4	340.0	201905
Lufthansa	Frankfurt I	Mumbai	1935	0805	5	1	85.0	201902
Lufthansa	Frankfurt I	Mumbai	2025	0855	5	1	85.0	201902
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	4	340.0	201905
Lufthansa	Frankfurt I	New York J	2005	2240	4	4	340.0	201907
Lufthansa	Frankfurt I	New York J	2120	2355	3	4	340.0	201904
Lufthansa	Frankfurt I	New York J	2120	2355	3	4	340.0	201910
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	8	680.0	201904
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	5	425.0	201906
Lufthansa	Frankfurt I	Riyadh Kin	1345	2025	7	5	425.0	201909
Lufthansa	Frankfurt I	Seattle-Ta	0825	1000	5	4	340.0	201902
Lufthansa	Frankfurt I	Seattle-Ta	1525	1700	7	1	85.0	201903
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	4	415.6	201910
Lufthansa	Guadalajar	Frankfurt I	0310	2230	45	2	207.8	201904
Lufthansa	Guadalajar	Frankfurt I	0410	2230	4	1	103.9	201910
Lufthansa	Houston G	Frankfurt I	1955	1245	2	5	425.0	201907
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	8	680.0	201910
Lufthansa	Hyderabad	Frankfurt I	1135	1640	2	4	340.0	201902
Lufthansa	Istanbul At	Frankfurt I	0330	0530	7	1	85.0	201905
Lufthansa	Istanbul At	Frankfurt I	0445	0540	3 5 7	13	1,105.0	201903
Lufthansa	Istanbul At	Frankfurt I	0445	0640	7	1	85.0	201903
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	2	170.0	201903
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	10	850.0	201905
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	10	850.0	201910
Lufthansa	New York J	Frankfurt I	0110	1440	5	4	340.0	201906
Lufthansa	New York J	Frankfurt I	0130	1455	6	4	340.0	201904
Lufthansa	New York J	Frankfurt I	0130	1500	7	4	340.0	201905
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	13	1,105.0	201906
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	7	595.0	201909
Lufthansa	Novosibirs	Frankfurt I	1230	1250	3	3	255.0	201902
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	4	340.0	201908
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	3	311.7	201910
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	13	1,350.7	201904
Lufthansa	Tel Aviv-ya	Frankfurt I	1725	2050	5	1	85.0	201906
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201904
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201907
Qatar Airw	Doha	Frankfurt I	1310	1830	6	5	519.5	201903

Lufthansa	Frankfurt I	Dakar Blais	0445	0855	5	1	85.0	201905
Lufthansa	Frankfurt I	Dakar Blais	0815	1320	7	4	340.0	201902
Lufthansa	Frankfurt I	Dakar Blais	1955	0100	3	4	340.0	201903
Lufthansa	Frankfurt I	Johannesb	0445	1630	4	4	340.0	201903
Lufthansa	Frankfurt I	Johannesb	0545	1630	7	3	255.0	201910
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	5	425.0	201905
Lufthansa	Frankfurt I	Kuwait	1620	2340	4	1	85.0	201902
Lufthansa	Frankfurt I	Los Angele	1230	1530	3	4	340.0	201909
Lufthansa	Frankfurt I	Mexico Cit	1425	2020	6	4	415.6	201906
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	5	519.5	201907
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	4	415.6	201910
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	5	425.0	201909
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	3	255.0	201906
Lufthansa	Frankfurt I	New York J	1950	2225	34	2	170.0	201903
Lufthansa	Frankfurt I	New York J	2020	2300	56	10	850.0	201908
Lufthansa	Frankfurt I	Novosibirs	0450	1605	5 7	4	340.0	201909
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	11	935.0	201910
Lufthansa	Frankfurt I	Sao Paulo '	0735	1600	5	5	519.5	201903
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	21	2,181.9	201909
Lufthansa	Frankfurt I	Tokyo Nari	2115	1655	7	4	415.6	201903
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	4	415.6	201909
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	11	935.0	201906
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	4	340.0	201909
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	8	680.0	201904
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	12	1,020.0	201908
Lufthansa	New York J	Frankfurt I	0055	1420	4	3	255.0	201902
Lufthansa	New York J	Frankfurt I	0130	1455	6	5	425.0	201908
Lufthansa	New York J	Frankfurt I	0130	1500	7	5	425.0	201909
Lufthansa	New York J	Frankfurt I	0130	1500	3	5	425.0	201905
Lufthansa	New York J	Frankfurt I	0305	1635	4	5	425.0	201908
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	12	1,020.0	201905
Lufthansa	Novosibirs	Frankfurt I	1210	1230	1	3	255.0	201902
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3	2	207.8	201908
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	4	415.6	201908
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	13	1,350.7	201905
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	12	1,246.8	201908
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	7	727.3	201910
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	1	103.9	201903
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	16	1,662.4	201910
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201911
Qatar Airw	Doha	Frankfurt I	0935	1455	4	5	519.5	202001
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201906
Qatar Airw	Doha	Frankfurt I	1310	1830	6	5	519.5	202002
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201906
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201912

Qatar Airw	Frankfurt I	Doha	2030	0320	6	5	519.5	201903
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201909
Qatar Airw	Frankfurt I	Doha	2030	0320	5	5	519.5	201903
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201912
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201904
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	5	500.0	201910
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	202001
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201911
Lufthansa	Frankfurt I	Cairo Inter	2110	0055	7	5	425.0	201906
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	13	1,105.0	201905
Lufthansa	Frankfurt I	Chicago O'	2125	2355	6	1	85.0	201906
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	4	415.6	201909
Lufthansa	Frankfurt I	Dammam	1425	2110	1	4	340.0	201905
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	4	340.0	201910
Lufthansa	Frankfurt I	Mexico Cit	1645	2240	4	1	103.9	201910
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	8	680.0	201910
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	9	765.0	201904
Lufthansa	Frankfurt I	New York J	2120	2355	3	4	340.0	201909
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	4	415.6	201907
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	4	415.6	201909
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	4	415.6	201907
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	4	340.0	201909
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	4	340.0	201904
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	4	340.0	201907
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	21	2,181.9	201904
Lufthansa	Frankfurt I	Tokyo Nari	2110	1655	2	4	415.6	201902
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	8	831.2	201909
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	5	519.5	201909
Lufthansa	Guadalajar	Frankfurt I	0205	2025	4	1	103.9	201905
Lufthansa	Houston G	Frankfurt I	1955	1245	2	4	340.0	201909
Lufthansa	Houston G	Frankfurt I	2340	1620	5	2	170.0	201903
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	9	765.0	201906
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	4	340.0	201904
Lufthansa	Natal	Frankfurt I	1600	0515	7	4	415.6	201902
Lufthansa	New York J	Frankfurt I	0110	1440	5	5	425.0	201908
Lufthansa	New York J	Frankfurt I	0130	1500	7	4	340.0	201904
Lufthansa	New York J	Frankfurt I	0155	1420	45	6	510.0	201903
Lufthansa	New York J	Frankfurt I	0305	1635	4	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	5	425.0	201905
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	5	425.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	1115	1235	4 6	3	255.0	201908
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	10	850.0	201908
Lufthansa	Novosibirs	Frankfurt I	2110	2130	7	3	255.0	201902
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	1	103.9	201907
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	17	1,766.3	201906
Lufthansa	Seoul Inch	Frankfurt I	0215	0705	7	1	103.9	201903

Lufthansa	Shanghai P	Frankfurt I	0430	0900	7	1	103.9	201910
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201908
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201911
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201911
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201904
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	202001
Qatar Airw	Frankfurt I	Doha	1440	2130	1	5	519.5	201912
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201904
Qatar Airw	Frankfurt I	Doha	2020	0320	3	5	325.0	201910
Qatar Airw	Frankfurt I	Doha	2030	0320	5	5	519.5	201908
Qatar Airw	Frankfurt I	Doha	2030	0320	5	5	519.5	201911
Qatar Airw	Frankfurt I	Doha	2030	0320	5	5	519.5	202001
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201910
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201912
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201909
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201902
Lufthansa	Frankfurt I	Chicago O'	2020	2305	34	2	207.8	201903
Lufthansa	Frankfurt I	Chicago O'	2045	2315	123	12	1,020.0	201908
Lufthansa	Frankfurt I	Curitiba Af	0650	1430	7	3	311.7	201910
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	5	519.5	201907
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	3	311.7	201910
Lufthansa	Frankfurt I	Dallas Dall	1155	1700	3	3	255.0	201903
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	4	340.0	201907
Lufthansa	Frankfurt I	Los Angele	1200	1605	3	3	255.0	201903
Lufthansa	Frankfurt I	Los Angele	1450	1755	6	4	340.0	201902
Lufthansa	Frankfurt I	Los Angele	1450	1855	6	3	255.0	201903
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	5	425.0	201906
Lufthansa	Frankfurt I	Mumbai	1935	0805	5	5	425.0	201903
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	5	425.0	201907
Lufthansa	Frankfurt I	New York J	2020	2300	56	8	680.0	201904
Lufthansa	Frankfurt I	Sao Paulo '	2210	0625	6	4	415.6	201903
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	4	340.0	201904
Lufthansa	Frankfurt I	Shanghai P	0720	0105	1	1	103.9	201902
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	4	340.0	201905
Lufthansa	Frankfurt I	Toronto Le	1440	1720	1	4	340.0	201902
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	6	623.4	201906
Lufthansa	Houston G	Frankfurt I	1955	1245	2	4	340.0	201908
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	8	680.0	201905
Lufthansa	Istanbul At	Frankfurt I	0445	0540	3	1	103.9	201902
Lufthansa	Istanbul At	Frankfurt I	0445	0540	3 5 7	8	680.0	201902
Lufthansa	New York J	Frankfurt I	0110	1440	5	4	340.0	201907
Lufthansa	New York J	Frankfurt I	0130	1455	6	5	425.0	201906
Lufthansa	New York J	Frankfurt I	0130	1500	7	5	425.0	201906
Lufthansa	New York J	Frankfurt I	0130	1500	3	4	340.0	201908
Lufthansa	New York J	Frankfurt I	0305	1635	4	4	340.0	201904
Lufthansa	New York J	Frankfurt I	0305	1635	4	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	4	340.0	201908

Lufthansa	Novosibirs	Frankfurt I	1220	1240	7	4	340.0	201903
Lufthansa	Novosibirs	Frankfurt I	1230	1250	3	4	340.0	201903
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	2	207.8	201909
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	18	1,870.2	201907
Lufthansa	Shanghai P	Frankfurt I	0935	1435	1 3456	20	2,078.0	201902
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	202002
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201906
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201911
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201912
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201905
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	202001
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	5	500.0	202001
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	5	500.0	201908
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201904
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201903
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201906
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201912
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201909
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201908
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201909
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	5	325.0	201903
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	5	325.0	201906
Lufthansa	Frankfurt I	Chicago O'	1000	1245	7	1	85.0	201903
Lufthansa	Frankfurt I	Chicago O'	1135	1420	2	1	85.0	201903
Lufthansa	Frankfurt I	Chicago O'	1335	1605	4	4	340.0	201904
Lufthansa	Frankfurt I	Dakar Blais	0445	0855	3	1	85.0	201905
Lufthansa	Frankfurt I	Dakar Blais	2115	0220	1	4	340.0	201903
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	4	340.0	201909
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	4	340.0	201905
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	5	425.0	201908
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	4	415.6	201909
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1	4	415.6	201906
Lufthansa	Frankfurt I	Mumbai	1735	0605	1	4	340.0	201903
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	5	425.0	201904
Lufthansa	Frankfurt I	New York J	2120	2355	3	5	425.0	201905
Lufthansa	Frankfurt I	Novosibirs	0445	1650	3 5 7	13	1,105.0	201903
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	4	415.6	201908
Lufthansa	Frankfurt I	Shanghai P	0915	0200	4 6	8	831.2	201904
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	1	103.9	201903
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	12	1,020.0	201907
Lufthansa	Guadalajar	Frankfurt I	0100	2020	7	1	103.9	201903
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	3	311.7	201910
Lufthansa	Houston G	Frankfurt I	1955	1245	2	4	340.0	201905
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3	2	170.0	201910
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	5	425.0	201908
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	1	85.0	201903

Lufthansa	Los Angele	Frankfurt I	2025	1630	6	1	85.0	201903
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	4	340.0	201905
Lufthansa	Mumbai	Frankfurt I	0735	1235	1	4	340.0	201905
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	6	510.0	201905
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 5 7	1	85.0	201903
Lufthansa	Natal	Frankfurt I	1600	0515	7	4	415.6	201903
Lufthansa	New York J	Frankfurt I	0110	1440	5	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0430	7	1	85.0	201910
Lufthansa	Novosibirs	Frankfurt I	0510	0530	5 7	5	425.0	201902
Lufthansa	Novosibirs	Frankfurt I	1220	1250	4 6	2	170.0	201903
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	8	680.0	201909
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	13	1,350.7	201909
Lufthansa	Shanghai P	Frankfurt I	0530	1030	5 7	7	727.3	201902
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	9	935.1	201909
Qatar Airw	Doha	Frankfurt I	1225	1745	2	5	519.5	201904
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201911
Qatar Airw	Frankfurt I	Doha	1945	0235	2	5	519.5	201904
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201912
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201908
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	5	500.0	201908
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201905
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201904
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201907
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	4	260.0	201907
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201909
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201909
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	12	481.2	201910
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	4	260.0	201904
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	4	415.6	201904
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	5	519.5	201907
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	3	311.7	201910
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	5	425.0	201908
Lufthansa	Frankfurt I	Tel Aviv-ya	0800	1250	6	1	85.0	201902
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2100	2 4 6	12	1,020.0	201903
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	9	935.1	201907
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	4	340.0	201909
Lufthansa	Frankfurt I	Toronto Le	1400	1730	5	3	255.0	201903
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	3	311.7	201904
Lufthansa	Guadalajar	Frankfurt I	0405	2225	5	3	311.7	201910
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	4	340.0	201909
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	4	340.0	201906
Lufthansa	Los Angele	Frankfurt I	1900	1350	3	3	255.0	201903
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	4	340.0	201907
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	4	340.0	201904
Lufthansa	Mumbai	Frankfurt I	0735	1235	1	4	340.0	201906
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	8	680.0	201907

Lufthansa	Nairobi Jor	Frankfurt I	0130	0750	12 5 7	17	1,445.0	201903
Lufthansa	New York J	Frankfurt I	0220	1545	3	1	103.9	201902
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	5	425.0	201909
Lufthansa	Novosibirs	Frankfurt I	1140	1210	6	2	170.0	201902
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	4	340.0	201907
Lufthansa	Novosibirs	Frankfurt I	2110	2130	7	4	340.0	201903
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	23 5 7	17	1,766.3	201904
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	9	935.1	201906
Lufthansa	Shanghai P	Frankfurt I	0935	1435	2	1	103.9	201902
Lufthansa	Tel Aviv-ya	Frankfurt I	1840	2205	2	1	85.0	201908
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201905
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201903
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201909
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201912
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201909
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201912
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	202002
Qatar Airw	Doha	Frankfurt I	1355	1915	7	5	519.5	201903
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201910
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201909
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201902
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201912
Qatar Airw	Frankfurt I	Doha	2115	0405	7	5	519.5	201903
Qatar Airw	Frankfurt I	Doha	2115	0405	7	5	519.5	201906
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201909
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	202002
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201902
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201906
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	12	481.2	201910
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	5	325.0	201905
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201904
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	4	340.0	201910
Lufthansa	Frankfurt I	Kuwait	1550	2310	4	3	255.0	201902
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	4	340.0	201904
Lufthansa	Frankfurt I	Los Angele	1520	1820	6	5	425.0	201906
Lufthansa	Frankfurt I	Mexico Cit	1700	2155	3	1	103.9	201904
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	4	415.6	201905
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	3	311.7	201906
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	4	415.6	201906
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	9	765.0	201907
Lufthansa	Frankfurt I	Mumbai	2035	0810	2	4	340.0	201908
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	13	1,105.0	201905
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	8	680.0	201908
Lufthansa	Frankfurt I	Sao Paulo	0445	1155	5	4	415.6	201907
Lufthansa	Frankfurt I	Seattle-Ta	0825	1000	5	2	170.0	201903
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	8	831.2	201908
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	16	1,662.4	201910

Lufthansa	Frankfurt I	Sharjah	1030	1925	3	4	340.0	201903
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2105	2 4 6	8	680.0	201910
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	4	415.6	201904
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	16	1,662.4	201904
Lufthansa	Houston G	Frankfurt I	1955	1245	2	4	340.0	201906
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	5	425.0	201906
Lufthansa	Los Angele	Frankfurt I	2125	1630	6	2	170.0	201903
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	8	680.0	201909
Lufthansa	Nairobi Jor	Frankfurt I	0130	0730	7	1	85.0	201910
Lufthansa	New York J	Frankfurt I	0130	1500	7	4	340.0	201907
Lufthansa	New York J	Frankfurt I	1000	2225	2	3	255.0	201903
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0530	4	5	425.0	201908
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	4	340.0	201904
Lufthansa	Novosibirs	Frankfurt I	0410	0530	3	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	0510	0530	7	1	85.0	201902
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	4	340.0	201909
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	2	207.8	201904
Lufthansa	Seoul Inch	Frankfurt I	0215	0605	3 5 7	13	1,350.7	201903
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	9	935.1	201905
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	8	831.2	201908
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	23	2,389.7	201908
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201905
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201911
Qatar Airw	Frankfurt I	Doha	1945	0235	2	5	519.5	201907
Qatar Airw	Frankfurt I	Doha	2030	0320	6	5	519.5	201908
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	202001
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201908
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	202001
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	4	400.0	201904
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201903
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	5	500.0	201903
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201912
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201904
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	5	500.0	201912
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	5	325.0	201908
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	5	200.5	201903
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	5	325.0	201903
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201909
Lufthansa	Frankfurt I	Kuwait	1620	2255	4	4	340.0	201906
Lufthansa	Frankfurt I	Mexico Cit	1700	2255	3	4	415.6	201909
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	4	415.6	201907
Lufthansa	Frankfurt I	Moscow D	2130	0240	3	3	255.0	201902
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	9	765.0	201905
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	9	765.0	201908
Lufthansa	Frankfurt I	New York J	2005	2240	4	4	340.0	201906
Lufthansa	Frankfurt I	New York J	2020	2300	56	8	680.0	201907

Lufthansa	Frankfurt I	New York J	2020	2300	56	8	680.0	201910
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	4	415.6	201906
Lufthansa	Frankfurt I	Seattle-Ta	0845	1010	5	4	340.0	201910
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	5	425.0	201906
Lufthansa	Frankfurt I	Tel Aviv-ya	1610	2100	2 4	2	170.0	201902
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	4	415.6	201905
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	5	519.5	201908
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	7	727.3	201908
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	1	103.9	201903
Lufthansa	Frankfurt I	Toronto Le	1400	1630	5	2	170.0	201902
Lufthansa	Frankfurt I	Toronto Le	1440	1720	5	1	85.0	201903
Lufthansa	Hyderabad	Frankfurt I	1120	1710	4	4	340.0	201907
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	4	340.0	201902
Lufthansa	Los Angele	Frankfurt I	1730	1320	5	5	425.0	201905
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	4	340.0	201909
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	5	425.0	201908
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	3	255.0	201910
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	8	680.0	201906
Lufthansa	New York J	Frankfurt I	0120	1445	3	1	103.9	201903
Lufthansa	New York J	Frankfurt I	0130	1455	6	4	340.0	201909
Lufthansa	New York J	Frankfurt I	0305	1635	4	4	340.0	201907
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	4	340.0	201907
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	9	765.0	201908
Lufthansa	Novosibirs	Frankfurt I	1210	1230	4	3	255.0	201903
Lufthansa	Novosibirs	Frankfurt I	1210	1230	1	5	425.0	201903
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	9	765.0	201906
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	5	425.0	201908
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	1	103.9	201906
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3	2	207.8	201909
Lufthansa	Shanghai P	Frankfurt I	0335	0835	2 4	6	623.4	201902
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	9	935.1	201906
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	9	935.1	201909
Qatar Airw	Doha	Frankfurt I	1255	1820	3	5	325.0	201905
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201905
Qatar Airw	Doha	Frankfurt I	1355	1915	7	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201908
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	202001
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201903
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	202001
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	201908
Qatar Airw	Frankfurt I	Doha	2115	0405	7	5	519.5	201912
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	5	500.0	201905
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	5	500.0	201910
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	202002
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	5	550.0	201903
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201906
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201904

Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	5	519.5	201905
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	5	519.5	201908
Lufthansa	Frankfurt I	Mumbai	1745	0520	34	8	680.0	201909
Lufthansa	Frankfurt I	Mumbai	1750	0525	1 5	7	595.0	201910
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	4	415.6	201905
Lufthansa	Frankfurt I	Sao Paulo '	2040	0350	7	4	415.6	201908
Lufthansa	Frankfurt I	Seattle-Tac	1335	1500	7	4	340.0	201908
Lufthansa	Frankfurt I	Shanghai P	0820	0105	1 3	9	935.1	201909
Lufthansa	Frankfurt I	Tokyo Nari	2230	1655	6	4	415.6	201907
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	2 4	8	831.2	201910
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	14	1,454.6	201908
Lufthansa	Guadalajar	Frankfurt I	0200	2020	7	4	415.6	201908
Lufthansa	Houston G	Frankfurt I	0045	1625	3	3	255.0	201903
Lufthansa	London Sta	Frankfurt I	0955	1215	4	1	85.0	201903
Lufthansa	Los Angele	Frankfurt I	2025	1620	6	1	85.0	201903
Lufthansa	Mumbai	Frankfurt I	0735	1235	1	5	425.0	201907
Lufthansa	Mumbai	Frankfurt I	0755	1255	45	10	850.0	201908
Lufthansa	Nairobi Jor	Frankfurt I	0130	0750	12 7	1	85.0	201902
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	3	255.0	201910
Lufthansa	Novosibirs	Frankfurt I	0410	0530	6	5	425.0	201906
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	4	340.0	201906
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	8	680.0	201904
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	4	340.0	201906
Lufthansa	Novosibirs	Frankfurt I	2035	2155	4	3	255.0	201909
Lufthansa	Sao Paulo '	Frankfurt I	0035	1750	3	1	103.9	201904
Lufthansa	Sao Paulo '	Frankfurt I	1955	1310	7	4	415.6	201904
Lufthansa	Seoul Inch	Frankfurt I	0205	0620	1 4 6	13	1,350.7	201907
Lufthansa	Seoul Inch	Frankfurt I	0215	0605	3 5 7	12	1,246.8	201902
Lufthansa	Shanghai P	Frankfurt I	0335	0835	2	1	103.9	201902
Lufthansa	Shanghai P	Frankfurt I	0820	1350	2 7	9	935.1	201904
Qatar Airw	Doha	Frankfurt I	0720	1240	1	5	519.5	201909
Qatar Airw	Doha	Frankfurt I	1255	1820	3	5	325.0	201907
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201910
Qatar Airw	Doha	Frankfurt I	1355	1915	7	5	519.5	201909
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201903
Qatar Airw	Frankfurt I	Doha	2020	0320	3	4	260.0	202002
Qatar Airw	Frankfurt I	Doha	2030	0320	5	4	415.6	201904
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	5	500.0	201907
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201903
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201912
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	5	500.0	201905
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201904
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201903
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201906
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201906
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	13	521.3	201904
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	4	160.4	201908

Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201907
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201910
Lufthansa	Frankfurt I	Dakar Blais	1955	0100	3	4	340.0	201902
Lufthansa	Frankfurt I	Dammam	1425	2110	1	4	340.0	201908
Lufthansa	Frankfurt I	Johannesb	0540	1625	6	5	425.0	201906
Lufthansa	Frankfurt I	Mexico Cit	1745	2330	1	5	519.5	201909
Lufthansa	Frankfurt I	Mexico Cit	1805	2359	5	4	415.6	201909
Lufthansa	Frankfurt I	Mumbai	2040	0915	2	4	340.0	201903
Lufthansa	Frankfurt I	New York J	2005	2240	4	4	340.0	201910
Lufthansa	Frankfurt I	New York J	2020	2300	56	9	765.0	201906
Lufthansa	Frankfurt I	New York J	2120	2355	3	4	340.0	201906
Lufthansa	Frankfurt I	Novosibirs	1405	0120	3 5	8	680.0	201906
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	4	415.6	201904
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	5	4	415.6	201904
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	3	255.0	201910
Lufthansa	Frankfurt I	Seoul Inch	0520	2335	3 5	2	207.8	201908
Lufthansa	Frankfurt I	Shanghai P	1305	0550	2345 7	22	2,285.8	201907
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	14	1,454.6	201910
Lufthansa	Frankfurt I	Toronto Le	1010	1250	5	1	85.0	201902
Lufthansa	Houston G	Frankfurt I	0040	1620	6	3	255.0	201903
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	8	680.0	201909
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	12	1,020.0	201904
Lufthansa	London Sta	Frankfurt I	1750	2010	7	1	103.9	201904
Lufthansa	Los Angele	Frankfurt I	1800	1350	3	5	425.0	201905
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	5	425.0	201906
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	5	425.0	201909
Lufthansa	Nairobi Jor	Frankfurt I	0130	0830	1 3 7	14	1,190.0	201909
Lufthansa	New York J	Frankfurt I	0130	1500	7	3	255.0	201910
Lufthansa	New York J	Frankfurt I	0130	1500	3	4	340.0	201910
Lufthansa	Novosibirs	Frankfurt I	0410	0530	7	4	340.0	201907
Lufthansa	Novosibirs	Frankfurt I	0410	0530	2	5	425.0	201907
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 6	4	340.0	201909
Lufthansa	Novosibirs	Frankfurt I	1115	1235	1 4 6	11	935.0	201910
Lufthansa	Novosibirs	Frankfurt I	1915	2035	4 6	9	765.0	201905
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	5	425.0	201906
Lufthansa	Sao Paulo '	Frankfurt I	0005	1720	3	2	207.8	201910
Lufthansa	Seoul Inch	Frankfurt I	0155	0545	2	4	415.6	201903
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	8	831.2	201910
Qatar Airw	Doha	Frankfurt I	0720	1240	1	4	415.6	201903
Qatar Airw	Doha	Frankfurt I	0935	1455	4	4	415.6	201903
Qatar Airw	Doha	Frankfurt I	0935	1455	4	5	519.5	201910
Qatar Airw	Doha	Frankfurt I	1255	1820	3	4	260.0	201904
Qatar Airw	Doha	Frankfurt I	1310	1830	6	4	415.6	201907
Qatar Airw	Doha	Frankfurt I	1310	1830	5	5	519.5	201911
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201902
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201905
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	202002

Qatar Airw	Frankfurt I	Doha	1735	0025	4	5	519.5	201910
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	201906
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	4	400.0	202002
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201902
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	202002
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201909
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	5	500.0	202002
Saudi Arab	Frankfurt I	Riyadh Kin	1935	0310	4	4	400.0	201903
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201910
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201907
Lufthansa	Frankfurt I	Almaty	0730	1830	5 7	3	255.0	201908
Lufthansa	Frankfurt I	Almaty	0730	1830	3 5 7	13	1,105.0	201905
Lufthansa	Frankfurt I	Atlanta Ha	1105	1450	3	1	103.9	201903
Lufthansa	Frankfurt I	Atlanta Ha	1530	1915	2	4	340.0	201906
Lufthansa	Frankfurt I	Atlanta Ha	1930	0025	6	1	85.0	201903
Lufthansa	Frankfurt I	Beijing Cap	1200	0435	2	1	103.9	201902
Lufthansa	Frankfurt I	Bengaluru	1210	0135	6	1	85.0	201903
Lufthansa	Frankfurt I	Bengaluru	1300	0225	6	2	170.0	201902
Lufthansa	Frankfurt I	Cairo Inter	1910	0005	5	4	340.0	201902
Lufthansa	Frankfurt I	Cairo Inter	1950	0045	2	4	340.0	201902
Lufthansa	Frankfurt I	Cairo Inter	2050	0045	2	3	255.0	201905
Lufthansa	Frankfurt I	Chicago O'	0840	1125	5	1	85.0	201902
Lufthansa	Frankfurt I	Chicago O'	1000	1245	7	4	340.0	201902
Lufthansa	Frankfurt I	Chicago O'	2030	0015	1	3	255.0	201903
Lufthansa	Frankfurt I	Curitiba Af	1145	1910	2	4	415.6	201905
Lufthansa	Frankfurt I	Dallas Dall	1155	1600	3	1	85.0	201903
Lufthansa	Frankfurt I	Dammam	1425	2110	1	5	425.0	201904
Lufthansa	Frankfurt I	Istanbul At	2115	0115	6	1	85.0	201905
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	4	340.0	201906
Lufthansa	Frankfurt I	Johannesb	0555	1640	2	4	340.0	201909
Lufthansa	Frankfurt I	Mexico Cit	1425	1920	6	1	103.9	201904
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	4	415.6	201907
Lufthansa	Frankfurt I	Mexico Cit	1735	2330	4	3	311.7	201910
Lufthansa	Frankfurt I	Mumbai	1730	0505	7	4	340.0	201908
Lufthansa	Frankfurt I	New York J	2020	2300	56	8	680.0	201909
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	1	85.0	201903
Lufthansa	Frankfurt I	Novosibirs	0450	1605	3 5 7	13	1,105.0	201906
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	4	415.6	201905
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	6	5	519.5	201908
Lufthansa	Frankfurt I	Sao Paulo '	0445	1155	5	5	519.5	201908
Lufthansa	Frankfurt I	Sao Paulo '	0735	1700	5	3	311.7	201902
Lufthansa	Frankfurt I	Sao Paulo '	0845	1555	3	4	415.6	201906
Lufthansa	Frankfurt I	Seattle-Ta	1335	1500	7	4	340.0	201905
Lufthansa	Frankfurt I	Tokyo Nari	2230	1700	1 3 5 7	15	1,558.5	201905
Lufthansa	Frankfurt I	Toronto Le	1110	1335	2	4	340.0	201906
Lufthansa	Guadalajar	Frankfurt I	0410	2230	45	10	1,039.0	201908
Lufthansa	Hyderabad	Frankfurt I	1055	1645	2 6	9	765.0	201907

Lufthansa	Istanbul At	Frankfurt I	0330	0530	5	1	85.0	201910
Lufthansa	Istanbul At	Frankfurt I	0330	0530	3 5 7	13	1,105.0	201905
Lufthansa	Istanbul At	Frankfurt I	0445	0540	3 5	2	170.0	201902
Lufthansa	Los Angele	Frankfurt I	2050	1700	6	3	255.0	201910
Lufthansa	Los Angele	Frankfurt I	2210	1800	7	4	340.0	201905
Lufthansa	New York J	Frankfurt I	0130	1500	7	4	340.0	201908
Lufthansa	New York J	Frankfurt I	0130	1500	3	4	340.0	201906
Lufthansa	New York J	Frankfurt I	0305	1635	4	5	425.0	201905
Lufthansa	Novosibirs	Frankfurt I	1140	1210	6	5	425.0	201903
Lufthansa	Novosibirs	Frankfurt I	1150	1210	1 6	7	595.0	201903
Lufthansa	Novosibirs	Frankfurt I	2010	2130	7	4	340.0	201905
Lufthansa	Sao Paulo	Frankfurt I	0005	1720	3	2	207.8	201908
Lufthansa	Sao Paulo	Frankfurt I	0035	1750	3	4	415.6	201907
Lufthansa	Shanghai P	Frankfurt I	0325	0855	2 4	8	831.2	201906
Lufthansa	Shanghai P	Frankfurt I	0430	1000	5 7	9	935.1	201908
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	4	260.0	201906
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201905
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	12	481.2	201906
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	4	260.0	201908
Saudi Arab	Frankfurt I	Jeddah	0705	1420	4	4	400.0	201911
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201902
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	5	550.0	201907
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	201905
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	4	400.0	202001
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	12	481.2	201906
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	12	481.2	201909
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	4	260.0	201910
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	5	325.0	201908
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	4	260.0	201907
Turkish Air	Lagos	Frankfurt I	0240	1120	5	5	325.0	201908
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201902
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201903
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	13	521.3	201903
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	5	325.0	201903
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	4	260.0	201909
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	4	160.4	201904
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	13	521.3	201903
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201907
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	4	260.0	201904
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	14	561.4	201907
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201902
Qatar Airw	Doha	Frankfurt I	1310	1830	5	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	1440	2130	1	4	415.6	201906
Qatar Airw	Frankfurt I	Doha	1440	2130	1	5	519.5	201909
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201906
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201904
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201904

Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	2115	0405	7	4	415.6	201910
Saudi Arab	Dammam	Frankfurt I	1450	1925	3	5	500.0	201910
Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201907
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	201908
Saudi Arab	Frankfurt I	Riyadh Kin	1940	0315	1	4	400.0	202001
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201912
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	202002
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201904
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	14	561.4	201907
Turkish Air	Frankfurt I	Istanbul At	1315	1815	5	5	325.0	201905
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201904
Turkish Air	Istanbul At	Frankfurt I	0430	0630	23 5	13	521.3	201908
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	5	325.0	201909
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	5	550.0	201908
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	4	440.0	201902
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	5	500.0	201905
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201902
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	5	325.0	201908
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	4	260.0	201905
Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201902
Saudi Arab	Riyadh Kin	Frankfurt I	1045	1455	1	5	500.0	201909
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201903
Turkish Air	Frankfurt I	Istanbul At	0815	1215	23 5	13	521.3	201908
Turkish Air	Lagos	Frankfurt I	0240	1120	5	5	325.0	201905
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	5	325.0	201903
Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201907
Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201910
Turkish Air	Frankfurt I	Istanbul At	0815	1215	4	4	260.0	201902
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	4	160.4	201907
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	3	120.3	201910
Turkish Air	Istanbul At	Frankfurt I	0430	0630	4	4	260.0	201906
Turkish Air	Istanbul At	Frankfurt I	1600	1800	6	4	260.0	201905
Turkish Air	Istanbul At	Frankfurt I	1615	1815	7	3	195.0	201910
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	5	200.5	201906
Turkish Air	Frankfurt I	Istanbul At	2000	0005	7	5	200.5	201909
Turkish Air	Frankfurt I	Istanbul At	2000	0005	6	4	260.0	201910
Lufthansa	Shanghai P	Frankfurt I	0820	1350	1 3456	21	2,181.9	201909
Qatar Airw	Doha	Frankfurt I	0720	1240	1	5	519.5	201912
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201902
Qatar Airw	Doha	Frankfurt I	1225	1745	2	4	415.6	201909
Qatar Airw	Frankfurt I	Doha	1735	0025	4	4	415.6	201911
Qatar Airw	Frankfurt I	Doha	1945	0235	2	4	415.6	201903
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201907
Qatar Airw	Frankfurt I	Doha	2030	0320	6	4	415.6	201910
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	5	500.0	201903
Saudi Arab	Dammam	Frankfurt I	0135	0610	6	5	500.0	201906

Saudi Arab	Frankfurt I	Jeddah	0820	1535	6	4	400.0	201910
Saudi Arab	Frankfurt I	Jeddah	2020	0250	3	4	440.0	201909
Saudi Arab	Frankfurt I	Riyadh Kin	2040	0315	5	4	440.0	201907
Saudi Arab	Riyadh Kin	Frankfurt I	0910	1420	5	5	550.0	201911
Saudi Arab	Riyadh Kin	Frankfurt I	1105	1515	4	4	400.0	201909
Turkish Air	Lagos	Frankfurt I	0240	1120	5	4	260.0	201906

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USAGE: 3367 RECORDS.

United Parcel Service (UPS) flights from London Stansted

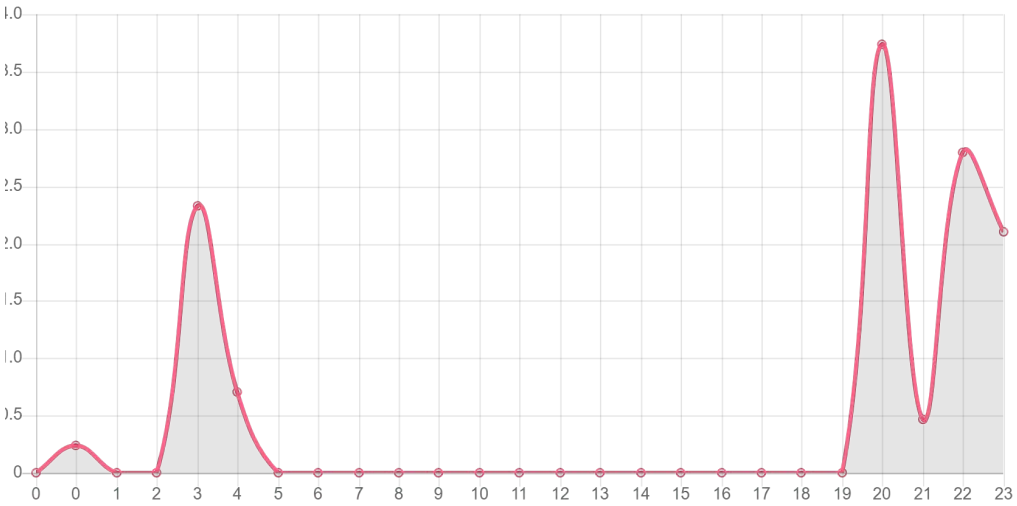
AIRPORT
London Stansted Airport — STN / EGSS

AIRLINE
United Parcel Service (UPS) — 5X / UPS
United States (US)

DESTINATIONS
3 airports

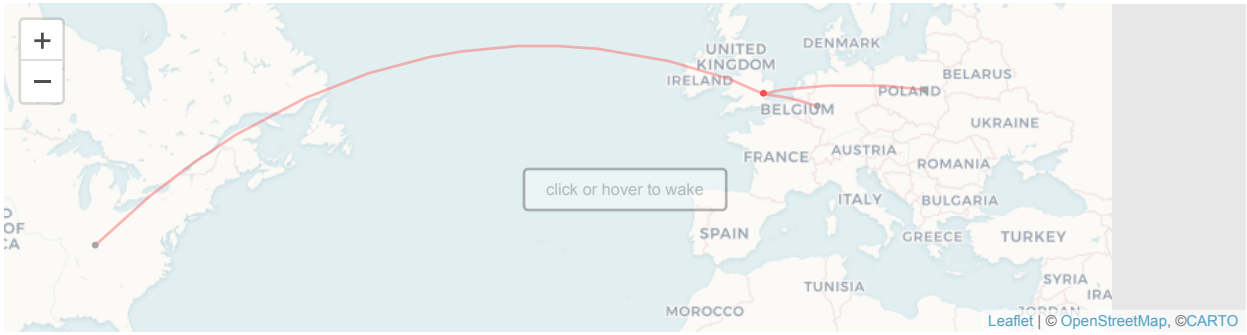
SEAT CAPACITY
474 seats per day
0% of total capacity.

Departures per Hour



Weekly values, based on flights in the last 30 days

Departure Map



Destinations

Top Routes

Show 10 ▼ entries

Airport	Flights per Week	Seats per Flight
Louisville International Airport (SDF)	5	237
Cologne Bonn Airport (CGN)	5	237
Warsaw Chopin Airport (WAW)	3	0

Showing 1 to 3 of 3 entries

Based on flights in the last 30 days

Recent Flights

Thu, 28. Feb (lands Thu, 01. Jan): Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N427UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
01:00 (00:00 UTC)
Duration: -430923h -47m
Turnaround: 28 hours

Actual:
03:42 (03:42 UTC)
Departed 4 min early
06:32 (05:32 UTC)
Landed 25855532 min delayed
Duration: 1h 45m

Wed, 27. Feb (lands Thu, 28. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N319UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
23:03 (23:03 UTC)
00:56 (23:56 UTC)
Duration: 0h 53m
Turnaround: 2 hours

Actual (estimated values):
23:03 (23:03 UTC)
00:56 (23:56 UTC)
Duration: 0h 53m

Wed, 27. Feb : Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N429UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
06:37 (05:37 UTC)
Duration: 1h 50m
Turnaround: 68 minutes

Actual (estimated values):
03:48 (03:48 UTC)
Departed 1 min delayed
06:37 (05:37 UTC)
Duration: 1h 50m

Tue, 26. Feb (lands Wed, 27. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N319UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
23:04 (23:04 UTC)
00:49 (23:49 UTC)
Duration: 0h 45m

Actual (estimated values):
23:04 (23:04 UTC)
00:50 (23:50 UTC)
Duration: 0h 45m

Tue, 26. Feb (lands Wed, 31. Dec): Live

5X238 UPS238
United Parcel Service (UPS) 5X / UPS
N332UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

Scheduled:
20:45 (20:45 UTC)
19:00 (00:00 UTC)
Duration: -430892h -45m

Estimated:
20:51 (20:51 UTC)
Departed 1446 min delayed
01:02 (06:02 UTC)
Expected 25855562 min delayed
Duration: 33h 17m

Tue, 26. Feb : Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N429UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
06:35 (05:35 UTC)
Duration: 1h 48m

Actual (estimated values):
03:45 (03:45 UTC)
Departed 1 min early
06:34 (05:34 UTC)
Duration: 1h 47m

Mon, 25. Feb (lands Tue, 26. Feb): Landed

5X205 UPS205
United Parcel Service (UPS) 5X / UPS
N304UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
22:57 (22:57 UTC)
00:45 (23:45 UTC)
Duration: 0h 48m

Actual (estimated values):
22:57 (22:57 UTC)
00:45 (23:45 UTC)
Duration: 0h 48m

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Mon, 25. Feb (lands Wed, 27. Feb): Landed

5X238 UPS238
United Parcel Service (UPS) 5X / UPS
N304UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

Scheduled:
20:45 (20:45 UTC)
00:15 (05:15 UTC)
Duration: 32h 30m

Actual (estimated values):
21:00 (21:00 UTC)
Departed 1455 min delayed
00:16 (05:16 UTC)
Duration: 32h 31m

Fri, 22. Feb (lands Tue, 26. Feb): Landed

5X238 UPS238

Scheduled:

Actual (estimated values):

United Parcel Service (UPS) 5X / UPS
N340UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

23:15 (23:15 UTC)
00:23 (05:23 UTC)
Duration: 78h 8m

21:05 (21:05 UTC)
Departed 4190 min delayed
00:23 (05:23 UTC)

Duration: 78h 8m

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Fri, 22. Feb (lands Sat, 23. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N340UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
23:12 (23:12 UTC)
00:59 (23:59 UTC)
Duration: 0h 47m

Actual (estimated values):
23:12 (23:12 UTC)
01:00 (00:00 UTC)

Duration: 0h 48m

Thu, 21. Feb (lands Fri, 22. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N323UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
23:10 (23:10 UTC)
01:02 (00:02 UTC)
Duration: 0h 52m

Actual (estimated values):
23:09 (23:09 UTC)
01:02 (00:02 UTC)

Duration: 0h 51m

Thu, 21. Feb (lands Fri, 22. Feb): Landed

5X238 UPS238
United Parcel Service (UPS) 5X / UPS
N315UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

Scheduled:
20:45 (20:45 UTC)
01:22 (06:22 UTC)
Duration: 9h 37m

Actual (estimated values):
21:54 (21:54 UTC)
Departed 69 min delayed
01:22 (06:22 UTC)

Duration: 9h 37m

Thu, 21. Feb : Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N429UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
06:38 (05:38 UTC)
Duration: 1h 51m

Actual (estimated values):
03:42 (03:42 UTC)
Departed 4 min early
06:38 (05:38 UTC)

Duration: 1h 51m

Wed, 20. Feb (lands Thu, 21. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N323UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
22:57 (22:57 UTC)
00:43 (23:43 UTC)
Duration: 0h 45m

Actual (estimated values):
22:57 (22:57 UTC)
00:42 (23:42 UTC)

Duration: 0h 45m

Wed, 20. Feb (lands Thu, 21. Feb): Landed

5X238 UPS238
United Parcel Service (UPS) 5X / UPS
N339UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

Scheduled:
20:45 (20:45 UTC)
00:55 (05:55 UTC)
Duration: 9h 10m

Actual (estimated values):
21:01 (21:01 UTC)
Departed 16 min delayed
00:54 (05:54 UTC)
Duration: 9h 9m

Wed, 20. Feb : Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N431UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
06:42 (05:42 UTC)
Duration: 1h 55m

Actual (estimated values):
03:39 (03:39 UTC)
Departed 7 min early
06:43 (05:43 UTC)
Duration: 1h 56m

Tue, 19. Feb (lands Wed, 20. Feb): Landed

5X235 UPS235
United Parcel Service (UPS) 5X / UPS
N323UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
23:13 (23:13 UTC)
01:04 (00:04 UTC)
Duration: 0h 50m

Actual (estimated values):
23:12 (23:12 UTC)
01:04 (00:04 UTC)
Duration: 0h 50m

Tue, 19. Feb (lands Wed, 20. Feb): Landed

5X238 UPS238
United Parcel Service (UPS) 5X / UPS
N304UP Boeing B767-300
London (STN)
to Louisville (SDF)
6,528km (4,054mi.)

Scheduled:
20:45 (20:45 UTC)
00:57 (05:57 UTC)
Duration: 9h 12m

Actual (estimated values):
21:08 (21:08 UTC)
Departed 23 min delayed
00:57 (05:57 UTC)
Duration: 9h 12m

Tue, 19. Feb : Landed

5X244 UPS244
United Parcel Service (UPS) 5X / UPS
N429UP Boeing B757-200
London (STN)
to Warsaw (WAW)
1,415km (879mi.)

Scheduled:
03:47 (03:47 UTC)
06:33 (05:33 UTC)
Duration: 1h 46m

Actual (estimated values):
03:42 (03:42 UTC)
Departed 4 min early
06:33 (05:33 UTC)
Duration: 1h 46m

Mon, 18. Feb (lands Tue, 19. Feb): Landed

5X205 UPS205
United Parcel Service (UPS) 5X / UPS
N304UP Boeing B767-300
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
22:56 (22:56 UTC)
00:47 (23:47 UTC)
Duration: 0h 50m

Actual (estimated values):
22:56 (22:56 UTC)
00:47 (23:47 UTC)
Duration: 0h 50m

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Federal Express (FedEx) flights from London Stansted

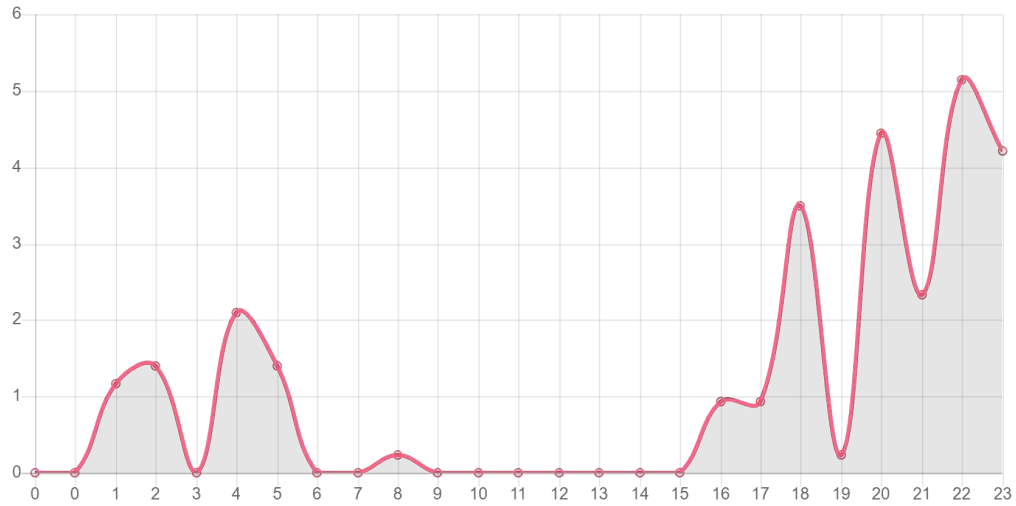
AIRPORT
London Stansted Airport — STN / EGSS

AIRLINE
Federal Express (FedEx) — FX / FDX
United States (US)

DESTINATIONS
7 airports

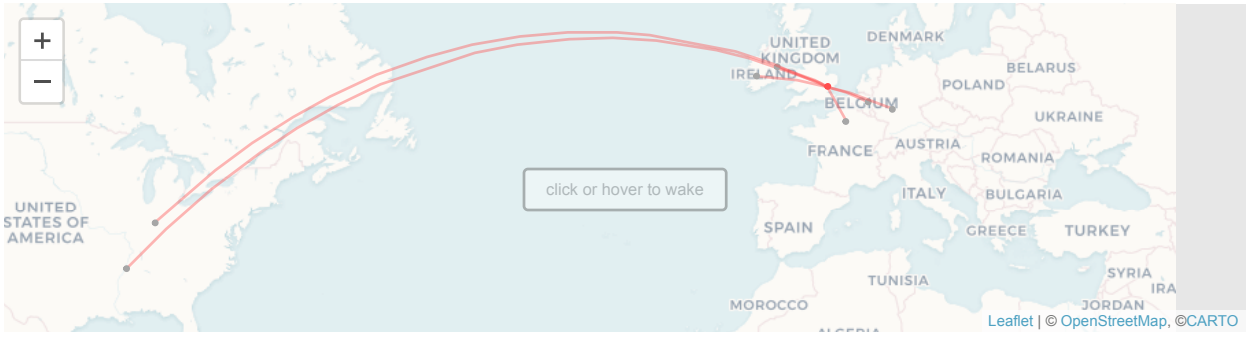
SEAT CAPACITY
0 seats per day
0% of total capacity.

Departures per Hour



Weekly values, based on flights in the last 30 days

Departure Map



Destinations

Top Routes

Show 10 entries

Airport	Flights per Week	Seats per Flight
Paris Charles de Gaulle Airport (CDG)	7	0
Liege Airport (LGG)	6	0
Memphis International Airport (MEM)	6	0
Dublin Airport (DUB)	5	0

Airport	Flights per Week	Seats per Flight
Indianapolis International Airport (IND)	2	0
Frankfurt Airport (FRA)	2	0
Shannon Airport (SNN)	1	0

Showing 1 to 7 of 7 entries

Previous 1 Next

Recent Flights

Based on flights in the last 30 days

Thu, 28. Feb : Landed

3V976 TAY976C
Federal Express (FedEx) FX / FDX
OE-IAQ Boeing B737-400
London (STN)
to Liege (LGG)
388km (241mi.)

Scheduled:
02:00 (02:00 UTC)
04:00 (03:00 UTC)
Duration: 1h 0m
Turnaround: 62 minutes

Actual:
02:09 (02:09 UTC)
Departed 9 min delayed
03:53 (02:53 UTC)
Landed 6 min early
Duration: 0h 53m

Tue, 26. Feb (lands Wed, 27. Feb): Landed

FX5201 FDX5201
Federal Express (FedEx) FX / FDX
N676FE Airbus A300-600
London (STN)
to Paris (CDG)
359km (223mi.)

Scheduled:
22:23 (22:23 UTC)
00:08 (23:08 UTC)
Duration: 0h 44m

Actual (estimated values):
22:24 (22:24 UTC)
00:08 (23:08 UTC)

Duration: 0h 44m

Tue, 26. Feb (lands Wed, 31. Dec): Landed

FX9 FDX9
Federal Express (FedEx) FX / FDX
N617FE McDonnell-Douglas MD11
London (STN)
to Indianapolis (IND)
6,444km (4,002mi.)

Scheduled:
21:56 (21:56 UTC)
19:00 (00:00 UTC)
Duration: -430893h -56m
Turnaround: 111 minutes

Actual:
22:31 (22:31 UTC)
Departed 35 min delayed
01:20 (06:20 UTC)
Landed 25854140 min delayed
Duration: 8h 24m

Tue, 26. Feb (lands Wed, 27. Feb): Landed

FX1 FDX1
Federal Express (FedEx) FX / FDX
N890FD Boeing B777-200LR
London (STN)
to Memphis (MEM)
7,042km (4,374mi.)

Scheduled:
20:50 (20:50 UTC)
00:14 (06:14 UTC)
Duration: 9h 24m
Turnaround: 2 hours

Actual (estimated values):
21:25 (21:25 UTC)
Departed 35 min delayed
00:15 (06:15 UTC)
Duration: 9h 25m

Tue, 26. Feb : Landed

FX36 FDX36
Federal Express (FedEx) FX / FDX
N528FE McDonnell-Douglas MD11
London (STN)
to Frankfurt (FRA)
617km (383mi.)

Scheduled:
18:40 (18:40 UTC)
20:45 (19:45 UTC)
Duration: 1h 4m
Turnaround: 99 minutes

Actual (estimated values):
18:41 (18:41 UTC)
20:45 (19:45 UTC)
Duration: 1h 4m

Tue, 26. Feb : Landed

FX5202 FDX5202
Federal Express (FedEx) FX / FDX
N676FE Airbus A300-600
London (STN)
to Dublin (DUB)
471km (292mi.)

Scheduled:
05:02 (05:02 UTC)
05:46 (05:46 UTC)
Duration: 0h 44m

Actual (estimated values):
05:03 (05:03 UTC)
05:47 (05:47 UTC)
Duration: 0h 45m

Tue, 26. Feb : Landed

3V976 TAY976C
Federal Express (FedEx) FX / FDX
OE-IAQ Boeing B737-400
London (STN)
to Liege (LGG)
388km (241mi.)

Scheduled:
02:00 (02:00 UTC)
04:00 (03:00 UTC)
Duration: 1h 0m

Actual:
02:00 (02:00 UTC)
03:40 (02:40 UTC)
Landed 19 min early
Duration: 0h 40m

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Mon, 25. Feb (lands Tue, 26. Feb): Landed

FX6301 FDX6301
Federal Express (FedEx) FX / FDX
N972FD Boeing B757-200
London (STN)
to Liege (LGG)
388km (241mi.)

Scheduled:
23:06 (23:06 UTC)
00:48 (23:48 UTC)
Duration: 0h 42m

Actual (estimated values):
23:06 (23:06 UTC)
00:49 (23:49 UTC)
Duration: 0h 42m

Mon, 25. Feb (lands Tue, 26. Feb): Landed

FX5201 FDX5201
Federal Express (FedEx) FX / FDX

Scheduled:
22:26 (22:26 UTC)

Actual (estimated values):
22:26 (22:26 UTC)

N658FE Airbus A300-600
London (STN)
to Paris (CDG)
359km (223mi.)

00:15 (23:15 UTC)
Duration: 0h 48m
Turnaround: 86 minutes

00:16 (23:16 UTC)
Duration: 0h 49m

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Mon, 25. Feb (lands Tue, 26. Feb): Landed

FX34 FDX34
Federal Express (FedEx) FX / FDX
N598FE McDonnell-Douglas MD11
London (STN)
to Cologne (CGN)
493km (306mi.)

Scheduled:
22:13 (22:13 UTC)
00:06 (23:06 UTC)
Duration: 0h 53m

Actual (estimated values):
22:13 (22:13 UTC)
00:05 (23:05 UTC)
Duration: 0h 52m

Mon, 25. Feb (lands Tue, 26. Feb): Landed

FX1 FDX1
Federal Express (FedEx) FX / FDX
N854FD Boeing B777-200LR
London (STN)
to Memphis (MEM)
7,042km (4,374mi.)

Scheduled:
20:50 (20:50 UTC)
00:17 (06:17 UTC)
Duration: 9h 27m

Actual (estimated values):
21:26 (21:26 UTC)
Departed 36 min delayed
00:16 (06:16 UTC)
Duration: 9h 26m

Mon, 25. Feb : Landed

FX9142 FDX9142
Federal Express (FedEx) FX / FDX
N573FE McDonnell-Douglas MD11
London (STN)
to Paris (CDG)
359km (223mi.)

Scheduled:
18:44 (18:44 UTC)
20:29 (19:29 UTC)
Duration: 0h 45m

Actual (estimated values):
18:45 (18:45 UTC)
20:29 (19:29 UTC)
Duration: 0h 44m

Sun, 24. Feb : Landed

FX5220 FDX5220
Federal Express (FedEx) FX / FDX
N658FE Airbus A300-600
London (STN)
to Dublin (DUB)
471km (292mi.)

Scheduled:
01:37 (01:37 UTC)
02:20 (02:20 UTC)
Duration: 0h 43m

Actual (estimated values):
01:37 (01:37 UTC)
02:20 (02:20 UTC)
Duration: 0h 43m

Sat, 23. Feb (lands Sun, 24. Feb): Landed

FX5391 FDX5391
Federal Express (FedEx) FX / FDX
N883FD Boeing B777-200LR
London (STN)
to Memphis (MEM)
7,042km (4,374mi.)

Scheduled:
23:38 (23:38 UTC)
02:59 (08:59 UTC)
Duration: 9h 21m

Actual (estimated values):
23:49 (23:49 UTC)
Departed 11 min delayed
03:00 (09:00 UTC)
Duration: 9h 22m

Sat, 23. Feb (lands Sun, 24. Feb): Landed

FX36 FDX36
Federal Express (FedEx) FX / FDX
N618FE McDonnell-Douglas MD11
London (STN)
to Paris (CDG)
359km (223mi.)

Scheduled:
23:36 (23:36 UTC)
01:16 (00:16 UTC)
Duration: 0h 40m

Actual (estimated values):
23:35 (23:35 UTC)
01:16 (00:16 UTC)
Duration: 0h 40m

Sat, 23. Feb : Landed

FX5210 FDX5210
Federal Express (FedEx) FX / FDX
N676FE Airbus A300-600
London (STN)
to Paris (CDG)
359km (223mi.)

Scheduled:
17:57 (17:57 UTC)
19:41 (18:41 UTC)
Duration: 0h 44m

Actual (estimated values):
17:57 (17:57 UTC)
19:40 (18:40 UTC)
Duration: 0h 43m

Fri, 22. Feb (lands Sat, 23. Feb): Landed

FX6301 FDX6301
Federal Express (FedEx) FX / FDX
N916FD Boeing B757-200
London (STN)
to Liege (LGG)
388km (241mi.)

Scheduled:
23:05 (23:05 UTC)
00:50 (23:50 UTC)
Duration: 0h 45m

Actual (estimated values):
23:05 (23:05 UTC)
00:49 (23:49 UTC)
Duration: 0h 44m

Fri, 22. Feb (lands Sat, 23. Feb): Landed

FX1 FDX1
Federal Express (FedEx) FX / FDX
N859FD Boeing B777-200LR
London (STN)
to Memphis (MEM)
7,042km (4,374mi.)

Scheduled:
20:50 (20:50 UTC)
00:39 (06:39 UTC)
Duration: 9h 49m

Actual (estimated values):
21:15 (21:15 UTC)
Departed 25 min delayed
00:39 (06:39 UTC)
Duration: 9h 49m

Fri, 22. Feb : Landed

FX5202 FDX5202
Federal Express (FedEx) FX / FDX
N676FE Airbus A300-600
London (STN)
to Dublin (DUB)
471km (292mi.)

Scheduled:
04:49 (04:49 UTC)
05:37 (05:37 UTC)
Duration: 0h 47m

Actual (estimated values):
04:49 (04:49 UTC)
05:38 (05:38 UTC)
Duration: 0h 48m

Thu, 21. Feb (lands Fri, 22. Feb): Landed

FX6301 FDX6301
Federal Express (FedEx) FX / FDX
N916FD Boeing B757-200
London (STN)
to Liege (LGG)
388km (241mi.)

Scheduled:
23:05 (23:05 UTC)
00:51 (23:51 UTC)
Duration: 0h 45m

Actual (estimated values):
23:05 (23:05 UTC)
00:51 (23:51 UTC)
Duration: 0h 45m

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Carrier Name	Dep Airport Name	Arr Airport Name	Local Dep Time	Local Days Of Op	Frequency	FreightTons (Total)	Time series
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	5	519.5	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	5	519.5	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	5	519.5	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	5	519.5	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	4	415.6	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0100	6	5	519.5	202002
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	5	519.5	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	5	519.5	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	5	519.5	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	5	519.5	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	4	415.6	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0105	6	5	519.5	202002
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201903
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201903
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201904
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201904
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201905
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201905
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201906
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201906
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201907
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201907
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201908
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201908
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201909
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201909
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201910
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201910
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201911
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	201911
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201912
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	5	519.5	201912
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	202001
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	202001
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	202002
Qatar Airways	London Stansted Apt	Paris Charles de Gal	0500	7	4	415.6	202002
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	5	519.5	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	5	519.5	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	5	519.5	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	5	519.5	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	5	519.5	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0530	5	4	415.6	202002

Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	5	519.5	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	5	519.5	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	5	519.5	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	5	519.5	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	5	519.5	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0600	5	4	415.6	202002
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201903
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201904
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	5	519.5	201905
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201906
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201907
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	5	519.5	201908
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201909
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	5	519.5	201910
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201911
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	201912
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	5	519.5	202001
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0700	4	4	415.6	202002
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201903
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201904
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	5	519.5	201905
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201906
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201907
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	5	519.5	201908
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201909
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	5	519.5	201910
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201911
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	201912
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	5	519.5	202001
Qatar Airways	London Stansted Apt	Paris Charles de Gau	0725	4	4	415.6	202002
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201903
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201904
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	5	563	201905
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201906
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	5	563	201907
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201908
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201909
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	5	563	201910
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201911
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	201912
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	5	563	202001
Cargolux Airline	London Stansted Apt	Luxembourg	0820	3	4	450.4	202002
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201903
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	5	545	201904
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201905
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201906
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	5	545	201907
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201908
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	5	545	201909
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201910
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	201911
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	5	545	201912
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	202001
Cargolux Italia S	London Stansted Apt	Luxembourg	0820	1	4	436	202002
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	201903

China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201903
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	5	500	201904
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	8	800	201904
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	201905
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201905
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201906
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	201906
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	5	500	201907
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	8	800	201907
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	10	1000	201908
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201908
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201909
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	8	800	201909
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	5	500	201910
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	201910
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	201911
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	201911
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	5	500	201912
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	8	800	201912
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	202001
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	202001
China Southern	London Stansted Apt	Frankfurt Internatio	0835	2	4	400	202002
China Southern	London Stansted Apt	Frankfurt Internatio	0835	4 6	9	900	202002
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	5	519.5	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	5	519.5	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	5	519.5	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	5	519.5	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0900	1	4	415.6	202002
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201903
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	5	519.5	201904
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201905
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201906
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	5	519.5	201907
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201908
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	5	519.5	201909
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201910
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	201911
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	5	519.5	201912
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	202001
Qatar Airways	London Stansted Apt	Milan Malpensa Apt	0910	1	4	415.6	202002
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201903
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201904
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	5	550	201905
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201906
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201907
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	5	550	201908
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201909
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	5	550	201910
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201911
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	201912
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	5	550	202001
Silk Way West A	London Stansted Apt	Maastricht/Aachen	0930	4	4	440	202002
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	5	563	201903
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4	201904

Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	5	563 201905
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 201906
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 201907
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	5	563 201908
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 201909
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 201910
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	5	563 201911
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 201912
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	5	563 202001
Cargolux Airline	London Stansted Apt	Luxembourg	0935	5	4	450.4 202002
Lufthansa Germ	London Stansted Apt	Frankfurt Internatio	0955	4	1	85 201903
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201903
China Southern	London Stansted Apt	Guangzhou	1005	1	5	500 201904
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201905
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201906
China Southern	London Stansted Apt	Guangzhou	1005	1	5	500 201907
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201908
China Southern	London Stansted Apt	Guangzhou	1005	1	5	500 201909
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201910
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 201911
China Southern	London Stansted Apt	Guangzhou	1005	1	5	500 201912
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 202001
China Southern	London Stansted Apt	Guangzhou	1005	1	4	400 202002
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201903
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201904
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	5	550 201905
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201906
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	5	550 201907
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201908
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201909
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	5	550 201910
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201911
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 201912
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	5	550 202001
Cargologicair	London Stansted Apt	Frankfurt Internatio	1250	3	4	440 202002
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201903
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201904
Qatar Airways	London Stansted Apt	Basel	1600	3	5	325 201905
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201906
Qatar Airways	London Stansted Apt	Basel	1600	3	5	325 201907
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201908
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201909
Qatar Airways	London Stansted Apt	Basel	1600	3	5	325 201910
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201911
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 201912
Qatar Airways	London Stansted Apt	Basel	1600	3	5	325 202001
Qatar Airways	London Stansted Apt	Basel	1600	3	4	260 202002
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201903
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201904
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201905
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201906
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201907
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201908
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 201909
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	14	1400 201910
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	12	1200 201911
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	14	1400 201912
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	13	1300 202001
Asiana Airlines	London Stansted Apt	Frankfurt Internatio	1610	2 4 7	12	1200 202002
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260 201903
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260 201904

Qatar Airways	London Stansted Apt	Basel	1615	3	5	325	201905
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	201906
Qatar Airways	London Stansted Apt	Basel	1615	3	5	325	201907
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	201908
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	201909
Qatar Airways	London Stansted Apt	Basel	1615	3	5	325	201910
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	201911
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	201912
Qatar Airways	London Stansted Apt	Basel	1615	3	5	325	202001
Qatar Airways	London Stansted Apt	Basel	1615	3	4	260	202002
Qatar Airways	London Stansted Apt	Basel	1740	6	5	325	201903
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201904
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201905
Qatar Airways	London Stansted Apt	Basel	1740	6	5	325	201906
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201907
Qatar Airways	London Stansted Apt	Basel	1740	6	5	325	201908
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201909
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201910
Qatar Airways	London Stansted Apt	Basel	1740	6	5	325	201911
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	201912
Qatar Airways	London Stansted Apt	Basel	1740	6	4	260	202001
Qatar Airways	London Stansted Apt	Basel	1740	6	5	325	202002
Lufthansa Germ	London Stansted Apt	Frankfurt Internatio	1750	7	1	103.9	201904
Qatar Airways	London Stansted Apt	Basel	1800	6	5	325	201903
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201904
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201905
Qatar Airways	London Stansted Apt	Basel	1800	6	5	325	201906
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201907
Qatar Airways	London Stansted Apt	Basel	1800	6	5	325	201908
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201909
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201910
Qatar Airways	London Stansted Apt	Basel	1800	6	5	325	201911
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	201912
Qatar Airways	London Stansted Apt	Basel	1800	6	4	260	202001
Qatar Airways	London Stansted Apt	Basel	1800	6	5	325	202002
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	5	550	201903
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201904
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201905
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	5	550	201906
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201907
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201908
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	5	550	201909
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201910
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	201911
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	5	550	201912
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	202001
Martinair Hollar	London Stansted Apt	Amsterdam	1825	7	4	440	202002
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201903
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	5	325	201904
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201905
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201906
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	5	325	201907
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201908
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	5	325	201909
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201910
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	201911
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	5	325	201912
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	202001
Qatar Airways	London Stansted Apt	Brussels Airport	1830	1	4	260	202002
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	5	550	201903
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201904

Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201905
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	5	550	201906
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201907
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	5	550	201908
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201909
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201910
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	5	550	201911
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	201912
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	4	440	202001
Cargologicair	London Stansted Apt	Atlanta Hartsfield-ja	1850	6	5	550	202002
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201903
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	5	325	201904
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201905
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201906
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	5	325	201907
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201908
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	5	325	201909
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201910
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	201911
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	5	325	201912
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	202001
Qatar Airways	London Stansted Apt	Brussels Airport	1900	1	4	260	202002
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	5	700	201903
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201904
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201905
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	5	700	201906
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201907
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	5	700	201908
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201909
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201910
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	5	700	201911
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	201912
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	4	560	202001
AirBridgeCargo	London Stansted Apt	Atlanta Hartsfield-ja	2035	6	5	700	202002

Carrier Name	Dep Airport Name	Arr Airport Name	Local Arr Time	Local Days Of Op	Frequency	FreightTons (Total)	Time series	Column1
British Airways	Doha	London Stansted Ap	0310	6	10	1039	201903	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201904	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201905	
British Airways	Doha	London Stansted Ap	0310	6	10	1039	201906	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201907	
British Airways	Doha	London Stansted Ap	0310	6	10	1039	201908	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201909	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201910	
British Airways	Doha	London Stansted Ap	0310	6	10	1039	201911	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	201912	
British Airways	Doha	London Stansted Ap	0310	6	8	831.2	202001	
British Airways	Doha	London Stansted Ap	0310	6	10	1039	202002	
Qatar Airways	Doha	London Stansted Ap	0330	6	5	519.5	201903	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201904	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201905	
Qatar Airways	Doha	London Stansted Ap	0330	6	5	519.5	201906	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201907	
Qatar Airways	Doha	London Stansted Ap	0330	6	5	519.5	201908	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201909	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201910	
Qatar Airways	Doha	London Stansted Ap	0330	6	5	519.5	201911	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	201912	
Qatar Airways	Doha	London Stansted Ap	0330	6	4	415.6	202001	
Qatar Airways	Doha	London Stansted Ap	0330	6	5	519.5	202002	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201903	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201904	
Qatar Airways	Doha	London Stansted Ap	0415	4	5	519.5	201905	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201906	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201907	
Qatar Airways	Doha	London Stansted Ap	0415	4	5	519.5	201908	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201909	
Qatar Airways	Doha	London Stansted Ap	0415	4	5	519.5	201910	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201911	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	201912	
Qatar Airways	Doha	London Stansted Ap	0415	4	5	519.5	202001	
Qatar Airways	Doha	London Stansted Ap	0415	4	4	415.6	202002	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201903	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201903	
China Southern	Guangzhou	London Stansted Ap	0535	1	5	500	201904	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201904	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201905	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201905	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201906	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201906	
China Southern	Guangzhou	London Stansted Ap	0535	1	5	500	201907	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201907	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201908	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	14	1400	201908	
China Southern	Guangzhou	London Stansted Ap	0535	1	5	500	201909	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	12	1200	201909	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201910	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	14	1400	201910	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	201911	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201911	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	201912	
China Southern	Guangzhou	London Stansted Ap	0535	1	5	500	201912	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	202001	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	202001	
China Southern	Guangzhou	London Stansted Ap	0535	1	4	400	202002	
China Southern	Guangzhou	London Stansted Ap	0535	2 4 6	13	1300	202002	
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6	201903	
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6	201904	
Qatar Airways	Doha	London Stansted Ap	0555	4	5	519.5	201905	
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6	201906	

Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6 201907
Qatar Airways	Doha	London Stansted Ap	0555	4	5	519.5 201908
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6 201909
Qatar Airways	Doha	London Stansted Ap	0555	4	5	519.5 201910
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6 201911
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6 201912
Qatar Airways	Doha	London Stansted Ap	0555	4	5	519.5 202001
Qatar Airways	Doha	London Stansted Ap	0555	4	4	415.6 202002
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201903
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201904
British Airways	Doha	London Stansted Ap	0630	4	5	519.5 201905
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201906
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201907
British Airways	Doha	London Stansted Ap	0630	4	5	519.5 201908
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201909
British Airways	Doha	London Stansted Ap	0630	4	5	519.5 201910
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201911
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 201912
British Airways	Doha	London Stansted Ap	0630	4	5	519.5 202001
British Airways	Doha	London Stansted Ap	0630	4	4	415.6 202002
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201903
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201904
British Airways	Doha	London Stansted Ap	0636	4	5	519.5 201905
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201906
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201907
British Airways	Doha	London Stansted Ap	0636	4	5	519.5 201908
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201909
British Airways	Doha	London Stansted Ap	0636	4	5	519.5 201910
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201911
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 201912
British Airways	Doha	London Stansted Ap	0636	4	5	519.5 202001
British Airways	Doha	London Stansted Ap	0636	4	4	415.6 202002
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201903
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201904
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	5	563 201905
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201906
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	5	563 201907
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201908
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201909
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	5	563 201910
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201911
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 201912
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	5	563 202001
Cargolux Airline	Zhengzhou	London Stansted Ap	0650	3	4	450.4 202002
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201903
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	5	545 201904
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201905
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201906
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	5	545 201907
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201908
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	5	545 201909
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201910
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 201911
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	5	545 201912
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 202001
Cargolux Italia S	Zhengzhou	London Stansted Ap	0650	1	4	436 202002
British Airways	Doha	London Stansted Ap	0700	7	5	519.5 201903
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201903
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201904
British Airways	Doha	London Stansted Ap	0700	1	5	519.5 201904
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201905
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201905
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201906
British Airways	Doha	London Stansted Ap	0700	7	5	519.5 201906
British Airways	Doha	London Stansted Ap	0700	1	5	519.5 201907

British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201907
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201908
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201908
British Airways	Doha	London Stansted Ap	0700	7	5	519.5 201909
British Airways	Doha	London Stansted Ap	0700	1	5	519.5 201909
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201910
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201910
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 201911
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 201911
British Airways	Doha	London Stansted Ap	0700	1	5	519.5 201912
British Airways	Doha	London Stansted Ap	0700	7	5	519.5 201912
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 202001
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 202001
British Airways	Doha	London Stansted Ap	0700	7	4	415.6 202002
British Airways	Doha	London Stansted Ap	0700	1	4	415.6 202002
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201903
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201904
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	5	550 201905
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201906
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	5	550 201907
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201908
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201909
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	5	550 201910
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201911
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 201912
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	5	550 202001
Safari Express C	Nairobi Jomo Kenyat	London Stansted Ap	0705	3	4	440 202002
British Airways	Doha	London Stansted Ap	0725	5	10	1039 201903
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201904
British Airways	Doha	London Stansted Ap	0725	5	10	1039 201905
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201906
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201907
British Airways	Doha	London Stansted Ap	0725	5	10	1039 201908
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201909
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201910
British Airways	Doha	London Stansted Ap	0725	5	10	1039 201911
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 201912
British Airways	Doha	London Stansted Ap	0725	5	10	1039 202001
British Airways	Doha	London Stansted Ap	0725	5	8	831.2 202002
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201903
Qatar Airways	Doha	London Stansted Ap	0735	1	5	519.5 201904
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201905
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201906
Qatar Airways	Doha	London Stansted Ap	0735	1	5	519.5 201907
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201908
Qatar Airways	Doha	London Stansted Ap	0735	1	5	519.5 201909
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201910
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 201911
Qatar Airways	Doha	London Stansted Ap	0735	1	5	519.5 201912
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 202001
Qatar Airways	Doha	London Stansted Ap	0735	1	4	415.6 202002
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	5	563 201903
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201904
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	5	563 201905
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201906
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201907
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	5	563 201908
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201909
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201910
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	5	563 201911
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 201912
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	5	563 202001
Cargolux Airline	Nairobi Jomo Kenyat	London Stansted Ap	0805	5	4	450.4 202002
Lufthansa Germ	Dakar Blaise Diagne I	London Stansted Ap	0825	4	1	85 201903
Cargologicair	Atlanta Hartsfield-ja	London Stansted Ap	1050	2	4	440 201903

Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	5	550	201904
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	201905
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	201906
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	5	550	201907
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	201908
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	201909
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	5	550	201910
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	201911
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	5	550	201912
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	202001
Cargologicair	Atlanta Hartsfield-jac	London Stansted Ap	1050	2	4	440	202002
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201903
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201903
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	8	800	201904
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	5	500	201904
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201905
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201905
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201906
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201906
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	8	800	201907
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	5	500	201907
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201908
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201908
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201909
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201909
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	5	500	201910
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201910
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	8	800	201911
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	201911
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	5	500	201912
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	201912
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	9	900	202001
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	202001
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	2	4	400	202002
Asiana Airlines	Moscow Domodedov	London Stansted Ap	1415	4 7	8	800	202002
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201903
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201904
Qatar Airways	Doha	London Stansted Ap	1445	3	5	325	201905
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201906
Qatar Airways	Doha	London Stansted Ap	1445	3	5	325	201907
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201908
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201909
Qatar Airways	Doha	London Stansted Ap	1445	3	5	325	201910
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201911
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	201912
Qatar Airways	Doha	London Stansted Ap	1445	3	5	325	202001
Qatar Airways	Doha	London Stansted Ap	1445	3	4	260	202002
Lufthansa Germ	Buenos Aires Ministr	London Stansted Ap	1510	6	1	103.9	201904
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	5	550	201903
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201904
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201905
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	5	550	201906
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201907
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	5	550	201908
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201909
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201910
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	5	550	201911
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	201912
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	4	440	202001
Cargologicair	Frankfurt Internatior	London Stansted Ap	1610	6	5	550	202002
Qatar Airways	Doha	London Stansted Ap	1610	6	5	325	201903
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201904
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201905
Qatar Airways	Doha	London Stansted Ap	1610	6	5	325	201906
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201907

Qatar Airways	Doha	London Stansted Ap	1610	6	5	325	201908	
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201909	
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201910	
Qatar Airways	Doha	London Stansted Ap	1610	6	5	325	201911	
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	201912	
Qatar Airways	Doha	London Stansted Ap	1610	6	4	260	202001	
Qatar Airways	Doha	London Stansted Ap	1610	6	5	325	202002	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	5	550	201903	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201904	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201905	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	5	550	201906	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201907	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201908	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	5	550	201909	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201910	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	201911	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	5	550	201912	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	202001	
Martinair Hollar	Miami International	London Stansted Ap	1655	7	4	440	202002	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201903	
Qatar Airways	Doha	London Stansted Ap	1730	1	5	325	201904	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201905	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201906	
Qatar Airways	Doha	London Stansted Ap	1730	1	5	325	201907	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201908	
Qatar Airways	Doha	London Stansted Ap	1730	1	5	325	201909	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201910	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	201911	
Qatar Airways	Doha	London Stansted Ap	1730	1	5	325	201912	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	202001	
Qatar Airways	Doha	London Stansted Ap	1730	1	4	260	202002	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	5	700	201903	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201904	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201905	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	5	700	201906	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201907	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	5	700	201908	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201909	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201910	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	5	700	201911	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	201912	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	4	560	202001	
AirBridgeCargo	Frankfurt Internatior	London Stansted Ap	1905	6	5	700	202002	
British Airways	Doha	London Stansted Ap	2215	5	10	1039	201903	106
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201904	
British Airways	Doha	London Stansted Ap	2215	5	10	1039	201905	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201906	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201907	
British Airways	Doha	London Stansted Ap	2215	5	10	1039	201908	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201909	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201910	
British Airways	Doha	London Stansted Ap	2215	5	10	1039	201911	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	201912	
British Airways	Doha	London Stansted Ap	2215	5	10	1039	202001	
British Airways	Doha	London Stansted Ap	2215	5	8	831.2	202002	
Qatar Airways	Doha	London Stansted Ap	2330	5	5	519.5	201903	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201904	
Qatar Airways	Doha	London Stansted Ap	2330	5	5	519.5	201905	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201906	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201907	
Qatar Airways	Doha	London Stansted Ap	2330	5	5	519.5	201908	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201909	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201910	
Qatar Airways	Doha	London Stansted Ap	2330	5	5	519.5	201911	
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	201912	

Qatar Airways	Doha	London Stansted Ap	2330	5	5	519.5	202001
Qatar Airways	Doha	London Stansted Ap	2330	5	4	415.6	202002

Appendix F

Pakistan International Airlines

PIA - Pakistan International Airlines ★
Airline Name

Active
Status

PAKISTAN International Airlines
Great People to Fly With

Info | News | Fleet/Bases | Ownership/Partners | Contacts | IT | Financials/Pax | Capacities

Fleet
show complete list

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity		
A320-200	10	1	11		13.1	1,914	Routes	Schedule
ATR42-500	4	1	5		12.2	240	Routes	Schedule
ATR72-500	3	2	5		6.8	350	Routes	Schedule
B777-200(ER)	6		6		14.1	1,921	Routes	Schedule
B777-200(LR)	2		2		13.9	620	Routes	Schedule
B777-300(ER)	3	1	4		11.3	1,621	Routes	Schedule
Total	**28**	**5**	**33**	**0**	**12.0**	**6,666**		

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Orders

Aircraft Type	Aircraft On Order	As of*
B777-300(ER)	5	31JAN2019
Total	**5**	

* The data in the table above displays unfilled order data provided by manufacturers as of the date displayed in the As of column. It does not take orders announced after this date into consideration.

Iran Air

Iran Air ★
Airline Name

Active
Status

IranAir
The Airline of the Islamic Republic of Iran

Info | News | Fleet/Bases | Ownership/Partners | Contacts | IT | Financials/Pax | Capacities

Fleet
show complete list

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity		
A300-600R	2	2	4		25.8	1,040	Routes	Schedule
A300B2	1		1		39.1	277	Routes	Schedule
A300B4	1	3	4		35.6	1,089	Routes	Schedule
A300B4(F)		2	2		37.6		Routes	Schedule
A310-300	1	1	2		29.0	385	Routes	Schedule
A319-100		3	3		17.0	414	Routes	Schedule
A320-200	2	4	6		23.4	870	Routes	Schedule
A321-200	1		1		2.3	194	Routes	Schedule
A330-200	2		2		4.5	476	Routes	Schedule
ATR72-600	12	1	13		1.3	910	Routes	Schedule
B747-200C(M)	1		1		30.5		Routes	Schedule
F100	1	8	9		27.2	936	Routes	Schedule
MD-82		1	1		30.5	142	Routes	Schedule
Total	**24**	**25**	**49**	**0**	**19.3**	**6,733**		

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Divisions

Cargo

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity
A300B4(F)		2	2		37.6	
B747-200C(M)	1		1		30.5	
Total	**1**	**2**	**3**	**0**	**35.2**	

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Orders

Aircraft Type	Aircraft On Order	As of*
A320-200	6	31JAN2019
A320-200N	32	31JAN2019
A321-200	7	31JAN2019
A330-200	8	31JAN2019
A330-900N	28	31JAN2019
A350-1000	16	31JAN2019
Total	**97**	

* The data in the table above displays unfilled order data provided by manufacturers as of the date displayed in the As of column. It does not take orders announced after this date into consideration.

Qatar Airways

Qatar Airways ☆
Airline Name

Active
Status

QATAR AIRWAYS القطرية

Info | News | Fleet/Bases | Ownership/Partners | Contacts | IT | Financials/Pax | Capacities

Fleet
show complete list

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity		
A320-200	32	1	33		7.8	4,812	Routes	Schedule
A321-200	6		6		11.4	1,092	Routes	Schedule
A321-200N				2			Routes	Schedule
A330-200	7		7		13.1	1,832	Routes	Schedule
A330-200F	7		7		4.4		Routes	Schedule
A330-300	13		13		12.7	3,935	Routes	Schedule
A340-600	4		4		12.6	1,488	Routes	Schedule
A350-1000	6		6	17	0.6	1,962	Routes	Schedule
A350-900	32		32	4	2.1	9,168	Routes	Schedule
A380-800	10		10		3.6	5,170	Routes	Schedule
ACJ319-100	2		2		15.6	220	Routes	Schedule
B747-8(F)	2		2		4.0		Routes	Schedule
B777-200(F)	15		15	1	4.3		Routes	Schedule
B777-200(LR)	9		9		9.1	2,344	Routes	Schedule
B777-300(ER)	48		48		5.3	17,806	Routes	Schedule
B787-8	30		30		4.7	7,620	Routes	Schedule
Total	**223**	**1**	**224**	**24**	**6.0**	**57,449**		

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Divisions

Cargo

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity
A330-200F	7		7		4.4	
B747-8(F)	2		2		4.0	
B777-200(F)	15		15		4.3	
Total	**24**	**0**	**24**	**0**	**4.3**	

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Orders

Aircraft Type	Aircraft On Order	As of*
A321-200N	40	31JAN2019
A321-200NX(LR)	10	31JAN2019
A350-1000	36	31JAN2019
A350-900	4	31JAN2019
B777-200(F)	6	31JAN2019
B777-8	10	31JAN2019
B777-9	50	31JAN2019
B787-9	30	31JAN2019
Total	**186**	

* The data in the table above displays unfilled order data provided by manufacturers as of the date displayed in the As of column. It does not take orders announced after this date into consideration.

TAAG Angola

TAAG Angola Airlines ☆
Airline Name

Active
Status

TAAG

Info | News | Fleet/Bases | Ownership/Partners | Contacts | IT | Financials/Pax | Capacities

Fleet
show complete list

Aircraft Type	Active	Inactive	Total	On Order*	Ø Age	Capacity		
B737-700	4		4		12.5	480	Routes	Schedule
B737-700(QC)	1		1		11.0	120	Routes	Schedule
B777-200(ER)	3		3		12.1	705	Routes	Schedule
B777-300(ER)	5		5		5.3	1,457	Routes	Schedule
Total	**13**	**0**	**13**	**0**	**9.5**	**2,762**		

* Includes new or used aircraft not yet delivered for which a construction/manufacturer serial number is already known.

Appendix 04

York Aviation
Updated Critique of Assessment of the Need and Justification for the Development of Manston Airport as an Air Freight Hub

February 2019



York Aviation

STONE HILL PARK LIMITED

UPDATED CRITIQUE OF ASSESSMENT OF THE NEED AND JUSTIFICATION FOR THE DEVELOPMENT OF MANSTON AIRPORT AS AN AIR FREIGHT HUB

REPORT

FEBRUARY 2019



York Aviation

Originated by: Louise Congdon/James Brass/Matt Jones/Richard Connelly

Dated: 13th February 2019

Reviewed by: Richard Kaberry

Dated: 14th February 2019

STONE HILL PARK LIMITED

ASSESSMENT OF THE NEED AND JUSTIFICATION FOR THE DEVELOPMENT OF MANSTON AIRPORT AS AN AIR FREIGHT HUB

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APPENDICES

EXECUTIVE SUMMARY

1. York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services. Our initial summary Report was published in November 2017 and the contents remain valid and relevant. It is included at **Appendix B** to this report for completeness.

2. Our November 2017 Report made clear that:

   - RSP's analysis of our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) was flawed and this work did not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.
   - The remaining evidence relied on by RSP to justify its Need Case is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport. This is simply irrelevant particularly given that it is Government policy to promote the development of a third runway at Heathrow.
   - The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market, especially in failing to recognise the economic drivers that prioritise the use of bellyhold capacity over dedicated freighters.
   - Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as there are more economically efficient alternatives available for any freight displaced from Heathrow in the short term, pending the development of a third runway.
   - Azimuth's 'forecasts' rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK.
   - Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened and does not provide a basis for the specific aircraft movement forecasts upon which the case relies, not least as it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.
   - To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.
   - Proper analysis of the UK air freight market showed that there is plenty of freighter capacity at Stansted and East Midlands Airport to accommodate any growth required in dedicated freighter operations such that there will be no shortage of capacity across the UK and no role for Manston in accommodating traffic spilled from other airports. These airports are better located relative to the market and the key locations for distribution within the UK.

- Our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open.
- Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this would impact substantially on the viability of the proposal.
- Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.
- We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.
- We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.
- Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts at a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

3. This report updates and adds to the analysis of the flaws in RSP's Need Case, as set out principally in the Azimuth Reports, as presented in our November 2017 Report. In practice, the Azimuth Reports are little changed and, to the extent that new material has been added, do not address or rectify the substantial errors that we identified in the analysis contained therein. We do also update consideration of Aviation Policy in the light of developments, including the formal designation of the Airports National Policy Statement (NPS) and the clear statement of intent regarding the third runway at Heathrow and its role in ensuring adequate air freight capacity for the foreseeable future.

4. Our overall assessment in November 2017 was that RSP's case lacked any real credibility. Nothing has fundamentally changed and to the extent that there have been changes, for example in the formal designation of the Airports NPS, any need for Manston is even less than we previously assessed.

5. In updating of our previous work, we have taken particular cognisance of the requirement for RSP to present a compelling case in the public interest to justify the compulsory acquisition of land. This goes beyond the theoretical test of the capability of the infrastructure proposed but must, necessarily, consider the likelihood and extent of the level of usage of that infrastructure and the extent to which there would be wider public benefit from the land being used in that way.

Aviation Policy

6. The whole of the RSP Need Case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is still set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

7. The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways with ample spare capacity.

Errors and Inconsistencies of Analysis

8. In this report, we have identified further inconsistencies and mathematical errors in the 'forecasts' presented by Azimuth and others in the RSP team to justify the proposed development at Manston. Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

9. The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. Several of these airlines do not operate air freight services at all and others would be unlikely to operate to Manston for the reasons we set out. Hence, the list presented is no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;
- the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts' as, contrary to what RSP claim, airlines would not be able to operate to Manston on an unconstrained basis to meet their own commercial requirements but would be so constrained during the night period as to make the majority of the operations claimed by Azimuth unviable for the airlines;

- the overstatement of longer term demand projections through the use of unjustified growth rates due to mathematical errors made by Azimuth.

10. These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens.

Understanding the Air Freight Market

11. Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation for ad hoc specialist consignments, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essentially drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

12. R3 will provide for a doubling of air freight capacity at Heathrow, mainly in bellyholds of passenger aircraft, but also scope for dedicated freighters to the extent that these are required to feed the hub at Heathrow. Indeed, the ability to provide a step change in capacity for air freight was one of the principal reasons why the Government chose the specific proposal for the development of a new runway. Freight facilities at Heathrow are actively being modernised and extended in anticipation of the growth of cargo activity there.

13. The integrators are already well established at East Midlands Airport in particular, as well as using Heathrow and Stansted to serve the main markets in England. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

14. This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole, not least as it seems likely that any freighter activity would in fact need to be displaced from elsewhere through price incentives as there are few, if any, natural market drivers which would make Manston the first choice location, particularly given growth in bellyhold capacity at airports such as Manchester, Edinburgh, Birmingham and Stansted, plus available capacity for freighters particularly at East Midlands and Stansted Airports.

Air Passenger Forecasts

15. As with the asserted air freight 'forecasts', RSP/Azimuth provide no quantified analysis of the market to justify the passenger forecasts. The passenger element of the forecasts will be a vital element in considering the potential viability of the Airport as, generally, passenger operations offer higher margins for an airport than cargo operations given the ability to earn ancillary commercial revenues from shops and car parking. Furthermore, much of the asserted economic benefit from the Manston operation stems from passenger flights rather than cargo operations.

16. To assist the Examining Authority, we have set out in full our market assessment for passenger services at Manston. We have undertaken this analysis on the same basis as we would for any UK regional airport and presented it in a form that would be normal practice at an airport planning inquiry. Such analysis is completely missing from the Azimuth Reports.

17. Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates over the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole. It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

Infrastructure Requirements

18. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, our analysis shows that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any justification for the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

19. To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of Code E equivalent stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced to no more than 1/3 of the size proposed by RSP. Overall, even in the highly unlikely event that RSP/Azimuth's 'forecasts' were realised, the overall scale of development required would be no more than of the order of 40% of that proposed in RSP's Master Plan to accommodate airlines at the times they would wish to fly. This is, of course, not the same as the theoretical capability of the existing or proposed infrastructure.

20. As far as the Northern Grass is concerned, the list of airport related uses provided in the Updated NSIP Justification by RSP is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement for the facilities listed could be accommodated south of the B2050.

21. The development on the Northern Grass site appears to be speculative commercial development. The total extent of landside airport related uses at East Midlands Airport, other than hotels which do not feature as part of Manston's plans, is 13,000m^2, or 13% of the scale of development proposed for the Northern Grass by RSP. Hence, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – the extent of development proposed for the Northern Grass means it would be expected to be largely for non-aviation related uses.

Viability

22. In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

23. Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts'. The Airport would remain in a loss making position for at least 15 years and generate a negative return on investment for more than 20 years. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP as the development is likely to deliver negative returns to investment for the foreseeable future.

24. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

25. Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse. It is our assessment that, even if initial investment was forthcoming, which we doubt, it is inevitable that the Airport would close again in the medium term due to lack of inherent viability.

Overall Conclusion

26. Fundamentally, the whole Need Case for the development of Manston as an air freight hub is infected with flaws and errors of understanding such that the so-called 'forecasts' of air freight and passenger demand have no credibility at all. Even if they were credible, the scale of development proposed is unjustified and excessive. The development and operation of the Airport would simply be unviable and incapable of attracting competent investors.

1 INTRODUCTION

This Report

1.1 York Aviation (YAL) was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services. Our initial Summary Report was published by SHP in November 2017 and is appended to this report at **Appendix B** to assist the Examining Authority.

1.2 We subsequently provided comments on RSP's updated consultation materials in February 2018 and these were submitted as part of SHP's response to the consultation. This note is appended to this report at **Appendix D** to assist the Examining Authority.

1.3 In our original November 2017 report, as summarised in the Executive Summary, we made clear that:

i. RSP's quantified forecast of the number of dedicated freighter aircraft that Manston might attract was based almost entirely on our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. However, the analysis in these reports, when properly read, does not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.

ii. The remaining evidence relied on by RPS as the basis of the Justification for the Application, set out in the Azimuth Reports, is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport (the Airports Commission's baseline position). Use of the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050 is not relevant to the specific question as to whether there would be sufficient demand or any economic justification for dedicated freighter movements to be operated to/from Manston in the foreseeable future, particularly in the circumstance where it is Government policy to promote the development of a third runway at Heathrow.

iii. The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market. Just because there could be excess air freight demand in 2050, compared to the bellyhold capacity available in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive dedicated freighter service from an alternative airport over the use of available bellyhold capacity, even if available at a more distant airport, as this bellyhold capacity can be provided at a lower cost to the shipper with only a marginal penalty in terms of the overall shipment time.

iv. Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as

there are more economically efficient alternatives available for any freight displaced to the extent that there are ongoing capacity constraints at Heathrow in the short and longer term.

v. The Manston freighter forecasts rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets for ease of distribution. Manston is simply in the wrong place to serve the market being located at the far south east at the end of a peninsular, away from the main centres of population and remote from the majority of the UK.

vi. Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened[1] and does not provide a basis for the specific aircraft movement forecasts upon which the case relies. If anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence."* It did not identify what this niche market might be. These interviews confirm our view that any realistic expectation for Manston, at best, is for a small niche operation, as it previously sustained on a non-viable basis rather than as a general 'overspill' cargo airport for London.

vii. The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.

viii. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.

ix. Our November 2017 Report contained an updated and further developed analysis of the UK air freight market from that previously undertaken in 2013 and 2015 for TfL and for the FTA. When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that, to the extent that there is <u>any</u> need for additional pure freighter movements, there is plenty of freighter capacity at Stansted and East Midlands to accommodate any growth. These airports are better located relative to the market and the key locations for distribution within the UK. Overall, we conclude from this analysis that there will be no shortage of capacity for dedicated freighter aircraft across the UK in the period up 2040 and that overspill from other airports would not provide a rationale for re-opening Manston.

[1] Not all of these companies are still in operation.

x. On any assessment of a realistic potential role for Manston, our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open. These are far below Azimuth's projection, upon which RSP rely, of 17,171 annual cargo aircraft movements.

xi. Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, these are unlikely to contribute substantially to the overall viability of the Airport.

xii. Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.

xiii. We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.

xiv. We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.

xv. Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts at a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

xvi. Our overall assessment was that RSP's case lacked any real credibility.

1.4 In practice, there have been no substantive changes to the case being presented by RSP since our original report was prepared. Hence, we consider that the contents of our original report and the subsequent note remain valid and should be given full consideration by the Examining Authority. We do not repeat their contents here but this updating report should be read alongside our previous reports, which are appended to this report at **Appendices B** and **D**[2]. It remains the case that RSP's assessment of the need for the development of a specialist air freight airport at Manston lacks credibility and is not founded in any proper assessment of the market as would normally be expected for a planning (or development consent) application of this magnitude.

1.5 In this report, we will highlight the key ongoing shortcomings in the Need Case being presented by RSP, drawing on our earlier reports and updating the material contained therein where necessary, in particular relating to:

- the implications of the Airports National Policy Statement (NPS) and emerging Government Policy as set out in the Aviation Strategy Green Paper[3];
- the updated performance of the UK Air Freight Sector and future trends;
- additional or revised material made available in the RSP Application Documents.

1.6 To assist the Examining Authority, this report also sets out, in more detail, our assessment of realistic passenger demand forecasts and on the implications of the assessment of the air freight market and passenger demand forecasts for the viability of the Airport, which were not previously covered in our 2017 Summary Report.

1.7 Fundamentally, this report goes beyond the work previously submitted to examine whether there is a compelling case in the public interest for the development of an air freight hub at Manston by reference to our assessment of the market and need for the development and in the light of recently emerging Government Aviation policy. The test that needs to be met is a more stringent test than simply whether the infrastructure proposed would deliver a theoretical capability greater than the threshold set out in the Planning Act 2008. It requires consideration of:

- the levels of demand that are likely to use Manston – this goes beyond consideration of the capability of the infrastructure proposed and requires consideration of whether the infrastructure is likely to be used and how this usage contributes to efficiently meeting the national demand for air transport;
- the implications of those levels of usage for the likelihood that the development and operation of the Airport would be viable and sustainable over the longer term, having regard to the requirement to fund the development of the infrastructure in the first instance;
- whether the land proposed to be acquired is required to meet realistic levels of demand.

[2] To assist the Examining Authority, we have included an updated index of the references to the final Azimuth Reports in **Appendix C**.

[3] Aviation 2050, The Future of UK Aviation, a Consultation, Department for Transport, Cmnd 9714, December 2018

1.8 In this report, we highlight further the deficiencies in the evidence presented by RSP to support its case, in particular the continued absence of detailed analysis and justification from RSP relating to the need for the development within the Application Documentation. It remains our view that the deficiencies in the evidence are not capable of remedy or, if remedied, would confirm our previous conclusion that the case for the re-opening of Manston as an operational commercial airport on a viable or sustainable basis lacks foundation.

1.9 In this Report, we consider:

- whether there is aviation policy support for the development **in Section 2**;
- errors and inconsistencies in the case presented by RSP in **Section 3**;
- understanding the air freight sector in **Section 4**;
- realistic forecasts of air passenger demand in **Section 5**;
- the justification for infrastructure required to support those forecasts in **Section 6**;
- the implications for the viability of airport operations in **Section 7**;
- our conclusions in **Section 8**.

York Aviation Credentials

1.10 York Aviation LLP is a specialist air transport consultancy that focusses on airport planning, demand forecasting, strategy, operation and management. The company was established in 2002. We offer a broad range of services to airports, airlines, governments, economic development organisations and other parties with an interest in air transport. Our team is a mixture of experienced air transport professionals and economists. Key members of the team have substantial experience of airport operations and development gained through working for Manchester Airports Group. Our core services include:

- business planning and strategy;
- capacity and facilities planning;
- master planning and planning application support;
- demand forecasting;
- economic impact assessment and economic appraisal;
- policy and regulatory advice;
- route development;
- transaction support.

1.11 Our current and recent clients include:

- Department for Transport (DfT), in particular producing supporting studies published by DfT alongside the Airports NPS and Aviation Strategy Green Paper
- Transport for the North, including recent work on the linkage between aviation connectivity and trade (with Oxford Economics);
- Transport Scotland and Scottish Enterprise;

- Civil Aviation Authority;
- London City Airport in relation to updating its Master Plan;
- London Luton Airport in relation to its prospective DCO;
- Manchester Airports Group, including economic impact assessments of East Midlands and Stansted Airports;
- Birmingham Airport;
- Glasgow Airport;
- Regional and City Airports;
- Ryanair.

In addition, we work for numerous investors in airports and other parties with an interest in the development, operation and management of airports in the UK and abroad. This includes the development of business plans, the assessment of viability and the broader business case for investment.

1.12 We previously did work for Transport for London and the Freight Transport Association related to submissions to the Airports Commission in connection with the requirement for a new hub airport serving London and the South East. This included analysis of the UK air freight market. This is work upon which RSP seeks to rely but, as made clear in our 2017 Summary Report, this reliance is misplaced and betrays a misunderstanding of air freight market and the implications of our findings in terms of any potential role for Manston in the event of capacity constraints at Heathrow and the main London airports.

1.13 Louise Congdon, Managing Partner of York Aviation has provided evidence in relation to the need for and economic impact of airport development at several airport public inquiries, including Manchester Runway 2, Liverpool Airport, Doncaster Sheffield Airport, Stansted Airport Generation 1, Farnborough Airport, London Ashford Airport (Lydd) and London City Airport. Louise has been actively involved in the development and implementation of UK Aviation Policy since the 1980s and acted as adviser to the House of Commons Transport Select Committee from 2011 to 2014. Her CV is appended at **Appendix A.** Louise has been assisted by other members of the York Aviation team in compiling this and the previous reports.

2 DOES AVIATION POLICY SUPPORT THE NEED FOR MANSTON?

In this section, we show that RSP and Azimuth's claims that development of Manston as an air freight hub are supported by Aviation Policy is flawed. The claims rely largely in the position set out by the Airports Commission in the event of no additional capacity being provided at any of the main London airports. This is no longer valid, if indeed the inferences drawn by Azimuth and RSP ever were, in the light of the clear Government Policy in support of the provision of a third runway at Heathrow as set out in the Airports National Policy Statement.

The Basis of RSP's Need Case

2.1 RSP's Statement of Reasons, Planning Statement and Environmental Statement include sections on the justification or need for the proposals but these rely entirely on the work of Azimuth Associates[4]. Azimuth Associates set out that their work seeks to address three questions[5]:

- *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
- *Should this additional capacity be located in the South East of England?*
- *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*

As we made clear in our November 2017 Report (paras 2.5 to 2.7), these are not the right questions to be addressed in terms of whether there is a specific need for the development of a dedicated air freight hub at Manston sufficient to make a compelling case in the public interest.

2.2 RSP's Need Case appears to be as follows:

- aviation is important to the national economy and will become more important post-Brexit;
- there is a shortage of airport capacity in the South East of England, ignoring the impact of the development of a third runway at Heathrow (R3) and other committed or proposed expansions of capacity at the other London airports;
- pure freighter traffic has not been growing in the UK due solely to shortage of airport capacity;
- so there must be a need for a dedicated freight airport to address this shortfall;
- Manston has spare capacity so could fulfil that role.

[4] We are unaware of any other published reports by Azimuth Associates and are unclear of the extent of their relevant experience across the aviation sector more generally.
[5] Azimuth Report Vol I, para. 1.3.1.

2.3 In practice, the RSP Application Documents, including the Statement of Reasons, continue to rely on circumstantial evidence, references and quotations relating to the need for more air passenger connectivity, the economic benefits of addressing that need, and the need for a hub airport in the South East of England as evidence to support their case. As we set out at length in our November 2017 Report, most of these references are irrelevant to the asserted need for a dedicated air freight hub as most of the economic benefits cited relate specifically to passenger connectivity through more global air service connections offering passenger and bellyhold[6] freight capacity. Many of the reports and quotations have been misconstrued or misrepresented by the RSP team. We do not seek to address each and every erroneous reference in this Report. Circumstantial evidence supporting the need for more airport capacity in the South East of England simply does not provide specific justification of the need for the development of Manston as a dedicated air freight hub sufficient to make a compelling case.

2.4 Indeed, the Planning Statement itself (para 1.47), sets out the key test, namely that:

"Significant weight should be attached to the considerations of need and the weight to be attributed to need in any given case should be proportionate to the anticipated extent of the Manston Airport Project's contribution to meeting that need"

The extent to which the Manston Airport Project would contribute to meeting that need can only be assessed by reference to the reasonably expected usage of the Airport, if it re-opened, and does not follow from a general description of the situation appertaining across the London Airport system if a third runway at Heathrow is not constructed. This assessment requires a proper examination of the air cargo market, which does not support that the contention that there is a role for Manston in meeting the need for more air freight capacity in the UK as we set out later in this report.

2.5 The work of Azimuth Associates is also stated in other Application Documents to set out not only the need for development but also the Business Plan and the viability of the development[7]. Such an assessment of the Business Plan for the operational airport would be normally expected to include financial projections, the wider business case and an assessment of viability but this is completely absent from any of the documents submitted by RSP. We return to the business case and viability in **Section 7**.

2.6 As explained in detail in our Summary Report of November 2017, we consider the report by Azimuth Associates to be infected by manifest flaws, including in its interpretation of our earlier work for Transport for London (TfL) and the Freight Transport Association (FTA). Despite providing detailed rebuttal of the interpretation of our work by Azimuth Associates in consultation responses submitted by Stonehill Park, many of the RSP Application Documents continue to misrepresent the conclusions of our work as the basis of their case. We do not repeat these criticisms here[8] but, in this section, we comment more generally on the overarching aviation policy case being made by RSP drawing on our understanding of the Government's aviation policy as set out in the Airports NPS and Aviation Green Paper. We address the implications of the errors and inconsistencies in the Azimuth Reports further in the next section.

[6] Bellyhold capacity is capacity for air freight on passenger aircraft, typically below the passenger deck.
[7] RSP Environmental Statement (ES) para. 3.3.275, RSP Planning Statement para. 9.35.
[8] These are set out in full in Section 2 of our November 2017 Report.

Aviation Policy

2.7 RSP's Planning Statement includes the extraordinary statements (paras 9.16 and 10.6) that:

"The APF[9] makes it clear that it is not appropriate to re-examine the need for increased aviation capacity or, indeed, to question the Government's clear policy position that increases in aviation capacity are necessary and that they bring significant benefits. It states that it is the purpose of national policy to settle these issues."

"Government policy on aviation makes it clear that it is not appropriate to re-examine the need for increased aviation capacity or, indeed, to question the Government's clear policy position that increases in aviation capacity are necessary and that they bring significant benefits"

This appears to be an attempt to suggest that there is no requirement to examine the specific need case for development at Manston or, indeed, any other airport. This is patently nonsense as it would suggest that airport development across the UK should proceed unfettered regardless of whether there is any underpinning justification for each specific development or a proper balancing of benefits and environmental costs in each individual case. The apparent absurdity of this suggestion is even greater when compulsory acquisition of land is in prospect requiring a compelling case in the public interest to be made.

2.8 The Airports NPS[10] sets out clearly, in Sections 2 and 3, the Government's settled approach to meeting the need for increased airport capacity in the South East of England by provision of a third runway at Heathrow (R3), such that the need for that specific development as a response to the economic need for growth in aviation capacity is established. However, this is not the case for other proposed airport capacity developments. Indeed, the NPS is specific as to its applicability in relation to all other airport developments (para 1.41):

"The Airports NPS does not have effect in relation to an application for development consent for an airport development not comprised in an application relating to the Heathrow Northwest runway, and proposals for new terminal capacity located between the Northwest Runway at Heathrow Airport and the existing Northern Runway and reconfiguration of terminal facilities between the two existing runways at Heathrow Airport. Nevertheless, the Secretary of State considers that the contents of the Airports NPS will be both important and relevant considerations in the determination of such an application, particularly where it relates to London or the South East of England. Among the considerations that will be important and relevant are the findings in the Airports NPS as to the need for new airport capacity and that the preferred scheme is the most appropriate means of meeting that need." (emphasis added)

[9] Aviation Policy Framework, Department for Transport, March 2013, Cm8584.
[10] Department for Transport, June 2018.

2.9 This means that the NPS cannot be construed as creating a general presumption in favour of schemes, other than the Northwest Runway at Heathrow, which seek to address the shortfall in airport capacity within the South East of England. In fact, the wording of the NPS suggests the exact converse is true. Hence, it is not sufficient to rely, as RSP seek to do, on any general presumption in favour of increasing airport capacity for the broader economic benefit. Rather, the proponent of any other airport development proposal is required to justify that proposal by reference to the NPS and the specific benefits to users and society more generally that would arise from the specific proposed expansion.

2.10 RSP's Need Case is, in essence, based on the position before the NPS was designated[11]. Indeed, para 9.18 of the Planning Statement refers specifically to and relies on para 2.12 of the NPS that outlines the capacity shortfall that would exist in the absence of any additional capacity in the South East as a context for the Government's decision to support the development of another runway at Heathrow. This is a recurrent theme throughout the RSP documents, which seek to rely on the implications of no additional capacity being provided at Heathrow or, indeed, any of the other main London airports. Hence, in the light of proposals to increase capacity across the London airports, including the provision of R3 at Heathrow and recently approved capacity increases at Stansted, the alleged capacity shortfall on which RSP's case is based no longer exists. We discuss the extent to which there remains a capacity shortfall for air freight further in **Section 4**.

2.11 There is recurrent use by RSP of data relating to the economic cost of not addressing the need for additional hub airport capacity for passenger services and the benefits of overcoming that constraint[12], implying that the economic and connectivity benefits that are cited in respect of a passenger hub could, in some way, be realised by the development of Manston as a dedicated air freight hub. This creates a misleading impression of the specific benefits that the scheme might bring even if it did develop an air freight role, which we address further in later sections.

2.12 Despite the settled policy in terms of the Government's preferred option for meeting the principal need for more airport capacity in the South East of England, RSP's case remains that there is a shortage of airport capacity in the South East of England and that there must, therefore, be a need for a freight focussed airport in the South East to meet the need for more air freight capacity. This no longer follows if, indeed, it was ever a logical conclusion that could have been drawn from the evidence. The NPS settles how Government intends the shortage of airport capacity in the South East of England to be addressed, particularly in terms of meeting the requirement for additional capacity for air freight:

"The Heathrow Northwest Runway scheme delivers the greatest support for freight. The plans for the scheme include a doubling of freight capacity at the airport."[13]

2.13 Indeed, it is relevant that the Airports Commission[14] made clear one of their reasons for recommending the choice of a third runway at Heathrow over the option of a second runway at Gatwick was because:

[11] For example, Azimuth Reports Vol I, paras. 2.1.4, 2.1.5, 4.4.1, 4.4.5, 4.4.7, 9.0.4, 9.0.5.

[12] For example, the RSP Planning Statement, para 1.9 refers to work by Oxford Economics and Ramboll for Transport for London 2013 (see Azimuth Report Vol I, para. 4.4.1) which clearly relates to DfT's capacity constrained scenario.

[13] Airports NPS, Department for Transport, June 2017, para. 3.73.

[14] Airports Commission: Final Report, July 2015, Executive Summary, page 24.

"Gatwick's position to the south of London limits its effectiveness as a national freight hub."

Clearly, such considerations would apply even more so to Manston, which is even further away from the main centres of population, the sources of freight requiring shipment and the location of the main air freight consolidation and distribution centres adjacent to Heathrow and in the 'golden triangle' for distribution in the East Midlands.

2.14 Hence, references at para. 6.28 of RSP's Planning Statement to paras. 2.7 and 3.23 of the NPS as providing underpinning justification for the provision of a dedicated freight airport are misplaced as these clearly provide a context for the importance attached to meeting growing demand for air freight in the Government's decision to support the Heathrow Northwest Runway option as providing the scope for the greatest growth in air freight capacity including both bellyhold services and the opportunity for additional dedicated freighters.

2.15 A doubling of air freight capacity at Heathrow would allow for at least 31 years of extrapolated growth based using the updated analysis of future air cargo[15] tonnage growth potential set out in **Section 4**, assuming Heathrow sustains its current share of the market. We discuss the future of the market and trends further in that section. On the basis of realistic projections of cargo tonnage growth and the availability of capacity at Heathrow, it is hard to see how there is likely to be any shortfall of in air freight capacity in the South East of England for the foreseeable future, leaving aside the shorter term implications of capacity constraint at Heathrow until R3 is operational, which we also discuss further in **Section 4**.

2.16 RSP also seek to rely (Planning Statement, para 6.65) on the policy promoting best use of runway capacity at all UK airports, published alongside the Airports NPS[16]. This does not, however, settle that it will always be the case that best use should be made of any given runway, nor that runways should be protected in perpetuity as implied by the RSP's Statement of Reasons (para. 9.56). The policy, as set out in the 'Making Best Use' document, is clear that whilst there is a policy presumption in favour of making best use of existing runways, each case falls to be considered on its merits (para 1.29):

"We therefore consider that any proposals should be judged by the relevant planning authority, taking careful account of all relevant considerations, particularly economic and environmental impacts and proposed mitigations."

[15] Cargo includes freight and mail.

[16] Beyond the Horizon, The Future of UK Aviation, Making Best Use of Existing Runways, Department for Transport, June 2017.

2.17 Whilst this paragraph refers specifically to local decision making rather than an NSIP, the NPS makes clear that there is no automatic presumption of need for any other airport NSIP within the South East of England. There is, hence, still a requirement for a full justification to be provided for the best use of existing runway capacity at any individual airport on its own merits in terms of the demand it may reasonably be expected to handle and the benefits to consumers (or shippers) of using that airport rather than other available capacity. It is not sufficient to seek to make the case based on an inference of some general shortfall of capacity across the South East. Re-opening a runway only for it to be little used in practice does not constitute an economically efficient usage of that runway and so would not be likely to equate to 'best use'. There is a requirement for specific justification of how the capacity would be used and the benefits flowing from that usage at the airport in question rather than generic estimates of the economic value of overcoming the capacity constraints at the UK's main passenger hub airport that are peppered throughout the RSP documents and upon which RSP seek to rely for the substance of their need case.

2.18 More recently, the Government published a Green Paper on Aviation Strategy[17] as a pre-cursor to an updated strategy later in 2019. The section on air freight (paras. 4.45-4.50) makes clear that the three principal air freight airports are Heathrow, East Midlands and Stansted, highlights the doubling of air freight capacity that R3 at Heathrow will provide and stresses the key role that night flying plays in the air freight industry. The section also makes clear the role these airports play in meeting the need for air freight from across the whole country, i.e. it does not follow that because air freight is carried from a London airport that the freight has an origin or destination in the South East. This is relevant to consideration of alternatives, as we go on to discuss in **Section 4**.

2.19 It should be noted that the need for a dedicated freight focussed airport was previously considered in the Future of Air Transport White Paper in 2003, which stated, in relation to a proposal for a dedicated freight airport at Alconbury (arguably better located in relation to the total UK market than Manston being close to the A1M in north Cambridgeshire):

"The concept of Alconbury as a specialist freight facility attracted little support, especially from within the industry."[18]

Alconbury at the time was owned by Prologis (distribution experts) and BAA Lynton (airport developers) but they chose not to promote Alconbury as a freight airport. There are reasons why this is so, related to the complex inter-relationship between the freight forwarding sector, consolidation of freight loads, use of bellyhold capacity and the residual role of pure freighter operations that we explain further in **Section 4**. We have seen no analysis by RSP or Azimuth as to whether this position has changed, nor can we find specific policy support for a dedicated freight airport in more recent Government policy documents or consultations.

2.20 Indeed, in the same 2003 policy document, the Government set out its consideration of the potential role for Manston:

[17] Aviation 2050, The Future of UK Aviation, A Consultation, Department for Transport, December 2018, Cm 9714.

[18] Department for Transport, Future of Air Transport White Paper, December 2003, para 11.105

"11.98 The operators of Southend, Lydd and Manston argue that their airports could grow substantially and each has plans for development. The potential of other airports, including, Shoreham, and Biggin Hill, should also not be overlooked.

11.99 We consider that all these airports could play a valuable role in meeting local demand and could contribute to regional economic development. In principle, we would support their development, subject to relevant environmental considerations.

Had the Government considered there was a need for Manston as a specialist air freight airport at the time, it would have said so, not least as, in 2003, Manston was the UK's 7th busiest airport in the UK for air freight after Heathrow, Gatwick, Stansted, East Midlands, Manchester and Prestwick.

2.21 Nor can RSP take comfort from the work of the Airports Commission in considering whether there is a role for reliever airports[19] to add weight to there being a potential role for a dedicated air freight hub. The discussion in the Airports Commission Interim Report[20] dealt with the potential role of smaller airports in acting as relievers to capacity pressure at the main London airports principally for general and business aviation, which makes up a minor part of the RSP case. Indeed, the specific reference to Manston in Appendix 2 (page 16) to the Interim Report makes clear any consideration given to a potential role for the Airport was within the context of the Commission's broader consideration of reliever airports as referred to above rather than any specific role as a dedicated freight airport. Manston was promoted by its then owner, Infratil, to the Airports Commission as having potential as a major cargo hub airport but this was not taken up by the Commission.

Treatment of Alternatives

2.22 As noted in para. 2.9 above, it is notable, therefore, that the Application Documents, including the ES, contain no proper assessment of the ability of capacity that is, or will be, available at the London airports and across the UK to accommodate the asserted air freight demand that could be attracted to Manston by way of a full assessment of the alternative ways of meeting that demand. RSP's case is wrongly based on the position without the provision of additional capacity at any of the other London airports and is, incorrectly, based on a presumption that air freight currently being flown from the London airports reflects demand for air freight based within the South East; neither of which is valid. Hence, there should have been an assessment of the alternatives available for handling any excess demand for air freight rather than the simply considering whether there are alternative locations for the asserted requirement for a specialist freight airport (ES para. 2.3.3) within the South East of England. It is asserted, but not evidenced, that there are no alternatives to handle air freight growth. This is patently wrong as examination of the UK air freight sector demonstrates as set out in **Section 4**.

[19] RSP Planning Statement, paras. 6.67 to 6.71.

[20] Airports Commission, Interim Report, November 2014, paras. 5.96 to 5.100

Conclusions

2.23 The whole of the RSP need case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

2.24 The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways.

3 ERRORS AND INCONSISTENCIES IN THE EVIDENCE PRESENTED BY RSP

In this section, we catalogue ongoing errors of analysis and the lack of supporting information which render the 'forecasts' presented to underpin RSP's application wholly unreliable. Indeed, they are not 'forecasts' in any meaningful sense given the absence of proper analysis of the market and any evidenced assessment of the extent to which Manston might capture any share of that market at any future date.

At best, the projections set out in Azimuth Vol III represent no more than an aspirational 'wish list' of what RSP would like to be able to attract to use Manston but, even then, this 'wish list' is infected with errors in terms of airlines that do not operate freighter aircraft, and patterns of operation, particularly in terms of the balance of movements between day and night time, that are wholly inconsistent with the patterns of operation that the airlines would require if they were even to consider operating some flights to Manston.

The Azimuth Reports

3.1 The Azimuth Reports are, in practice, little changed from those published for the supplementary consultation in January 2018, which we had previously commented on in our November 2017 Report and Supplementary Note of February 2018. In our original Report, we commented on the lack of realism in the so-called 'forecasts' for Manston and highlighted the lack of methodological rigour, particularly in relation to the adoption of the 'Delphic Approach'[21]. Azimuth have subsequently claimed that their forecasts have been subject to a peer review by Loughborough University[22] but this review has not been made available as would be normal good practice. It remains the case that the freight aircraft movement and tonnage forecasts, along with the passenger forecasts, set out by Azimuth have not been correctly derived from market data or using standard industry analytical techniques as would be normal practice in presenting the case for a planning or development consent application. As such, they cannot be relied on.

3.2 Furthermore, we have noted further errors in the use of data and information by Azimuth as well as further inconsistencies between the information presented in the four Azimuth volumes and material relied on in the Environmental Statement. These errors and inconsistencies go to the heart of the reliance that can be placed on RSP's need case for Manston. Indeed, the nature of the errors is such that the 'forecasts' are simply not realistic or achievable.

3.3 In this section, we highlight a number of areas where the information relied on by RSP is:

- unsupported by the evidence of how the airfreight sector actually operates;
- infected by mathematical errors;
- inconsistent;
- wrongly applied to the local market.

[21] York Aviation Report, November 2017, paras. 2.77-2.79.
[22] Azimuth Vol III, para. 2.1.6.

Air Freight Forecasting

3.4 There are two principal problems with the air freight demand forecasts presented by Azimuth:

- the absence of any justification for the short term forecasts for the first 10 years of the proposed airport operation;
- erroneous use of growth rates from other industry or Government publications to project forward from Year 10 to Year 20.

We set these issues out in some detail in our November 2017 Report (Section 2) and do not repeat them all here. In combination, these issues render the so-called 'forecasts' meaningless and misleading.

3.5 At the outset, any forecasts for air freight growth need to be seen within the context of deceleration of growth trends in the face of economic uncertainty. This has recently been reported as a concern by the airport's trade body, ACI EUROPE.[23]

Short Term

3.6 It is notable that the Azimuth Reports provide no detail or justification for the forecasts of air cargo aircraft movements by type, airline or world region for the first 10 years of the forecast period. The 'forecasts' are based on unevidenced interviews and indications of the types of markets which Manston might hope to serve[24]. This is simply not a sound basis for establishing the need for Manston. Similar issues infect the passenger forecasts, which we discuss further in **Section 5**.

3.7 The basis for the markets which it is claimed that Manston might serve appears to be comments such as:

"The Indian subcontinent is also a potential exporter and importer of goods to the UK. One interviewee mentioned the potential for airlines from Pakistan to use Manston Airport (Securitas). Pakistan mainly exports clothing and imports consumer goods."[25]

[23] ACI EUROPE, https://www.aci-europe.org/media-room/mediaroom.html, Press Release 6.2.19.
[24] Azimuth Reports Vol III, para. 3.2.1. We note that most of the interviewees were local haulage firms or similar, some of which are no longer in business. The interviews do not directly relate to the list of airlines that it is claimed might operate.
[25] Azimuth Reports Vol II, para. 4.2.37

3.8 There is a further list of possible geographic markets set out at para. 5.2.5 of Azimuth Vol II and then a discussion of sectoral markets which might offer opportunities for growth in air freight. However, none of this represents an assessment of the likelihood of dedicated freighter services operating at Manston but represents a generic discussion of areas where there may be growth in air freight tonnage across the UK as a whole and where increased bellyhold capacity on passenger aircraft to/from these destinations will assist the development of these import/export markets. For example, Jet Airways has recently commenced a 5 days a week service from Manchester to Mumbai with an A330-200 offering bellyhold cargo capability as part of the offer within the context of a liberal air service agreement that allows for capacity increases across the market[26] between the UK and India.

3.9 So, whilst Section 3.2 of Vol III of the Azimuth Reports sets out how the cargo tonnage forecasts have been derived from the cargo aircraft movement forecasts, the basis for the movement forecasts is not set out at all. Hence, without a reasoned justification by reference to the scale of the market for each service proposed, little reliance can be placed on the asserted aircraft movement forecasts. These appear to represent nothing more than an aspirational list rather than a robust assessment of the extent to which such services might be operated. For none of the assumed services is there any analysis presented of markets, costs or alternatives available now or in the future for such freight and for none of the assumed services is any commitment documented.

3.10 The 'guesstimates' of the aircraft movements projected each year by airline(s), aircraft type and world region are set out, without further explanation, in Appendix 3.3 to the ES[27]. We set out below our comments on a number of the suggested airlines shown as assumed to be operating at Manston should the Airport re-open as an air freight hub.

- Amazon - it is not clear why Amazon would operate up to 4 return flights a day (1 in the first year of operation) from the US to Manston as the goods which Amazon sells in the UK are not, in the main, US manufactured. This seems to confuse the asserted role as an Amazon distribution hub with a requirement for long haul freight operations. Amazon's own flights in the US are between its main hub and secondary regional hubs, they operate no international services. Manston is not well located to operate as a distribution hub either for the London area or for the country as a whole so transatlantic flights by Amazon are not a realistic prospect.
- Cargolux - this assumes reinstatement of the previous Cargolux flower operation which has relocated to Stansted. This is only likely to take place should the charges to the airline be set at a very low level at Manston, as was the case previously, given the better location of Stansted relative to the totality of the UK market for the distribution of fresh flowers. Whether this would be commercially viable given RSP's asserted £300m investment in Manston is not assessed.

[26] https://www.gov.uk/government/news/deal-agreed-to-ease-restrictions-on-flights-between-the-two-nations

[27] TR020002-002418-5.2-6 - Environmental Statement - Volume 6 - Appendices 1.4-7.2.

- Fedex/DHL- the aircraft types proposed seem to pre-suppose a DHL operation. The integrator operation is expected to account for 22.8 movements per day on average or 48% of the total at Year 20 (a higher proportion in some of the earlier years). Manston is simply in the wrong location to perform as a hub for an integrator as we explain further in **Section 4**. Based on our knowledge of the integrator operations, this is completely unrealistic for Manston.

  Overall, the number of movements would imply around 8,322 annual movements by an integrator. This is around 43% of the total number of freighter movements at East Midlands Airport (EMA) in 2016 or around 2/3 of the current DHL operation there. This is hardly realistic as it would imply Manston would be a major integrator hub, duplicating the EMA operation, which acts as the main DHL hub for the UK working in tandem its main European hub at Leipzig. Freight tonnage continues to grow at EMA but the number of freighter movements have not systematically grown over the last decade. Further detail will be set out in the next section.

- Pakistan Airlines - The airline no longer operates pure freighter aircraft. The airline operates 22 passenger flights a week to and from the UK (Heathrow, Manchester and Birmingham) offering 208.5 tonnes of freight capacity each week[28].

- Postal - The B737 operation presupposes the development of a mail hub. Royal Mail have pared back on flying even at their main hub at EMA so it is unclear why a dedicated B737 operation is expected at Manston.

- Russian - Whereas the PEIR showed Russian airlines operating with aircraft types that have noise quota counts of 8 and 16, which meant that they could not operate according to the noise mitigation plan. The proposed aircraft type has been changed to a B747-400 in the ES but with no explanation as to whether the proposed Russian airline plans to operate such an aircraft or not.

- TAAG Angola – Do not operate any dedicated freight aircraft, let alone the B747 freighters, which is the type shown as expected to operate to Manston.

- Iran Air - Had a limited freighter fleet which is now stored and no longer in service. The airline placed no new freight aircraft orders when ordering a vast number of new passenger aircraft after the lifting of sanctions so it would not have aircraft to operate to Manston.

- Qatar Airways - Operates a significant schedule of dedicated freight services at London Stansted as part of its agreement to take over British Airways' freight commitments at the Airport. This British Airways/Qatar joint operation was in place when Manston was previously operational, and there were no services at Manston at that time, so it is not clear why they would not move from their established base if Manston was re-opened.

[28] Official Airline Guide (OAG) database.

3.11 At the very least, even without the other issues that we discuss in this section, consideration of the list of airlines and the type of operation shown in the ES gives rise to serious doubts about the credibility of the air freight movement forecast overall. These airlines account for 90% of the aircraft movements projected by RSP for Manston in the first year of operation and over 80% in Year 20. Regardless of whether a list of supposed operating airlines is produced, the absence of any analysis of the market for the proposed flights and a reasoned explanation for why each of the named airlines would operate to Manston means that the forecasts lack any credibility at all. In practice, most of the airlines relied on within RSP's 'forecasts' would or could not operate, invalidating the forecast and the assessments that depend on it.

3.12 It would be normal practice to set out clearly the markets that the Airport believes could be served, taking into account demand within its catchment area, and then to indicate the airlines and the aircraft types most likely to serve those markets. No assessment is presented by RSP of the extent to which the markets that it has identified are already being served by existing bellyhold or dedicated freighter operations nor any assessment of the extent to which future demand will be met through increased freight capacity at Heathrow and elsewhere. It is not sufficient to simply hypothesize a list of airlines as a basis for a forecasts of cargo movements and tonnage without supporting evidence and analysis of the market.

3.13 We recognise that Azimuth have sought to justify the absence of any mathematical demand model[29] to assess air freight demand for Manston on the basis of the difficulty of establishing relevant market data in the circumstances when Manston is not currently operational and in the light of the RSP claim that the re-opening of the Airport could bring about a step change in performance. However, the sources that they rely on to vindicate a purely qualitative approach to preparing the forecasts do not support the position adopted. For example, the US Transportation Research Board approach cited as justification for the approach adopted[30] makes clear that any qualitative approach should be based on the clear identification of the scale of the market, the drivers for change and an assessment of the potential market share that could be achieved as well as consideration of alternative future scenarios. It is evident that Azimuth has not completed these steps in a systematic and transparent fashion based on analysis of the actual demand for dedicated freighter aircraft to and from the UK today.

3.14 Hence, it is our view that no credence can be placed on the short term demand projections presented in the Azimuth Reports. It is simply not credible that Manston would attain 50% of the number of freighter aircraft movements currently operated to Stansted Airport within its first year of operation or that it would match Stansted in its second operational year (Year 3 2022).

3.15 We set out, in **Section 4**, a proper analysis of the market and the competitive drivers using publicly available data to substitute for the lack of proper analysis carried out by Azimuth. This will demonstrate that there is no pent up excess demand waiting for the re-opening of Manston, leaving aside that the Airport is simply in the wrong place to serve the UK market.

[29] Azimuth Reports Vol II, para. 2.22.4
[30] Ibid, para. 2.22.5

Longer Term

3.16 The short term 10 year forecasts are then extrapolated forwards by Azimuth for the following 10 years based on an assumed growth rate in underlying dedicated freighter aircraft movements. It is important to note that, if the forecasts for the first 10 years are not properly grounded in an assessment of the market for Manston, then any extrapolation forwards will lack validity whatever the realism or otherwise of the growth rate selected. This is fundamentally the case.

3.17 Even if the short term forecasts were reliable, which they are not, we dealt at length in our November 2017 Report (Section 2) with the errors made by Azimuth in its interpretation and use of Boeing and Airbus forecasts of the potential global growth in air freight RTKs[31] as the basis for its long term trend based forecasts using a 4% per annum annual growth rate for dedicated freighter movements. We do not repeat these criticisms here but the points remain valid.

3.18 It remains significant that the latest Government UK Aviation forecasts[32] continue to assume that there will be no net growth in pure freighter aircraft to and from the UK over the period to 2050:

"Freight is not modelled in detail. An assumption about the number of freighter ATMs is nevertheless required in the model as freighters potentially affect the space for passenger ATMs available where capacity constraints exist and, as discussed in Chapter 3, CO_2 emissions. At the airport level the number of freighter movements has been volatile with some evidence of overall national decline in recent decades. In the absence of clear trends for individual airports, the modelling now assumes that the number of such movements will remain unchanged from 2016 levels at airport level across the system.

If DfT has believed that there was likely to material growth in demand for dedicated freighter aircraft, it would have made a different assumption so as not to understate the need for more airport capacity across the UK's airports and the carbon effects of growth more generally.

3.19 We know that Azimuth do not agree with this view[33] but we are unaware of any intention by DfT to revise this no net growth assumption regarding the long term growth potential for dedicated freighter movements across the UK. This is in the context of the role of Heathrow and the additional capacity to be provided by R3 in increasing capacity for freight carried in the bellyholds of passenger aircraft and even in providing some increase in capacity for dedicated freighter aircraft at the UK's principal air freight hub to the extent that there is specific demand for additional movements at Heathrow connected with its hub role. We address the role of Heathrow within the UK air freight industry and the relationship between freight carried in bellyholds of passenger aircraft and in dedicated freighters further in the next section. We addressed Azimuth's use of alternative global forecasts of freight tonnage growth as the basis for forecasting dedicated freighter movement requirements in our previous reports but we draw some additional conclusions below.

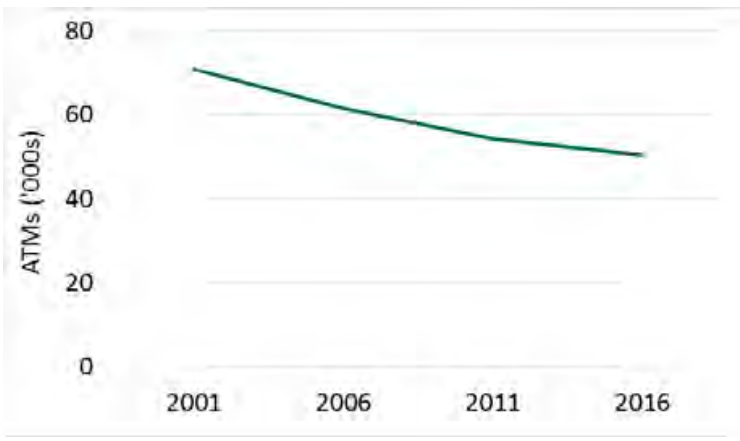
[31] Revenue Tonne Kilometers
[32] UK Aviation Forecasts, October 2017, as amended 25th January 2018, para. 2.56.
[33] Azimuth Report, Vol III, para. 2.1.14.

3.20 The trends in terms of tonnage growth are set out in paras. 4.4 and 4.5 and illustrated in Figure 4.5 of the UK Aviation Forecasts 2017. The Azimuth Report, Vol II, para 2.6.4 and Vol III para. 2.3.6, quotes from the DfT's original version of the UK Aviation Forecasts 2017. Azimuth appear not to have realised that this text was amended and an updated version issued on 25th January 2018[34].

"Freight, in terms of both tonnage and numbers of aircraft movements, has not kept pace with the growth in passenger numbers. In 2011 (70%) and 2016 (69%) most freight by tonnage is carried in the holds of passenger aircraft ('bellyhold'). Total freight carried at the UK airports rose from 2.3 million tonnes in 2011 to 2.4 million tonnes in 2016, with a growth of about 5% in the weight of cargo carried on both freighter and passenger aircraft."

3.21 The key point is that, whilst there has been growth in tonnage carried on both dedicated freighter aircraft and in the bellyholds of passenger aircraft over the 5 year period from 2011 to 2016, there has been an ongoing decline in the number of movements by dedicated freighter aircraft as illustrated in **Figure 3.1** below. Our analysis of the trends is echoed in the recent Altitude Report[35]. Notwithstanding a small increase in dedicated freighter operations in 2017, the general trend remains downwards. Our analysis of Civil Aviation Authority (CAA) Airport Statistics[36] suggests that there were just under 55,000 such aircraft movements in 2018 across all UK reporting airports[37]. This downward or static trend in relation to dedicated cargo aircraft movements across the UK as a whole is important in terms of setting a context for considering the reasonableness of Azimuth's projections by reference to the implications for the market share of the total market that it is claimed Manston could attract.

Figure 3.1: Trends in Dedicated Freighter Air Transport Movements (ATMs)



Source: DfT UK Aviation Forecasts 2017, Figure 4.5

[34] As a result of inconsistencies in the original pointed out to the DfT by York Aviation.
[35] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.
[36] https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-airport-data/
[37] i.e. excluding the Channel Islands and the Isle of Man.

3.22 Of the 55,000 freighter aircraft movements to/from the UK in 2018, some 34,000 movements were non-domestic; the domestic flights being mainly mail operations and feeder flights to the EMA freight hub. In terms of the domestic flights, it is important to recognise that they are counted twice in the CAA statistics, once at each end of the route, e.g. EMA and Belfast. Hence the number of such individual flights is actually under 11,000. On the basis that the small turboprop aircraft (ATR72s), making up 28% in Year 1 falling to 25% in Year 20 of the freighter movements shown in the ES Fleet mix[38], are operating principally on domestic routes, this would imply a market share of total UK domestic freighter flights starting in Manston of 13% in Year 1 rising to 40% by Year 20. This assumes no further decline in the number of domestic cargo flights, although this sector has a longstanding historic trend of decline numbers of flights. In terms of international operations, the Azimuth projections for Manston, would imply a market share of international freighter operations of 11% in Year 1 rising to nearly 40% in Year 20. If the market for Manston is narrowed down still further to principally day time operations, the asserted share of the available market would rise much further. In either case, the market share implications of Azimuth's 'forecasts' simply defy credibility in a market already well served by the better located operations at East Midlands and Stansted in addition to the contribution at Heathrow and other airports.

3.23 Azimuth use the original DfT estimate of 4% growth in tonnage carried on dedicated freighter aircraft (which was amended by DfT to 5%) over the period 2011 to 2016 as a key part of their justification for using the 4% per annum (p.a.) growth rate that they apply to the Year 10 freighter aircraft movement 'forecast' to extrapolate the freighter aircraft movement forecasts to Year 20. This leads to 2 fundamental errors:

- firstly, in applying a growth rate for cargo tonnage (or RTKs in the case of the Boeing and Airbus global forecasts cited by Azimuth) to aircraft movements ignoring the increase in tonnage carried per movement meaning that the growth in movements will always be lower over time than the growth in tonnage; and
- secondly a failure to understand the difference between the growth rate over a period of time (5, 10 or longer number of years) and an average annual growth rate applicable each year within the period to achieve that level of growth.

3.24 This latter and fundamental mathematical error undermines their use of average annual growth rates applied to derive both the longer term air freight movement and passenger growth rates and results in grossly overstated long term demand projections for Manston, leaving aside the reliability of the short term forecasts upon which the extrapolations are based. The specific errors are:

- The DfT trend of 4% growth over 5 years that is relied on by Azimuth is equivalent to 0.8% p.a. growth which, even if the Year 10 forecasts were valid (which they are not), would reduce the Year 20 forecast of freighter aircraft movements to 12,550 aircraft movements rather than the 17,170 projected by Azimuth.

[38] ES Appendix 3.3

- ✈ The 4% trend growth in the passenger forecast is cited by Azimuth as being conservative[39] by reference to a peer review undertaken by ourselves of the passenger forecasts for Liverpool John Lennon Airport in 2017, which found growth of 50% over the period from 2016 to 2030 and 120% over the period to 2050 to be reasonable. Based on growth of over 50% (62.5%) and 120% over 24 and 44 years respectively, the average annual growth rate was just over and just under 2% p.a. respectively in the case of Liverpool, which we considered reasonable in the context of DfT's overall projections for the UK market. Hence, again, proper analysis of growth rates does not support the use of 4% p.a. growth rate adopted by Azimuth for Manston over the longer term.

We discuss the appropriate basis for passenger forecasting in both the short and longer term in the **Section 5**.

Displacement Implications

3.25 It is notable that the implication of the Azimuth freighter forecasts is that the Airport is predicted to handle 5,252 freighter aircraft movements in its first year of operation (Year 2). This is almost five times the number of freighter aircraft handled in the previous peak year for the Airport of 2003[40]. On this basis, Manston would have almost a 10% share of the total market for dedicated freighter aircraft in the UK (based on just over 55,000 such movements in the rolling year to October 2018) in its first year of operation and assuming no net growth in freighter movement activity across the UK in line with DfT assumptions, or 15% of the international freighter movements. The Year 2 figure amounts to around 25% of the total number of freighters handled at the UK's main airport for dedicated freight aircraft, East Midlands (EMA), or around 50% of those handled at Stansted in the rolling year to October 2018. As noted above, the Year 3 figure for freighter aircraft movements would place Manston on a par with Stansted within 2 years of opening. This is not credible.

3.26 The only assumption that can be made is that Azimuth/RSP are relying on freighter aircraft at Manston being wholly or largely displaced from elsewhere in order to achieve the growth projected in a single year or over 2 years. Even if there was some latent demand for additional freighter movements to the UK, which we do not believe to be the case, it is not reasonable to assume that Manston would be the first choice for such freighters. We discuss the availability of spare capacity and market trends more generally in the next section.

3.27 Although Azimuth claim that the costs to airlines, freight forwarders and shippers of switching between airports have been taken into account in preparing the forecasts[41], this is nowhere transparently explained and, in particular the implications this might have for the revenues that RSP could earn and the viability of the development overall. Azimuth helpfully identify the factors that airlines, forwarders and shippers would need to take into account in considering the desirability or otherwise of relocating operations:

- *"The cost of physical relocation*
- *Cancellation of long-term contracts*
- *Loss of economies of scale, although if an entire operation is switched, economies*
- *of scale would be gained at the new airport*

[39] Azimuth Report Vol III, para. 4.0.3.
[40] See Table 1.1 of our November 2017 report.
[41] Azimuth Report Vol III, para 2.2.10.

- *Market effects such as marketing new routes and a potential loss of custom in the*
- *early years following the switch*
- *Network effects lost by switching to a smaller airport*
- *Capacity constraints at other airports, particularly in slot allocations*
- *Sunk costs such as an airline's investment in the airport from which they are switching"*

This means that any decision to relocate to Manston would be costly and would only be taken in the face of major disadvantages. Notwithstanding the claimed advantages of a dedicated purpose built cargo airport, we do not believe that these would outweigh the costs of switching or the fundamental disadvantages of being wrongly located in terms of serving the UK market.

3.28 Given these switching costs, the only way any freighter movements could be attracted to use Manston would be by offering lower prices than elsewhere, not least to compensate for greater trucking distances and time to the principal distribution centres in the UK Midlands (see our November 2017 Report and the Altitude Aviation Advisory Report of November 2017). We understand that this was the case when the Airport was previously operational and it almost certain to be the case if it re-opens. The need to charge lower prices would necessarily have an impact on the viability of the Airport, given the scale of RSP's claimed proposed investment which we discuss further in **Section 7**.

3.29 At 17,170 freighter aircraft movements and following DfT's assumption of no or negligible growth in dedicated freighter operations to/from the UK, then Azimuth's projections would result in Manston having attained a market share of 30% over 20 years (or 50% of international freighter aircraft movements), almost entirely at the expense of other airports. Again, the implications of such displacement need to be considered, not least in terms of whether there is actually a need for Manston given the capacity available at other better located airports to meet the demand.

3.30 The key point to make here is that the Azimuth forecasts are silent on the extent to which its forecasts rely on displacement from elsewhere, which has implications for any assessment of the net economic value of activity at Manston within the socio-economic assessment when measured, as Azimuth do, at a national scale (see later in this section). When the nature of the UK air freight market is properly understood (see next section), we consider the extent of displacement of freighter activity implied if Azimuth's 'forecasts' were correct as simply implausible, further invalidating the assumptions that underpin the case for the development.

3.31 Fundamentally, the Azimuth 'forecasts' appear to rely on substantial displacement of dedicated freighter aircraft movements from other airports that have already invested in the infrastructure to handle such movements, or, as we discuss further in the next section, already have adequate capacity to handle air freight, including the reasonably expected number of dedicated freighter movements. This is not plausible. Hence, the only opportunities for Manston will, in all likelihood, be niche operations not currently being served from elsewhere. In practice, we would expect the latter outcome to be more likely, meaning that there would be very limited, if any, demand for Manston.

Fleet Mix

3.32 Even if the 'forecasts' had any credibility at a headline level, which they do not, there are substantial discrepancies in how the forecasts have been disaggregated to inform the environmental assessment. These discrepancies further undermine any credence that can be placed on the forecasts themselves, particularly given that they are essentially derived from subjective judgements as to the airlines that might operate and the types of aircraft they would use.

3.33 The fleet mix proposed for Manston is set out in Appendix 3.3 of the ES (Vol 6). The information presented shows the expected operating airlines (as discussed above), the aircraft types and whether the operation is expected to be during the day or night time. Without prejudice to our view about the realism of the level of freighter aircraft movements projected, we consider here the reliability of the specific fleet mix forecast that underpins RSP's case.

3.34 In the first instance, we note discrepancies between the mix of claimed aircraft types (sizes) set out in Appendix 3.3. of the ES and those shown in the Azimuth Report (as well as between versions of the Azimuth Report) and the mix of aircraft types shown as the basis of assessment in Table 3.7 of the ES for Year 20. We illustrate the discrepancy in **Table 3.1** below.

Table 3.1: Fleet Mix of Freighter Aircraft by Aircraft Size Category (ICAO Design Code)

Code	C	D	E	F
Original Azimuth Vol III, Table 2	43%	42%	13%	2%
Updated Azimuth Vol III Table 2	43%	17%	40%	0%
ES Table 3.7	43%	40%	17%	0%
ES Appendix 3.3	43%	12%	40%	5%
Source: RSP Application Documents				

3.35 Hence, there appears to be confusion as to the actual forecast usage of Manston by RSP. No explanation is provided as to the reason for these discrepancies, or indeed why the fleet mix projections changed between the original version of the Azimuth Reports and the final submitted version. This is material as the airfreight tonnage 'forecasts' are apparently derived from assumptions made about the average tonnage per aircraft[42] so changing the fleet mix should inevitably have resulted in changed tonnage projections given the changing fleet mix assumed. The fact that the total airfreight tonnage 'forecasts' set out by Azimuth have not changed is a further illustration of the cavalier way in the forecasts and the whole case have been put together.

[42] Ibid, para 3.2.2.

3.36 Such inconsistencies must inevitably raise further doubts about the robustness of the forecast overall. These discrepancies have implications for the assessment of infrastructure required and the assessment of environmental effects[43] and reduce any reliance that can be placed on the assessments given that the basis of assessment appears to be different from the asserted Need Case as set out in the Azimuth Reports.

Pattern of Operations

3.37 The pattern of aircraft movements projected by RSP for Manston, in terms of its day/night balance, is inconsistent with industry norms. It is our view that the proposed day/night operating pattern is a further reason why the air freight forecasts for Manston are unattainable.

3.38 In the first instance, we have looked at the pattern of aircraft movement operations that we would expect based on the patterns seen elsewhere in the UK for similar types of aircraft, operator and destinations. Although Appendix 3.3. of the ES gives an indication of the proportion of movements by each aircraft type that would operate in the day time and the night time, no explanation is given for these day/night splits. In particular, it is not clear how the ES allocation of flights by day and night would fit with the airlines' required operating times to meet customer requirements. Whereas it may be possible to confine some specialist ad hoc freight operations to operate only within the day time period (07.00-23.00), many dedicated freighter operations are geared to collecting goods at the end of the working day, transporting them during the night and ensuring early morning deliveries the next day. This is particularly so for the integrators, for whom it is key to their business model and which are proposed in the ES forecasts to make up 48% of all freighter movements at Manston in Year 20. For an integrator, such as DHL, the timings of flights are, in large, part geared to the requirements for connecting operations at their main European hub in Leipzig and so are non-negotiable.

3.39 Without prejudice to our views on the overall number of freighter aircraft movements projected for Manston or, specifically, the likelihood an integrator operating to Manston at all (considered further in the next section), we have examined the validity of the pattern of operation proposed by RSP, particularly in relation to whether it is realistic to claim that Manston could operate as a major air freight hub with such a small number of night flights. In order to consider the reasonableness of the pattern of movements assumed by RSP (as set out in the ES), we have used our understanding of flight patterns and fleet mixes for cargo operations at other UK airports, specifically referencing the UK's main airport for dedicated freighter operations East Midlands Airport (EMA) current cargo movement schedule[44]. **Table 3.2** below shows that 56% of the total freighter aircraft movements at EMA operate between the hours of 23:00 and 07:00.

[43] For the purpose of our infrastructure assessment later in this report, we have worked from the more detailed data set out in Appendix 3.3 of the ES.

[44] EMA Cargo Schedule - http://aerofred.juice.org.uk/EMA/east_mids_cargo.html

Table 3.2: East Midlands Cargo Schedule Splits For Day Time And Night Time Movements By Operator Type				
	Integrator	**Mail**	**Other**	**Total**
Day Time Movements	37%	31%	74%	44%
Night Time Movements	63%	69%	26%	56%
Source: York Aviation Analysis of EMA Cargo Schedule[25]				

3.40 Clearly, this is significantly different from the 86%/14% day/night split of freighter aircraft movements assessed by RSP in the ES based, we assume, on the requirements proposed by Azimuth. As previously explained, this is in large part because the integrators, which make up nearly 64% of freighter movements at EMA operate to specific patterns linked to overnight delivery. It is, therefore, important to note that by RSP's forecast show that only 32% of Manston night movements are expected to be by integrators, despite such operations being projected to make up 48% of all freighter aircraft movements, whereas 70% of total night time movements at EMA are by integrators. This strongly suggests that the dependence of the integrators on night time operations has not been properly reflected in RSP's assessments.

3.41 We have used information on the patterns of operation observed for integrators, mail operators and for general air freight operations to assess the pattern of operation which the airlines would naturally seek to operate. We would have expected the rationale made for the assumed day/night time split of operations to be have been fully explained in RSP's Need Case (the Azimuth Reports) and the ES. It is not.

3.42 In the first instance, we have assumed that freighter operations are principally on weekdays and so have assumed 250 operational days per year. To the extent that some freighter operations might be at weekends, the effect of this assumption will have been to over rather than understate the number of daily movements. However, the assumption will be neutral in terms of its effect on the day/night balance of movements. We have applied RSP's assumptions as to the extent to which movements would bunch into busier periods (the 'Busy Day' multiplier as set out for each type of movement in Appendix 3.3 to RSP's ES).

3.43 Our specific assumptions for the main market sectors are as follows:

- *Integrators* - Based on the movement types expected by RSP/Azimuth to operate at Manston, with over half of the integrator movements expected to be ATR72s or other smaller Code C[45] turboprop aircraft, experience at other airports shows that these aircraft tend to operate a late evening arrival, early morning departure pattern as they act principally as domestic feeders from/to the UK's main integrator bases at East Midlands and Stansted. Closer inspection of the integrator fleet mix and, specifically, the volume of turbo props in the predicted aircraft movements by RSP has led us to estimate a higher percentage of movements requiring to operate at night than the 63% of integrator movements observed at EMA as a direct consequence of the high volume of predicted DHL/Fedex ATR72 aircraft operating feeder routes in Azimuth/RSP forecast, taking into account the times at which they will require to operate to fulfil the customer requirements. If there were fewer turboprops in the mix, this would, of course, have negative implications for the noise assessment assuming they were replaced by jets.

  Using realistic operational timings to the ES fleet mix leads to a roughly 10%/90% split of movements day to night for the integrators. EMA has a higher proportion of larger integrator aircraft in its operation as it fulfils a secondary hub role itself, which results in a proportion of the movements by these larger aircraft operating outside of the night period. In total, only 4% of integrator movements at EMA are by turboprop aircraft such as the ATRs, with a further 29% of movements by full size Code C aircraft, such as the B737. The remaining 67% of integrator movements at EMA are by the larger code D and E aircraft such as B767s and B777s. This reflects its role as an integrator hub for the UK given its central location.

  RSP's assumed mix of aircraft types for the integrator operation further highlights the lack of realism in the presumption that a substantial integrator operation is plausible at Manston, as it relies on a large number of feeder flights by small aircraft serving other hubs which would, in practice be more likely to be dispersed across a range of airports so as to serve local markets with efficient close out times for the collection of urgent packages. Manston simply could not fulfil that role and is not in the correct location to operate as a hub itself.

- *Mail* – Based on the busy day forecast calculated from RSP/Azimuth's data, there were 3 daily movements on average for postal services, which we rounded up to 4 to allow for a realistic pattern over a single 24-hour period. The RSP/Azimuth split of movements between the day and night was suggested as 50%/50%. However, as shown in **Table 3.2,** we found that 69% of mail movements were typically at night based on the EMA experience. This is hardly surprising given that the principal requirement is for overnight mail deliveries. Given the small number of such movements expected at Manston, it seems likely that all would need to operate during the night.

[45] The aircraft Codes referred to are aircraft size categories that determine the physical dimensions of the airport infrastructure required to handle them.

- *Other Freighters* – We have included all other freighter movements in this category. This is wider than the RSP/Azimuth forecast, which specifies 'Other Freighters' as relating only to a small number of movements by B737-300 freighter aircraft. For the purposes of building the busy day schedule, we have considered all non-integrator and non-mail movements as 'other'. RSP/Azimuth propose that, of all these other cargo movements, nearly 93% will be during the day. However, considering the nature of the flights proposed by Azimuth and typical operating times for these flights having regard to world time zones, we found that a more likely day/night distribution to be 80%/20%. This is closer to the split we found at EMA for general cargo operations of 74% day/26% night.

3.44 On the basis of a rational patterns of operations for RSP's claimed mix of aircraft and operators, we find that the same overall pattern of operations as EMA would be required if Manston is to allow airlines to fly when they wish to do so, i.e. 44% day and 56% night. Our analysis would strongly suggest that the pattern of day and night time operations being proposed by RSP is not realistic and that, for Manston to have any hope of attracting freighter operations in line with Azimuth's projections, there would have to be a substantially greater number and proportion of the operations taking place at night, giving rise to substantially different noise implications.

3.45 The pattern of operations put forward for Environmental Assessment by RSP, hence, runs entirely contrary to what is claimed in RSP's Statement of Reasons (para 4.23) that:

"other unique advantages of the Proposed Development include: dedicated air freight stands, aprons, handling, storage and processing facilities; prioritisation of freight with quick turnaround and unloading time of aircraft; and availability and flexibility of slots none of these advantages are likely to be sustained by any of the other airports in the south east of England",

and in the NSIP Justification Statement[46] that:

"our business model is to provide sufficient capacity to be able to accommodate aircraft when the airline wants to operate rather than to suit the airport through slot management, which requires a much greater availability of stands."

3.46 The proposals for Manston rely on constraining the times at which airlines could operate to a sub-optimal slot pattern, particularly for the intergrator and mail operations that require to operate largely at night. More likely, when coupled with the structural factors in the air freight market that we discuss further in the next section, the consequence of seeking to force an integrator to adopt RSP's proposed operating pattern reinforces our expectation that integrator operations are simply an unrealistic aspiration at Manston. This is significant as they account for 48% of the projected freighter aircraft movements in Year 20 (and higher in earlier years). If integrator operations are excluded from RSP's 'forecasts' then the number of freighter movements in Year 20 is only 8,843, leaving aside other errors and discrepancies in the assessment. Royal Mail flights, which would also require to operate at night make up a further 4.5% of freighter aircraft movements in RSP's 'forecasts'.

[46] RSP NSIP Justification, para. 29.

3.47 Furthermore, there is some confusion across the submission documents as to whether integrator operations are a core part of the demand projections in any event as the Planning Statement (para. 9.39) comments that:

"Additionally, there is the potential to attract an integrator to Manston Airport, which would dramatically increase the profitability of the airport."

This implies that this is an upside potential not part of the core Business Case as claimed to be set out in the Azimuth Reports and, hence, the assessment of need would need to exclude such operations in the core case and illustrate only the upside potential if such operations could be attracted.

Night Quotas

3.48 There remains further confusion regarding the intentions for night time operations as we understand that RSP has in public statements, on occasion, suggested that there would be no scheduled aircraft operations at night, i.e. the Airport would only accept delayed aircraft operating in the night period. Such a situation would be even more untenable for integrator and mail operations. Such a ban does not form part of the Noise Mitigation Plan and, hence, we have considered the implications of the Plan as published[47].

3.49 This gives rise to another key point regarding the fleet mix as RSP's Noise Mitigation Plan states that only aircraft of QC8 and QC16[48] will be banned from operating at night. This is inconsistent with best practice at other airports that ban scheduled operations at night by aircraft of greater than QC2 or even QC1[49]. The lax policy being adopted by RSP for Manston could act as an incentive for the operators of noisier aircraft to use the Airport within the proposed night quota available. Whilst this might bolster the attractiveness of the Airport for ad hoc freighter movements, e.g. by Russian airlines, it would not overcome the fundamental restriction on the principal operations by integrators such as DHL which would be heavily constrained by the night movement restrictions proposed in terms of the number of movements allowed within the quota.

3.50 We note that the proposed night movement quota of 3,028 QC points for the period 23.00-07.00 has been further reduced compared to the 4,000 QC points proposed for the period 23.000-06.00 at the consultation stage, with the additional 2,000 QC points available for scheduled passenger departures during the period 06.00-07.00. This imposes further severe restrictions on the ability of the cargo and passenger airlines to schedule their operations at times necessary to their operational viability in terms of meeting customer needs for delivery of goods and in ensuring optimum aircraft utilisation and efficiency.

[47] RSP 2.4: Noise Mitigation Plan.

[48] The QC (Quota Count) system is a classification system for the noise made by aircraft and has been adopted at most of the main UK airports as the basis for defining a night movement quota related not just to the number of movements but the level of noise each aircraft makes. The higher the QC number the noisier the aircraft. A movement by a QC16 aircraft would be equivalent in quota terms to 16 movements by a QC1 aircraft.

[49] Luton - https://www.acl-uk.org/wp-content/uploads/2016/10/Local-rule-1.pdf , Birmingham - https://www.acl-uk.org/wp-content/uploads/2018/10/Night-Flying-Policy-2018-2021.pdf , Stansted - https://live-webadmin-media.s3.amazonaws.com/media/3682/stn-noise-action-plan-consultation-15818.pdf.

3.51 Furthermore, examination of the day and night time split of movements as set out in Appendix 3.3 of the ES suggests that by Year 20 there are expected to be approximately 10 aircraft movements per weekday night[50] according to Azimuth/RSP's forecasts. Although the QC points per movement are not clearly set out in the ES, an approximate estimate using Heathrow's QC point attribution by aircraft type[51] would suggest that an average weekday quota count of between 8 and 8.5 based on the night movements indicated in Appendix 3.3 of the ES and assuming an even balance of arriving and departing aircraft movements per night. This would amount to around 2,460 movements per year using just over 2,000 of the 3,028 proposed night quota points, dependent on the split of arriving and departing aircraft and the precise aircraft variant used. Whilst this would allow additional movements to be scheduled at night, it would still not be sufficient to allow for an integrator operation to be established, even assuming that Manston was geographically in the right place – a point that we discuss further in the next section. However, it is notable that, assuming the noise assessment has been based on the data supplied in Appendix 3.3 of the ES, the full impact of the proposed noise mitigation strategy and quota appears have not been assessed in the ES.

3.52 Appendix 3.3 of RSP's ES indicates that none of the passenger aircraft operations would be at night. This is equally unrealistic. We set out in the next section the typical rotation pattern for a based low cost carrier (LCC) aircraft at a regional airport. These airlines maintain low fares by optimising the time that the aircraft are in the air each day. To achieve this, they typically make their first departure before 07.00 and often return after 23.00. Hence, we would expect there to be at least some night movements by passenger aircraft in addition to freighter movements. Constraining an LCC to daytime operations only would render Manston particularly unattractive as a base for aircraft.

Socio-economic Assessment

3.53 Whereas our previous criticisms of Azimuth's approach to air freight movement projections have been ignored, there appears to have been some attempt to take on board criticisms of the socio-economic assessment (Azimuth Reports Vol IV). Nonetheless, the assessment of the socio-economic impact of the development remains badly confused, unclear and riddled with errors and ultimately, even if the socio-economic assessment undertaken were robust, it would be rendered meaningless by the manifest errors in the demand 'forecasts' that feed into it. What is put forward with RSP's submission should, therefore, be accorded no weight whatsoever.

3.54 In our previous report, we considered the methodology adopted by Azimuth Associates in some detail and although some minor changes have been made to the approach reflecting our comments, little has really changed. We would, therefore, refer the Examining Authority back to our November 2017 Report[52] for a complete assessment of the RSP case. However, we would reiterate a number of key points:

[50] Freighter movements typically operate principally on weekdays.

[51] https://www.heathrow.com/file_source/HeathrowNoise/Static/HCNF_WG1_QC_and_chapter_correlation_Feb_18.pdf .

[52] York Aviation November 2017 Report, Section 5.

- The study area that is being considered by this assessment remains completely unclear and Azimuth repeatedly uses assumptions that would not be appropriate for the assessment they appear to be trying to make at the level of Kent or East Kent. At points, it appears that the impact of Manston is being considered at a UK level and multipliers are being used that reflect this size of study area. However, at the same time the Azimuth Reports and the Planning Statement talk about impacts in much more localised areas, particularly East Kent, but no change appears to be made to the multipliers to consider these smaller areas. Multipliers for smaller geographic areas must be smaller than those for larger areas as they will not include as much supply chain or as much expenditure of employees' salaries. Failure to realise this suggests a fundamental lack of understanding of how multipliers work and how they should be applied. As RSP's submission stands, it does not actually include a socio-economic impact assessment because it does not properly define the geographic area it is assessing. All that is presented are a series of random, meaningless inferences of what the impact of an airport might be.
- Azimuth continue to use an on-site employment density for a re-opened Manston that is too high. We continue to believe that Prestwick Airport is a better comparator for Manston, with a density of around 650 jobs per million passengers per annum or 100,000 tonnes of freight. Azimuth has revisited their assumptions and concluded that East Midlands Airport is an appropriate comparator, with a job density of around 887 jobs per million passengers per annum or 100,000 tonnes of freight[53]. However, what Azimuth have failed to account for is the substantial amount of non-aviation related employment based on the Pegasus Business Park at East Midlands which is included in this employment estimate. This means that the basis for the calculation used is inflated resulting in a higher employment density. If this non-aviation related employment were to be removed from the assessment the employment would actually be similar to that at Prestwick and is a better comparator to Manston given that much of the non-airport related employment at EMA relates to businesses located there adjacent to the M1 and centrally located for the three main cities in the East Midlands region.
- Azimuth are also incorrect[54] to assert that our economic assessment set out in our November 2017 Report must be wrong because our estimate of catalytic impacts in terms of jobs is lower than our estimate of direct airport related jobs (based on RSP 'forecasts'). Whilst we would agree that the catalytic effects of airports are often larger than the direct, indirect and induced effects, that does not make it true in all cases. Consideration of individual circumstances is vital. Our assessment considered a properly defined area, Kent. Given Kent's location, its industrial base, population and the size of freight catchment areas, it is unlikely that a significant number of potential freight users will be located within that area and, hence, the amount of impact captured will be relatively small. The passenger services envisaged are likely to be focussed on outbound leisure markets and, hence, inbound tourism impacts are likely to be small. In Manston's case, there is no reason to expect significant catalytic effects within a properly defined catchment area.

  In practice, the catalytic effects tend more often to manifest themselves in increased productivity and so appear as GVA[55] effects rather than necessarily employment effects. Azimuth do not appear to understand this and have not taken into account how any catalytic effects would actually materialise within the local context.

[53] This economic impact assessment was undertaken by York Aviation.
[54] Azimuth Reports Vol IV, para 4.3.6.
[55] Gross Value Added

- Following on from the failure to properly define a study area and the use of national multipliers, it should again be re-emphasised that if Azimuth are looking at national effects they failed to allow for any displacement of economic activity from other parts of the UK from the abstracting of demand from other airports. In our view, Manston is not going to generate new demand for freight services. It will have to capture demand from other airports. This will have an effect on these other airports in terms of their ability to support employment.
- Azimuth has also failed to properly define the baseline for the socio-economic assessment. Their assessment has implicitly assumed that if the RSP proposals are rejected then the Manston site will not support any economic activity. This is again inaccurate. The current owners have put forward plans for a mixed use development and this should be considered as the counterfactual for the assessment. Any impacts from RSP's proposals should be reported net of impacts from the alternative uses for the site.

Passenger Terminal Parameters

3.55 As we discuss in **Section 6**, no explanation or justification is provided for how the air freight movement or tonnage forecasts have been converted to facility requirements. The requirements are simply reported in Table 6 of Vol III of the Azimuth Reports. This is a significant gap in the justification for the scale of facilities required, as we discuss further in **Section 6**.

3.56 Despite there being no information provided in relation to the cargo terminal requirements associated with the freight tonnage forecast, some information is provided in relation to the scale of passenger terminal facilities required in Table 7 of Vol III of the Azimuth Reports. In this case, there are obvious errors of analysis in terms of the 'pax per hour' requirements set out. There can be no certainty that similar errors have not been made in assessing the facility requirements for air freight but no explanation is provided.

3.57 At para. 4.0.5 of Vol III of the Azimuth Reports, it is stated that a low cost carrier (LCC) (elsewhere shown to be assumed to be Ryanair) would base 2 aircraft at the Airport initially, increasing to 3 from Year 6. Based on the pattern of Ryanair operations seen elsewhere across their network, these aircraft are likely to all need to depart in the first operational hour of the day in order to achieve optimum utilisation of the aircraft over the day. Similarly, they are likely to arrive back at a similar time of night, particularly if night time operations after 23.00 are not expected (as indicated by the ES Appendix 3.3 data). Hence the terminal would need to be sized to accommodate the full passenger load from 3 aircraft within an hour for each of arrivals and departures. Ryanair's current fleet of aircraft (B737-800s) typically have 189 seats and, over time, these will be replaced by B737 Max aircraft of 200 seats. Hence, at Ryanair's typical summer load factor of 97%[56], the number of passengers per hour that the terminal would be expected to handle in each direction would be 550-580. It is also possible that the KLM operation to/from Amsterdam would also operate at similar times in order to maximise connections available at the Amsterdam hub increasing the number of passengers requiring to be handled within an hour.

[56] https://investor.ryanair.com/traffic/

3.58 According to Table 7 of Vol III of the Azimuth Reports, the required terminal capacity is 171 departing passengers per hour (less than the load of a single Ryanair aircraft) and 43 arriving passengers per hour or around 23.5% of the load of the smallest Ryanair aircraft. This simply does not make sense, particularly in terms of the large differential between departing and arriving capacities assumed. Should the capacity of the terminal be constrained to these levels, it is unlikely that a single aircraft could be based at Manston at all. The arrivals capacity would relate only to the ability to handle a single very small turbo-prop aircraft at any one time. We consider further the terminal capacity requirement in **Section 6**.

Conclusion

3.59 Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

3.60 The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. This is no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;
- the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts';
- the overstatement of longer term demand projections through the use of unjustified growth rates.

3.61 These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens. In the next section, we set out our assessment of the market potential for Manston to assist the Examining Authority.

4 UNDERSTANDING THE AIR FREIGHT SECTOR

In this section, we summarise the performance of the UK Air Cargo market and demonstrate that there has been an inexorable trend away from the use of dedicated freighter aircraft towards a clear preference for the use of bellyhold capacity on passenger aircraft on the growing network of global air service connections. The exceptions to this are the operations of the integrators, which have well established UK operational bases, particularly at Heathrow, East Midlands and Stansted serving the main conurbations.

There is a strong concentration of freight handling and forwarding facilities in the vicinity of Heathrow, drawn by the air freight capacity offered by the global hub network of air services. This means that much airfreight is inevitably consolidated at Heathrow to avail of the lowest possible freight rates using bellyhold capacity. These facilities are being modernised to increase capacity and this will reinforce the dominant position of Heathrow in the sector. Development of the third runway at Heathrow will enable that Airport to double its freight handling capacity, principally in bellyhold capacity but also for dedicated freighter aircraft to the extent required by the integrators or to supplement bellyhold capacity in core markets and to feed the hub.

Alongside growth at Heathrow, there is increasing bellyhold capacity being made available at other airports as they develop a broader range of long haul services, in particular at Manchester. This may be expected to see further growth in consolidation activities adjacent to other major airports as their global connectivity increases.

Overall, within the context of an industry dominated by consolidation, bellyhold capacity and integrator operations, it is difficult to see any potential role for Manston other than in relation to niche services and specialist consignments, similar to the cargo handled when it was previously operational. This is unlikely to result in usage of Manston Airport by dedicated freighters to any greater extent than historically seen.

Introduction

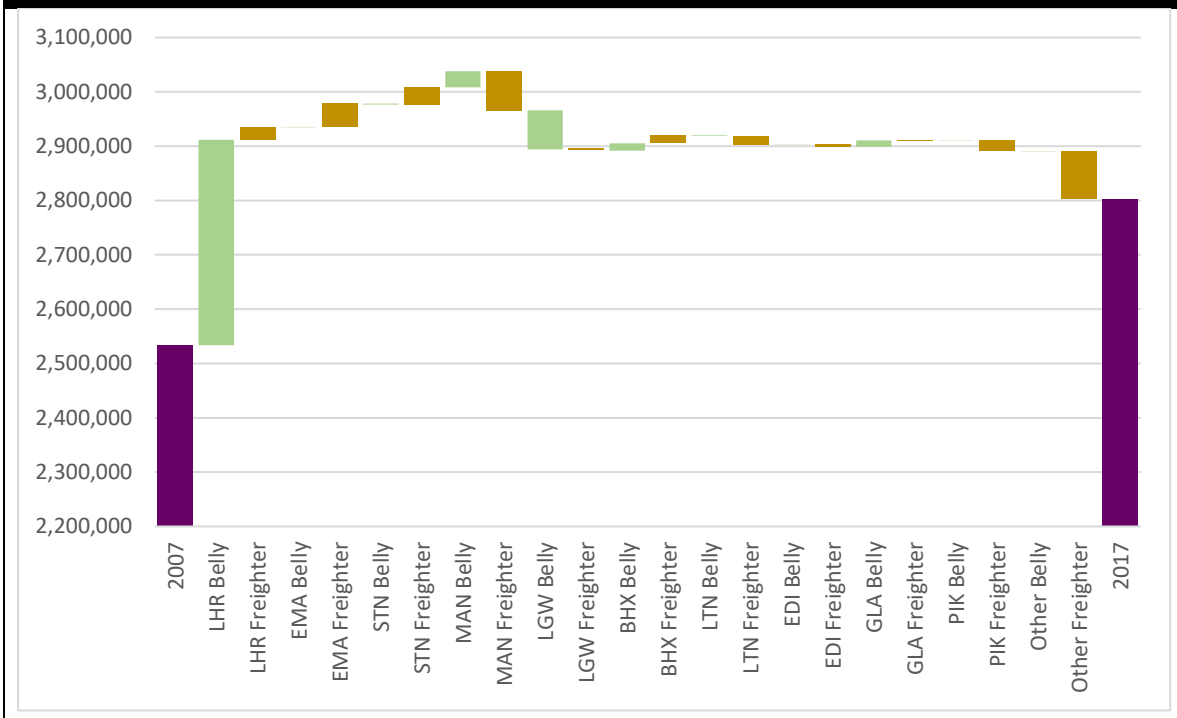
4.1 In this section, we update our consideration of the air freight sector in the UK, the way it functions and the key trends that have been observed in recent years. This analysis updates the evidence presented in our November 2017 report, including new data where it is available. However, it should be emphasised that the key messages from our previous report have not changed and our views on the key dynamics in the market and their implications for Manston similarly have not changed. The November 2017 analysis is important as it updates and correctly interprets the work that we undertook for the Freight Transport Association and TfL in 2015 upon which Azimuth still seek to rely as the basis for their justification of the number of freighter aircraft movements that Manston might attract.

Historic Performance of the UK Air Cargo Market

4.2 The evidence set out in our November 2017 Report and in the Altitude Aviation Advisory Reports[57] provides a detailed picture of the UK air cargo market over the last thirty years and we do not seek to repeat that analysis here. However, in the context of considering whether RSP has presented a compelling case for development, we have sought to re-emphasise several key themes which are central to any consideration of the UK air freight market generally and a re-opened Manston's potential market performance specifically.

4.3 What is evident is that there has been a fundamental structural shift to using available bellyhold capacity in passenger aircraft and away from pure freighter operations. This is illustrated in **Figure 4.1**, which sets out a bridge diagram between 2006 and 2017 showing the change in freight handled via bellyhold and pure freighter at major UK freight airports.

Figure 4.1: Drivers of Change in the UK Air Cargo Market – 2007 to 2017[58]



Source: York Aviation analysis of CAA Statistics

4.4 There are a number of key points to note:

[57] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport, November 2017 and Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.

[58] LHR = Heathrow, EMA = East Midlands, STN = Stansted, MAN = Manchester, BHX = Birmingham, LTN = Luton, EDI = Edinburgh, GLA = Glasgow, PIK = Prestwick.

- the market has continued to consolidate into Heathrow, in particular through increased bellyhold capacity, enabled by the ongoing rebalancing of that airport's passenger network towards long haul destinations. There has been a 29% growth in tonnage carried in the bellyholds of passenger aircraft and 31% on dedicated freighter aircraft over the period 2007 to 2017[59], with Heathrow increasing its share of the total UK air freight market from 82% to 86% in terms of bellyhold freight and from 8% to 11% in terms of freight carried on dedicated freighter aircraft. This increase in market share has been achieved even in circumstances where the airport has been operating with a capacity constraint and whilst other airports have had spare capacity available for dedicated freighter aircraft, indicating that there have been other economic and structural factors at play, including the structure of the freight forwarding sector and the economics of consolidation;
- elsewhere in London, Gatwick has seen both bellyhold and freighter capacity significantly eroded as that airport has become more capacity constrained and it has focussed increasingly on low fares passenger airlines offering short haul services, albeit this trend has started to reverse as more long haul operations come on stream with Gatwick recording a 50% increase in tonnage carried on passenger aircraft between 2017 and the rolling year to October 2018;
- Stansted has seen 14% growth in freighter tonnage but has not increased its freighter activity despite having spare slot capacity available to do so strongly suggesting that the effect of any capacity constraints at Heathrow have not resulted in displaced dedicated freighter demand to other London airports;
- East Midlands, with major DHL and UPS bases, has seen 17% growth in air freight tonnage on an 11% increase in freighter movements over the period 2007 to 2017 and had been the only airport that has seen significant growth in pure freighter traffic, but again this has not offset losses in freighter traffic from elsewhere, suggesting that, for more general air cargo, bellyhold capacity is fundamentally more attractive, even potentially if this involves trucking to more distant airports;
- this is reinforced by what has happened at Manchester, which has seen 21% growth in its bellyhold air cargo market, relating to its growing long haul network, but has seen freighter traffic fall away significantly, with a 91% reduction in cargo carried in dedicated freighter aircraft despite the airport having spare capacity to handle such freighters. Again, this demonstrates that a shift to bellyhold is not driven by capacity constraints as Azimuth claim but by underpinning structural and economic factors;
- the growth in bellyhold traffic at Birmingham is also probably reflective of its growing long haul passenger network;
- in general, there has been a noticeable switch towards the use of bellyhold capacity. Since 2007, pure freighter cargo's share of the UK market has dropped from 36% to 30%, while actual freighter tonnage has dropped by 9%;
- it is interesting to note the performance of Prestwick in the context of Manston, as it provides perhaps the most obvious direct comparator, with a similar sized freighter operation in 2007 to Manston at its peak. Freighter traffic at that airport has dropped by 64% since 2007. It is also worth noting that, in the meantime, Prestwick has also had to be nationalised to maintain operations as it had been heavily loss making for a considerable period of time.

[59] York Aviation Analysis of CAA Airport Statistics.

4.5 Whilst the volume of air cargo flown to/from the UK's airports over the past 15 years has grown only incrementally, there have been considerable changes in the way that demand has been serviced, which again reflect the drivers and constraints on demand described above. Essentially, the market has been consolidating to a small number of airports and bellyhold cargo has become more dominant.

Understanding the Sub-Markets

4.6 The air freight market can be categorised into 4 sub-segments, as set out in a report by Steer for Airlines UK[60] was published by the DfT to accompany the Aviation Strategy Green Paper[61]. These are:

- **General Air Cargo** – which makes up the majority of air cargo and is carried principally by IAG Cargo (British Airways and partners), Virgin Atlantic and a number of American and Asian airlines. As Steer make clear, such cargo is predominantly carried in the bellyholds of passenger aircraft and so would not be available at all to Manston;
- **Express Freight** – carried principally by the four main integrators (DHL, Fedex, TNT and UPS). The integrators use their own aircraft for intra-European flights and on the main long haul sectors but use bellyhold capacity for the remainder of their operations. These operators are well established at East Midlands, Stansted and Heathrow, with satellite operations at other airports such Luton, Manchester, Edinburgh and Belfast. The report by Steer also makes clear, as we set out in the previous section, the high dependence of the integrators on night time operations which would rule out operations at Manston based on the proposed night flying policy:

"Integrator stakeholders consulted as part of this study stated that the way in which these operating restrictions [Night time operations] a*re applied impacts their ability to operate effectively, as the express business model (described above) is dependent on being able to ship goods during the night to enable maximum productivity for customers who rely on shipments being picked up close to the end of the working day and delivered as early as possible the next"*[62];

- **Specialist and Niche Cargo** – classified as freight that has specific requirements in terms of storage, security or regulatory requirements, including perishables or dangerous goods. Such goods are unlikely to be suitable for carriage in bellyhold capacity so may require dedicated aircraft;
- **Mail** – where international mail principally uses bellyhold capacity but chartered freighters can be used for some longer distance mail deliveries between the main centres of population in the UK.

Examination of these categories demonstrates that the only category that might have any use for Manston would be the Specialist and Niche Cargo category. Although, no data is available, this is a very small part of the overall airfreight market.

[60] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras. 2.8 to 2.16.
[61] Aviation 2050, The Future of UK Aviation, a Consultation, Department for Transport, Cmnd 9714, December 2018.
[62] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras. 2.33.

The Economics of Bellyhold

4.7 From discussions with airlines, we understand that modern long haul aircraft operating primarily passenger services from airports such as Heathrow or Manchester can typically carry around 15 tonnes of cargo per sector and airlines would expect to earn around 10% of total revenues from cargo. Whilst this is only indicative, it would follow that an airline may expect to earn around 0.66% of the revenues from operating a flight from 1 tonne of cargo. In contrast, a dedicated cargo flight needs to cover all of its operating costs from the cargo carried. At the average tonnage per movement projected by Azimuth for Manston[63] of c.13.9 tonnes per aircraft this means each tonne of cargo has to earn enough to cover over 7% of the costs of operating the flight. Taking an equivalent long haul aircraft (Code E), which Azimuth's work suggests could be carrying 33 tonnes per movement, this would require each tonne of cargo carried to cover 3% of the cost of the flight. Accepting that dedicated cargo aircraft like for like with the same aircraft type may have lower operating costs per flight than a passenger aircraft (no cabin crew or meals), it would also be likely that the dedicated freighter aircraft would be an older variant and use more fuel than the more modern equivalent that tends to be used on passenger operations, particularly from an airport such as Heathrow. The two factors may be expected to largely cancel each other out. On balance, then, a tonne of cargo carried in a dedicated freighter aircraft is likely to cost around 4.5 times more per tonne to transport than the same tonne of cargo carried in the bellyhold of a passenger aircraft. This will almost certainly translate into a higher price to the shipper.

4.8 It is for this reason that we see an inexorable shift from the use of dedicated freighter aircraft to bellyhold capacity due to the sheer cost advantages of availing of bellyhold capacity. The availability of bellyhold capacity is a powerful reason why the UK has lower dependence on dedicated freighter aircraft than the global average. We see this shift to bellyhold in the data from the UK regional airports noted above, which have seen little or negative growth in dedicated freighter operations (except for the integrator operations at EMA) but growth in flown cargo tonnage as their long haul passenger operations offering bellyhold capacity have grown. This demonstrates that, contrary to the assertion by Azimuth that the shift to the use of bellyhold capacity in the UK is a response to a shortage of capacity for dedicated freighter aircraft at the London airports, the shift towards a preference for bellyhold capacity for the carriage of the majority of airfreight reflects the economics of the industry, i.e. shippers and forwarders choose the most cost effective solution for moving goods from A to B which may include an element of trucking to avail of the lowest air freight rate.

4.9 Indeed, the Steer Report confirms that dedicated freighter operations are on the decline globally:

"The market for dedicated freighter services has struggled globally since the financial crisis due to falling seafreight rates and the continued rise of air passenger demand (and associated bellyhold capacity), which have driven down freighter yields. Although some UK airports have retained important integrator, and to lesser extent, freight operations, freighter activity has remained relatively flat in recent years and is currently lower than pre-crisis levels."[64]

[63] Analysis of Azimuth Report Vol III, Tables 2, 3 and 4.

[64] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, para. 3.8.

4.10 The implications for Manston from this analysis are clear. Bellyhold is the preferred option for a significant proportion of the air cargo market and that this trend has intensified in recent years. This is a function of price and the relative urgency in relation to general air freight, as opposed to either express freight or niche products which may justify a higher cost dedicated freighter services such as operated at the existing integrator hubs. For express freight or niche products, shippers are prepared to pay a premium which allows the use of freighter aircraft because either speed is of the essence, or the destination is hard to reach, or the cargo is difficult to handle in some way. For general air freight, these drivers are not the same. Accepting that all air cargo is to some degree sensitive to speed of delivery, it seems that what is likely to be pushed from bellyhold capacity, in a capacity constrained environment, is less time sensitive and shippers' willingness to pay is lower. Hence, in the current market with relatively high fuel prices, freighter options are not an adequate or economically realistic substitute.

4.11 The only UK airports experiencing dedicated freighter growth are those with significant integrator activity. This suggests that Manston's likely freighter offer, on the assumption that an integrator operation would not realistically be attracted, would struggle to penetrate the market. There has been consolidation into larger airports, which again suggests that Manston will struggle to establish market presence. Finally, the experience of Prestwick, its nearest comparator in many ways, is not encouraging for Manston. Its well established dedicated freighter operation has been heavily eroded and the airport has had to be nationalised to maintain its operation. It continues to be heavily loss making, losing £7.6 million in 2017/8[65].

4.12 This is very important from the perspective of considering the potential role of Manston. It suggests it will be very difficult for the Airport to compete effectively for any traffic displaced as a result of constraints in the London market as it cannot and will not be able to provide the price, frequency and breadth of destination advantages that bellyhold freight can offer. In this context, the airports competing for cargo traffic being pushed away from Heathrow now and in the future are the large UK regional airports with growing long haul passenger networks, such as Manchester or Birmingham, and the near European global hub airports, which offer the closest substitutes to Heathrow and are within easy trucking time of, certainly, the London and South East market. In any event, bellyhold capacity at Heathrow is expected to increase substantially once the third runway becomes operational so driving down the competitive prices in the market, making it even more difficult for freighters to compete. In fact, as we have discussed above, the NPS cites one of the key reasons for the choice of the North West Runway option at Heathrow being the opportunity to double freight capacity.

The Role of Trucking

4.13 The Steer Report for Airlines UK also explains the role of trucking, noting that[66]:

"a significant amount of air freight is transported in customs-bonded trucks between the UK and continental Europe and is classified as air freight with an assigned flight number. Freight is often flown to continental Europe, particularly from Asia, as there is often more available air freight capacity than to UK airports, partly due to lack of available slots for freighter aircraft at Heathrow……..

[65] https://beta.companieshouse.gov.uk/company/SC462050/filing-history

[66] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras 2.24, 2.25.

In contrast to goods from Asia, Heathrow stated that goods destined for North America are also often trucked to the UK, in particular Heathrow, from continental Europe in order to take advantage of cheaper rates from the UK on North American routes. As Heathrow is the primary European hub for North American passenger connections, there is a significant level of bellyhold capacity available, which means air freight rates are cheaper compared to other European airports."

4.14 There is a further reason why trucking to airports in Europe is an inherent part of the industry as also set out in the Steer Report[67]:

"Many of the largest freight airports in the EU are concentrated in North-West Europe, which is relatively well off and densely populated (therefore generates demand for imports), and is the home of a lot of European industry (therefore produces a large amount of goods for export). The close proximity of many large freight airports to the UK may also to some extent explain why so much air freight is flown to continental Europe and trucked to the UK, as there is much greater capacity available to continental North-West Europe than to the UK."

Hence, even if Manston was operational, the structural factors that mean that freight loads are consolidated at the main freight hubs in continental Europe and then trucked to and from the UK would still result in this freight being trucked and by-passing Manston. The concentration of markets around these continental European hubs also allows them to support some dedicated freighter activity, reinforced by trucking and consolidation.

4.15 As explained above, the reasons why trucking is an inherent part of the industry is cost. It is simply cheaper in overall terms to truck to an alternative airport offering cost effective bellyhold capacity than it is to seek out dedicated freighter capacity. This applies to the vast majority of general air cargo. Ultimately, shippers and forwarders seek the cheapest option. Having a dedicated freight airport at Manston would not 'intercept' this freight travelling to and from Europe as Azimuth claim[68] as such freight would still seek the cheaper bellyhold capacity regardless of the potential option of a dedicated freighter or, where a dedicated freighter aircraft was the most cost effective option, seek to operate that aircraft to the main centres of economic activity in Central Europe or the UK's main distribution focus around East Midlands Airport[69] so as to optimise distribution of goods overall.

Heathrow

4.16 As noted above, despite the acknowledged runway capacity constraints, Heathrow has increased its share of UK air freight carried. This indicates a strong structural preference for Heathrow as the UK's main air freight hub, as identified in the NPS. It is important to understand why this is so. The Steer Report referred to at para 4.6 above makes clear the importance of Heathrow within the air freight sector:

[67] Ibid, para 3.21.
[68] Azimuth Reports Vol I, para. 6.4.13
[69] Altitude Aviation Advisory, Analysis of the Market Potential of a Reopened Manston Airport, October 2017 paras. 114, 115.

"One notable feature of the UK air freight market is the huge importance of Heathrow and its surrounding freight facilities, with most forwarders having major consolidation centres in the vicinity of the airport. Very significant volumes of air freight are trucked to such facilities near Heathrow, processed and then trucked to another airport, either in the UK or in continental Europe, without ever flying in or out of Heathrow itself."[70]

4.17 The Steer Report goes on to state:

"Historically, much of the UK air freight activity is concentrated around Heathrow due to its significantly more extensive intercontinental passenger network compared to those of other UK airports. Although this remains the case, new intercontinental passenger connections at regional UK airports have increased possibilities for transporting long-haul freight as bellyhold cargo."[71]

Hence, regional airports developing bellyhold capacity are likely to be the principal gainers from any freight displaced from Heathrow as a consequence of short term constraints until R3 is operational.

4.18 Even where capacity constraints at Heathrow are noted as a potential problem, the reasons cited in the Steer Report[72] do not lend credence to there being a need for additional air freight capacity at Manston:

"The importer stated the reason such a high proportion of its goods are flown to the UK via Europe, is because the UK's air freight capacity is not sufficient to service the required import volumes. Goods are trucked as bonded freight to avoid having to undergo Dutch or German customs procedures, as the importer incurs fewer administration costs as it is only required to deal with UK customs.

The importer stated that, as most of its imports are flown in freighter aircraft, one of the reasons why it often cannot fly its goods into the UK, is because not enough UK airlines operate these types of aircraft. Many airlines that in the past operated long-haul freighter services, for example IAG Cargo at Stansted, no longer do; therefore, there are fewer long-haul freighter options available. However, the main problem the importer cited with UK air freight capacity was the quality of the infrastructure.

The importer stated that it avoids using UK airports because they are too congested and therefore not efficient; air freight infrastructure has not been upgraded in line with increased traffic, which causes delays that can be avoided at continental European airports. The importer stated that there should be better utilisation of regional airport capacity at, for example, Manchester, which was cited as a relatively good operation with not enough freight capacity."

[70] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Executive Summary.
[71] Ibid, para. 2.36.
[72] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Case Study Example at Page 11.

4.19 Properly understood, this highlights a desire for more freighter capacity at Heathrow, concerns around infrastructure constraints at Heathrow, and issues caused by the willingness of airlines to operate such flights. As the case study makes clear, Stansted and the existing regional airports provide potential available airport capacity but the lack of airlines willing to operate dedicated freighters is the issue rather than the capacity of the airport infrastructure. To illustrate the point, Cathay Pacific Airways operated a dedicated freighter aircraft to Manchester until recently but this has been replaced by more cost effective bellyhold capacity on their now daily A350 service to Hong Kong[73].

4.20 As noted above and in RSP documents[74], there have been concerns expressed about both slot constraints at Heathrow and the adequacy of capacity for freight more generally as well as the quality of the infrastructure. However, as we have made clear at para. 2.12 above, this shortfall in capacity for air freight will be addressed by R3. Indeed, recent proposals by Heathrow Airport Ltd to introduce mixed mode operations ahead of R3 will provide short term relief to the capacity constraints over the same time period as Manston might become operational[75]. In the longer term, freight capacity at Heathrow is expected to virtually double to 3 million tonnes a year from the 1.7 million tonnes handled in the rolling year to the end of October 2018[76].

4.21 Facilities at Heathrow are also being expanded and modernised in line with Heathrow's Cargo Strategy[77]. The strategy is firmly aimed at ensuring that Heathrow is able to capitalise on the opportunity offered by R3 by providing state of the art cargo handling facilities and overcoming the identified bottlenecks and congestion, including improvements to local road infrastructure[78]. Examples of new facilities being provided include the recently opened facilities for Virgin Atlantic and Delta Airlines aimed explicitly at increasing the amount of cargo that they carry through Heathrow on their passenger operations[79]. There is clearly substantial investment being made to ensure that Heathrow can efficiently increase its cargo throughput, negating the need for spill to other airports[80].

4.22 In overall terms, then, it is clear that there are powerful structural factors as to why air freight is concentrated at Heathrow, based around the strong bellyhold offering and the existence of the freight forwarding/consolidation activity. Evidence would suggest that this is not replicable elsewhere in the UK and certainly not at a small niche airport such as Manston. This has implications for the need case for the development as a whole and, in particular, the likelihood of RSP being able to attract freight forwarders as occupiers of the proposed infrastructure at the Airport, including that on the Northern Grass.

[73] https://news.cathaypacific.com/cathay-pacific-s-manchester-service-to-go-daily-from-december-180062#
[74] RSP Planning Statement, para 6.29 and Azimuth Reports Vol I, para. 4.1.3.
[75] https://afo.heathrowconsultation.com/wp-content/uploads/sites/4/2019/01/Making-better-use-of-our-existing-runways-Final-single-pages.pdf
[76] York Aviation analysis of CAA Airport Statistics.
[77] https://www.heathrow.com/file_source/Company/Static/PDF/Partnersandsuppliers/heathrow-cargo.pdf.
[78] https://www.aircargonews.net/news/airport/single-view/news/segro-planning-to-replace-heathrows-cargo-horseshoe.html.
[79] https://www.aircargoweek.com/virgin-and-delta-to-move-into-dnata-city-east/.
[80] This does not mean that airports with growing bellyhold capacity, such as Manchester will not also increase tonnage carried nor that there will not be growth at existing integrator bases such as EMA and Stansted reflecting their key role in the UK distribution network.

The Geographic Distribution of UK Air Cargo Demand

4.23 Another key factor to understand is the geographic distribution of air freight demand. It is important not to confuse, as Azimuth do, the clear economic preference for freight to be flown out of Heathrow due to the economics of consolidation with the true origin of the demand for air freight. This is important as it influences the choices made as to how any excess freight that Heathrow cannot accommodate in future would be shipped as well as the economic choices that drive the point of consolidation in the first instance.

4.24 At the outset, it should be made clear that there is very limited data on where air cargo originates from or is destined for within the UK. However, some indications are available from other research, notably work by MDS Transmodal, in conjunction with York Aviation, for Transport for the North in relation to its International Connectivity Strategy[81]. MDS analysed a series of datasets on air freight and road haulage and estimated that around 14% of UK air freight demand originates in or is destined for the North of England, for example. We also know that air cargo is often trucked a considerable distance before being loaded on to aircraft.

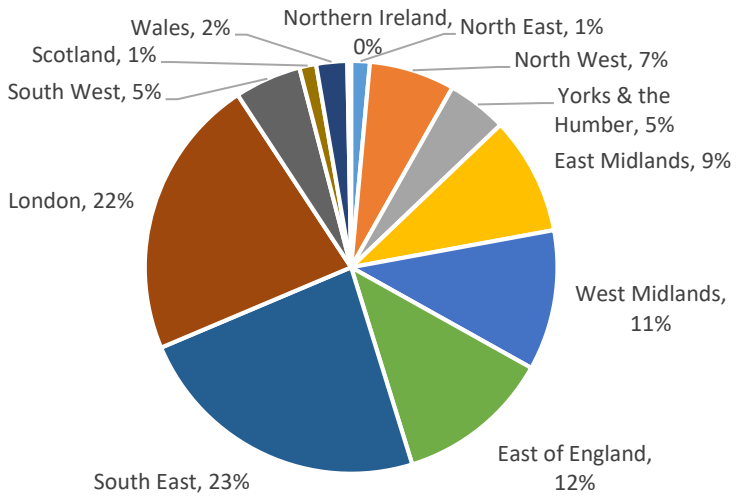
4.25 To estimate the amount of cargo tonnage originating in or destined for the different regions of the UK, we have used a simple gravity model that distributes air cargo regionally across the UK based on:

- for exports, the distribution of manufacturing employment in the UK. This is intended to reflect that air cargo exports are likely to be primarily manufactured goods;
- for imports, the distribution of UK population. This is intended to reflect that imports are in many cases destined either for consumers directly or retailers. This is clearly a simplification but we believe a sensible one given the data available;
- a relatively low distance decay factor of 1.5, reflecting the relative insensitivity of air freight to trucking times. This has also, in part, been calibrated to reflect MDS's findings for Transport for the North.

4.26 The resulting distribution of air cargo demand is shown in **Figure 4.4**. It shows that, while there is a heavy concentration of demand in the Greater South East, there is significant demand located across the country. It is misleading to assume that cargo that is currently flown from the London airports is necessarily destined for or originating in the South East and so easily available to Manston.

[81] https://transportforthenorth.com/wp-content/uploads/Final-International-Connectivity-Evidence-Report.pdf, para.

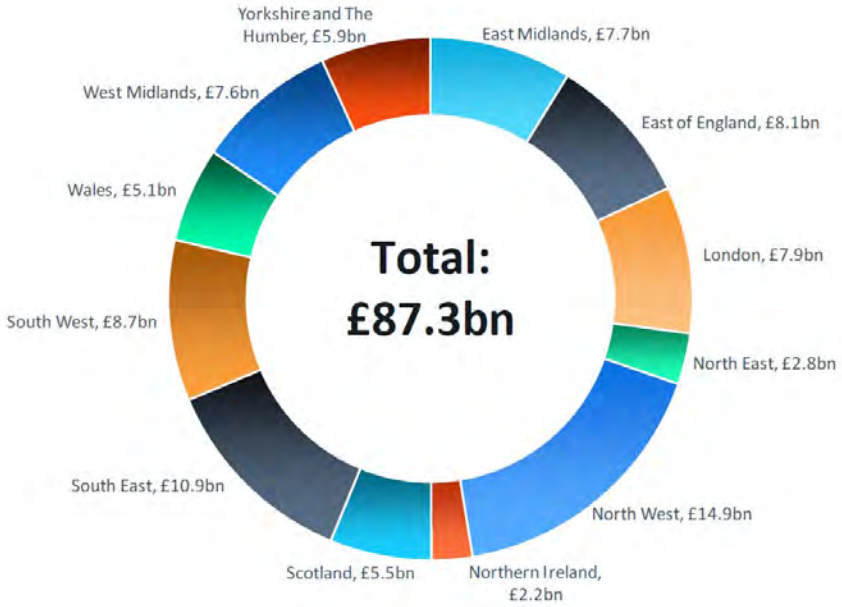
Figure 4.4: Modelled Regional Distribution of UK Air Cargo Demand



Source: York Aviation analysis of CAA Statistics, ONS and Google Maps Data

4.27 More recent analysis by Steer for Airlines UK[82] provides more specific data on the GVA value of air freight exports by air by region. This is shown in Figure 4.5.

Figure 4.5: GVA Currently Dependent on Air Freight by Region



Source: Steer 2018

[82] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Figure 5.6.

4.28 The issue for Manston is that it is poorly placed geographically to serve the totality of this demand. In the event of air cargo capacity constraints in London this demand is likely to look initially for cargo capacity closer to home at the major regional airports, particularly those that that are developing broader long haul passenger networks. Even if freighter aircraft are required for this demand, there are likely to be substantially better options than Manston, not least the national air freight hub at East Midlands, with its central location in the UK.

Air Cargo Capacity at UK Airports

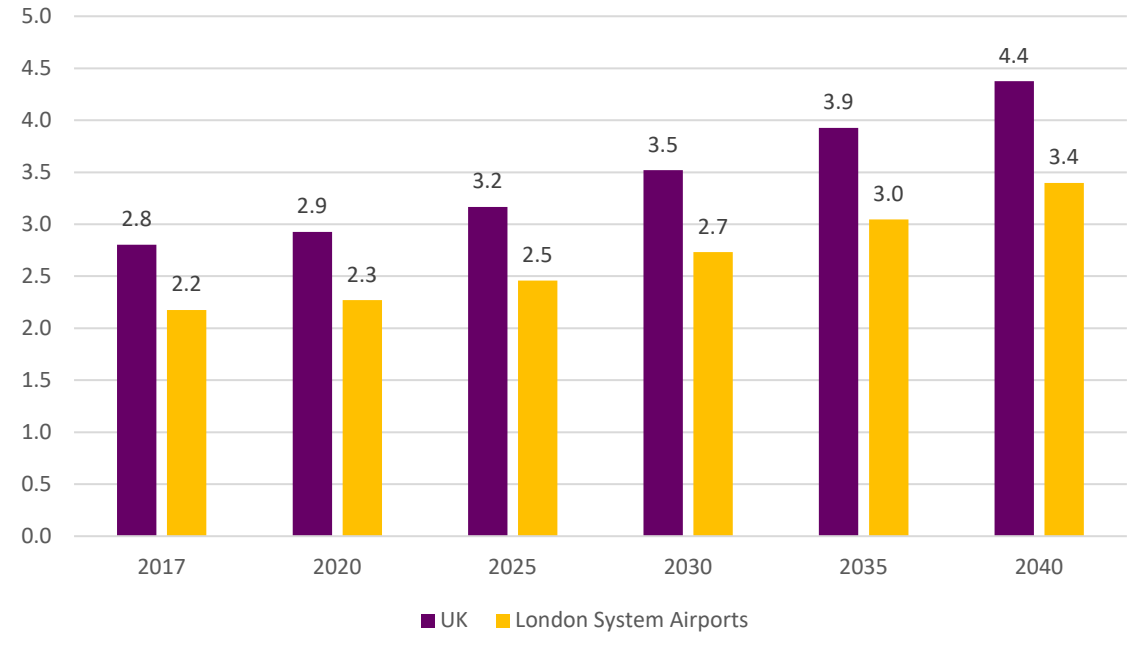
4.29 In our November 2017 Report, we set out an assessment of expected cargo tonnage growth by reference to GDP. We have updated this to enable an assessment of the extent to which there is likely to be any shortfall in capacity available across UK airports as a whole. As in our 2017 report, we have adopted a relatively simple approach, growing existing air cargo demand forward in line with GDP projections for the UK economy. This is in line with our analysis of the link between cargo volumes and the key economic drivers described in our November 2017 Report. The GDP forecasts used are the latest forecasts produced by the Office for Budgetary Responsibility at the time of writing. These are taken from:

- Economic & Fiscal Outlook (October 2018), which provides short to medium term forecasts;
- Fiscal Sustainability Report (July 2018), which provides long term forecasts for the UK economy.

4.30 These forecasts suggest average real growth in UK GDP of around 2% over the period to 2040. These forecasts are slightly lower than those used in our November 2017 report, reflecting more fully the outlook for the economy post Brexit. These slower growth rates have been offset by the uptick in growth observed in the UK air cargo market in 2017, which has increased our baseline. The resulting projections of air cargo demand at the London system airports and across the UK are set out in **Figure 4.6**. This analysis sees total UK air cargo demand reach around 4.4 million tonnes by 2040 and demand in the London system[83] of around 3.4 million tonnes by 2040.

[83] Based on the London airports current share of the national market.

Figure 4.6: Air Cargo Tonnage Forecasts (million tonnes)



Source: York Aviation

4.31 Next, we considered the extent to which the demand identified above could be met by UK airports and the London system airports. This is, again, in line with our approach taken in our work in November 2017 and with our previous research for the FTA in 2015 relied on, wrongly, by Azimuth.

4.32 The first step is to assess the extent to which the bulk of air freight demand will be accommodated in passenger aircraft. In order to estimate the likely bellyhold capacity that will be available through the period to 2040, we have produced projections of passenger ATM[84] demand for each of the top 10 freight airports in the UK in 2017, along with a residual forecast for Other UK airports. For Heathrow, Gatwick and Manchester, these forecasts have been split into domestic, EU and non-EU ATMs. The future years for each airport have been based on the ATM forecasts produced by the Airports Commission for which detailed data files have been released[85]. Years prior to the opening of Runway 3, use the Base ATMs scenario, while post opening uses the Heathrow's ATMs scenario, which reflects the third runway. This will understate the potential at Heathrow in the short to medium term if it gains approval for full mixed mode use of the runways as an interim step before R3 allowing additional global air services providing bellyhold capacity.

[84] ATM – air transport movement.
[85] https://www.gov.uk/government/publications/airports-commission-documents-and-data.

4.33 The existing freight loads per passenger ATM for each airport have been estimated using CAA Airport Statistics. These average loads have then increased by between 0.5% and 0.75% per annum at Heathrow. These rates have been slowed in the short term compared to our 2017 report to reflect the increase in average loads at Heathrow seen in the last year. CAA Airport Statistics suggest that the average tonnage per passenger ATM has grown by 8.5% in the last year. This may reflect the introduction of new aircraft such as the Airbus A350 that have higher freight capacity. The implication of this large short term change is that Heathrow's total bellyhold capacity may actually be higher than previously forecast. This ultimately reduces the chance of there being excess demand for Manston to capture and this has been a strong contributory factor to the decline in some of the forecast scenarios. Other airports have also seen some increase in average loads in the past year, which has further increased available bellyhold capacity. At these other airports, we have assumed that loads will grow at around 1.6% per annum tapering to 1.0% per annum in the longer term. This reflects trends in average loads identified from CAA Airport Statistics over recent years.

4.34 Having assessed the extent to which future air freight demand is likely to be accommodated in the bellyholds of passenger aircraft, we then consider the capacity provided by likely freighter ATMs at the existing airports handling such movements. This 'Business as Usual' assessment of freighter tonnage expected at these airports takes, as a conservative assumption, growth in freighter ATMs at each airport of 0.4% per annum, in line with expected growth rate from the Department for Transport's Aviation Forecasts 2013[86] so as not to understate any potential demand for additional air freighter movements. We have used a 0.4% p.a. growth assumption although the more recent DfT position, as reported in para 3.18 above, is that no growth is a more reasonable assumption. Taking this assumption is inherently conservative and more likely to overstate than understate the actual need for freighter movement capacity and understate the available headroom to accommodate such movements.

4.35 Once again, average loads per freighter ATM have been estimated for each airport from CAA Statistics. As with bellyhold cargo per ATM, there has been an upward trend in average loads on freighters in recent years of around 1.1% per annum (York Aviation analysis of CAA Airport Statistics). This is assumed to continue over the period. This gives us an estimate of the upper bound of tonnage likely to use dedicated freighter aircraft based on the projected movement growth set out above. We term this 'Business as Usual' Freighter tonnage, i.e. the tonnage we would expect to be carried on freighter aircraft based on extrapolation of current patterns of freighter operations at existing UK airports.

4.36 Having assessed the volume of tonnage likely to seek to use freighter aircraft, we have also taken a view as to the likely total tonnage capacity over time of the two largest freighter airports in the UK, East Midlands and Stansted, based on those airports' development plans, and the proposed increase in total cargo capacity at Heathrow, as set out within the NPS:

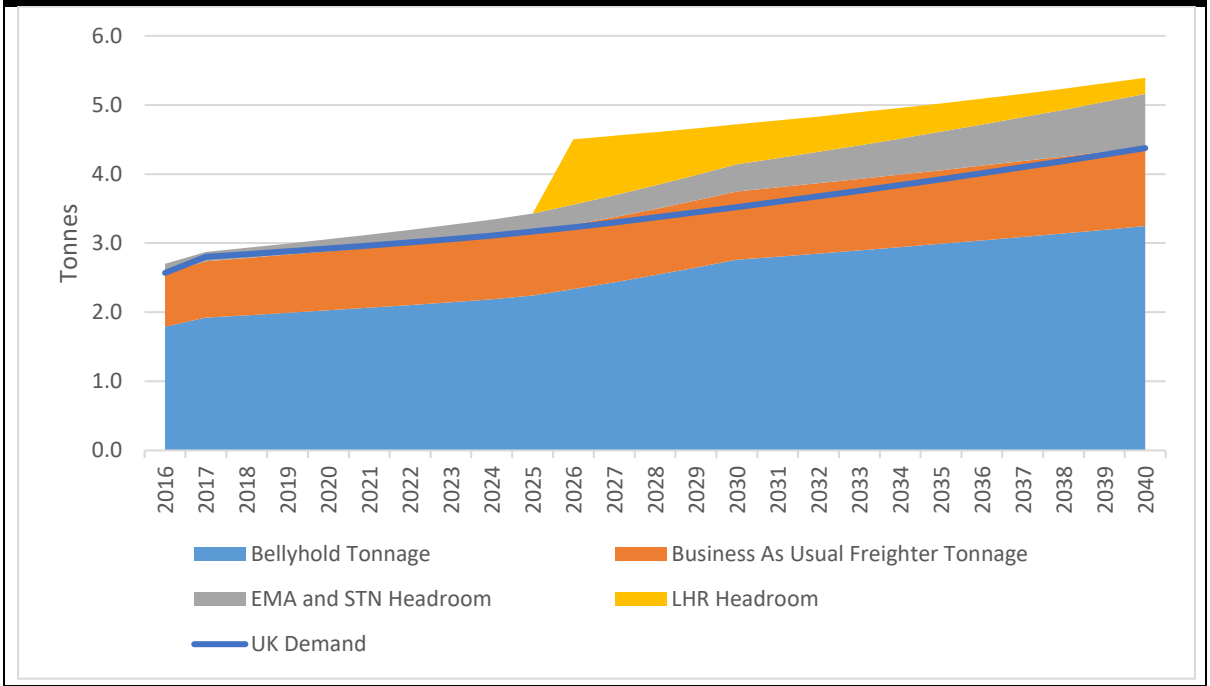
- the Stansted Sustainable Development Plan talks about developing cargo capacity to handle around 400,000 tonnes of cargo. We have assumed that current capacity is around 300,000 tonnes and that this grows steadily over time to 400,000 tonnes by 2040[87];

[86] The exception to this is the small number of freighter movements at Heathrow, which are not allowed to grow until the Third Runway is opened.
[87] Stansted Airport, Sustainable Development Plan, 2015, Summary, page 9.

- the East Midlands Sustainable Development Plan describes its runway capacity as being able to support a 10 million passenger and 1.2 million tonne cargo airport[88]. We have assumed that this capacity could be developed over time to 2040 from an assumed base capacity of 400,000 tonnes. The airport is not subject to any specific ATM limit;
- the NPS states that the development of the third runway at Heathrow will enable a doubling of freight capacity at the airport[89] This would suggest that the cargo facilities will be able to handle around 3 million tonnes per annum. We have assumed that this headroom would be available from the point of the new runway opening.

4.37 This assessment of the cargo capacity headroom at Heathrow, Stansted and East Midlands helps provide an assessment of how any excess demand identified could be handled by freighters in the UK if this were the response of the market to any shortage of bellyhold capacity, after having taken account of bellyhold capacity. The resulting estimates for air cargo tonnage capacity for the UK as a whole and the London system over time are shown in **Figures 4.7** and **4.8**.

Figure 4.7: UK Air Cargo Capacity

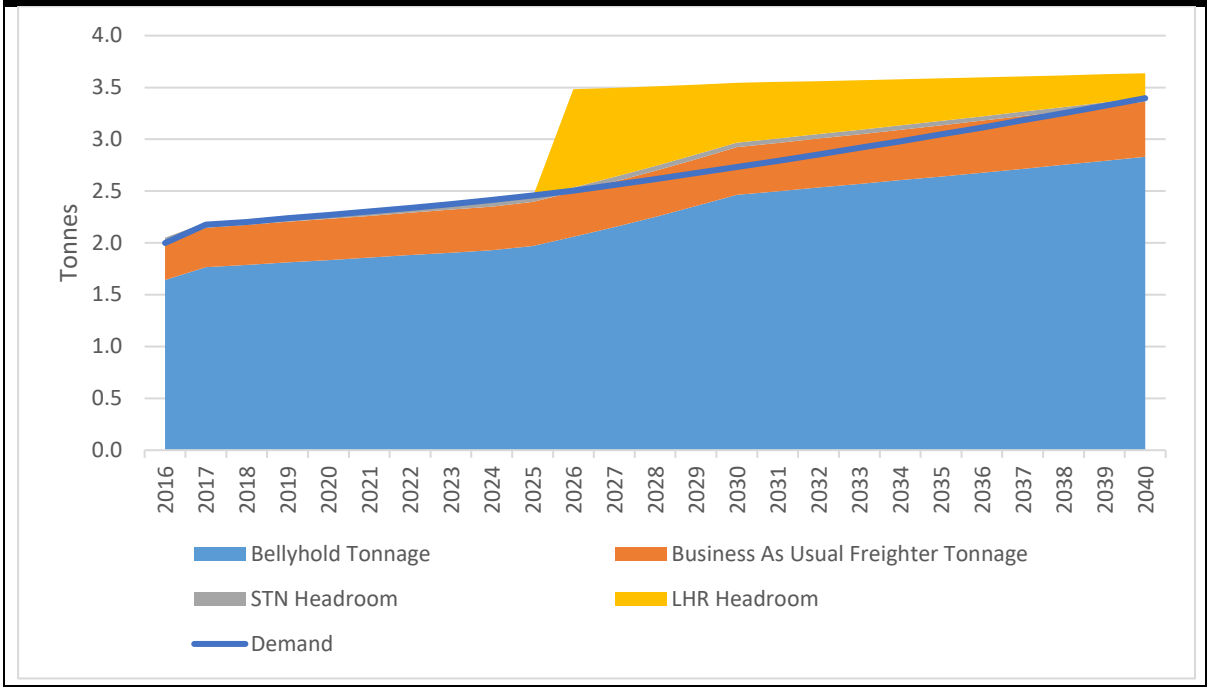


Source: York Aviation

[88] East Midlands Airport Sustainable Development Plan, 2015. Page 75.
[89] Airports National Policy Statement, 2018. Page 32.

4.38 At a UK level, our analysis suggests that there are unlikely to be capacity issues in the cargo market until well beyond 2040 even on the conservative (worst case) basis that we have adopted by retaining the DfT's 2013 projection of possible growth in freighters. Based on the latest DfT projections of no such growth, there is simply no capacity shortfall at all. Once the third runway is opened at Heathrow, there is in fact likely to be excess capacity in the market particularly in the light of the expected doubling of freight capability at the Airport as set out in the NPS, which is likely to soften demand for supporting freighter capacity dedicated to general air freight (accepting that integrator/express freight is a separate market to a significant degree).

Figure 4.8: London System Air Cargo Capacity



Source: York Aviation

4.39 The situation at the London airports is slightly different. With Heathrow's bellyhold growth relatively constrained in the short term, there could be potentially some limited capacity constraints in the very short term before mixed mode and R3 are operational. However, allowing for headroom at Stansted, there are no capacity constraints in the medium term. Once R3 is opened, excess capacity develops rapidly. The London system's freight capacity does start to fill up as Heathrow begins to fill up once again but Heathrow's freight capacity plans suggest that there will still be headroom by 2040. Assuming mixed mode (independent parallel approach operations are permitted at an early date), this shortfall will not arise.

4.40 The implications for Manston Airport are that, even in pure volume terms, push factors from other airports in London are unlikely to provide opportunities for growth before at least 2040 and beyond assuming no further airport capacity comes on stream at the main London airports. This is before any consideration is given to Manston's suitability to serve the markets in question. In the short to medium term, there might be some very limited constraint in the London system before the third runway at Heathrow is opened. However, this is largely a function of bellyhold constraints at Heathrow and it is clear that the preferred option for such freight is alternative bellyhold capacity.

4.41 Logic would suggest that what will be pushed out is relatively low yielding, general air cargo that is more sensitive to price and less sensitive to time. Essentially, this is akin to business passengers forcing leisure passengers out of Heathrow. This type of air cargo is not likely to see pure freighters as an effective alternate, given the higher prices involved. It is more likely to seek out alternative bellyhold capacity at UK regional airports (which might actually be closer to its point of origin given our analysis above) or travel via truck to the continental European airports.

Prospects for Manston

4.42 In our November 2017 Report, we set out 'realistic' forecasts of freighter movements and freight tonnage at Manston, drawing on the methodology that we used in our earlier work for the Freight Transport Association and upon which Azimuth seek to rely. In essence, these have not changed, except that our previous projections may have been on the optimistic side given the continued trend away from the use of dedicated freighter aircraft and with greater clarity regarding the expected increases in capacity for freight at Heathrow. Even on the most optimistic basis, we would not expect Manston to be able to attract more than around 2,000 annual freighter aircraft movements and, more likely, it may struggle to attract more movements than it did when previously in operation. If we were to fully update our forecasts for Manston, we would expect the realistically projected number of dedicated freighter movements to be even lower given deteriorating market conditions, increased competition and economic uncertainty.

Conclusions

4.43 Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essential drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

4.44 Going forward, Heathrow will have substantially enhanced capacity for air freight operations (around double its current throughput) and modernised facilities negating any 'push' factors that might drive users to even consider Manston.

4.45 The integrators are already well established at East Midlands Airport in particular as well as using Heathrow and Stansted to serve the main markets in England, with these airports stated as having scope to increase air freight capacity by 800,000 and 150,000 tonnes per annum respectively[90]. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

4.46 This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle[91]. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole.

[90] See para. 4.36 above.
[91] See Figure 3.9 of our November 2017 Report.

5 AIR PASSENGER FORECASTS

In this section, we set out our analysis of the passenger potential for Manston. The Azimuth Reports set out no analysis of the market and merely assert that certain airlines might operate. This is not credible and certainly not sufficient to underpin any business case for investment in the development of Manston. Given the importance of passenger related revenues to the viability of any airport's operation, this is significant.

We set out here an analysis of the passenger market that Manston might serve and demonstrate that, at best, it might achieve around half of the number of passengers that RSP's need case depends on. To do so, there will need to be an allowance for passenger aircraft movements in the night period, which have not currently been assessed in RSP's ES.

The viability to the airlines of passenger operations remains questionable and there is no guarantee that any passenger services would be viable for the airlines on a sustainable basis and without some form of public subsidy.

Basis for Passenger Forecasting

5.1 In our November 2017 Report, we set out the basis for assessing any potential for cargo operations at Manston. Whilst we indicated that more likely passenger forecast would be of the order of half[92] of those set out in the Azimuth Report, we did not set out further detail. As the passenger market is significant in terms of assessing the potential for viable operations at the Airport taken as whole, we set out further detail on the likely passenger market in this section in order to assist the Examining Authority. We have adopted the same approach to developing these forecasts as we do for other clients operating or investing in regional airports in the UK.

5.2 Whilst the need for the Airport and its designation as an NSIP is fundamentally driven by the asserted need for a dedicated air freight hub, passenger services and the economic benefits that potentially derive from such passenger flights form part of RSP's socio-economic case. Taken in the round, then, these services form part of the need case and, hence, the demand for such services requires full justification. Passenger operations, both in terms of revenues and costs, will also be key elements that underpin the financial viability of the operation and whether the proposition is likely to be economically sustainable.

5.3 Azimuth provide no details of how the specific passenger and associated aircraft movement forecasts have been built up. It is simply postulated that a number of airlines and air services might operate. This is not sufficient nor consistent with the approach to forecasting normally required to justify an airport planning application in our experience.

[92] York Aviation, November 2017, Executive Summary, para 12.

5.4 We note that RSP's Planning Statement, at para. 9.44 asserts the passenger 'forecast' of 660,000 passengers in first year of passenger operations (Year 3) is driven by lack of capacity at other London airports. This statement appears to ignore capacity developments at other London airports, including the planning approval recently granted to Stansted to increase from 35 million to 43 million passengers a year[93] or developments such as Ryanair's decision to base aircraft at Southend Airport from summer 2019[94].

Methodology

5.5 Unlike Azimuth, our approach to forecasting the potential of Manston for passenger services is to consider the level of demand in the Airport's catchment area and how this might grow in future. We accept that there is a need to consider the airline response to this demand in terms of the frequency of flights they might offer as a basis for setting out the number of passengers they might carry. However, it is not sufficient to simply assert that IF an airline was to commence services it would carry X thousand passengers, the requirement to present a compelling case requires some evidence as to the likelihood of each airline commencing services (absent any firm documented commitment), which would normally be based on the assessment of the levels of demand and whether these would be sufficient to support viable services.

5.6 Given the importance of passenger services to the viability of airport operations, developing a robust forecast of passenger demand is critical to the assessment of the overall viability and sustainability of the operation of the Airport, which we consider further in **Section 7**. We present here an assessment in a form consistent with that which would be expected in support of an airport planning application.

Kent Passenger Market

5.7 The UK Civil Aviation Authority (CAA) undertake sample surveys of departing passengers using the main UK airports on a continuous basis[95]. This data base runs to almost 200,000 records and contains information about the passengers' home or journey origin, their end destination airport and any intermediate stops, the purpose of travel, the airline flown with and other demographic information. Summary reports are published[96] but York Aviation, in common with most other experienced aviation consultants, use the raw survey data purchased from the CAA to analyse and produce passenger forecasts for airports in the UK. This data enables the scale of the market in any individual airport's catchment area to be estimated along with the nature of that demand – business/leisure, UK outbound or foreign visitor, destination or origin of the air journey.

[93] https://mediacentre.stanstedairport.com/london-stansted-gets-the-go-ahead-to-boost-the-regions-economic-growth-and-create-5000-new-jobs/
[94] https://www.independent.co.uk/travel/news-and-advice/ryanair-southend-airport-base-easyjet-cheap-flights-stansted-a8396956.html
[95] This includes all of the main London airports but not Southend. Smaller regional airports are surveyed on a more periodic basis, typically every 3-5 years.
[96] https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Consumer-research/Departing-passenger-survey/Survey-reports/.

5.8 We have analysed the 2017 CAA Survey data to look at the scale and nature of the air passenger market in Kent. We have chosen to restrict the analysis to Kent because it is unlikely that a re-opened Manston Airport would attract passengers to any substantial degree from outside of the County due to the surface journey distance and time from Manston to areas beyond Kent, as well as the fact that most of these areas are located closer to larger airports, including London Gatwick, with a much wider range and frequency of passenger services than is ever likely to be delivered at Manston. We recognise that the planned Lower Thames Crossing may make access times quicker from north of the Thames but this will, of course, also speed up journey times from Kent to larger, more established airports with broader networks and frequencies, such as London Stansted, London Luton and even London Southend. Hence, any potential passenger gain for Manston is likely to be more than offset by passengers travelling north of the river to more easily avail of a wider range of air services. There is a real risk that the attractiveness of services from the larger airports could further reduce the pool of demand available to a re-opened Manston compared to that which we have assessed below.

5.9 In 2017, as can be seen in **Table 5.1** below, the total market size for Kent was 4.97 million passengers[97]. Over 1.2 million of these are travelling to long haul points and so, other than via a hub connection, these are unlikely to be served by a re-opened Manston Airport[98]. This leaves around 3.8 million short haul and domestic passengers in the County.

Table 5.1: Kent Passenger Demand 2017

Passenger Type	All Catchment
Domestic	372,000
Long Haul	1,221,000
Short Haul	3,373,000
Grand Total	**4,966,000**
Source: CAA Survey 2017	

5.10 However, Manston Airport's location at the eastern extremity of the Kent peninsula means that the Airport is unlikely to draw equally from all districts within the County and, as such, the total underlying market for the Airport is likely to be well below 3.8 million passengers. **Table 5.2** illustrates the time taken to drive to competitor airports from key urban centres in each district. As can be seen, Manston Airport would have the shortest drive time from only 6 of the 13 Kent districts.

[97] This figure may not include some passengers who chose to use London Southend Airport which was not included in the CAA Survey for that year. We would anticipate the figure to be relatively low given the scale of operations at Southend and the route overlap with other larger airports accessible to Kent.
[98] We note the aspiration for a small number of charter flights bringing cruise passengers to Manston

Table 5.2: Drive Time to Competitor Airports from Kent Districts				
District	Manston Airport	London Gatwick	London Stansted	Southend Airport
Thanet	14	91	111	108
Canterbury	30	65	85	85
Dover	35	70	104	105
Swale	40	50	70	65
Shepway	45	65	90	90
Maidstone	45	40	60	60
Ashford	50	55	80	80
Medway	50	45	60	60
Gravesham	55	40	45	50
Dartford	60	35	45	45
Tonbridge & Malling	65	30	80	60
Sevenoaks	65	30	60	55
Tunbridge Wells	75	40	70	90
Source: York Aviation/Google Maps				

5.11 A key differentiator for Manston Airport when compared to other UK regional airports is that its location on a coastal peninsula means that it is not surrounded on all sides by population centres from which it can draw demand, with a large part of the area surrounding Manston being sea.

5.12 In making decisions on which airport to use, passengers would be likely to weigh up three key elements, service frequency (convenience), fare price and journey time/cost to airport. Of these, Manston is always likely to be beaten on the first by larger airports in the South East, whilst fares are likely to be no better than available elsewhere due to the spread of low fares airlines across all airports surrounding London. This means that the only benefit Manston Airport could offer would be on journey time savings and, even then, this would be limited in some cases. In determining the scale of the market which may, thus, be available to Manston, we have made assumptions about how much of the market could be attracted to use the Airport if services were provided based on experience at other regional airports seeking to penetrate their local market in competition with larger airports.

5.13 It is not realistic to assume that Manston Airport would be able to attract all of the market from any district, either in totality or even at individual route level for a number of reasons, but principally because:

- for many destinations, there is insufficient demand to make operations viable for the airlines even with market stimulation from low fares, meaning these passengers must be consolidated on to services at larger airports; and
- routes operated from Manston Airport would still be competing with services from other airports which may have more attractive frequencies, flight times, or fares.

5.14 It is, therefore, necessary to determine how much demand could realistically be attracted to the Airport. In our previous work in Kent, in relation to Lydd Airport, we assumed that, in core districts adjacent to the Airport, 60% of the market could be captured if regular services are operated to any given destination and that other, more distant districts, would attract a much lower % share of the total available market given competition from other airports. In practice, this approach may now be generous to the Manston because, in the intervening years since the Lydd Inquiry in 2011, there has been significant growth of low fares services from London Gatwick that will be very appealing to passengers from much of Kent. Furthermore, given how little difference there is in journey times between airports from some key districts, the attractiveness of larger airports is likely to be far higher than Manston Airport overall other than in the very local area.

5.15 The 60% level of market capture is also higher than we observe elsewhere in the UK when regional airports are in competition with their larger, more dominant, neighbours. Nonetheless, we have adopted a 60% local market capture from districts where Manston is the closest airport in order not to understate the potential demand that Manston might attract as an upper bound. We have assumed that for all other districts in Kent, 5% of passengers could be attracted to Manston. Overall, we have erred on the optimistic side in our projections of how much passenger traffic Manston could realistically attract and sustain over a 20 year period so as to indicate a maximum potential rather than a most likely forecast.

5.16 Following this approach shows that, in 2017, the total market available to the Airport would be around 1 million passengers, across all short haul and domestic routes (point to point). However, this demand is spread across a total of nearly 240 destinations (some of which were reached via hubs rather than on direct services). On the assumption that Manston Airport will neither serve all of these destinations nor have sufficient hub connectivity, notwithstanding the possibility of an Amsterdam service, to provide competitively convenient connections to all of these destinations, the figure of 1 million passengers represents an unachievable upper bound presently. The realistic potential market is substantially below this figure if the Airport was open for passenger services today.

5.17 Further analysis of this market potential for the Airport shows how quickly the demand potential falls below levels which would be considered viable for most airlines to be interested in operating a service. For an airline, the decision whether to serve an airport is not about the total level of demand in a catchment area but whether there is sufficient demand to a particular destination to make a service viable at a frequency of service sufficient to ensure that an individual route will be competitive with services from other airports and/or whether there is sufficient demand across a bundle of routes to support the basing of aircraft.

5.18 In **Table 5.3**, we set out the 30 destinations with the highest demand based on the applied market capture rates.

Table 5.3: Top 30 Market Potential in 2017	
Destination	**Potential Demand**
Alicante	38,000
Dublin	34,500
Tenerife	32,500
Palma	32,000
Glasgow	30,500
Rome (FCO)	25,500
Lanzarote	25,000
Malaga	24,500
Faro	24,500
Barcelona	23,500
Venice	22,500
Amsterdam	22,000*
Belfast (BFS)	21,500
Geneva	21,500
Mahon	19,000
Edinburgh	19,000
Malta	17,000
Oslo	14,500
Paphos	14,000
Fuerteventura	13,000
Ibiza	13,000
Lisbon	12,000
Milan (MXP)	12,000
Bucharest	12,000
Murcia	11,500
Heraklion	11,000
Las Palmas	11,000
Corfu	10,500
Madrid	10,000
Stockholm	10,000
Note: *Excludes onward connecting passengers. KLM typically expect around one third of the route to be point to point, with the remaining two thirds to be onward connecting meaning that, if it operated a service to Amsterdam, the route would carry more passengers when those connecting in Amsterdam are included.	
Source: CAA Survey 2017 and York Aviation	

5.19 On the basis that many airlines would, in our experience, be seeking at least 30,000 passengers for a summer-only service, only one destination would have achieved this level of potential demand in 2017, Malaga (Dublin would reach this level but is a year-round type destination which would likely require greater demand to be sustainable overall). This illustrates how dependent services from the Airport would be on stimulation (or destination switching[99]) to reach viable passenger levels to make them attractive to airlines.

York Aviation Passenger Forecast

5.20 In order to project forward the market, we have applied underlying demand growth rates from the DfT's 2017 UK Aviation Forecasts[100]. In the first instance, it is worth pointing out that applying growth of 2% per annum[101] to the total underlying potential market for Manston would suggest that by 2021[102], the total potential market from which Manston could draw passengers would still be less than 1.1 million passengers. On this basis, 662,000 passengers as forecast for Year 3 of RSP's Manston Airport demand forecasts[103] would amount to the Airport capturing over 60% of all available short haul demand within its reasonable catchment area based on our assumed market capture rates set out above in the first year of passenger service operations. This is simply not credible given how few of the 240 routes are likely to reach a viability threshold sufficient for an airline to commence operations in the first year.

5.21 We have developed more realistic passenger forecasts using a market-led semi-bottom-up approach which takes into account the scale of the market at route level and overlays the bottom-up likely provision of airline capacity to meet this. This is typical of approach to demand forecasting for regional airports that we undertake for numerous airport operators and investors. However, as pointed out above, the market capture assumptions used to assess the total potential market available to Manston err on the optimistic side such that the forecast represents more of an upper bound of plausibility.

5.22 Our forecasts are derived through the following steps:

- identifying the underlying demand for all routes from the catchment area (Kent);
- determining the market capture which could be achieved if services were offered from Manston Airport and applying these to the above;
- applying stimulation to the underlying demand at a route level to reflect stimulation of the market through a new route and as a proxy for destination switching;
- growing the route level demand forward by appropriate market growth rates (usually derived from the DfT UK Aviation Forecasts);
- determining the likely airline type[104], aircraft type/size and frequency to operate each route. Relevant passenger load factors are also applied at this stage based on industry norms;

[99] Passengers choosing where to fly based on the services available rather than their underlying market preference.
[100] UK Aviation Forecasts, Department for Transport, October 2017.
[101] the DfT average growth rate for short haul and domestic passengers from 2016 to 2030.
[102] Indicated as Year 3 in the RSP Planning Statement, para 3.105.
[103] RSP Azimuth Report, Vol III
[104] Low cost, full service etc.

- ✈ growing airline frequency, capacity and load factor as underlying demand grows.

5.23 The first two steps are as previously explained, with the application of 60% market share for districts which are closer to Manston Airport than others and 5% from all others. As previously identified, we believe that the 60% may be generous for a number of reasons.

5.24 In making allowance for some stimulation of the local market associated with the introduction of new services at Manston, we have been cautious for a number of reasons, in part explained previously, but also because much of the stimulation is likely to be effectively destination switching by local passengers choosing to fly from Manston rather than elsewhere rather than pure stimulation of the underlying market[105]. Taken in the round, this does not increase the overall pool of passengers from which the Airport can draw but may result in individual routes becoming viable to the airlines at an earlier date but slowing the introduction of other routes. Typically, in our experience, the level of market stimulation seen at the individual route level can be in the order of 10-40% depending on the airline and route[106]. In order to make routes financially viable, it is likely that airlines will seek to serve well established core destinations and these will be the hardest to stimulate given the sheer level of frequency already offered from competing airports. For this reason, we have adopted a 20% market stimulation rate to reflect the impact of new passenger services at Manston on individual destination markets, which may, in practice, still be too high given the likely route structure focussed inevitably on mature markets already well served. Again, we have erred on the optimistic side so as not to understate the potential.

5.25 Our growth rates are based on the DfT growth rates from 2017 and applied to the latest 2017 CAA Survey data on the scale of the local market. No further adjustments have been made to these to account for Brexit, though clearly there may be circumstances in which the growth rates are supressed by more negative economic outcomes from the Brexit process. This demand suppression would equally apply to any projections of cargo tonnage growth. The growth rates are shown in **Table 5.4** and have been used widely by ourselves in projecting demand for other clients in the UK. These are lower than those used by Azimuth of 4%, partly reflecting a proper interpretation of annual passenger growth rates (see **Section 3**) but also because they are applied to the underlying passenger demand, not the level of growth which could be seen at the individual airport level. The growth at an individual airport could be greater in any one year as new services are launched and step changes in passenger levels from the previous year are achieved. This is taken into account in our overall analysis of the potential for Manston.

[105] High levels of market stimulation were observed with the rapid growth of low fare services in the period 2002-2008 but there is significantly less scope for continued stimulation of the underlying market for air travel through further air fare reductions.

[106] This can be much higher for a limited number of routes, but these levels tend to be for first forays into new markets from much bigger airports

Table 5.4: Applied Annual Market Growth Rates		
Year	Domestic	International Short Haul
2018	1.2%	2.2%
2019	1.2%	2.2%
2020	1.2%	2.2%
2021	1.5%	2.0%
2022	1.5%	2.0%
2023	1.5%	2.0%
2024	1.5%	2.0%
2025	1.5%	2.0%
2026	1.5%	2.0%
2027	1.5%	2.0%
2028	1.5%	2.0%
2029	1.5%	2.0%
2030	1.5%	2.0%
2031	1.2%	1.8%
2032	1.2%	1.8%
2033	1.2%	1.8%
2034	1.2%	1.8%
2035	1.2%	1.8%
2036	1.2%	1.8%
2037	1.2%	1.8%
2038	1.2%	1.8%
2039	1.2%	1.8%
2040	1.2%	1.8%
2018-2040 Average	1.4%	2.0%
Source: Department for Transport		

5.26 Projecting forward the stimulated routes on this basis, we have been able to determine routes which may over time be viable for an airline to from Manston Airport. Whether they would constitute a viable operation for the Airport, particularly given the cost of building a new passenger terminal is debatable and something we consider further in **Section 7**.

5.27 We have assumed that routes would be started when stimulated demand reaches 30,000 passengers per annum. This mainly covers leisure routes, though would also cover Amsterdam and Dublin initially notwithstanding concerns that this passenger volume may not be sufficient for year round services at a reasonable frequency of service, along with Glasgow and Edinburgh over the longer term. The choice of 30,000 passengers per annum equates broadly to:

- 3 flights per week for a 30-week summer period by a 189-seat Boeing-737-800 aircraft;
- 2 flights per week, year round for a 189-seat Boeing-737-800 aircraft;
- 5 flights per week, year round by a 78-seat Dash-8-Q400 or Embraer E175 aircraft.

It should be noted that at these levels of frequency, the 60% market capture share is very optimistic given the level of comparative frequency from neighbouring airports.

5.28 For the Amsterdam route, we have assumed that KLM would potentially return to this route and, therefore, would bring benefits of hub connectivity which would increase demand for the route. We have assumed a ratio of one third point-to-point demand, and two-thirds onward connecting. However, as we have noted in **Section 3**, RSP's detailed fleet forecasts assume the route would be operated by Fokker F70 aircraft, an aircraft type now fully retired by KLM. Given the opportunity costs are higher with newer aircraft, such as the Embraer E175, than for a fully depreciated older F70 aircraft, it is not certain that operating a more marginal route to Manston would be a priority over other route opportunities with a newer more expensive aircraft.

5.29 Overall, we have assumed the following as a basis for assessing what might actually be operated:

- Ryanair would operate the bulk of services to leisure destinations along with city points of Dublin and Belfast (both at low frequency). It would use 189-seat aircraft with a starting load factor of 90% in the first year of operation, growing by 0.5% compound until a load factor limit of 93% is reached. However, there must be considerable doubt over this in the short term given recent statements by Ryanair about reducing the number of its bases due to fuel increases and lower fares realised in the market[107];
- KLM would operate the Amsterdam route with an 88-seat Embraer E175. Load factors are assumed to start at 80% and grow by 0.5% compound per annum until a load factor limit of 88% is reached. These load factors are higher than Azimuth assume but reflect the levels that the service will need to achieve long term for the airline to commit the aircraft resource to the services. This may, hence, overstate the early year forecasts;
- Flybe would operate to Glasgow and Edinburgh[108], although would not launch these routes until both are viable so as to increase market presence in Kent. Routes would be operated with Dash-8-Q400 aircraft with 78-seats and have a static load factor of 75% throughout. Due to the timing of the Edinburgh route reaching viable demand levels, this means these routes are not launched until the end of the forecast period.

5.30 **Table 5.5** presents our forecasts by route at 5-yearly intervals (plus 2039) and indicates the assumed airline and frequencies.

[107] http://www.travelweekly.co.uk/articles/322988/oleary-extends-ryanair-contract-despite-plunge-into-red.

[108] It should be noted that there is some short term doubt as to whether Flybe will continue in operation and, assuming it does, it is not clear that the prospective new owners flying under a Virgin Atlantic brand would be willing to start services at a small regional airport given the stated intention to focus on hub connections at Heathrow and Manchester, as well as serving Southend as part of the tie up with Stobart Air. There would be few alternative airlines suitable to commence domestic flights of this nature.

Table 5.5: Route Level Forecasts for Selected Years							
Destination	**Airline**	**2021**	**2026**	**2031**	**2036**	**2040**	**Notes**
Alicante	Ryanair	41,000	53,000	54,000	54,000	71,000	Starts 2-weekly year-round, increases over time
Dublin	Ryanair	35,000	36,000	54,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Palma	Ryanair	41,000	42,000	42,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Tenerife (TFS)	Ryanair	35,000	36,000	36,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Glasgow	Flybe	0	0	0	0	43,000	Starts as daily service year-round
Rome (FCO)	Ryanair	20,000	31,000	32,000	36,000	36,000	Starts 2-weekly summer only, increases over time
Lanzarote	Ryanair	33,000	36,000	36,000	36,000	36,000	2-weekly throughout
Malaga	Ryanair	20,000	35,000	36,000	36,000	36,000	Starts 2-weekly summer only, increases to year-round
Barcelona	Ryanair	31,000	31,000	32,000	41,000	42,000	Starts 2-weekly summer only, increases over time
Faro	Ryanair	30,000	31,000	36,000	36,000	36,000	Starts 3-weekly summer only, increases to year-round
Venice	Ryanair	0	21,000	21,000	21,000	32,000	2-weekly summer only, increases over time
Amsterdam*	KLM	0	96,000	105,000	108,000	111,000	2-daily throughout.
Belfast (BFS)	Ryanair	0	0	30,000	31,000	32,000	2-weekly throughout
Geneva	Winter Charter	0	1,000	2,000	2,000	2,000	Starts 8 flights per winter, increases over time
Mahon	Ryanair	0	0	30,000	32,000	32,000	3-weekly summer only
Edinburgh	Flybe	0	0	0	0	30,000	5-weekly
Malta	Ryanair	0	0	0	0	32,000	3-weekly summer only
	Total	**286,000**	**449,000**	**546,000**	**595,000**	**733,000**	
Note: *Includes onward connecting passengers							
Source: York Aviation							

5.31 These passenger projections are based on the stimulated market size grown forward route by route with airline capacity increases only assumed once the underlying demand grows to a level to sustain higher frequencies. Over the forecast period, no additional routes would be expected to reach the minimum threshold of 30,000 passengers sufficient to be included in the forecast.

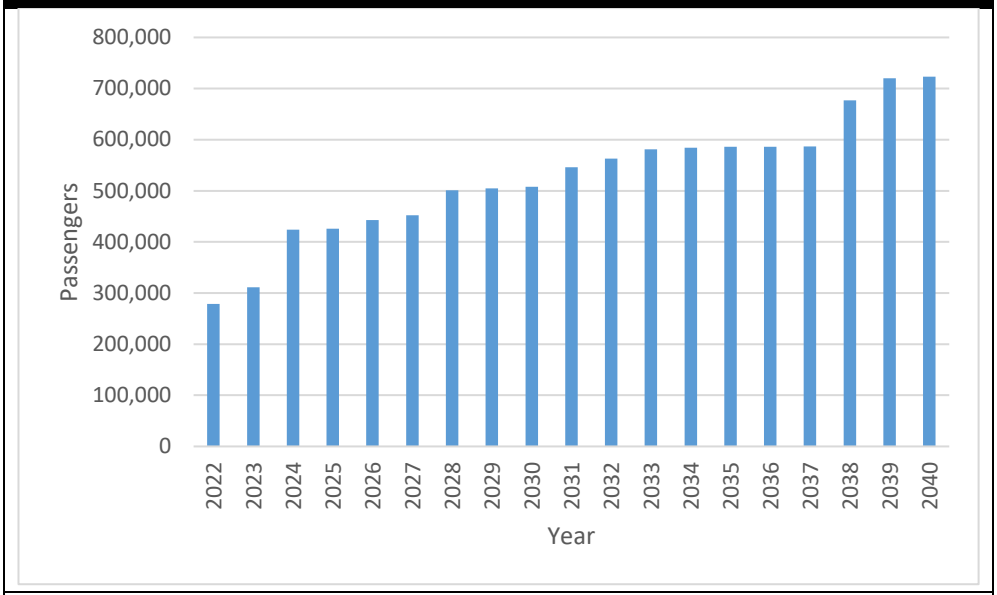
5.32 Crucially, the projected number of viable routes for the airlines and the level of activity may be insufficient to initially sustain any based aircraft by a low fares carrier (such as Ryanair) and, even in the longer term, the demand would likely only support 1 or 2 based aircraft for the summer period only. This contrasts with Azimuth's assertion that they would expect 2 based aircraft from the outset growing over time to 3. Given the nature of the underlying market, we believe this would be unsustainable which would quickly become obvious to any airline. Furthermore, for the reasons identified above, market conditions in the low cost airline sector may rule out the establishment of additional new bases in the short term unless there is a very strong local market, which is not the case at Manston.

5.33 We have not separately included outbound charter flights within the forecasts as leisure demand is already accounted for in our underlying assessment of the market so these flights would not be additional to the assessment above. Some of the routes we have identified as viable on a seasonal basis could be operated by charter airlines rather than a low fares airline; there is increasingly substitutability between the two airline types in short haul markets.

5.34 We have also not directly created a forecast for ad-hoc inbound services associated with the cruise industry. We understand the nature of these and are familiar with the historic aim of Manston Airport to attract more of these flights. It is possible that this sort of service might be attracted given the proximity to Dover but it is difficult to make a precise estimate. We note that the aircraft type assumed by Azimuth for such flights (the Boeing B757-300) has limited range and would not be able to serve Florida as indicated in the ES (Table 3.3). In any event, this aircraft is nearing the end of its operational life and any replacement aircraft is likely to be larger and with different environmental impacts. The estimate of 30,000 passengers, as shown by Azimuth, is significant and probably at the upper end of the range. Any such passengers would be additional to the forecast shown in **Figure 5.1** below, which illustrates our core passenger forecast driven by existing local demand from residents and inbound visitors for all years from 2021 to 2039.

5.35 In overall terms, our passenger forecasts suggest that by Year 20, the Airport might, as an upper bound, be able to attract around 750,000 passengers per annum but the build up to these levels of passenger throughput would be significantly slower than indicated in the RSP Application Documents. Whilst we have updated our assessment of expected levels of passenger demand to the latest full year CAA Survey data for 2017, our overall assessment of a realistic long term passenger forecast for Manston remains at around half of that suggested without supporting evidence, by Azimuth for RSP, as indicated at para. 12 of our November 2017 Report. The maximum forecast for the first year of passenger operations, Year 2, is no more than 280,000 passengers, even assuming any airline could be persuaded to commence operations at all.

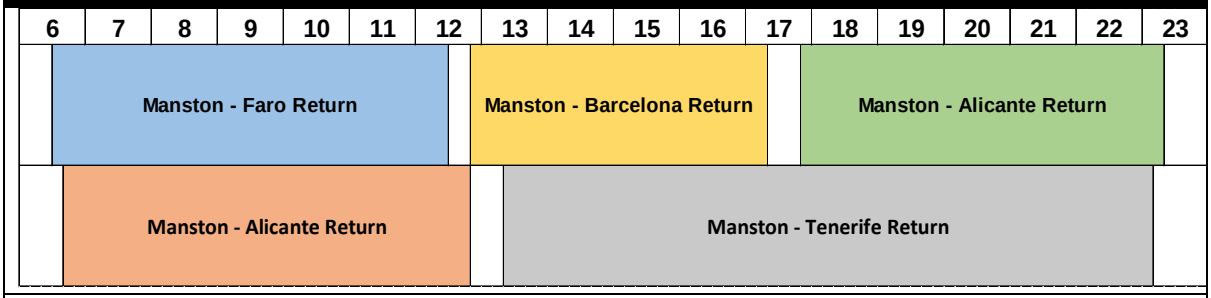
Figure 5.1: Market Based Passenger Forecasts



Source: York Aviation

5.36 Whilst the above assessment represents the potential scale of potential passenger throughput that Manston might attract if it could attract a low cost airline (LCC) to base a number of aircraft at the Airport, this is rendered unlikely given the proposed night movement restrictions in period 23.00-07.00. RSP's stated position that there would be no night flights by passenger aircraft would make it highly unlikely that an LCC would base an aircraft at Manston due to the restricted operating day over and above the market related factors highlighted above. In order to make low cost/low fare operations viable, a low cost airline would expect to be able to make their first departure before 07.00 and/or last arrival after 23.00. This is illustrated by typical aircraft rotation patterns for routes that might operate from Manston in **Figure 5.2** below, showing clearly that in order to achieve 2 or 3 rotations a day (dependent on destination) an airline would likely need to depart before 07.00 and/or arrive after 23.00. By way of illustration, Ryanair's new base at Southend has 48% of the first departures departing before 07.00 and 29% of the last arrivals arriving after 23.00. We would expect a similar pattern at Manston. However, RSP's ES suggests that there would no night movements passenger aircraft – none have been assessed for environmental impact purposes. In the alternative, night operations by passenger aircraft would crowd out freighter movements, which would further restrict the potential for viable freight operations.

Figure 5.2: Typical Low Cost Airline Aircraft Rotation Patterns



Source: York Aviation

5.37 Finally, we would note that these forecasts, whilst optimistic for a number of reasons previously explained, would only be deliverable if an airline could be persuaded to operate the services. The market is not so large, nor the competitive options sufficiently limited, that the Airport would stand out as an underserved market in its own right. Therefore, the only way in which airlines could be persuaded to operate would likely be with very attractive terms. Typically, such terms may involve:

- £0 income per passenger for one or more years from the start of services. This may be followed by gradual step changes;
- A need to underwrite new services until the routes become established, which can lead to an airport having to pay operators for a number of years;
- In addition to both of the above the airport may be expected to provide marketing support and offer accommodation and other services, such as handling, free of charge to the airline.

5.38 Terms such as these are not limited to low fares airlines and indeed major carriers such as KLM and regional airlines such as Flybe are increasingly looking for deals of this nature in the UK. If Manston were to seek to realise £2.50 per passenger as suggested in George Yerrall's 2017 analysis[109], it is more likely that no airline would be willing to take the risk of serving an airport with no track record of viable operations for the airlines or the airport as is the case at Manston. Without substantial incentives, the rational approach by the airlines is instead, to focus on continued consolidation of all regional passengers onto services from the London airports where economies of scale will allow better returns. This has implications for the revenue that could be earned from passenger services which will impact on the potential viability of the development and operation of Manston Airport, as we set out further in **Section 7**.

5.39 It is important to note that our projections are highly optimistic as the maximum passenger throughput previously handled by the Airport was 200,000 in 2005 when EUJet was the principal airline operator. This airline ceased trading as its operations were fundamentally unviable. Subsequent operations by Flybe also failed as they were not viable for the airline. The KLM service to Amsterdam which operated prior to the Airport's closure in 2014 was subject to marketing support from the County Council amounting to at least £100,000 paid via the Airport[110]. In other words, there is no track record of sustainable passenger operations for the airlines at Manston without some form of public sector support. We would expect the same to be true in future if airlines are to be attracted to commence operations in the first place and deliver the longer term passenger potential that we have assessed.

Conclusions

5.40 We have set out in full our market assessment for passenger services at Manston, in part to provide the Examining Authority with an example of the type of market analysis that it would be normal practice to present in support of a planning or development consent application. The RSP case contains no such systematic presentation of the market nor reasoned analysis of how airlines are likely to respond to the market.

5.41 Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates over the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole.

5.42 It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

[109] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017), Table 1.
[110] http://www.airportwatch.org.uk/2013/03/farnborough-turns-away-private-flyers/.

6 JUSTIFICATION FOR THE FACILITIES PROPOSED

The RSP Application Documents fail to set out any material that justifies the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

In this section, we have considered the infrastructure that would be required if RSP/Azimuth's air freight forecasts were correct to assist the Examining Authority. This is without prejudice to the evidence that strongly suggests that they are unattainable. We have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly, including the required night operations.

Based on proper analysis of airline operating patterns, the maximum number of stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced, probably to around 1/3 of the scale indicated.

As far as the Northern Grass is concerned, the list of airport related uses provided in response to questions from the Examining Authority is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event.

Based on East Midlands Airport (EMA) and its Pegasus Business Park, despite the major freight hub activity, only around 13,000m^2 of accommodation within the business park is airport related other than hotels. The remainder of the occupiers are non-airport related and therefore not relevant to RSP's asserted used for the Northern Grass. It is simply not credible that Manston could sustain more of these airport related activities than the UK's main dedicated freighter hub at EMA.

6.1 In this section, we concentrate principally on the infrastructure required to handle RSP's projected air freight forecasts and the extent to which the scale of the proposed Master Plan has been justified. This is important in the context of the DCO and justification for the acquisition of land. Whilst we present here an assessment of the infrastructure required if RSP/Azimuth's 'forecasts' were correct, this is without prejudice the clear evidenced view within the remainder of this report that they are not. We have based our assessment here on the more detailed information set out at Appendix 3.3 of the ES, notwithstanding the discrepancies between this information and that set out in the Azimuth Reports and elsewhere as highlighted in **Section 3**.

6.2 We consider separately the extent to which the core aviation infrastructure has been justified and then the use of the 'Northern Grass'.

6.3 A further consideration is the capability of the infrastructure proposed in the RSP Master Plan as this capability is material to whether the impacts of the proposed development have been correctly assessed.

Infrastructure Required to accommodate RSP's Aviation Forecasts

6.4 The Master Plan presented by RSP for the Manston Airport site is shown at **Figure 6.1**. It makes use of the full length of the runway and provides a full length parallel taxiway. The western side of the site is dedicated to freight handling activity and has 19 full Code E aircraft stands[111] for cargo flights and 4 large cargo sheds totalling 65.500m^2 for the processing of freight supported by truck loading and parking areas. The eastern side of the site shows as a new passenger terminal and apron along with a MRO hangar and apron. The existing private aircraft handling facility (FBO) and fire station site are retained. We understand that four phases of development are planned[112] as illustrated in RSP's Design and Access Statement. Notwithstanding our view as to the significantly lower potential demand that might realistically be attracted to a re-opened Manston Airport, we focus here on the overall scale of facilities required at Year 20 based on RSP's forecasts for that year and whether there is an evidenced justification for this scale of facilities in the highly unlikely event that these 'forecasts' were deliverable.

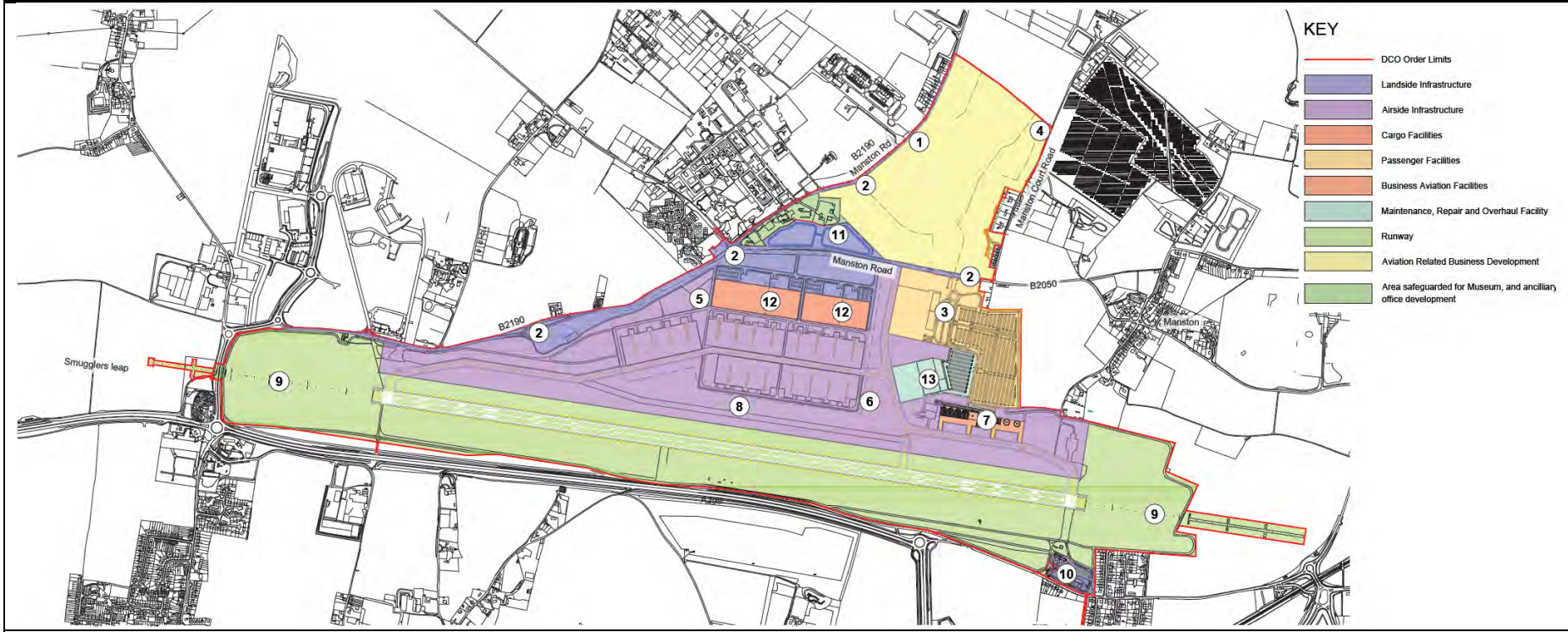
6.5 RSP projects that Manston will need to be able to handle 17,170 cargo related ATMs and that 1.4 mppa[113] will be handled by Year 20. Given that this level of throughput forms the basis of the Environmental Assessment, prima facie it would be reasonable to assume that the infrastructure shown in the Master Plan should reflect that required to handle this level of aircraft movement and passenger activity.

6.6 We note that the RSP Design and Access Statement (sections 3.01, 3.02) states that the requirement of 19 Code E stands for cargo aircraft was a given input assumption in the Client Brief, along with the requirement for 65,500m^2 of cargo facilities[114]. The Need Case for an airport development would normally be expected to set out clearly and transparently how these requirements have been derived from the demand forecasts. We would have expected the Application Documents to contain a specific justification of the scale of airside facilities proposed by way of, as a minimum:

- an indicative busy day schedule of aircraft movement by type time of day;
- a quantification of the number of aircraft stands required to handle those aircraft movements by reference to the schedule;
- the volume of cargo expected each day, the proportion expected to use the cargo facilities on-site and off-site[115], the time such cargo is expected to remain in the warehousing on-site, conversion of the volumes and dwell time to the storage space required.
- similarly for the passenger terminal requirements and number of stands required.

[111] It is unclear how the Code F aircraft shown within the fleet mix at Appendix 3.3 of RSP's ES will be accommodated.
[112] Azimuth Reports Vol III, para 5.1.2.
[113] Million passengers per annum.
[114] We note also that the DAS states that the brief was to double the size of passenger terminal facilities and add 1 passenger aircraft stand. As discussed in Section 3 of this Report, the justification for the scale of passenger terminal facilities given in the Azimuth Reports Vol III is nonsensical.
[115] Much of the cargo previously using Manston was trucked directly off-site from the aircraft side. This is common practice for some types of cargo, particularly where the integrator or forwarder has established consolidation and breakdown facilities located more centrally to the market.

Figure 6.1: RSP Masterplan – Proposed Site Layout



Source: RSP Design and Access Statement

6.7 Such information is missing from all of the key documents where it would normally be found in an airport development application, including the Planning Statement, the ES Scheme Description (Chapter 3), the Design and Access Statement and the Need Case (Azimuth Reports). As we pointed out in **Section 3**, to the extent that there is are any parameters given for the scale of facilities required in relation to the passenger terminal, these are fundamentally flawed.

6.8 Absent such a coherent explanation of how the forecasts translate into a physical requirement for infrastructure, leaving aside the validity of the forecasts themselves, the need for the facilities cannot be stated to have been justified. This is particularly relevant in the context of the required CPO which requires a compelling case to be made for the precise area of land that it is proposed be acquired.

6.9 To assist the Examining Authority, we now set out some of the key considerations in terms of the scale of facilities required relative to what is proposed in the RSP Master Plan.

Stand Requirements

6.10 As we have noted earlier, not all of the aircraft that RSP project to use Manston are Code E aircraft. Leaving aside the discrepancies between the reported aircraft mix in various parts of the Application Documents that we have highlighted in **Section 3**, 40% of aircraft movements are projected to be by smaller Code C aircraft, within which many are very small turbo-prop aircraft. It is normal practice to accommodate 2 Code C aircraft side by side within the area of 1 Code E stand. Hence, the total number of Code E stands required does not equate to the total number of aircraft requiring a stand at the same time. Furthermore, as Code C aircraft are shorter in length than Code E aircraft and, to the extent that all of the stands would not be required to accommodate Code E aircraft based on the proposed fleet mix, the length of a number of the stands could be materially shortened so reducing the overall apron area required[116]. Adoption of such principles would be consistent with ensuring efficient use of space and not over-designing the infrastructure. This would reduce the area of apron actually required to accommodate forecast demand.

Efficient Use of Stands

6.11 Taking into account that a Code E stand can accommodate more than 1 of the smaller aircraft types simultaneously and given the high proportion of such aircraft in the overall fleet mix, it is possible to assess how many aircraft a day each stand would be required to accommodate on RSP's 'forecasts' by using the phased provision of stands set out in the Design and Access Statement and the aircraft movement forecasts set out at Appendix 3.3 of the ES.

[116] The depth of a Code C stand is less than a Code E stand so the use of a Code E stand solely for 2 smaller aircraft does not use all of the stand depth as Code C aircraft are shorter nose to tail, leaving wasted space.

6.12 Using the Busy Day Multipliers set out in Appendix 3.3 to the ES, which show the extent to which the number of movements on a busy day is expected to be compared to an average day in the year, and assuming that freighter operations are typically in weekdays, i.e. only 250 days in a year, the number of peak/busy day aircraft movements by freighter aircraft that RSP claim would use Manston can be estimated. This starts at 24 (23.55) aircraft movements over a 24 hour day in Year 1, increasing to 73 (72.82) aircraft movements a day in Year 20. The number of aircraft requiring to park on a stand would be half the number of movements[117] and this can be converted to a Code E equivalent number of aircraft taking into account the projected fleet mix. Based on the 8 stands to be provided at Phase 1 rising to 19 stands by Year 20, the number of Code E equivalent aircraft that would be expected, on RSP's projections, to use each stand on a busy day would be 1.24 in Year 1 rising to 1.53 in Year 20. The number would be lower on an average day and even lower on an off-peak day. In other words, RSP are providing sufficient stand capacity for over 60% of all daily aircraft movements to be accommodated on stand at the same time. This represents a massively inefficient solution.

6.13 Based on a rational pattern of freighter aircraft operations, as set out at para. 3.44 above, we have set out an indicative stand utilisation chart based on the operating times and stand occupancy times for similar types of aircraft and types of operation (integrator, mail, general freight etc) based on equivalent operations at East Midlands. This is set out at **Appendix E**. This analysis shows an average stand occupancy time of around 3.5 hours within 24 hour period but this is affected by the assumption that, as at EMA, there may some aircraft that stay for longer than 8 hours in order to fit with EMA's integrator secondary hub role for DHL. We have assumed that there could be some similar operations at Manston in the unlikely event that it developed a hub role in order to be conservative in our assessment.

6.14 However, in practice, our analysis shows that the average stand occupancy time for freighter aircraft excluding these movements, is around 2¼ hours, consistent with the assumption of 2.5 hours set out at para. 4.5 of our November 2017 Report and as adopted by RSP[118]. On a conservative basis, our analysis shows no more than 9 Code E equivalent stands would be required to accommodate RSP's forecasts based on realistic patterns of airline operation. If the long stopping aircraft were not in the mix at Manston, as it is not realistically likely to become a secondary hub for an integrator, then it is probable that no more than 6 Code E equivalent stands would be required to meet the airline requirements.

6.15 As we have made clear in **Section 3** above, applying the proposed night movement quota would almost certainly result in a large part of RSP's freighter movement 'forecast' not operating due the effect of the restrictions on the commercial viability of the operation to the airlines, leaving aside the broader question of market viability overall. If, hypothetically, the airlines were willing to operate from Manston at commercially sub-optimal times, this would require extensive changes to the operating pattern but would still be containable within 6 to 9 Code E equivalent stands as a maximum.

6.16 RSP seek to justify the excessive provision of infrastructure by referring to the need for resilience:

[117] A movement comprising the arrival or departure of an aircraft from the runway.
[118] RSP NSIP Justification Statement, para. 22.

"The reason that the physical capability of the Proposed Development is much higher than the expected operational level is twofold. First, significant 'headroom' is required to be able to withstand operational issues that regularly arise and so is for reasons of resilience."[119]

6.17 In the first instance, allowance is typically made for a 'buffer' of time between planned operation of aircraft off of and on to a stand. This allowance is evident in the stand allocation chart at **Appendix E**[120]. This provides resilience for a normal level of operational delay. Over and above that it is normal practice in planning airport facilities to allow 10% additional stands for unforeseen events, e.g. stand outage, aircraft technical delays etc. In the case of Manston, this would require no more than 1 additional resilience stand to be available. Hence, at the very maximum, the number of stands required for 17,170 movements would be no more than 10. Furthermore, the requirement for these stands assumes that no use could be made of any of the passenger apron for cargo operations. Given the high proportion of smaller aircraft types in the fleet mix, this would also be eminently possible so reducing the required number of cargo aircraft stands further.

6.18 RSP appear to have assumed more than 100% over provision with 19 stands compared to the maximum of 9 stands operationally required. As explained earlier, this is a maximum stand requirement and, assuming that Manston could not fulfil a secondary hub role for an integrator, the required number of stands would be materially less.

Cargo Terminal Requirements

6.19 In association with proposed the 19 Code E cargo aircraft stands, the RSP Design and Access Statement Section 1.05 also states that the Brief required the provision of 65,500m^2 of cargo facilities, which is shown on the Master Plan to be 4 large cargo sheds in standard portal frame structures. Again, no justification is provided for this requirement and no explicit linkage is made to the forecasts of tonnage requiring to be processed through the facilities.

6.20 RSP themselves make reference[121], in their Masterplan Design Principles, to the objective that their development:

"'Sustains the improvements to operational efficiency for as many years as is practicable"

This appears to be something of an oxymoron given the above assessment of the efficiency with which the proposed stands would be utilised.

[119] Ibid, para. 29.
[120] We have allowed 30 mins to be cautious for freighter operations. For passenger operations a buffer of 15-20 mins would be more usual.
[121] RSP Planning Statement, para 4.14.

6.21 In the light of the claim about efficiency, we would have expected to see a calculation of the floor area of cargo facilities set out by reference to industry standards. The industry standards are set out in the IATA ADRM[122] explains that a cargo facilities size is a function of its proposed processing capability which it sets out under three categories of operation; Low Automation (mostly manual), Automated (average) and Highly Automated. The processing capability for each category is set by a tonnes per m^2 multiplier ranging from 5 to 17. It is worth noting however that some facilities across the world far exceed the top end of this range with facilities that process possibly more than 30 tonnes of cargo per m^2 of facility.

6.22 Given that Manston is intended by RSP to be a state of the art cargo handling facility, it is reasonable to assume that the tonnage per m^2 multiplier should be towards the top end of the range compared to older facilities which may not have been designed to modern standards. However, the multiplier used by RSP to size the cargo facilities appears to be of the order of 5.2 tonnes per m^2, i.e. at the bottom of the range when a more reasonable multiplier for a modern facility would be expected to be of the order of 13.5 tonnes per m^2. The cargo sheds at Manston, as with number of stands to be provided, are substantially oversized relative to the required throughput, by an order of 3 times at least.

6.23 It would appear that the scale of facilities proposed by RSP may have been based, to some extent on East Midlands Airport (EMA), which has a combined cargo shed footprint of approximately 80,000 m^2 and processed a total of over 375,000 tonnes of air cargo in 2018 at a usage multiplier of 4.7 tonnes per m^2. However, this is not a valid comparison for two principal reasons:

- ✈ Cargo handling facilities at EMA have been recently extended and are unlikely, therefore, to be operating at capacity at current tonnage levels;
- ✈ EMA operates as a hub for domestic road freight in addition to air freight given its position in the centre of the country and proximity to the M1.

For example, the Design and Access Statement for DHL's application to expand its cargo hub terminal makes clear that the primary reason for this expansion was to handle more road freight[123]. Manston is simply in the wrong place for this type of operation and, in any event, extensive road freight operations have not been assessed as part of the Transport Assessment.

6.24 Moreover, the assessment assumes that all of the cargo using aircraft at Manston needs to be handled in on-site cargo sheds. This is unlikely to be the case. Previous Manston operations were based on much of the freight being taken from the aircraft side straight off-site for distribution without entering the on-site cargo sheds, despite these sheds being underused and with ample capacity to handle all of the freight using the Airport. Given the structure of the industry and dependence on consolidated distribution centres in easily accessible locations, we would expect this pattern to continue if Manston re-opened, meaning that Manston would, in practice, require sufficient space for only a proportion of the cargo flown through the Airport to use the sheds, with the remaining freight trucked off-site in bonded trucks to be customs cleared at consolidation or distribution centres elsewhere.

[122] IATA (International Air Transport Association) Airport Development Reference Manual (ADRM) Edition 10, 2017.

[123] https://plans.nwleics.gov.uk/publicaccess/files/2928B5D0A88323F668C0208F281F5AC5/pdf/15_00319_FULM-DESIGN___ACCESS_STATEMENT_PART_1-341251.pdf, page 22.

Overall Capability of the Infrastructure

6.25 As RSP has acknowledged[124], the capability of the infrastructure applied for is at least 83,220 freighter aircraft movements a year. At a projected usage of only 17,170 freighter aircraft movements a year, this is clearly a highly inefficient development. Whilst some discrepancy would be expected between the theoretical capability of airport infrastructure and the practically achievable capacity when actual airline requirements are taken into account, the scale of the discrepancy is far in excess of what would normally be expected.

6.26 In essence, RSP plan to use only 20% of the available aircraft movement slot capability (as defined by the number of stands) that they plan to provide at Manston. As we discuss in the next section, this low utilisation rate of available capacity is highly inefficient and will inevitably result in a lack of viability of the investment. Medium sized airports in the UK typically operate at around 45 to 50% of available slot capacity when the peaks and troughs of airline demand are taken into account. Generally, operations are considered effectively unconstrained, in terms of allowing airlines the ability to operate at times at or close to when they would prefer, up to around 60% utilisation of available capacity. Beyond 70-75% utilisation, an airport is typically considered congested. Gatwick operates at well over 80% of its current capacity and Heathrow at around 99%.

6.27 By any measure, the level of utilisation proposed for Manston is below what would be reasonably expected. At 50% utilisation of available capacity, Manston as planned by RSP could accommodate almost 45,000 freighter aircraft movements a year without undue constraint on the airlines' ability to operate at commercially desirable times, leaving aside the obvious night movement constraint discussed in **Section 3**. It is important to stress that this does not mean there would be a market or need for it to handle this level of movements for the reasons outlined elsewhere in this report. Nonetheless, in order to reasonably accommodate the demand levels asserted as the need for the development and requiring to be assessed in terms of the likely significant effects[125], i.e. 17,170, this would imply a requirement for infrastructure of no more than 40% of the scale of the overall development proposed on the basis of efficient usage of the infrastructure. Any development of facilities above this level could be deemed excessive relative to efficient use of infrastructure and land in the longer term even if the 'forecasts' were correct. To the extent that the 'forecasts' are overstated, the requirement for infrastructure would come down pro-rata.

6.28 Whilst our assessment of the required number of stands takes into account realistic operating patterns which, as is made clear in our November 2017 Report[126], is necessary to assess the capacity of the infrastructure, this is not directly comparable to the theoretical capability of the infrastructure as RSP themselves accept. It remains the case that there is latent capability in the existing airport infrastructure at Manston that would be sufficient to allow it to handle the number of aircraft movements put forward by RSP as required in Year 20 without the need for RSP's development.

[124] RSP 2.3 NSIP Justification, para. 23.
[125] Ibid, para. 26.
[126] York Aviation, November 2017, paras. 4.6 and 4.7.

Passenger Facilities

6.29 As we have already noted in Section 3, the basis upon which the passenger terminal and apron facilities have been planned is unclear given the obvious errors in the design parameters set out. The proposed passenger terminal is stated in the Design and Access Statement (DAS) to have a footprint of 2,200m^2 initially, increasing to 4,500m^2 as demand requires[127]. However, there is lack of clarity as to what is actually proposed as the DAS variously refers to different footprints for the terminal. Whilst Vol 1, para. 2.01 cites the size as being 2,400m^2, the DAS also refers to there being only an extension of the existing passenger facilities rather than a new terminal (para. 1.05). The scale of the facility has not been justified even if it was clear what is proposed.

Other Aviation Facilities

6.30 RSP also cite a requirement for the Master Plan to accommodate other uses, namely General Aviation, Aircraft Recycling, and Maintenance Repair and Overhaul (MRO). As with the core air freight and passenger projections, RSP provide no assessment of the market for such activities specifically at Manston nor any justification for the scale of facilities proposed. To the extent that these occupy a material part of the site proposed to be acquired through compulsory purchase, this represents a substantial omission. As we set out at para. 2.65 of our November 2017 Report, these are highly competitive markets in terms of the number of airports seeking to attract such activities. In terms of Business Aviation, Manston is too far from London to be a major player in this market. The third opportunity, the MRO sector, other than related directly to major airline operations at larger airports, is limited in the UK as is evidenced by the recent failure of Monarch Engineering. Aircraft recycling has also been slow to develop despite active interest and operations at airports such as Newquay and Durham Tees Valley. We see very limited scope for Manston to attract these activities to any material extent so as to justify facilities beyond those that already exist on the airfield.

Northern Grass

6.31 To the north of the site, on the 'Northern Grass', a general business park development is shown. The RSP Design and Access Statement (Vol 3) shows the Northern Grass area laid out as a fairly conventional business park with a mixture of B8 warehouse units and B1 office buildings, each with their own car parking areas associated. In total, 105,100m^2 of accommodation is proposed and the DAS shows all of this being built out by Phase 2 of the development (Years 2-4). These buildings are located entirely on the landside of the B2050 and so will be unsuitable for activities integrally linked with the direct operation of the Airport.

6.32 The only justification originally given for these facilities were general statements about providing for airport related businesses "critical" to running the Airport:

"The Northern Grass area will accommodate infrastructure critical to the running of the airport including airport related businesses which do not require an airside location."[128]

[127] RSP Design and Access Statement Vol 4, para 7.17.4.
[128] RSP Planning Statement, para 3.76.

and

"A Business Park consisting of B1 and B8 units accommodating airport related businesses"[129]

6.33 These statements provided no justification for the scale of development proposed and how this relates to the operation of the Airport. RSP's Statement of Reasons simply says that this area has *"sufficient space on the Northern Grass to accommodate airport - related businesses that can be seen occupying premises in and adjacent to the vast majority of UK and European airports"*. This provides no specific justification for why any such uses would seek a site adjacent to Manston nor why they would qualify as associated development.

6.34 A further list of potential uses was set out in Appendix to the updated NSIP Justification Statement (published on 25th January 2019):

- *"radar equipment and its accompanying safeguarding clearances (these also limit the building heights across the remainder of the Northern Grass),*
- *airport management offices offering visibility over the airfield, with associated marketing suites and secure storage for equipment and materials that do not require an airside location (i.e. inside the security fence),*
- *offices and crew facilities for airlines (passenger and cargo),*
- *offices and flight planning facilities for flight schools,*
- *catering operation for passenger and business aviation flights,*
- *covered secure and valet parking operations,*
- *rental car operators – overnight garage, cleaning and office facilities,*
- *garage and offices for airside public transport providers,*
- *airport taxi company garage, cleaning and office facilities,*
- *vehicle depots and storage facilities for air cargo handlers and associated logistics*
- *companies,*
- *specialist bonded warehouses and other facilities (e.g. stables and other animal handling and veterinary facilities) that do not need to be constrained by an airside location,*
- *offices and warehousing for storage associated with MRO and aircraft recycling (including parting out) operations,*
- *office and storage facilities for outsourced contractors providing services to the airport (e.g. – maintenance, security, operations) that do not need to be airside,*
- *project offices for construction companies working on the airport, and*
- *offsite offices for Border Force, Police.*

[129] Ibid, para. 3.76.

6.35 However, this list appears to comprise not of airport-related businesses needing a landside location but of a mixture of essential airport facilities which would need to be located within the zone to the south of the B2050, e.g. airline crew offices, offices for Border Force, flight briefing facilities and facilities, garages for airside transport given that vehicles will typically not be licensed for the public highway, and those which do not appear relevant to the proposed use of Manston, e.g. airport taxi garages, covered valet parking, catering for passenger and business aviation flights. There remains a complete absence of any justification for the totality of the development proposed in this landside area save that RSP has indicated that it *"will seek to provide to the Examining Authority further examples of this type of airport-related development from other UK airports and important cargo led airports in Europe and North America."*

6.36 Taking into account the projections for Manston upon which RSP seek to base their case, the most relevant comparator, in this regard, remains EMA in the UK. East Midlands Airport has an associated landside business park, Pegasus Business Park comprised of c.52,000m^2 of accommodation. However, of this, c.16,000m^2 is comprised of 3 hotels associated with 4.9 million passengers using the Airport in 2018. Of course, hotels do not form part of the proposed used for the Northern Grass at Manston and, in any event, there is ample local supply in Ramsgate and Margate, as well as the Holiday Inn Express at Minster adjacent to the Airport, for any usage associated with the significantly lower volume of passengers projected by RSP. Of the remaining 36,000m^2 at EMA's Pegasus Business Park, many of the premises are vacant or occupied by non-airport related tenants amounting to around 23,000m^2, based on an examination on Google Earth. The proximity to the M1 and a location in the centre of the three East Midlands cities makes the site attractive to a broader range of non-aviation related business seeking proximity to the motorway. This leaves around 13,000m^{2}of accommodation occupied by what would be deemed airport-related or ancillary uses on RSP's definition.

6.37 There can be no justification for the scale of development proposed for the Northern Grass relative to the scale of operation which RSP put forward for Manston. By way of a further example, the proposed New Century Park Business Park proposed for land adjacent to Luton Airport comprises just under 60,000m^2 of accommodation, including a hotel of 6,600m^2[130]. Of the remainder, 11,100m^2 are expected to be used for airport-related business, with the remainder for general warehousing and office use. This has to be seen within the context of Luton being an airport handling over 17 million passengers a year with 1,400 freighter aircraft movements and over 22,000 tonnes of freight annually with plans for further expansion.

Conclusions on Justification for the Scale of Facilities

6.38 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, we consider that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any evidence or calculations to justify the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

130 https://planning.luton.gov.uk/onlineapplications/files/5562977400C860F9DD68F7F243FEB90B/pdf/17_02300_EIA-Planning_Statement_Addendum_Final_V2-769078.pdf, page 31.

6.39 To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced. This represents a topside estimate of the infrastructure required to handle RSP's 'forecasts' so as to provide sufficient capacity at the times that airlines would wish to fly and fully taking into account the need for resilience. This is not the same as the theoretical capability of the infrastructure, nor comparable to the capability of the existing infrastructure at the Airport if it re-opened.

6.40 As far as the Northern Grass is concerned, the list of airport related uses provided in response to questions from the Examining Authority is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement could be accommodated south of the B2050. The development on the Northern Grass site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses and, therefore, not qualify as associated development.

7 IMPLICATIONS FOR VIABILITY AND FUNDING

In the absence of any assessment of the Business Case for the development within the RSP Application Documents, in this section we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their optimistic traffic 'forecasts'. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future.

When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

The upfront costs of re-opening the Airport, on the basis of a minimum initial capital spend of £145m for Phases 1 and 2, are such that EBITDA losses and a cash flow negative position are inevitable even with this lower magnitude of expenditure, i.e. replicating the position that existed historically and which, ultimately led to the Airport's closure.

Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse.

Introduction

7.1 RSP's Funding Statement provides no information regarding the viability of the operation of the Airport on the scale proposed, nor sufficient information for an investor to consider whether it would be willing to contribute towards the funding of the investment. The only statement regarding the viability of the project is at para. 20 of the Funding Statement relating to capital costs estimates at para. 15:

"RiverOak has taken expert advice from RPS on the cost estimate for the project that is the subject of the application. The initial phase of the project, which will bring the airport back into use, is estimated to cost about £100 million. The cost of developing the remaining phases of the project over a 15-year period is estimated to be an additional £200 million, i.e. a total of £300 million. This cost estimate includes the cost of implementing the project, the cost of construction and the funding of the acquisition of the necessary rights over land, including any interference with rights"

"RiverOak has assessed the commercial viability of the project in the light of this information and is confident that the project will be commercially viable and will therefore be fully funded if development consent is granted"

7.2 As Altitude Aviation Advisory set out in their Addendum Report[131], this falls far short of the information that investors or lenders would require in order to consider whether or not to provide finance for the re-opening of the Airport. A full Business Plan and Business Case, accompanied by detailed financial modelling and sensitivity testing would be required. The information that would normally be expected within a Business Plan sufficient to secure investment are set out in Altitude's Addendum Report[132]. This accords with our experience in preparing such advise for investors in airports.

7.3 Although as noted in para, 2.5 above, the Planning Statement and ES assert that the Business Case and Business Plan are set out in the Azimuth Reports, these reports contain no financial analysis at all. Indeed, the Azimuth Report Vol II (para. 6.1.1) expressly refers to RSP needing to draw up a future marketing and development plan, which would necessarily need to form a crucial part of the Business Plan to inform the viability assessment. Hence, the Examining Authority has no basis for assessing the likelihood of the development being viable on an ongoing basis or whether it is likely to attract investment such that it would proceed at all. These matters are further explored in the Altitude Addendum Report.

7.4 The RSP Planning statement also claims, at para. 6.47, claims Funding Statement complies with Airports NPS requirement that development will be cost efficient for users. This would clearly not be the case if the costs of the excessive infrastructure, as discussed in the previous section, were passed onto users. A key issue that we go on to consider in this section is whether the development would be viable and at an efficient or competitive price for users even based on RSP's overstated 'forecasts'.

Assessment of the Financial Viability of Re-opening Manston Airport

7.5 In this section, we consider the financial viability of RSP's proposals for Manston Airport. The assessment of viability is crucial, as unless the operation of the Airport can be financially viable, it cannot survive in the medium to long term. If it cannot survive, it makes the investment and development superfluous and the Airport will not deliver any of the economic benefits claimed by Azimuth in Volume IV (albeit we believe these to be substantially overestimated in any case). Nor would the opening of an airport on an interim basis before failing comprise of a compelling case in the public interest for the development. A non-viable airport operation would in fact act as a drag on the economy as it would be abstracting resources that could be used more efficiently for other purposes.

7.6 Our assessment of potential viability has been undertaken using a range of information:

- we have been provided with historic and projected financial information on the operations of the Airport when it was still operating and used this information, along with the published accounts, to assess the potential EBITDA[133] performance of the Airport, taking into account the scope for material improvements in financial performance;
- we have used historic operating data provided to us along with CAA Statistics to identify key metrics for the Airport;

[131] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.
[132] Ibid, Section 4, Figure 3.
[133] EBITDA – Earnings before Interest, Tax and Depreciation/Amortisation.

- we have examined the financial analysis of the RSP proposals prepared by George Yerrall on behalf of RSP[134]. This includes, in particular, assumptions around the potential capital expenditure relating to RSP's plans and its phasing. There is no more recent information on capital expenditure phasing has been brought forward by RSP so we have retained this as our basis for assessing the costs of development;
- our experience of unit revenues for aeronautical activities (including cargo handling) at UK and European airports;
- the traffic forecasts for the Airport set out by Azimuth, albeit, as described in **Sections 3**, **4** and **5**, we do not believe that these forecasts are anywhere close to being achievable.

7.7 We note that, whilst the RSP Funding Statement[135] asserts confidence in the Business Plan for the Airport, we have seen no other explanation of this than is contained in George Yerrall's 2017 analysis which we, therefore, assume represents the basis upon which this assertion is made.

7.8 We have structured this section as follows:

- Previous Financial Performance;
- Economics of Attracting Operations;
- Airport Profit & Loss;
- Covering the Costs of Investment.

Previous Financial Performance

7.9 The poor financial performance of Manston Airport previously was, ultimately, the reason for its closure. The Airport had been loss making for a considerable period of time. Our analysis is based on the Airport's report and accounts and financial information provided to us by the current owners which sets out the Airport's Profit & Loss performance for the financial years 2011/12 and 2012/13. Key parameters from this analysis are set out in **Table 7.1**.

[134] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017)
[135] RSP Funding Statement, para. 20.

Table 7.1: Manston Airport Historic P&L Performance (£000s)		
	FY2011/12	**FY2012/13**
Freight Related Revenue	£1,275	£1,398
Passenger Related Revenue	£105	£23
Fuel	£575	£280
Other	£700	£450
Property Revenue	£248	£155
Concession & Retail Revenue	£68	£16
Total Revenue	**£2,971**	**£2,322**
Operating Expenditure	**-£5,724**	**-£4,496**
EBITDA	**-£2,753**	**-£2,174**
Depreciation	-869	-£749
Amortisation		£105
EBIT	**-£3,622**	**-£2,818**
Interest and Similar Charges	-720	-£731
Net Profit before Tax	**-£4,342**	**-£3,549**
Source: York Aviation analysis of Report & Accounts and Stone Hill Park data.		

7.10 The extent of losses was significant at between £2.2 million and £2.8 million per annum on an EBITDA basis. It should also be recognised that these were years in which Manston's freight throughput was close to its historic peak.

7.11 There are several points to drawn out from this analysis that are important in considering Manston's future potential viability. We contrast these with the only financial information relating to the potential viability of a re-opened Manston put forward by RSP, contained in George Yerrall's Proof of Evidence to the Manston Change of Use Inquiry in 2017[136]:

- this historic analysis gives significant clues as to what revenues might be achievable in Manston's market place. The analysis suggests that Manston was achieving around £45 per tonne of cargo, which appears to include both landing fees and cargo handling revenue. We understand that these figures may have been inflated in the short term due to temporary contract that was lucrative for the Airport and that the underlying earnings potential per tonne was below this figure. £45 per tonne is approximately what George Yerrall has assumed for landing fees alone at Manston in his modelling. He then assumes a further £63 per tonne (at Year 5) for cargo handling. This does not appear credible given historic performance[137];

[136] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017)
[137] Ibid, Page 3.

- in 2011/12, when the Airport was handling around 35,000 passengers, it was achieving passenger related aeronautical charges income of around £3 per passenger. This, however, reflects rates being paid by Flybe and a small number of charter operations, which typically pay higher charges. George Yerrall assumes £2.50 per passenger will be attained in Year 5[138]. However, this is almost certainly too high, for the reasons outlined in **Section 5**, in the light of the significant incentive payments Ryanair, and probably the other carriers, will require to commence operations and based on our experience of the charges that they are prepared to pay at small airports;
- retail and concession revenue was around £1.95 per passenger in 2011/12. In our experience, this seems reasonable given the scale of operations and we would expect some growth in passenger income over time to reflect improved retail offer and similar as the passenger numbers grow. George Yerrall uses a £3 per passenger figure over the whole period[139]. This appears optimistic in all but the later years of the RSP's 'forecasts';
- operational expenditure (OPEX) per workload unit[140] was around £17.50 in 2011/12. This is exceptionally high and we would not expect this to be reflective of the OPEX per workload unit that could be achieved in the unlikely event that the levels of throughput projected by RSP/Azimuth were achieved. George Yerrall's analysis suggests OPEX per workload unit of around £11 in Year 5 dropping to around £8 in Year 25[141]. Our modelling based on the financial information we have reviewed and experience at other small regional airports suggests that these assumptions may actually be slightly too high.

7.12 It is clear from this analysis that there are substantial challenges in making Manston Airport commercially viable. This is partly about volumes, in that in its previous guise operations were too small to cover its fixed costs and realise economies of scale, but volumes in themselves are a significant challenge as has been set out earlier in this report. However, it is also about yields. To the extent that any figures have been produced by RSP (in George Yerrall's 2017 Proof of Evidence), they appear, in our experience, to rely on assumptions around the yields that the Airport can achieve that are substantially out of line with its historic performance, especially in the cargo market, even with significant investment in the product offered by the Airport, and taking into account the assumption that low fares airlines are expected to deliver much of the passenger throughput.

Economics of Attracting Operations

7.13 Prior to presenting our own assessment of the Airport's viability, it is important to consider the economics of attracting operations to Manston Airport as these clearly influence the assumptions made, particularly those around revenues.

[138] Ibid, Page 3.
[139] Ibid, Page 3.
[140] Workload Unit or WLU is a method of standardising combined throughput of an airport. 1 WLU comprises 1 million passengers or 100,000 tonnes of cargo per annum.
[141] Ibid, Page 4.

7.14 Fundamentally, an airport's attractiveness is about the market that it provides access to, the price at which it offers its services and the availability of other options (competition). Other factors are clearly important, such as the quality of infrastructure, but these are less important than the fundamental drivers identified. It is worth considering Manston's position in relation to these factors in both the cargo and passenger market.

7.15 In relation to cargo, Manston is not well located. It is on a peninsula at the periphery of the UK. Its local market is very limited and it is, in reality, peripheral to the London and south east markets, with relatively poor links to the motorway network. In terms of competition, although it has no competition locally, there are a wide range of airports better placed to serve the London and South East market. As we have seen above, although there may be some very minor and fleeting capacity issues in London in the very short term, capacity for additional cargo at these airports is unlikely to be an issue until well beyond 2040. This suggests that Manston's only lever for attracting traffic is price. It needs to offer its services at a significantly lower price in the market than its better geographically placed competitors (which it should be noted also have first mover advantages as well as the overwhelming advantages at Heathrow with a third runway and with its concentration of forwarding and consolidation activity).

7.16 Based on discussions with Manston's previous cargo management, we understand that this is precisely the situation that the Airport was in before it closed. Its only way to attract cargo traffic was to 'buy' it in by significantly undercutting charges and handling rates at other airports. There is no reason why this is likely to have changed given our analysis of the market set out in **Section 4**. We, therefore, believe that its historic cargo revenue performance is probably a strong guide to the future. However, we have assumed that, in the highly unlikely event that the Airport is able to establish itself in the market to the degree suggested by RSP, it may be able to begin to raise prices in the longer term.

7.17 The situation in the passenger market is essentially the same. The Airport has a very limited local market, particularly given that a significant proportion of its natural catchment area is sea. It is peripheral to the London and South East market and there are a wide range of airports better placed to serve this market. Once again, therefore, its only lever to attract traffic is price. Azimuth's passenger 'forecasts' (and indeed our own) essentially identify a low fares intensive airport, with a single hub service and some charter activity. This is likely to be an airline market heavily driven by price and potential market incentives, such as marketing support. This means that net revenues to the Airport from direct passenger charges are likely to be very low, particularly in the first few years of operation when start up incentives will undoubtedly need to be in place.

7.18 Overall, any assessment of the commercial viability of Manston Airport needs to be realistic about its situation and the yields that it is likely to be able to achieve. It should also be recognised that, however low its pricing, it still suffers from fundamental weaknesses that will mean attracting traffic will be very difficult. It remains our assessment that the Airport, if re-opened, would be unlikely to attract more movements by dedicated freighter aircraft than it previously handled and certainly no more than 2,000 such movements per year even in the long term.

Manston Airport Profit & Loss

7.19 Notwithstanding the lack of credibility of the 'forecasts' presented by RSP, York Aviation has undertaken an assessment of the commercial viability of re-opening Manston Airport based on the traffic 'forecasts' that underpin RSP's proposals (as presented in the Azimuth reports).

7.20 In the absence of any specific information provided by RSP in connection with the Application other than an estimate of £100 million to bring the Airport back into operation and a further £200 million of investment over the remaining period, we have based the phasing of the capital expenditure on that set out in George Yerrall's 2017 Proof of Evidence and taking into account the phasing information set out in RSP's Design and Access Statement. This has been adjusted to remove the development costs of the Northern Grass, as these should not be considered within an assessment of the core Airport operation's viability, albeit that they may provide a source of cross subsidy to support any losses that the Airport makes.

7.21 As noted above, RSP's Funding Statement[142] that states that the cost of Phase 1 is £100m, which we estimate comprises of:

- £25m is the minimum to reinstate the airfield to usable condition, including refurbishment works to the runway and re-equipping existing facilities such as the Control Tower and Fire Station;
- each stand, of which 8 are specified for Stage 1[143], is expected to cost £2.84m[144];
- the passenger terminal to be available for the commencement of operations in Year 2.

It is also assumed that this will need to include other costs, such as S106 payments and the cost of the other facilities, including the fuel farm, that RSP claim are necessary for the Airport to be operational[145].

7.22 The remaining costs are stated as a further £200m over 15 years, of which Stone Hill Park estimate £80m would be required to fund the B1/B8 development and associated infrastructure development on the Northern Grass. We have excluded this cost for the purpose of assessing the viability of the Airport in its own right absent any facilities providing a cross subsidy to core airport operations. On this basis, we estimate the indicative phasing of capex required to be:

- Years 0/1 £100m
- Years 3/4 £45m
- Years 9/10 £29m
- Year 13 £16m
- Year 16 £15m
- Year 19 £15m

[142] RSP Funding Statement, para. 15.
[143] RSP Design and Access Statement, Section 5.
[144] RSP Funding Statement, Appendix 3.
[145] This list of requirements is not necessarily accepted by Stone Hill Park as being strictly necessary for the Airport to re-open based on its previous operations.

7.23 To the extent that we have omitted the costs associated with any facilities essential for the operation of the Airport, we may have understated the capex costs required to secure the level of operations claimed. We have used the capital cost phasing as set out above within our assessment of the potential cash flow implications of the development to inform an assessment of the likelihood of the development attracting private sector investment. We have assumed that any costs already incurred by RSP are sunk costs and not included within our analysis.

7.24 Central to this assessment has been the development of a 'bottom up' P&L model for the Airport, based on the previous financial performance of the Airport taken from previous report and accounts, financial information about the previous operations provided to us, as well as assumptions around potential revenue metrics based on our broader market experience.

7.25 In developing this model, we have made a number of core assumptions:

- in relation to cargo revenues, we have taken the average revenues per tonne from the previous financial reports, including projections for 2014/15 as the basis for performance in the first seven years from the re-opening of the Airport, which is the point at which it is handling over 100,000 tonnes per annum. At this point, we have assumed that the airport has gained enough market power to introduce a freight handling fee of £5 per tonne in addition to the basic landing fee related revenue. This is assumed to step up by £5 every five years until Year 20 so increasing revenues. Given that the historic revenues included handling and given that we expect a substantial part of any tonnage to be trucked directly offsite, this is likely to be a highly optimistic assumption;
- passenger revenues are assumed to be £3.50 per passenger for the Hub Service, £1 per passenger for low fares airlines, net of incentive payments, and £5 per passenger for charter airlines. These are in line with our experience of what airlines are paying at UK airports currently. All are subject to discounts in the early years of operation to reflect the fact that Manston will need to offer significant incentives to airlines to offset risks in the early years;
- we have assumed fuel revenues will grow with total aircraft movements. However, we are aware that previous fuel prices at the Airport were higher than elsewhere given the relatively low volumes sold and that most customers bought fuel elsewhere. Hence, using historic fuel prices may overstate the revenue potential or the total revenues if price deters airlines from purchasing fuel;
- in relation to the 'Northern Grass', we have excluded this revenue from our analysis as it is not a core airport operation. As described above, we have also removed the capital expenditure relating to the development;
- in relation to other activities that might develop on site as proposed by RSP (such as MRO, aircraft dismantling etc.), we have not examined these propositions in detail. We have instead assumed that the Airport will receive ground rent from existing floorspace and that GA activity will reach similar levels to previously by around Year 5. We do not believe that any income from other activities is likely to be significant in the overall scheme of RSP's proposals and that, in most cases, the ability to secure these activities is little more than speculation.

7.26 The results of our analysis of the potential profitability that Manston could attain in the highly unlikely event that the RSP/Azimuth 'forecasts' of usage could be attained are set out for a number of representative years below in **Table 7.2**[146]. Our assessment suggests that Manston Airport could, on this basis, achieve total annual revenues of around £29.9 million by Year 20. Over the period, whilst the Airport is able to achieve significant economies of scale, with operating expenditure going from around £7.6 million in Year 2 to £22.9 million in Year 20, the core airport operation is only just EBITDA positive in Year 15. This performance immediately raises considerable doubts about the viability of RSP's proposals given the high levels of capital expenditure required to bring the Airport into full operation.

Table 7.2: Manston Airport Profit & Loss Assessment (£ million)

	Year 2	Year 5	Year 10	Year 15	Year 20
Aviation Revenue	**£4.5**	**£9.9**	**£13.5**	**£18.0**	**£25.6**
of which Freight Landing Fees	*£4.0*	*£7.3*	*£8.9*	*£11.3*	*£14.3*
of which Freight Handling	*£0.0*	*£0.0*	*£1.1*	*£2.7*	*£6.8*
of which Passenger Related	*£0.0*	*£0.9*	*£1.4*	*£1.7*	*£2.0*
of which Fuel	*£0.2*	*£0.6*	*£0.7*	*£0.8*	*£0.9*
of which Other	*£0.3*	*£1.1*	*£1.3*	*£1.4*	*£1.6*
Property Revenue Existing Portfolio	£0.2	£0.2	£0.2	£0.2	£0.2
Concession & Retail Revenue	£0.0	£1.5	£2.3	£3.1	£4.1
Total Revenues	**£4.8**	**£11.6**	**£16.0**	**£21.3**	**£29.9**
Operating Expenditure	**£7.6**	**£14.9**	**£16.6**	**£20.6**	**£22.9**
EBITDA (Airport Operations)	**-£2.8**	**-£3.3**	**-£0.6**	**£0.8**	**£7.0**
EBITDA Margin	**-58%**	**-28%**	**-0%**	**4%**	**23%**

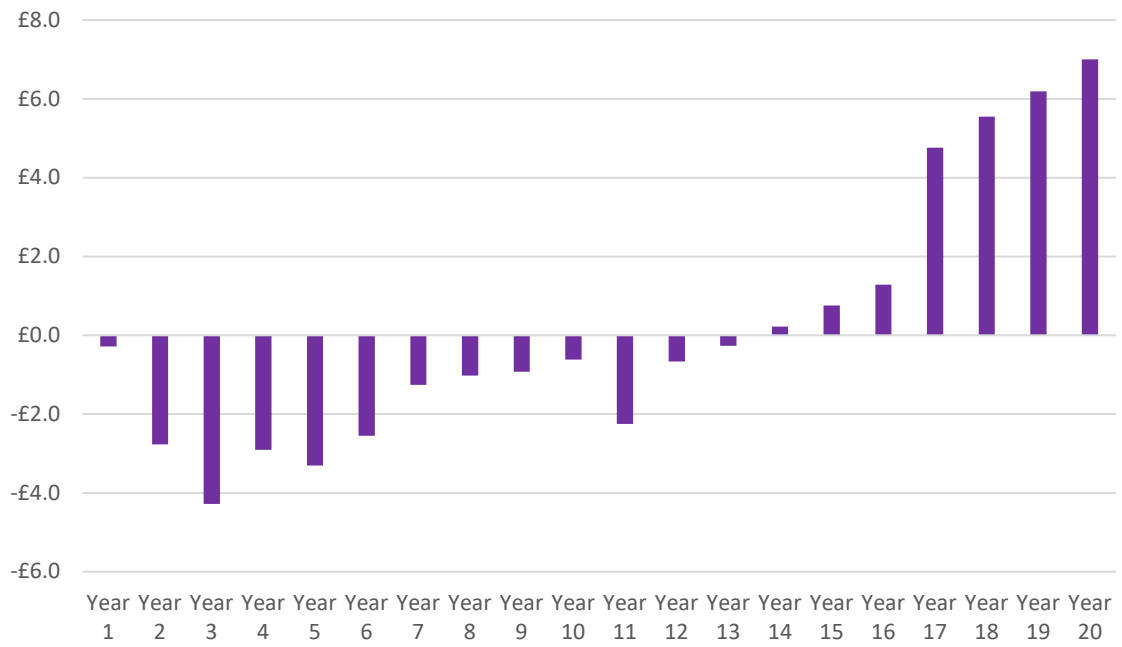
Source: York Aviation

7.27 It is important to note that, if we have been over optimistic in terms of our assumptions particularly in relation to the ability of Manston to earn cargo handling income in addition to landing fee related income, or in relation to the ability to achieve positive airport charges income from passenger flights, then the EBITDA will have been overstated. In particular, we have taken no specific account of the factors identified by Azimuth in relation to the costs of attracting traffic to Manston (as set out at para. 3.27 above) nor, it would appear did George Yerrall in his 2017 assessment. These would need to be reflected as additional costs or as revenue foregone. By way of illustration, stripping out cargo handling revenues would result in a net EBITDA of £0.2m even by Year 20, with greater losses in the early years. This highlights the extreme fragility of the expected financial performance of Manston even if RSP's highly optimistic throughput forecasts could be attained. There are a significant number of downside risks to the achievement of even this level of income and returns.

[146] We have assessed profitability at EBITDA (Earnings before Interest, Tax and Depreciation) level as this is a key metric used by investors and funders to consider the attractiveness of an airport investment. This, by definition, excludes interest charges on any debt, depreciation charges and tax payments.

7.28 The EBITDA performance over time is illustrated in **Figure 7.1**. The core airport operation is EBITDA negative for the great majority of the forecast period even assuming RSP/Azimuth's forecasts are delivered in full. It is important to note, as emphasised above, that the ability for the operation to deliver any profits, even in Year 14 and beyond, depends on a series of highly optimistic assumptions that may not be realisable in the market so we would emphasise that what is presented here is an upper bound estimate to illustrate the commercial risks that the investment would face even on a highly optimistic set of assumptions, i.e. this is very much a 'high case' position and not representative of the downside risks that an investor would certainly need to factor in before deciding if and how much it was willing to invest. These downside risks would become very apparent in any due diligence process ahead of investment and an investment case would, in all probability, have to be based on little or no prospect of operating profits even by Year 20.

Figure 7.1: EBITDA of Manston Airport by Year Scenario (£ million)



Source: York Aviation

7.29 This performance is in stark contrast to the position put forward by George Yerrall[147] on behalf of RSP in 2017, which remains the only information on the potential viability of the scheme put forward by RSP. That assessment sees the Airport EBITDA positive from Year 2 and achieving an EBITDA of £35.5 million by Year 20. Ultimately, we believe that this is driven by the unrealistic assumptions around revenues adopted, particularly in relation to revenues from cargo handling. If, as we believe strongly, the demand projections for the Airport are unrealistic, any assessment of profitability will be substantially overstated, i.e. the potential for viable operations to be attained will be significantly worse.

[147] George Yerrall Appeal Proof of Evidence Appendix 3. (2017), Page 9.

7.30 It should be noted that the financial performance that we project is not out of line with what is seen across the UK Regional Airport sector, as set out in Altitude's Addendum Report[148]. Indeed, based on 3.1m Workload Units identified in the Altitude Report, the EBITDA per Workload Unit of £2.25 would place Manston at the upper end of the range of performance, exceeded only by Humberside, Norwich and Southampton – all airports with high dependence on more lucrative business related travel and with strong markets serving the north sea oil and gas industry. This only serves to emphasise the optimism within the assumptions that we have used.

Covering the Costs of Investment

7.31 Below, we have used our analysis of Manston Airport's ability to generate cash in terms of EBITDA to consider whether it could support the costs of RSP's investment at the Airport and provide a commercially viable return. It is important here to note that George Yerrall himself, even though asserting that Manston would have pricing power, recognised that EBITDA may not be the most relevant measure when it comes to considering an investment with a high dependence on capital expenditure up front.

"Similarly profit margins mean nothing in isolation. The quid pro quo for profit margin in the Airport business is Capital Expenditure ("CapEx"). Whilst the market "Wisdom" around an airport EBITDA margin refer to an excess of 40%, this must be qualified by understanding the CapEx requirements, costs and most importantly the CapEx cycle. Passenger Airports require less CapEx at the outset, but thereafter require similar amounts deployed at more frequent intervals than their Cargo relatives"[149]

7.32 George Yerrall goes on[150] to make the point that:

"Net Income is a better guide than EBITDA to the profitability and inherent value of the Cargo business as it includes the normalisation of CapEx through our true depreciation curves."

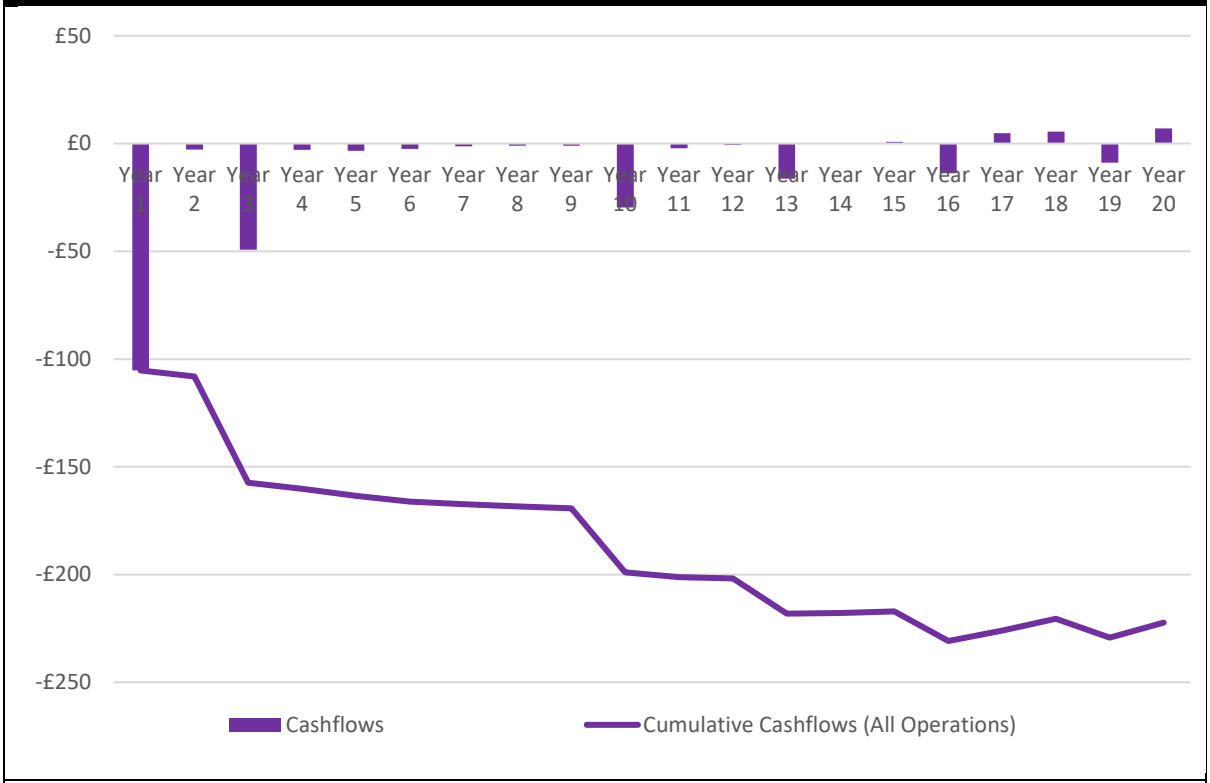
We do not have sufficient information regarding the specific assets and their costs to prepare depreciation curves for RSP's proposed investment in Manston so, for illustrative purposes, we have set out a cash flow analysis. The results are in stark contrast to the picture painted by George Yerrall as set out in his Figure 10.

7.33 In undertaking our analysis of the cash flow implications, we have used the RSP capital expenditure programme set out in George Yerrall's analysis[151] as a basis, as set out in para. 7.22 above, adjusted for capital expenditure relating to the Northern Grass. It should be noted that we have not made any explicit allowance for the substantial land acquisition or blight costs in relation to the re-opening of the Airport which are likely to become payable, in the main, before development could commence.

[148] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019, Section 4.
[149] George Yerrall Appeal Proof of Evidence Appendix 3. (2017), para. 5.
[150] Ibid, para 27.
[151] Ibid, Page 5.

7.34 **Figure 7.2** shows the yearly cashflows and cumulative cashflows for Manston Airport over the 20 year forecast period. The results of this analysis suggest very strongly that RSP's proposals, even on their own highly optimistic traffic forecasts and with revenue assumptions that may not be capable of realisation in the market, are nowhere close to being commercially viable. The cumulative cash position is still substantially negative in Year 20 (-£222 million). An investor would have to bear a negative and deteriorating cash position for well over 20 years even on our most optimistic set of assumptions. This would simply not be rational behaviour for a commercial investor.

Figure 7.2: Scenario 1: RSP Proposals Cumulative Cashflows for Manston Airport (£ million)



Source: York Aviation

7.35 The financial performance is in fact so poor that it is not actually possible to calculate an Internal Rate of Return (IRR). This is further evidence that no rational commercial investor would fund RSP's plans. By way of reference, it is worth noting that the allowable return at Heathrow set by the CAA is currently 5.35%. This is the rate of return allowed for one of the most stable, established and low risk airport assets in the world. We would typically expect an IRR of between 7% and 9% for an established UK regional airport. For a high risk investment such as re-opening a previously failed small regional airport, we would expect rates of return substantially in excess of that.

7.36 For Manston to offer a rate of return that would be commercially attractive to an investor or funder, perhaps around 15%, average aeronautical charges at the airport would need to be 275% higher throughout the forecast period than we have assumed. This would mean average aeronautical charges per workload unit of around £18. For comparison, aeronautical charges per workload unit at East Midlands were around £2.80 and around £5.10 at Stansted in the last available year. In other words, charges would have to be so high that it would render completely uncompetitive and it would become even more certain that RSP's traffic 'forecasts'. could not be achieved.

7.37 Further considerations relating to the fundability of the proposed development are set out in full in Altitude's Addendum Report.

Conclusions

7.38 In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

7.39 Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts' and taking a number of optimistic revenue assumptions. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

7.40 Even if the Airport re-opened on the basis of a minimum initial capital spend (£145m for Phases 1 and 2), this would inevitably limit the operation to a scale where ongoing EBITDA losses were inevitable, i.e. replicating the position that existed historically and which, ultimately led to the Airport's closure.

7.41 Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse.

8 CONCLUSIONS

8.1 This report updates and adds to the analysis of the flaws in RSP's Need Case, as set out principally in the Azimuth Reports, as presented in our November 2017 Report. In practice, the Azimuth Reports are little changed and, to the extent that new material has been added, do not address or rectify the substantial errors that we identified in the analysis contained therein.

8.2 Our November 2017 Report made clear that:

- RSP's analysis of our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) was flawed and this work did not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.
- The remaining evidence relied on by RPS to justify its Need Case is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport. This is simply irrelevant, particularly given that it is Government policy to promote the development of a third runway at Heathrow.
- The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market, especially in failing to recognise the economic drivers that prioritise the use of bellyhold capacity over dedicated freighters.
- Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as there are more economically efficient alternatives available for any freight displaced from Heathrow in the short term, pending the development of a third runway.
- Azimuth's 'forecasts' rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK.
- Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened and does not provide a basis for the specific aircraft movement forecasts upon which the case relies, not least as it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.
- To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.
- Proper analysis of the UK air freight market showed that there is plenty of freighter capacity at Stansted and East Midlands Airport to accommodate any growth required in dedicated freighter operations such that there will be no shortage of capacity across the UK and no role for Manston in accommodating traffic spilled from other airports. These airports are better located relative to the market and the key locations for distribution within the UK.
- Our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open.

- Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this would impact substantially on the viability of the proposal.
- Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.
- We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.
- We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.
- Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

8.3 Our overall assessment in November 2017 was that RSP's case lacked any real credibility. Nothing has fundamentally changed and to the extent that there have been changes, for example in the formal designation of the Airports NPS and the progress towards the development of a third runway at Heathrow, the need for Manston is even less than we previously assessed.

8.4 In updating of our previous work, we have taken particular cognisance of the requirement for RSP to present a compelling case in the public interest to justify the compulsory acquisition of land. This goes beyond the theoretical test of the capability of the infrastructure proposed but must, necessarily, consider the likelihood and extent of the level of usage of that infrastructure and the extent to which there would be wider public benefit from the land being used in that way.

Aviation Policy

8.5 The whole of the RSP need case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is still set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity for passengers was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

8.6 The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways with ample spare capacity.

Errors and Inconsistencies of Analysis

8.7 In this report, we have identified further inconsistencies and mathematical errors in the 'forecasts' presented by Azimuth and others in the RSP team to justify the proposed development at Manston. Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

8.8 The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. Several of these airlines do not operate air freight services at all and others would be unlikely to operate to Manston for the reasons we set out. Hence, the list presented no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;

- ✈ the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts' as, contrary to what RSP claim, airlines would not be able to operate to Manston on an unconstrained basis to meet their own commercial requirements but would be so constrained during the night period as to make the majority of the operations claimed by Azimuth unviable for the airlines;
- ✈ the overstatement of longer term demand projections through the use of unjustified growth rates due to mathematical errors made by Azimuth.

8.9 These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens.

Understanding the Air Freight Market

8.10 Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essential drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

8.11 R3 will provide for a doubling of air freight capacity at Heathrow, mainly in bellyholds of passenger aircraft but also scope for dedicated freighters to the extent that these are required to feed the hub at Heathrow. Indeed, the ability to provide a step change in capacity for air freight was one of the principal reasons why the Government chose the specific proposal for the development of a new runway. Freight facilities at Heathrow are actively being modernised and extended in anticipation of that growth of cargo activity there.

8.12 The integrators are already well established at East Midlands Airport in particular as well as using Heathrow and Stansted to serve the main markets in England. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

8.13 This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole, not least as it seems likely that any freighter activity would in fact need to be displaced from elsewhere through price incentives as there are few, if any, natural market drivers which would make Manston the first choice location and given the switching costs identified by Azimuth.

Air Passenger Forecasts

8.14 As with the asserted air freight 'forecasts', Azimuth provide no quantified analysis of the market to justify the passenger forecasts. The passenger element of the forecasts will be a vital element in considering the potential viability of the Airport as, generally, passenger operations offer better margins for an airport than cargo operations given the ability to earn revenue from shops and car parking. Furthermore, much of the asserted economic benefit from the Manston operation stems from passenger flights rather than cargo operations.

8.15 To assist the Examining Authority, we have set out in full our market assessment for passenger services at Manston. We have undertaken this analysis on the same basis as we would for any UK regional airport and presented it in a form that would be normal practice at an airport planning inquiry. Such analysis is completely missing from the Azimuth Reports.

8.16 Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates of the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole. It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

Infrastructure Requirements

8.17 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, our analysis shows that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any material that justifies the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

8.18 To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's 'forecasts' to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of Code E equivalent stands that would be required, even allowing a buffer for resilience, would be 10. This is an assessment of the required capacity to handle flights at the times airlines would wish to operate which is not the same as the assessment of the theoretical capability of the existing or planned infrastructure at Manston.

8.19 Based on global benchmarks, the scale of cargo sheds could also be substantially reduced to may be no more than 1/3 of the size proposed by RSP. Overall, even in the highly unlikely event that RSP/Azimuth's 'forecasts' were realised, the overall scale of development required would be no more than of the order of 40% of that proposed in RSP's Master Plan.

8.20 As far as the Northern Grass is concerned, the list of airport related uses provided recently by RSP is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement could be accommodated south of the B2050.

8.21 The development on the Northern Grass site appears to be speculative commercial development. The total extent of landside airport related uses at East Midlands Airport, other than hotels which do not feature as part of Manston's plans, is 13,000m^2, or 13% of the scale of development proposed for the Northern Grass by RSP. Hence, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – the extent of the proposed development on the Northern Grass means that it would be expected to be largely for non-aviation related uses unconnected to the operation of the Airport.

Viability

8.22 In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented. Our assessment is inherently optimistic and represents a 'high case' not the most likely outcome.

8.23 Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts'. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP as the development is likely to deliver negative returns to investment for the foreseeable future.

8.24 The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

8.25 Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse. It is our assessment that, even if initial investment was forthcoming, which we doubt, it is inevitable that the Airport would close again in the medium term due to lack of inherent viability.

Overall Conclusion

8.26 Fundamentally, the whole Need Case for the development of Manston as an air freight hub is infected with flaws and errors of understanding such that the so-called 'forecasts' of air freight and passenger demand have no credibility at all. Even if they were credible, the scale of development proposed is unjustified and excessive. The development and operation of the Airport would simply be unviable and incapable of attracting competent investors.

APPENDIX A: CV FOR LOUISE CONGDON



Louise Congdon
Managing Partner

Curriculum Vitae

- Louise is an experienced airport planner and strategist with 42 years' experience in the aviation industry for the UK Civil Aviation Authority, Birmingham and Manchester Airports; at a senior management level for 17 years. She set up York Aviation as Managing Partner in September 2002.
- At Manchester Airport, Louise played a key role in influencing UK and European aviation policy debates and was responsible for corporate strategy, business planning, forecasting, and overall aviation policy development, including the strategy and concepts behind the Airport's Development Strategy, the second passenger terminal, and the second runway. Louise gave the principal evidence on Need at the Public Inquiry into the Second Runway and also presented evidence on the need cases at Public Inquiries into Liverpool Airport and Doncaster Sheffield Airport.
- During this time, Louise chaired committees and represented both the UK Airport Operators Association and ACI EUROPE (the relevant trade bodies for airports) in discussions with the UK Government and European Commission in relation to slot allocation, ground handling, airport capacity and airspace. Louise was a member of the Government working party (RUCATSE) which previously recommended the development of a third runway at Heathrow in 1993. Louise was actively involved in the preparations for the Future of Air Transport White Paper of 2003, including acting as chair for a number of consultation events both before and after leaving Manchester Airport to set up York Aviation.
- Louise has also given evidence on need and economics at Public Inquiries into Stansted Airport Generation 1, Farnborough Airport Weekend Movements, London Ashford Airport, Redhill Airport, Belfast City Airport Seat for Sale Limit and London City Airport Development Programme.
- Louise has a BA (SOC SCI) Hons in Geography, Class 2.1, from the University of Sheffield 1974, and a Master of Transport Design, from the University of Liverpool 1976 (including thesis on National Airport Planning). Louise was appointed specialist adviser to the House of Commons Transport Select Committee from 2011 to 2014.

Selected Personal Relevant Experience with York Aviation

- Department for Transport: Advice in connection with technical issues relating to the Airports National Policy Statement (2017-9);
- London Luton Airport Ltd – Ongoing (since 2006) assignment to provide advice to the local authority owned company on air traffic forecasting and strategic airport development options for Luton and the potential financial and commercial implications;
- London City Airport – ongoing support in relation to air traffic forecasting and capital expenditure proposals, technical due diligence in respect of refinancing, development of the need and economic case for the City Airport Development Programme, due diligence connected with the acquisition of the Airport in2006 and in 2016, development of an updated Master Plan (ongoing since 2005);
- Transport for the North - support for an international connectivity study to identify the future strategic role of international air services and passenger sea travel in supporting economic growth across the Northern Powerhouse (2016);
- Transport for London – support in relation to the development of air transport policy and submissions to the Airport (2011 and 2013/14);
- Civil Aviation Authority (with Europe Economics) – advice in relation to Heathrow Airport's surface access strategy and the relationship to airport charges;
- Scottish Enterprise/Scottish Government – socio-economic assessment of Prestwick Airport and strategic options (2012/13), support for route development activity (2018);
- Leeds Bradford Airport – vendor due diligence in relation to the sale of the Airport (2006/7) and vendor diligence on refinancing (2016/2017)
- Belfast City Airport – economic and forecast advice in relation to the Seat for Sale Limit (2013-2015), support to 3i on the acquisition of the Airport (2016);

- Technical Airport Capacity Advice to the London Assembly Transport Committee (2013);
- Northern Ireland Government – contribution to air connectivity research (2014);
- Durham Tees Valley Airport – Business Plan advice to local authority shareholders (2013/4 and 2018);
- City of Gloucester/Cheltenham Borough Council – Review of Gloucestershire Airport Asset (2014); subsequent commissions to review airport governance and assist in the preparation of a Strategic Business Plan (2014/15) and Viability Assessment (2017);
- Advice to the Welsh Government in connection with the acquisition of Cardiff Airport (2013) and subsequent route development advice (2014/5);
- Support to an investor in Belgrade Airport (2017);
- Development of an Aviation Strategy for England's Regional Development Agencies (2002/5);
- Other clients include:

  States of Jersey

  States of Guernsey

  Isle of Man Government

  Blackpool Council

  Ryanair

  Birmingham Airport

  City of London Corporation

  Aberdeen Airport

  Edinburgh Airport

  Liverpool Airport

  Antin Infrastructure Partners

APPENDIX B: YORK AVIATION NOVEMBER 2017 REPORT



York Aviation

STONE HILL PARK LIMITED

SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS LIMITED AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT

NOVEMBER 2017



York Aviation

Originated by: Louise Congdon/James Brass/Niall Gunn/Richard Connelly

Dated: 10th November 2017

Reviewed by: Richard Kaberry

Dated: 13th November 2017

STONE HILL PARK LIMITED

SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS LIMITED AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT

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EXECUTIVE SUMMARY

1. York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services.

2. We were the authors of two specific reports upon which RSP seek to rely in making their case, namely a report for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. The first of these documents was used by RSP in its public consultation and this may have led respondents to believe that we were supporting the re-opening of Manston, which is not true and, as we go onto explain in this report, our analysis in these documents for the FTA and TfL does not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.

3. The RSP case is principally based on circumstantial evidence presented in the Volumes I to IV of *Manston – A Regional and National Asset* prepared by Dr Sally Dixon of Azimuth Associates (June 2017 consultation version). Much of the material upon which Azimuth seek to rely as the basis of RSP's case relates to the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050. This is not relevant to the specific question as to whether there would be sufficient demand for pure freighter movements to be operated to/from Manston in the foreseeable future or by their assessment year 2040.

4. The analysis presented by Azimuth shows a lack of understanding of the economics of the air freight market. This leads to a misinterpretation of our work, upon which Azimuth seek to rely to support RSP's case. Just because there could be excess air freight demand in 2050, compared to the bellyhold capacity available in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a relatively nearby airport over the use of available bellyhold capacity from a more distant airport which can be provided at a lower cost to the shipper with only a marginal penalty in terms of the overall shipment time.

5. Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Hence, reopening the Airport, in the face of a very limited niche market, has the potential to damage the productivity of the UK aviation sector overall, particularly, as we have demonstrated in our own assessment of cargo demand for Manston in Section 3 of this report, that there are more economically efficient alternatives available for any freight displaced due to specific capacity constraints at Heathrow both now and in the future.

6. Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses, for example as suggested in terms of the use of the 'Northern Grasslands' part of the overall Airport site, is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. It is simply in the wrong place to serve the market being located at the far south east at the end of a peninsular, away from the main centres of population and distribution in the UK.

7. In the absence of hard market evidence of the need for Manston Airport, Azimuth undertook an interview survey to supplement RSP's case and to inform the forecasts. However, the list of interviewees was small, dominated by mainly local companies with something of a vested interest in seeing Manston re-opened. Even so, if anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. The scale of this opportunity was never quantified by Azimuth. It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' cargo airport for London.

8. The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. At the very least, there is a lack of transparency in the approach adopted.

9. In our view, the Azimuth cargo movement forecasts simply lack credibility. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, which includes a substantial amount of bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. This lack of credibility is important in reaching any decision under section 23 of the Planning Act 2008 (as amended).

10. We have updated and further developed our analysis of the UK air freight market from that previously undertaken in 2013 and 2015 for TfL and for the FTA and TfL (RSP seek to rely on our 2013 and 2015 work as corroboration of their own cargo movement forecasts). When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that, to the extent that there is any need for additional pure freighter movements, there is plenty of freighter capacity at Stansted and East Midlands to accommodate any growth. These airports are better located relative to the market and the key locations for distribution within the UK. Overall, we conclude from this analysis that there will be no shortage of freighter capacity in the UK in the period up 2040 (RSP's assessment end date) and that overspill from other airports would not provide a rationale for re-opening Manston.

11. Taking the most optimistic basis for assessing its potential role, we have estimated that Manston might be able to achieve at most 4,470 annual air transport movements by cargo aircraft by 2040, but this is highly unlikely given its location and the clear market trend away from the use of dedicated freighter aircraft. Our more likely projection is that it might attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually. These are all far below Azimuth's projection, upon which RSP rely, of 17,171 annual cargo aircraft movements.

12. Our initial assessment of the passenger market is that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, these are unlikely to contribute substantially to the overall viability of the Airport.

13. The existing infrastructure at Manston Airport, if made good, is capable of handling 21,000 annual air cargo aircraft movements[1]. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

14. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we have considered the land required to accommodate such a number of movements. Our assessment is that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land. Any development required to handle 17,171 annual movements by air cargo aircraft can all be accommodated to the south of the B2050 and, even allowing for passenger operations and other activities, would not require all of the airfield land to the south of the road. Obviously, on the basis of more realistic forecasts of future demand, the area required to support the ongoing operation of the Airport would be materially smaller.

15. We can see no justification for the inclusion of the 'Northern Grasslands' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston, as suggested by RSP, and any requirement for such activity specifically to support the proposed level of freight activity at Manston could easily be accommodated on land to the south of the B2050. The development on the 'Northern Grasslands' site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[1] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

16. In terms of the socio-economic implications of the proposed development, Azimuth have shown a lack of understanding of how such impacts should properly be calculated. Leaving aside the use of inappropriate multipliers, the impacts have been assessed at a national scale and should have taken displacement of activity from other airports fully into account, reducing the impacts well below those stated. Furthermore, the assessment should have considered the impact on alternative uses of the site, including SHP's proposed mixed use development and the socio-economic benefits deriving therefrom. We have set out a more realistic and robust assessment, which shows that the local impacts within Kent, even on Azimuth's forecasts, would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and other impacts in assessing the acceptability of the proposed development against the alternatives.

17. Unsurprisingly, the socio-economic impacts associated with the Airport are lower still on the basis of more realistic forecasts of likely usage if it re-opened. The operation is simply of a much smaller scale such that, in Year 2, it would generate only 452 jobs, 17% of Azimuth's estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs compared to our estimate of just over 1,000 jobs. Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but also the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated. In any event, these benefits would not be realised if the Airport ceases operation again due to it not being commercially viable.

18. As well as the Azimuth reports which form the basis of RSP's case, we have also reviewed a number of other reports on the potential for Manston. In overall terms, we agree with Aviasolutions for Thanet District Council that there is little realistic prospect of the re-opening of Manston Airport being a commercially viable proposition. We have reviewed their original report and the more recent reports and concur with their views on the overall structure of the UK air cargo market, noting that they, unlike Azimuth, have correctly understood the implications of our 2015 work for the FTA. We do not accept Northpoint's rebuttal of the Aviasolutions work. Like Azimuth, Northpoint's work is largely aspirational without any robust evidence or analysis of the market. Northpoint, too, misinterpret our previous work for the FTA and TfL.

19. In overall terms, we do not consider that the case that the re-opening of Manston Airport would constitute a Nationally Significant Infrastructure Project has been robustly made or substantiated. In any event, given that the baseline capability of Manston Airport is at least 21,000 annual cargo air transport movements (see section 4), this means that RSP must, effectively, be seeking to increase the capability of Manston Airport from 21,000 annual air transport movements by cargo aircraft to at least 31,000 such movements each year, a level of activity which has not been consulted on or assessed in RSP's Preliminary Environmental Information Report (PEIR). Indeed, RSP's consultation material does not provide any detail as to what the increase in capability would be as a result of its proposals (i.e. the increase in capability as a result of its proposed alteration to Manston Airport). As a minimum, the increase in capability would be to 31,000 annual air transport movements by cargo aircraft, but in our view their proposals would result in a significantly higher 'new' capability which is not revealed or assessed by RSP.

20. Our overall assessment is that RSP have failed to provide their own evidence of the capability of Manston Airport and the amount by which their proposals would increase that capability by. Rather, the only information that they present is a forecast of future freight demand, which has no credibility as explained in this report. There are, hence, major omissions in RSP's consultation material. This failure means that, in our opinion, the requirements in section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

1 INTRODUCTION

1.1 York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services.

1.2 York Aviation is a specialist air transport consultancy that focusses on airport planning, demand forecasting, strategy, operation and management. The company was established in 2002. We offer a broad range of services to airports, airlines, governments, economic development organisations and other parties with an interest in air transport. Our team is a mixture of experienced air transport professionals and economists. Key members of the team have substantial experience of airport operations and development gained through working for Manchester Airports Group. Our core services include:

- business planning and strategy;
- capacity and facilities planning;
- master planning and planning application support;
- demand forecasting;
- economic impact assessment and economic appraisal;
- policy and regulatory advice;
- route development;
- transaction support.

1.3 Our clients include:

- Transport for London;
- Transport for the North;
- Department for Transport;
- Scottish Enterprise;
- Northern Ireland Government;
- Manchester Airports Group;
- Birmingham Airport;
- London City Airport;
- London Luton Airport;
- Ryanair;
- Freight Transport Association.

As well as numerous investors in airports and other parties with an interest in the development, operation and management of airports in the UK and abroad.

1.4 Louise Congdon, Managing Partner of York Aviation has provided evidence in relation to the need for and economic impact of airport development at several airport public inquiries, including Manchester Runway 2, Liverpool Airport, Doncaster Sheffield Airport, Stansted Generation 1, London Ashford Airport (Lydd) and London City Airport.

1.5 We were the authors of two specific reports upon which RSP seek to rely in making their case, namely a report for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. The first of these documents was used by RSP in its public consultation and this may have led respondents to believe that we were supporting the re-opening of Manston, which is not true and, as we go onto explain in this report, our analysis in these documents for the FTA and TfL does not support RSP's conclusion that there would be a substantive and sustainable role for Manston in the UK air freight industry.

Historical Position

1.6 Manston Airport closed to commercial operations in May 2014, following several unsuccessful attempts to attain commercially viable operations. In the decade prior to closure, the Airport did manage to attract some cargo and passenger activity but not to levels that could ensure financial and commercial viability for its owners. The historic traffic performance is set out in **Table 1.1**. The Airport's cargo traffic peak was in 2003.

Table 1.1: Historic Commercial Traffic at Manston Airport

	Passengers	Cargo (tonnes)	Air Transport Movements[2] (excl. Air Taxis)	of which, Cargo Aircraft Movements[3]	Total Aircraft Movements
2003	3,256	43,026	1,106	1,081	24,934
2004	101,328	26,626	3,333	730	23,324
2005	204,016	7,612	4,631	177	21,358
2006	9,845	20,841	461	322	16,687
2007	15,556	28,371	608	444	21,521
2008	11,625	25,673	540	412	19,269
2009	5,335	30,038	583	485	18,902
2010	25,692	28,103	1,151	491	16,260
2011	37,169	27,495	1,472	419	18,695
2012	8,262	31,078	687	432	14,688
2013	40,143	29,306	1,640	511	17,504
Source: CAA Airport Statistics					

[2] Air Transport Movements (ATMs) are those services sold to the public as distinct from private flights or those operated on behalf of individual companies using their own aircraft. All substantive cargo operations in the UK would be treated as air transport movements. Aircraft movements are all aircraft movements at an airport, including 'touch and go' landings by flying school aircraft.

[3] Based on more detailed records maintained by the former airport operator, it would appear that CAA data may not record all empty cargo positioning flights. However, we do not have complete data. The total number of cargo flights could, hence, be somewhat greater than shown.

1.7 Table 1.1 shows that the number of air cargo movements and the tonnage carried was fairly consistent over the last 10 years of the Airport's operation, but these operations were not sufficient to support a commercially viable operation at the Airport.

1.8 We address the realistic levels of freight demand that Manston Airport might attract if re-opened in **Section 3** of this report.

The Application

1.9 RSP's prospective DCO application is predicated on its proposed alterations to the Airport's infrastructure, the effect of which is expected to increase by at least 10,000 a year the number of cargo air transport movements (CATMs) a year that the Airport is capable of accommodating. In practice, the case set out in the consultation documents produced by RSP and used in the Preliminary Environmental Information Report (PEIR) are predicated on it being able to attract and handle a forecast of 17,171 CATMs and 1.4 million passengers per annum (mppa) by 2039 and all of the assessments are made on this basis.

1.10 In order for RSP's proposals to be considered a Nationally Significant Infrastructure Project (NSIP), which can be taken forward using the DCO procedure under the Planning Act 2008 (as amended), it must comprise of an alteration to an airport which would *"increase by at least 10 million per year the number of passengers for whom the airport is capable of providing air passenger services"* or *"increase by at least 10,000 a year the number of air transport movements of cargo aircraft for which the airport is capable of providing air cargo transport services."*[4] [5] In this case, the relevant criterion relates to air transport movements for cargo aircraft. It is clear, therefore, that validating the capability of Manston Airport of providing air cargo transport services is vital to determining the legitimacy of a DCO.

1.11 RSP's prospective DCO application does not provide any explanation or understanding of the capability of the Airport before its proposed alteration is made. The capability of the Airport is a necessary component of Section 23(5) of the Planning Act 2008 (as amended), as it is from that figure that a prospective applicant must consider the effect of its proposed alteration, which must be expected to have the effect of an increase of at least 10,000 annual air transport movements by cargo aircraft. Without identifying the capability of Manston Airport, one does not have all of the components required under section 23 of the Planning Act 2008 (as amended) for a decision to be made as to whether the proposed alteration falls within section 23. In addition, an applicant must then explain what the 'new' capability would be following its proposed alteration in order to then assess the effects of the proposed alteration. We consider this further in **Section 4**.

[4] Section 23(5) of the Planning Act 2008 (as amended).

[5] It is noted that the Planning Act 2008 (as amended) also refers to an increase in permitted use as a relevant criterion. In this case, the existing planning consent under which Manston operated contained no limit on the number of annual aircraft movements permitted although there was a prohibition on night movement of aircraft between 23.00 and 07.00 in force, pending agreement to a night movement policy with the local planning authority, Thanet District Council. In any event, the increase would still need to be at least 10,000 per year in the number of air transport movements of cargo aircraft for which the airport is permitted to provide air cargo transport services.

1.12 A further consideration is the extent of development proposed in terms of its capability of supporting the projected number of movements but, more importantly, given that RSP is seeking to compulsory acquire the entirety of the Manston Airport site from SHP, whether the land area proposed is actually necessary in order to handle the projected number of aircraft movements and whether there is a *"compelling case in the public interest"* for its acquisition[6]. This requires consideration as to whether the case for the development and re-opening of Manston Airport is *"compelling"* and whether the full extent of land required has been fully justified. We consider this in Section 4 of this report.

1.13 We consider the socio-economic case for the development in **Section 5** of this report.

This Report

1.14 RSP sets out its strategic case and need for the re-opening of Manston Airport as a hub for international air freight in 4 volumes prepared by Dr. Sally Dixon of Azimuth Associates (Azimuth), namely '*Manston Airport - a Regional and National Asset, Volumes I-IV; an analysis of air freight capacity limitations and constraints in the South East and Manston's ability to address these and provide for future growth; June 2017'.* **Section 2** of this report reviews this analysis and the extent to which the analysis presented by Azimuth justifies the forecast cargo and passenger activity projected for Manston. This is important for the purposes of section 23 of the Planning Act 2008 (as amended) and whether the analysis presented by Azimuth provides a compelling case in the public interest for the acquisition of the site through compulsory acquisition procedures.

1.15 Within this report, we address, in particular, the use made by Azimuth of analysis that we undertook for Transport for London[7] and for the Freight Transport Association[8] in connection with the work of the Airports Commission and the need for new hub airport capacity for London. For reasons which will be made clear, the York Aviation work relied upon by RSP does not, and cannot be taken to, support RSP's proposed alteration to Manston Airport and, therefore, cannot be relied upon by RSP, the Planning Inspectorate, the Secretary of State and any future appointed Examining Authority (should RSP submit the application and the Secretary of State accepts the application). Given the errors in the interpretation and use of our work by Azimuth, we are concerned that the consultation carried out to date has not properly informed the public in respect of the valid interpretation of our work regarding the prospects for the viable operation of Manston as a freight airport.

1.16 We also review independent reports produced variously by Aviasolutions (Avia) for Thanet District Council in September 2016 and August 2017 and Northpoint Aviation Services (Northpoint) for RSP. This peer review of the other reports is at **Section 6** of this report. To the extent that we agree with these other reports, we do not repeat the detailed analysis in this report but reference the corroborating evidence as appropriate.

[6] Department for Communities and Local Government, *Guidance on compulsory purchase process*, October 2015, page 6.
[7] Referenced by Azimuth as Transport for London (TfL), *Note on Freight Connectivity*, unpublished paper 2013. For the avoidance of doubt, this note as made available by TfL under a Freedom of Information Request is appended to this report at **Appendix A**.
[8] York Aviation (2015), *Implications for the Air Freight Sector of Different Airport Capacity Options*.

1.17 Our conclusions are presented in **Section 7**.

2 CRITIQUE OF RSP APPROACH TO FORECASTING

2.1 In this section, we review the work of Azimuth that forms the justification for the DCO and was part of RSP's consultation documents in June and July 2017. The work is presented in 4 volumes:

- Volume I: Demand in the south east of the UK
- Volume II: A qualitative study of potential demand
- Volume III: The forecast
- Volume IV: The economic and social impact of airport operations

This section also addresses the basis of the demand forecasts for Manston as set out in Volumes I, II and III, focussing principally on air freight in this summary report. We address the socio-economic assessment in Volume IV in Section 5 of this report. Given the repetition of much of the material across the first three volumes of Azimuth's work, we have grouped issues broadly under the appropriate volume in this section.

2.2 We do not, in the main, dispute the accuracy of the factual detail, some relevant and some not, set out in the Azimuth reports or the veracity of the secondary evidence presented. We do, however, have serious and considerable issues in relation to the interpretation and the completeness of this evidence base, in particular relating to the use of previous York Aviation reports, and the inferences and conclusions drawn from it. Ultimately, we consider that the case put forward by Azimuth is weak and unsubstantiated as the extensive evidence base presented does not, in reality, support the conclusions drawn which, in many cases, go well beyond what can reasonably and sensibly be inferred from the information presented. Much of the information is effectively circumstantial and falls far short of making a compelling case, or indeed any case, that the demand forecasts would be capable of being realised.

2.3 Although Azimuth state at paragraph 1.2.1 of Volume 1 *"RiverOak, who specialise in identifying profitable market opportunities, has identified the substantial need for additional and specialised airport capacity for dedicated freighters in the southeast of England"*, we are unaware of any other research upon which RSP rely. All other documents produced in support of the prospective DCO appear to rely on the work of Azimuth.

2.4 In essence, the work of Azimuth sets out to address three key questions, which they assert provide the answer as to whether there is a compelling case in the public interest for the development of Manston Airport sufficient to meet the test for the inclusion of compulsory acquisition powers as part of the DCO. These are largely addressed in Volumes I and II, and lead on to the preparation of demand forecasts set out in Volume III. The three tests put forward by Azimuth are:

- *Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
- *Should this additional capacity be located in the South East of England?*
- *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*

2.5 At the outset, we query whether these are the correct questions to be addressed in terms of the case that RSP seek to make for the use of Manston as a major freighter hub. As is clear from the draft Airports National Policy Statement (NPS)[9], the first two questions relate to the requirement for more capacity at the UK's main passenger hub airport at Heathrow. The updated draft NPS makes clear at paragraph 1.30 that, in relation to the Government's preferred solution of a new northwest runway at Heathrow:

"Consideration has been given to alternative solutions to the preferred scheme, and the conclusion has been reached that there are no alternatives that would deliver the objectives of the Airports NPS in relation to increasing airport capacity in the South East and maintaining the UK's hub status."

2.6 Hence, these first two questions are not relevant to considering whether there is a need for dedicated freighter capacity at Manston sufficient to meet the tests for a DCO. Manston would make no contribution to meeting the identified requirement of passenger hub capacity for the UK or for the South East of England. Furthermore, the draft NPS makes clear, at paragraph 1.39 in relation to any other development consent application for airport development, that:

"Nevertheless, the Secretary of State considers that the contents of the Airports NPS will be both important and relevant considerations in the determination of such an application, particularly where it relates to London or the South East of England. Among the considerations that will be important and relevant are the findings in the Airports NPS as to the need for new airport capacity and that the preferred scheme is the most appropriate means of meeting that need."

2.7 This confirms that the proposed northwest runway at Heathrow addresses the identified need as set out by the Airports Commission for new airport capacity in the South East of England and that this provides a context against which any other DCO application would need to be assessed.

Demand in the South East of the UK (Volume I)

2.8 As has been noted above and in the most recent 2017 reports from Avia, much of the analysis presented by Azimuth relates to the evidence for a shortage of airport capacity overall in the South East of England and, specifically, the work of the Airports Commission relating to the need for additional hub airport capacity serving both the needs of passengers and of air freight. Much of the evidence presented by Azimuth to justify the existence of an airport capacity shortfall in the South East of England relates to the shortfall in capacity for passenger aircraft and, specifically, a shortage of capacity at the main aviation hub at Heathrow as noted above. This does not provide any underpinning justification for the specific development that RSP proposes at Manston, which comprises a specialist freight airport with a small number of low fare, regional and charter flights for passengers.

[9] Department for Transport, *Revised Draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England*, October 2017. Note that the provisions referred to have not changed since the original draft as of February 2017, which pre-dated RSP's consultation.

2.9 Azimuth cite a number of reports which highlight the potential shortage of airport capacity, not just in the UK but across Europe, and the economic costs of not addressing these shortfalls. Azimuth then seek to imply that Manston could provide part of the solution and contribute to delivering these benefits. This is not justified and creates a false impression of the potential economic significance of RSP's proposals. A key point is that the reports relied on by Azimuth need to be seen in the context in which they were written, namely to set out the economic consequences of the failure to address the shortage of hub airport capacity principally for passengers but also providing bellyhold capacity for freight in the UK. All of the reports pre-date the Government's decision to promote an additional runway at Heathrow and were largely directed at ensuring that a positive decision was taken regarding the development of additional runway capacity.

2.10 Furthermore, the reference at paragraph 5.1.4 to concern expressed in the Aviation Policy Framework[10] regarding the implications of capacity shortfalls on the range of destinations served does not, as Azimuth infer, indicate a need for additional aircraft movements by dedicated freighter aircraft as these would require a concentration of freight flows to a specific destinations to fill a single aircraft at a time. Rather, the Aviation Policy Framework refers to the need for a wide range of global destinations being available at the UK's national hub airport, offering passenger and bellyhold capacity so as to maximise the choice and convenience for both passengers and shippers[11] of airfreight. It is this variety of destinations and, importantly, the high frequencies of service that lead the market to favour a bellyhold hub and spoke system so that freight can reach its end destination in the most efficient and cost effective way possible.

2.11 In the light of the Government's support for the provision of a third runway at Heathrow and the potential for further development of airport capacity beyond 2030[12], the use of these economic assessments of a constrained situation to 2050 is no longer relevant, if indeed it ever was, as a context for the potential re-opening of Manston as a freight airport. The use of this data by Azimuth to support RSP's proposals is disingenuous at the very least.

Reliance on York Aviation work

2.12 Ultimately, Azimuth rely heavily on two existing pieces of research undertaken by York Aviation during the Airports Commission process. The first an unpublished note for Transport for London (TfL) prepared in the early stages of that process (see Appendix A), and a later more detailed piece of research undertaken for the Freight Transport Association (FTA), in conjunction with TfL[13]. Both documents considered the overall position of the air freight market in the London system and what might be the circumstances of that market in 2050 under different assumptions regarding runway capacity development in the South East. Whilst we continue to believe that, in the very long term, there will be excess demand for air freight and that existing infrastructure in the London area will struggle to service this demand, more recent developments lessen the capacity pressure.

[10] Department for Transport, *Aviation Policy Framework*, 2013.
[11] Shippers are the originators of the airfreight, i.e. the exporters or importers.
[12] Department for Transport, *Beyond the Horizon The future of UK Aviation*, Call for Evidence, July 2017, paragraph 7.23.
[13] The FTA report being included explicitly in RSP's consultation documents on its website.

2.13 The key point, however, is that, to the extent that there is excess air freight demand in the long term, it does not follow that there will be a market for Manston, as asserted by Azimuth, as any excess demand at the Heathrow hub does not lend itself to being displaced onto dedicated freighter operations at Manston, for reasons we explain later in this section. To the extent that there is any role for additional freighter aircraft to accommodate some part of the displaced demand, there is ample spare capacity at other airports in the short to medium term at least. Thus, the York Aviation work relied upon by RSP does not, and cannot be taken to, support the need for a re-opened Manston Airport as a freight airport and cannot be so relied upon by RSP, the Secretary of State, the Planning Inspectorate and any appointed Examining Authority (should RSP submit its application and the Secretary of State accepts the application).

2.14 Specifically, Azimuth seek to rely on estimates presented in our reports of the number of freighter movements which might be required to carry the freight tonnage that could be displaced from the London airports in 2050 if there is no additional capacity provided by that date. It is important to note that our reports for TfL and the FTA went on to explain why there were other alternatives, such as regional airports or trucking to Europe, which would be favoured to meet demand ahead of any residual use of more dedicated freighters.

2.15 Despite the reports being very clear, when read in their entirety, that the solution to any shortage of capacity would not be extensive use of pure freighter aircraft, Azimuth rely on the freighter movement equivalents from our reports as justification for their projections of freighter movements at Manston both in the short to medium term and up to 2039. There are a number of problems with this approach:

- The analysis as at 2050 is not representative of the position at 2039 or any earlier date;
- The Government is committed to there being a third runway at Heathrow, with a major justification being the increase in bellyhold freight capability at the UK's principal freight hub;
- Gatwick has increased its effective hourly movement capacity, enabling more passenger aircraft and associated bellyhold capacity, particularly related to recent expansion of the long haul network;
- Stansted has 20,500 annual movements that are reserved for freighter aircraft, of which only around half are currently used. The Airport's Sustainable Development Plan[14] sets out an aspiration to grow cargo, including on dedicated freighter aircraft, to 400,000 tonnes annually;
- Regional airports have developed additional long haul services, providing additional bellyhold capacity, and have plenty of spare capacity to accommodate additional freighter aircraft movements to the extent that there is any need for more pure freighter capacity;
- The Government has not ruled out the provision of further additional airport capacity beyond 2030.

2.16 Fundamentally, the use of theoretical levels of excess air freight demand at 2050 cannot be used to underpin short to medium term forecasts for the expected usage at Manston or an assessment as to whether it could be viably developed in the meantime, regardless of the precise timing of the delivery of the third runway at Heathrow.

[14] Stansted Airport Ltd, *Sustainable Development Plan 2015*, Summary.

Transport for London

2.17 At the outset, it is important to note that our 2013 paper for TfL (referenced by Azimuth as an unpublished TfL note[15]) points out the UK did not then appear to be disadvantaged in terms of air freight capacity and that there was still substantial capacity for freighter movements remaining at Stansted. This is an important consideration in terms of short term forecasting and should have informed Azimuth's thinking.

2.18 In this paper for TfL, we estimated the excess air freight that could not be accommodated in bellyhold capacity on passenger aircraft under different scenarios of additional capacity at the London airports and converted that excess to an equivalent number of freighter movements. The 54,000 potential additional freighter movements that Azimuth (and Northpoint) cite at paragraph 3.4.5 are the additional freight carrying capacity required in the event of there being no further runway capacity at any of the London airports[16] (a severely constrained scenario) that is simply no longer realistic as we have set out above. Azimuth's (and Northpoint's) use of this figure as a potential market for Manston is misleading.

2.19 The note then goes on to set out how this requirement for additional freight capacity might be met and the economic consequences. In the first instance, we noted that around 14,000 additional freighter movements could be accommodated in the London system if no capacity expansion takes place, and this included the use of additional available freighter slots at Stansted. Azimuth appear to have taken our inclusion of Manston, as an example of a smaller airport in the South East that could accommodate some movements, as an indication that it could play a substantial role, wrongly stating in the Executive Summary and at paragraph 3.4.5 that we said that Manston was expected to handle 14,000 freighter movements. Manston was given simply as an example of an airport with freighter activity at the time of writing (2013) with the potential to accommodate some additional movements (as we set out in Section 4 of this report, the capability of Manston Airport is 21,000 annual cargo aircraft movements before allowing for any night operations).

2.20 In essence, our assumption was that, across the London airports (including Manston albeit on the periphery of the South East of England), it was plausible that, by 2050, double the number of existing freighter movements could be accommodated compared to 2012. If anything, the correct inference to draw from this is that we expected the number of freighter movements to double from 2012 levels, i.e. to around 1,000 movements a year at Manston.

2.21 Beyond this, the question of how excess freight demand in the London system in the future will be served is largely left open in our 2013 note but we made clear, at paragraph 26, that we believed the two most likely options would be greater use of bellyhold capacity and freighter operations at UK regional airports, noting Birmingham, East Midlands and Manchester particularly, or the trucking of freight to major European hub airports with substantial route networks and bellyhold capacity. This reflects the growing role of regional airports in serving their local freight markets (avoiding the need to truck to London), while balancing particularly the attractiveness of the substantial bellyhold capacity, lower air freight rates, and flexibility offered by the major continental hubs. We discuss this further below in relation to the economics of the air freight sector.

[15] See Appendix A.
[16] Based on the Airports Commission capacity assumptions.

2.22 Our TfL note also makes clear (paragraph 25) that, to the extent that there was a capacity constraint, the first consequence might well be less capacity for transit freight through the UK airports, prioritising freight to and from the UK. Ultimately, our TfL note concludes that:

"In the constrained, max use, case, there would be severe limitations of pure freighter movements at the London airports, which could amount to around 26% of the required air freight capacity to/from London. The extent to which this would act as a limitation on overall air freight volumes would depend on the extent to which the freight is still carried from regional airports or by truck. Clearly this would impact on the cost/efficiency of shipment, which in turn could impact on freight volumes carried. Again, it is outside the scope of the current exercise to assess these effects.

Overall, in assessing the economic value for air freight between the scenarios, the main difference is likely to lie in producer costs passed through to users and the impact that would have on business costs and hence output/freight generated. It would not be safe to assume that the reduction in cargo ATMs at the London airports necessarily translates to lost shipment value in its entirety."

2.23 Azimuth, at paragraph 3.3.2, incorrectly characterises our note to TfL as expressing a concern about the amount of trucking to Europe. Significantly, the last part of paragraph 9 is omitted by Azimuth. When looked at in its entirety, it is evident that we were noting that trucking is an inevitable part of the market, for reasons which we explain later in this section:

"However, the role of the low countries and Germany in acting as the major freight centre in western Europe is noticeable. In total, the main German freight airports handled almost 4.2 million tonnes of freight in 2012 which, when combined with the Netherlands and Benelux countries, amounted to 7.2 million tonnes of air freight flown. These airports have developed major and specialist air freight roles, with freight being trucked from all over Europe to feed these freight hubs. The integration of trucking with air freight should not be overlooked, even within the UK. In practice, it is unlikely that the UK could replicate this role, even with unconstrained airport capacity, due to its island location on the western edge of Europe."[17]

2.24 In other words, our assessment was that there would not, in effect, be a shortage of capacity for freight, albeit that there would be some loss of producer efficiency by way of increased trucking and time related costs, which would be small in the context of the overall cost of air freight transport. Our summary conclusion in this note makes this clear:

"The key difference between these two scenarios would be in terms of the efficiencies and economies of scale gained by the industry arising from the concentration of freight activity at a single hub. In both cases, the overall volume of air freight to and from the UK is expected to be broadly the same, although the actual freight carried including transit freight would be higher in the hub case. However, under the new hub scenario, savings from greater efficiency may be passed onto users, so reducing shipping costs and facilitating trade leading to higher freight volumes, but it is beyond the scope of the current exercise to assess this. "[18]

[17] See Reference 6, paragraph 9.
[18] Ibid, paragraph 30.

2.25 We were cautioning against the assumption that there would be a requirement for more capacity for dedicated freighter aircraft in a constrained scenario as there would be other more cost effective routes by which the freight would be carried, albeit at a higher cost than with the availability of more bellyhold capacity under a 4-runway hub scenario as being advocated by TfL at the time. Use of more dedicated freighter aircraft would represent a further increase in cost for shippers as we explain further later in this section.

Freight Transport Association

2.26 Our work for the FTA and TfL in 2015[19] again identified the potential for excess demand for air freight in the London system by 2050 and converted this number to freighter movements to demonstrate the point that a four runway hub could house this excess demand in one place. If this demand could not be served in the London system, the report makes clear our belief that it would then be trucked to alternate airports that offer significant options in terms of bellyhold freight or freighter operations. In this context, the bellyhold capacity and destinations offered by the continental hubs are a decisive factor in determining how the market will be served due to the range of destinations served and the lower costs inherent in using bellyhold freight. These continental airports act as freight consolidation hubs for the whole of Europe given their more central locations and, hence, offer consolidation advantages and more competitive freight rates.

2.27 Azimuth's interpretation of our work for FTA appears to erroneously assume that excess demand in the London system will need to be met by additional freighter movements from an airport in the vicinity of London. For instance, at para 4.2.3, they state that *"Even so and as York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050"*. Whilst our report does estimate that the excess air freight demand with a third runway at Heathrow would be around 1.2 million tonnes by 2050, equivalent to 45,000 additional freighter movements, at no point does our report say that this is how the market could or should be served. Indeed, as we state on Page 20 of our FTA report *"we have assumed that freighter aircraft primarily act as a means to supplement bellyhold capacity where insufficient bellyhold capacity is available"* and our later analysis of how the market might react to this excess tonnage focusses on this assumption by considering the attractiveness of alternative airports in terms of both passenger and freight services on offer. We continue to be of the view that bellyhold capacity elsewhere will be the primary alternate given the price advantages, the flexibility offered by the long haul networks of major airports, including those on Continental Europe, and the low cost of trucking as our report for FTA makes clear.

2.28 By the time of this report for FTA, Manston had closed but, even if it had not and had been included within our modelling work, the lack of bellyhold capacity and limited overall market presence would have meant it could only be projected to capture a very small percentage of the excess demand. For instance, East Midlands, an airport with around 10 times the freight throughput of Manston, and only 1 hour further away from London than Manston (and substantially closer than Manston to many of the major regional markets and manufacturing centres) captured only 8% of the excess demand in our 2015 modelling. In the Heathrow 3rd runway scenario, this equates to around 100,000 tonnes in 2050. This would equate to around 3,600 additional freighter movements in 2050.

[19] See paragraph 1.14 above.

The Economics of the Air Freight Industry

2.29 Throughout the analysis, Azimuth appear to assume complete interchangeability between bellyhold freight, pure freighter operations and express/integrator operations without any analysis of the economic drivers for the use of each type of freight transport and the economics of trucking of air freight between the UK and Europe. This is a fundamentally unrealistic assumption and leads to a misrepresentation of the market opportunity for pure freighters.

2.30 In our work on international connectivity for Transport for the North (TfN) in 2016 (in conjunction with MDS Transmodal[20]), we identified the key characteristics of the air freight market. We identified that air freight can, in principle, be broken down into three main sectors:

(i) bellyhold, where cargo is carried principally in wide-body long-haul passenger jets[21]. Shippers are able to take advantage of flights to a wide variety of destinations from the main hub airports such as Heathrow and from other major European hubs, e.g. Frankfurt and Paris, similarly offering a wide range of global destinations on passenger flights;

(ii) freight only services, which are viable on only a handful of routes and/or for specialist commodities on an ad hoc basis. This is an increasingly limited sector in the UK due to the variety of bellyhold routes available and the strong presence of the integrators in the market;

(iii) express 'parcel' type services that operate on a hub and spoke network basis by 'integrators' (typically DHL, Fedex and UPS). These services increasingly carry larger consignments and East Midlands and Stansted Airports dominate the UK market, feeding bigger hubs located more centrally within Europe.

2.31 In general, air freight is seeking door to door journey times of the order of 4-5 days, which is possible using bellyhold through major hub airports, whilst integrator freight will generally seek a door to door journey time of no greater than 2 days.

2.32 The majority of tonnage moves by bellyhold as, in essence, this capacity is sold at marginal cost, with the majority of the airlines' operating costs covered by the passengers carried. The market is dominated by Heathrow and the other major European passenger hub airports because the sheer range and frequency of services provides a competitive environment which typically delivers the lowest freight rates and the greatest range of destinations served. There is high locational inertia in the air freight sector, which is likely to remain focussed around Heathrow for the foreseeable future as it is expected to remain by far the largest UK airport for cargo. In our TfN work, we estimated that around 70% of freight from the North of England in 2015 was trucked to or from other hubs for uploading, with some freight trucked to Heathrow for consolidation by the freight forwarders before being trucked back to Manchester to avail of bellyhold capacity there. Assuming similar proportions from other regions of the UK, it is clear that at least a part of any excess demand at the London airports is likely to be satisfied at regional airports, not least as airports such as Manchester, Birmingham and Edinburgh increase their range of direct long haul services offering bellyhold capacity.

[20] Transport for the North, *International Connectivity Evidence Report*, York Aviation/MDS Transmodal July 2016, Appendix C.

[21] Short haul flights provide small amounts of bellyhold capacity but, generally, low fares airlines do not carry cargo within their operating model.

2.33 The integrator sector carries more urgent parcel traffic based upon hub and spoke networks offering (typically) two day intercontinental transits. Spoke services from the UK from East Midlands and Stansted serve central European hubs at airports such as Brussels and Frankfurt. The need for frequency tends to mean that, typically, only one 'spoke' can be justified per integrator per country and these spoke services tend to be centrally located to maximise accessibility from all parts of Great Britain. East Midlands Airport is ideally placed in this regard. The integrators are increasingly using bellyhold capacity as well, essentially acting as freight forwarders in this regard.

2.34 A handful of freight only services complement bellyhold and integrator services where there is sufficient cargo to justify dedicated aircraft to a particular destination. There are a small number of scheduled freighter services which circumnavigate the globe, picking up and dropping off cargo at each point. More often, dedicated freighter services, other than those linking with major cargo hubs such as Hong Kong, Seoul or Dubai, operate on an ad hoc basis dealing with special consignments, such as large loads, or specific commodities where time is of the essence, such as the perishables trade, which was previously the principal cargo usage at Manston. Whilst there is some cascade from bellyhold to pure freighter operations where capacity is not available or time is critical, ultimately, it is the economics of the operation which is key. It does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a nearby airport over the use of available bellyhold capacity from a more distant airport.

2.35 In particular, we identified that the high cost of air freight leads to a pressure to be cost effective and the role of freight forwarders[22] in consolidating loads in order to secure the lowest possible freight rates. Cargo, other than integrator operations, tends to be assembled by specialist air freight forwarders, which cluster around the major hub airports so as to avail of the competitive freight rates on offer. As the road transport costs are very low compared to the value of the cargo and the air freight costs, air cargo is often trucked long distances to find capacity (at a lower freight rate). This forms an important driver in how freight moves from its origin to the actual airport of uploading and applies both within the UK and between the UK and Europe.

2.36 The charges levied per tonne of cargo for the long haul flight leg are high relative to inland haulage costs so that a relatively small difference in air freight rates between different airports will easily cover any additional costs for road haulage. It is for this reason that the majority of air freight will always gravitate towards bellyhold where there is capacity available, even if there is a substantial road haul as part of the journey. Given the wide range of bellyhold services available from the UK, which will increase following the development of a third runway at Heathrow and long haul service growth elsewhere, it is reasonable to expect that pure freighter operations will continue to make up a declining share of the market.

[22] A freight forwarder, forwarder, or forwarding agent is a person or company that organizes shipments for individuals or corporations to get goods from the manufacturer or producer to a market, customer or final point of distribution. For example, the freight forwarder may arrange to have cargo moved from a plant to an airport by truck, flown to the destination city, then moved from the airport to a customer's building by another truck.

2.37 Trucking of air freight is not a new phenomenon. The work by Steer Davies Gleave for the Department for Transport (DfT) in 2010[23] estimated that over 50% of air freight leaving the UK for Europe was trucked rather than using the bellyhold of passenger aircraft. In other words, airlines are using trucks rather than aircraft to distribute freight arriving on and connecting to their global passenger (bellyhold) and freighter operations. At the time of this analysis, Manston was still operational. If it was more economical to use a pure freighter service from Manston rather than trucking over the Channel, this would have been happening in 2010 but it was not. Other than the potential additional border checks as a consequence of Brexit, Azimuth advance no reasons why freight would switch from the cheaper trucking/bellyhold model to expensive pure freighter operations. We believe that the economics of air freight will continue to favour the use of bellyhold freight, other than for a minority of consignments, to and from the UK even if there is a lengthy trucking leg.

Manston in the context of the drivers of air freight

2.38 At Para 4.0.2, Azimuth suggest the reasons why cargo airlines choose airports. In reality, Manston does not fulfil a number of these key criteria meaning that, even in the most favourable circumstances, it can never be more than a niche player in the market. Specifically:

- It does not provide convenient access to the main markets;
- The drive time to Central London is nearly two hours[24];
- The great majority of the Airport's natural catchment is sea and there is very limited evidence of any local demand base;
- Competition is strong from the London airports, with already established freight forwarding and a wide range of bellyhold capacity;
- Given that the Airport is closed and staff dispersed, Manston would not provide any advantages in terms of experience of cargo handling and is likely to offer only marginal advantages in terms of the speed of transit through the Airport;
- Manston could potentially offer lower airport costs, albeit this would impact on the viability of the Airport, but these lower airport costs and any reduction in flying time would not offset the additional cost of freighter transport compared to bellyhold;
- It is also unclear as to what extent night time operations will be an option at Manston given the operating constraints under which the Airport formerly operated which prohibited scheduled night flying[25].

[23] Steer Davies Gleave, *Air Freight: Economic and Environmental Drivers and Impacts*, March 2010

[24] Based on Google maps standard driving speeds.

[25] Azimuth Vol 1 paragraph 7.1.6 quotes from a 2005 MORI survey that people were not impacted by night flights but this would reflect that there were no scheduled night flights when the airport was operational. Local resident support for re-opening (paragraph 7.1.1) needs to be seen in this context. We note that RSP's Consultation Overview Report states (on page 11) that *"Air freight operations would be predominantly during the daytime, in accordance with operations at other similar air freight airports. There may be a requirement for a small number of night-time flights, the details of which will be determined as part of the on-going project design, taking account of feedback from the Statutory Consultation, and presented with the DCO and assessed within the Environmental Statement. For the purpose of the PEIR assessment, and as a worst case, the working assumption is that there might be a maximum of eight (8) aircraft movements at night between the hours of 2300 and 0600."*

2.39 A key consideration is Manston's geographic position substantially away from the economic spine of the UK and with very limited local demand. It is remote from most markets with a journey time to the M25 of nearly 1 hour and accessibility beyond would be subject to the general levels of traffic congestion in the London area. Azimuths's suggestion (paragraph 1.2.2) that Manston might effectively serve as a 4th runway for Heathrow for air cargo flights is merely fanciful given the journey time of 1¾ hours, which is little shorter than the time from Heathrow to East Midlands Airport with an already well developed infrastructure for handling air freight and more likely to fulfil such a role in relation to freight overspill from Heathrow that is time critical or of such a special nature as to warrant the use of pure freighter aircraft.

2.40 Many of the other points raised by Azimuth regarding security, e-commerce and just-in-time delivery are all factors relating to the overall efficiency of the industry. If anything, what the analysis presented by Azimuth demonstrates is the importance of developing efficient freight networks serving the whole of the UK rather than the need for a re-opened freight focussed airport in the South East of England. Manston could only recapture economic benefits from cargo being trucked to the continent, as asserted at paragraph 4.8.4, to the extent that it provides a more economically efficient solution. Manston was not viable in the past and there do not appear to be significant changed circumstances that would make it viable in the future. This lack of inherent viability is indicative of the fact that it did not provide an economically efficient solution.

2.41 One of the key reasons that the UK aviation sector is so productive, as cited by Azimuth at paragraph 5.2.1, is that it allows the market to work. Inefficient and unnecessary actors in the market are allowed to fail. There is a strong argument to suggest that the closure of Manston is simply a part of the process of the market working and delivering more efficient solutions. The argument around the importance of the sector and Manston's role only applies if it is commercially viable (and makes an adequate return to shareholders) and represents an economically efficient allocation of resources. Otherwise, it will in fact damage the productivity of the UK aviation sector.

2.42 Azimuth asserts, paragraph 6.2.2, that the perceived lack of investment in Manston by the previous owners was an impediment to freight growth. However, this is at odds with previous statements by former operators of the Airport and comments by interviewees, in Azimuth's Volume I, on the quality of service received by customers at Manston. In its 2002 results, the Wiggins Group plc claimed that, following investment, Manston was capable of handling 200,000 tonnes of cargo a year[26]. The subsequent owners, Infratil, published a Master Plan in 2009[27] which identified triggers when there might need to be some increase in cargo aprons or warehousing at 100,000 tonnes and 200,000 tonnes of cargo annually. Given that peak tonnage was 43,000 tonnes, this does not suggest that lack of capacity or shortage of investment was an impediment to increasing cargo volumes at Manston in the past, rather the limitation was the market.

[26] https://www.investegate.co.uk/wiggins-group-plc---230-/rns/final-results/2002073007004526862/
[27] Manston, *Kent International Airport Master Plan*, November 2009, page 62.

2.43 The only specific impediment to increasing throughput cited by Azimuth is a limitation to 1 aircraft being handled at a time but we understand that this was not the case, albeit supervised taxi-ing procedures had to be put in place when there were 2 aircraft using the apron at the same time. In practice, it does not appear that lack of investment was an issue which impacted on freight throughput. Rather, it must be assumed that the previous owners did not believe there was a viable economic case for investment. Lack of investment does not necessarily mean constrained demand and it may simply be that there was not sufficient demand to justify investment and that the market was functioning properly.

Qualitative assessment of demand (Volume II)

Forecasting Methodology

2.44 Volume II of Azimuth's work begins with an assessment of different forecasting approaches for cargo, noting that forecasting of cargo is not as well developed as that for passenger activity. We agree that air freight forecasting is difficult and that there is a lack of hard data. However, we do not agree with Azimuth's assertion that quantitative methods are, therefore, not suitable and that qualitative methods are more appropriate. The evidence cited by Azimuth at Table 3 does not support this conclusion and suggests that causal methods (regression analysis) remain the most appropriate for forecasting demand for cargo and freighters. Such an approach is far more akin to the type of analysis undertaken by York Aviation in its work for TfL and FTA and upon which Azimuth seek to rely as a basis for the scale of activity that Manston might attract.

2.45 Whilst we understand the reason for Azimuth's assertion that it <u>may</u> not be appropriate to extrapolate Manston's future performance from its historic performance, this does not take away from the importance of grounding any future forecast in quantitative evidence of the drivers of the market and how these might change in the future. In any event, the assertion is at odds with the reliance placed by Azimuth on our quantitative assessments of 'spill' from the London airports at 2050, in the circumstances of no additional runway at Heathrow, as corroboration of their qualitative projections for Manston to 2039. To reiterate, reliance on these estimates is not appropriate for considering the potential role for Manston, not least as they relate to 2050 and cannot be applied to 2039, or any earlier year, without working through from first principles how any constraints in the London system might bite and the likely market reaction.

2.46 As well as reviewing forecasting methodologies, Azimuth sets out some air freight growth forecasts produced by others. At paragraph 3.6.1, Azimuth cite the DfT's assumption for growth in freighter movements in its 2013 UK Aviation Forecasts at 0.4% p.a[28]. The DfT makes clear that the growth in freighter flights is seen as a residual, representing the share of freight on pure freighter flights after allowance is made for bellyhold cargo being the primary mode. It is clear that the DfT is expecting the share of the market using pure freighters to and from the UK to continue to decline. Indeed, the most recent UK Aviation Forecasts published by the DfT[29] suggest that there is expected to be no growth in the number of pure freighter movements to and from the UK above 2016 levels in the period to 2050. Hence, any increase in freight movements at Manston would have to come at the expense of other airports. We discuss the ability of other airports to handle such movements in Section 3.

2.47 Given the existence of a definitive 'official' UK forecast for freighter movements over the period to 2050, it is not clear why Azimuth rely on global forecasts for air freight produced by the manufacturers Boeing and Airbus for the purpose of selling aircraft (paragraph 2.1.10) as a basis for the longer term projections of freighter movements at Manston in their Volume III (paragraph 2.3.2). The global growth rates cited by Azimuth are inappropriate for projecting growth in freighter movements at Manston for several reasons:

- They relate to RTKs (Revenue tonne kilometres) (Boeing[30]) and FTKs (Freight tonne kilometres) (Airbus[31]) and will reflect increased tonnage per aircraft, including freight carried in the bellyholds of passenger aircraft, and longer sector lengths as well as any growth in aircraft movements;
- The projections relate to growth in air cargo at the global level and lower growth is clearly shown as expected to/from and between more advanced economies such as the UK;
- In the case of Airbus, specific lower growth rates are cited for growth in freight tonne kilometres in freighter aircraft (2.6% p.a. compared to 3.8% per annum in their latest forecasts which are lower in any event than the previous forecasts used by Azimuth). Even then, this growth rate relates to FTKs not to freighter movements.

2.48 Taken together, these reports point to a declining market share for freighter aircraft in mature markets such as the UK, where there is a good supply of bellyhold capacity. It is, hence, not reasonable to use the Boeing and Airbus growth rates as a basis for projecting future growth in movements by pure freighter aircraft to and from the UK, particularly given the existence of DfT projections for such movements. Rather than being conservative, as suggested at paragraph 2.3.2 in Volume III, the use of a 4% per annum growth rate for years 10 to 20 at Manston is highly optimistic, and is certainly not supported by the DfT's analysis of the UK market.

[28] Department for Transport, *UK Aviation Forecasts 2013,* paragraph 3.49.
[29] Department for Transport, *UK Aviation Forecasts*, October 2017, paragraph 2.56. The decline in pure freight movements since 2001 is illustrated in Figure 4.5.
[30] Boeing, *World Air Cargo Forecast 2016-2017*, page 2.
[31] Airbus, *Growing Horizons – Global Market Outlook 2017/2036*, page 101. Note that the 2016 version to which Azimuth refer is no longer available on the Airbus website.

Interviews

2.49 Having rejected the recognised methodologies for forecasting freight demand at an airport, Azimuth rely on interviews with 24 individuals and/or organisations as set out in Table 4 of their report. To a large extent, these are people with past connections with Manston and who may not have a totally unbiased view on the desirability of it re-opening. It is notable that few cargo airlines or large scale air freight operators were interviewed, rather the list is dominated by local interested parties and logistics firms, not all of which are still in business. In some cases, throughout the remainder of Volume II, individuals are referred to who are not listed in Table 4 and, in other cases, individuals or organisations are referred to in different terms to those listed in the table. This does not suggest a very robust or rigorous approach to setting out the potential for Manston. Although the framework of questions is set out at paragraph 4.3.1, we are unable to identify any questions that would enable an assessment to be made of future passenger or freight volumes that would be likely to use Manston and which could be used as the basis for any forecast of future usage.

2.50 In the light of this, the remainder of Volume II is largely a qualitative description of current problems experienced in transporting cargo in general in the UK and in terms of past operations at Manston. These do not, however, provide any insight into the potential scale of demand for freight or passenger services at Manston. Essentially, it constitutes a speculative description of where there might be opportunities if Manston re-opens. We highlight the speculative nature of some of these comments relating to freight activity below. Taking Azimuth's categories in turn:

Process and Issues associated with airfreight

2.51 This analysis is generic and of no direct relevance to the potential for Manston. In particular, no linkage is drawn between the commodities which typically use air freight set out at paragraph 5.1.2 and the economic sectors active in Kent. Significantly, at paragraph 5.1.5, Azimuth cite a respondent that made clear that *"tendered"* prices determine how air freight moves. This is a powerful reason why bellyhold will in most instances win over pure freighter operations. Issues of price for pure freighter operations are reinforced at paragraph 5.1.10, particularly in relation to the risks associated with higher fuel prices.

2.52 There are then a number of comments regarding the current difficulties of operating at Heathrow at paragraph 5.1.6ff. It is recognised that there are few realistic slots available for additional freighter operations at Heathrow so unsurprisingly Coyne Airways cite a difficulty for them if they sought to fly to Heathrow on an ad hoc basis. However, in reality, this airline is not a major player in the UK or Europe, operating a small number of weekly flights from Amsterdam to feed its network of flights within the Caspian Sea region[32]. Comments from ACC Shipping and Active Transport need to be read in the context that they are local Kent shippers and transporters of cargo that have a vested interest in seeing Manston re-opened.

[32] http://www.coyneair.com/caspian_schedule.htm

Future trends in airfreight

2.53 To some extent, the issues highlighted here regarding security relate to the specific issues around Calais at the time when the interviews were carried out but the situation has now changed since October 2016. It is recognised that security of air freight is an increasing concern globally but this would apply at Manston as well as elsewhere.

2.54 Again, paragraph 5.1.15 highlights the dominance of bellyhold freight. Whilst noting that the A380 aircraft has more limited space for bellyhold cargo than B747s at paragraph 5.1.14, Azimuth neglect to point out that other new aircraft, such as B787 and A350 aircraft, do not suffer from similar reductions in space and capacity and continue to offer substantial bellyhold opportunities and capacity.

Motivation to use Manston

2.55 The response cited at paragraph 5.1.19 makes clear that the most important factor in considering freighter operations is *"cost, speed and access to road networks"*, which is not a condition which Manston can meet for the majority of the UK. The local transport firms (paragraph 5.1.21) clearly saw an advantage for them in Manston re-opening but it is far less clear that this was reflected by the broader industry. Significantly, paragraph 5.1.20 does not address the operational reasons why major freight forwarders seek to locate close to Heathrow, Stansted or East Midlands, except possibly for their city centre sales offices.

2.56 The response quoted at paragraph 5.1.23 makes clear that for Manston to be an attractive option to freighter operations, it would need to offer night operations. In the light of the past ban on scheduled night flying, this would be a major change to operating mode, with consequential environmental impacts. Furthermore, RSP's position in relation to whether scheduled night flights will be allowed or not is ambiguous (see paragraph 2.37 above) and we understand that some supporters of the re-opening have said that such operations would not be allowed. In the event that night flights are not allowed or heavily restricted, this would further diminish the attractiveness of Manston for pure freighter operations (comparisons with the major European freight hub at Frankfurt as included by Azimuth are simply not realistic).

Demand model and data for Manston Airport

2.57 This section does not, in fact, contain any data for Manston nor set out a view on how future demand might be modelled.

Freight focussed findings

2.58 The one airline interviewed made clear (paragraph 5.2.3) that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. We would have expected the remainder of the report to concentrate on quantifying the size of this niche market, including any Brexit implications for exports (paragraph 5.2.1). It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' airport for London.

2.59 The spurious suggestion that freight might be *"banned"* from Heathrow (paragraph 5.2.6) and Manston might benefit is clearly nonsense in the context of the Government's support for a third runway to provide capacity for freight in the bellyholds of passenger aircraft as much as for passengers.

2.60 Whilst the suggestion from Coyne Airways about the potential for Manston to offer fuel cost savings when flying south from the UK (paragraph 5.2.11) is interesting, it appears not to take any account of the locations where freight is generated in the UK or where it is consolidated into viable loads. It does not seem likely that Coyne Airways would itself relocate its one European feeder service from Amsterdam to Manston given this would increase rather than decrease fuel burn. As noted earlier, the real reason freight is trucked across the channel is to avail of cheaper freight rates available at the main European hub airports, which act as focal points for cargo for the whole of Europe.

2.61 Azimuth also claim that the bellyhold model is broken and that there is about to be a shift back to pure freighter operations at paragraph 5.2.25 but this is pure speculation and at odds with other industry commentators (see Airbus freighter forecasts which project an increasing share of bellyhold globally[33]) and the UK Government's view as expressed by the Department for Transport.

2.62 Whilst paragraph 5.2.24 says there was underinvestment in facilities by the previous owners, the quotation from Finlays at paragraph 5.2.26 makes clear that Manston previously offered a good level of service. Hence, there is little evidence to suggest that underinvestment was any impediment to Manston attaining its natural share of the market in the past. Although Finlays have now relocated their operation back to Stansted, we would accept that they might choose to return to Manston with a similar number of movements as previously if the facilities were re-instated and provided the cost of operating was competitive compared to Stansted. There may also be scope for some humanitarian and military flights (paragraph 5.2.48) but these will be small in number and not the basis for a viable operation of the Airport.

2.63 At paragraph 5.2.45, Fedex's criteria for an airport to be attractive to an integrator are set out and these seems to describe the characteristics of their main UK base at Stansted. There is then a discussion about some of the problems DHL perceive at Heathrow but, of course, DHL's principal UK operation is focussed at East Midlands where they have an extensive operation. From our work with the integrators and with the Freight Transport Association, we know that Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses (paragraph 6.2.6) is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations (6.3.24-27). It is simply in the wrong place to serve the market being at the far south east at the end of the country on a peninsula.

[33] See Footnote 31.

2.64 The comparisons to Frankfurt Airport, in terms of the ability to sustain a freight operation without night movements, are simply irrelevant given that Frankfurt carries the second highest freight tonnage of any European airport and acts as a major cargo hub for air and road freight given its highly central location. Much of Frankfurt's cargo is carried in the bellyholds of passenger aircraft and this underpins the freight hub role. Given that Manston does not have anything like the overall market attractiveness of Frankfurt, for many reasons, any constraint on night operations would be a major impediment to freighter operations.

2.65 We do not discuss the passenger market in this report, albeit we have reviewed Azimuth's forecasts and disagree with their conclusions, which we can report upon should any application be made by RSP. The latter parts of Azimuth's Section 5 mention opportunities around ancillary activities such as MRO, aircraft recycling, flying schools and business aviation. We would simply highlight, at this stage, that these areas are highly competitive markets and it is not immediately obvious why Manston would provide an attractive option for operators in these markets when compared to what is often global competition. Nor is it evident that such activities would contribute substantially to the viability of Manston.

Analysis and Conclusions

2.66 Sections 6 and 7 of Azimuth's Volume II, go on to discuss what this means for Manston and draw conclusions. In general terms, Azimuth seek to draw conclusions about the cargo performance of Frankfurt, Heathrow and Stansted airports which are not consistent with the actual facts.

2.67 Again, there is reliance on our work for TfL and the FTA (paragraph 6.1.8) to justify the conclusions reached. As stated above this work does not support RSP's case.

2.68 Azimuth then identify that there are sectoral and geographic markets for which Manston has potential but there is no quantification of the scale of these markets. This is a fundamental gap if the scale of any potential opportunity is to be understood.

2.69 At paragraph 6.3.1, Azimuth set out 9 potential scenario drivers for Manston. However, it is not clear how these scenario drivers have been taken forward to the forecasts set out in Volume III, which do not set different potential scenarios for growth. If we take each of these drivers in turn:

1. *The UK's position in Europe* – Azimuth appear to assume that there will be an opportunity for multi-hop freighter services from Manston but it is far from clear that the traffic rights for such services will continue to be available post-Brexit.
2. *Changes to fuel prices* – in the face of the decline in the value of sterling, these are more likely to work against the operation of more freighter aircraft.
3. *The availability of more efficient aircraft* – the introduction of B787 and A350 aircraft will increase bellyhold capacity rather than reduce the capacity.
4. *Onshoring of manufacturing in the UK* – it is not clear how this is relevant given Kent does not have a strong manufacturing base.
5. *Changes to logistics and transport systems in Kent* – this is a circular argument as it relies on the re-opening of Manston driving a step change in the logistics and transport sector in Kent.

6. *Dramatic changes to economic performance* – it is noted that these are not factored into the forecasts but to the extent that there are Brexit effects on the economy, these would reduce trade and demand for air freight.

7. *Manston becomes a major integrator/forwarder base* -

8. *Manston becomes an Amazon base* -

9. *Manston becomes a hub for drone activity* –

for the reasons noted above, all three of these seem highly unlikely and are, at best, pure speculation with no evidence base whatsoever.

2.70 Section 7 sets out the conclusions from Volume II. According to Azimuth (paragraph 7.1.1), the key issues that are seen to favour Manston are:

- Lack of available slots at other South East airports;
- Bumping of freight from passenger aircraft;
- Security issues particularly with outsized cargo;
- Speed of turnaround.

However, our analysis of the factors would suggest that, other than perhaps the last two factors, there are few factors which would favour Manston and, in any event, these could be replicated by other airports closer to the main UK distribution centres, such as Doncaster Sheffield Airport, if these were deciding factors in the market.

2.71 Based on their analysis, Azimuth then set out (at paragraph 7.1.2), the markets which it believes that Manston could attract:

- Parcels and packages through an integrator;
- Perishables including fruit, vegetables, flowers, fish, and shellfish;
- Outsized freight;
- Formula One and luxury cars;
- Live animals;
- Time sensitive items such as aircraft [parts] and the oil and gas industry;
- Humanitarian and military flights.

In addition, some passenger operations along with a number of ancillary activities such as recycling, MRO[34] etc. are postulated for Manston.

[34] Maintenance, repair and overhaul of aircraft

2.72 Whilst, except for integrator operations, they are plausible markets for some potential operations from Manston, Azimuth make no assessment of the potential quantum of local demand as a basis for assessing how big a market there is. Whilst seeking to discredit analytical methods for projecting future demand at Manston, at the same time, Azimuth rely heavily on estimates made by us and using such methods that suggest there would be excess demand in the London system at 2050 if there is no new runway at all. Fundamentally, Azimuth make no assessment of the viability of what might be on offer or address any concerns as to why such operations have not secured a viable future for the Airport previously.

2.73 The key conclusion drawn by Azimuth is that *"This report demonstrates the potential demand for Manston Airport, indicating its viability and clearly showing that Manston Airport is a valuable local, regional and national asset, providing airport infrastructure badly needed by the UK."* (Paragraph 7.0.1) There is, quite frankly, no factual basis for Azimuth to make this claim. Azimuth claim that the capacity is *"badly needed by UK"* but this is linked to erroneous use of the economic costs of there being no further runway capacity in the UK (see paragraph 2.6 of this report) and a lack of understanding of the air freight market.

2.74 In summary, Azimuth's insistence that Manston's past market performance is not a relevant consideration in understanding how it might perform in the future is both erroneous and contradictory to the evidence put forward to support the qualitative market forecasting approach. The interview findings presented are clearly focussed towards operators that have used Manston in the past and would be pleased to be able to use it again but the evidence presented does not suggest that operators would do more than reinstate past operations. This did not result in an airport that was viable and certainly did not result in annual cargo air transport movements predicted by Azimuth. In our view, and having regard to the evidence, it is unlikely that circumstances have changed so dramatically in the intervening period since the Airport was last operational that there is likely to have been a fundamental change in its ability to capture market share. Its previous cargo performance remains the best starting point from which to consider its future.

2.75 In defence of their position, Azimuth cite lack of investment by the previous owners as being a key cause of Manston's inability to fulfil its potential previously but this is not borne out by the interview responses as the quality of service was noted as good. Fundamentally, the failure to consider the drivers of the Airport's previous performance effectively is a key error which infects the subsequent forecasts presented. The limited size of the market is perhaps the best explanation as to why there was not still further investment in developing the facilities as the operation was fundamentally not viable and it would have been imprudent to invest further.

Forecasting (Volume III)

2.76 The forecasts set out in Volume III draw extensively on the analysis in Volumes I and II. Although stated to be derived on a 'bottom up' basis (Executive Summary Page 1) and claimed to be more conservative than top down, econometrically driven, projections, reliance is still placed, at paragraph 1.1.1, on our quantitative work for TfL/FTA to justify/verify the overall quantum of movements projected, stating *"Rather than merely extrapolating past activity, studies that have focused on the 'lost' or suppressed demand include York Aviation's work (2015, p. 19)."* This work was itself fundamentally top down, based on examining past activity and its implications for the future. Azimuth rely on this as, effectively, the only quantitative evidence presented of a possible level of future demand which might be available to Manston. However, for the reasons set out earlier, Azimuth has incorrectly interpreted our findings and their use of our data to support RSP's case cannot be relied on.

2.77 Paragraph 2.1.2 again suggests that the literature review undertaken showed that *"a qualitative approach was the most appropriate method through which to gather data on the potential demand for an individual airport"*. Whilst we agree that freight forecasting is difficult, as Azimuth themselves note, at paragraph 2.1.4, qualitative forecasts still need to be based on *"market data"* and, at paragraph 2.1.6, Azimuth go on to refer to the anecdotal information collected in the interviews as primary market data. Overall, this anecdotal evidence does not provide a basis for the development of a forecast of future usage nor for the presentation of a business case of the proposed development.

2.78 To further justify the approach to forecasting, Azimuth claim that the Airports Commission recommended the use of a Delphic approach. This is not strictly true as what the Airports Commission actually said was:

> *"In cases where there is limited or no data available, judgement based forecasting, using techniques such as the 'Delphi Method' is applied. This approach involves experts in the field considering historical patterns to predict future trends and is often used in conjunction with both naïve and causal models to compare forecast trends. The Delphi method is considered especially useful for long term forecasting (20-30 years) and is effective in drawing on existing knowledge to identify areas of agreement and disagreement in forming the forecast. However, for complex themes the Delphi Method is not always considered appropriate as there is no way of testing different outcomes e.g. through scenario testing."*[35]

2.79 First of all, the Delphi Method involves a number of independent experts considering historic patterns of data and forming a judgement based forecast. Results are shared and refined until a consensus is reached amongst experts. This is not the same as a single judgemental based forecast as Azimuth have presented, based not on historic data but some unquantified estimate of 'lost' demand. In any event, we would question the appropriateness of this methodology, for the reasons that the Airports Commission cite, namely the importance of scenario testing in the context of a forecast to be used for a planning application, particularly one where the applicant is purporting to promote a NSIP under Section 23 of the Planning Act 2008 (as amended) and seeking to demonstrate that there is a compelling case in the public interest for the compulsory acquisition of the Airport site.

[35] Airports Commission, Discussion Paper 01, *Aviation Demand Forecasting*, February 2013, Paragraph 2.8

Freight Forecasts

Short to Medium Term (10 years)

2.80 Azimuth place reliance on both the overspill argument (paragraph 2.2.2) and that there will be a reversal away from the existing preference for bellyhold for most types of air freight, despite the overwhelming evidence that this is likely to remain the case in future due to the lower freight rates available. Azimuth's claim is not supported by the facts, current market trends or by other industry observers including the DfT and Airbus.

2.81 Furthermore, Azimuth appear to assume that, to the extent there is overspill seeking freighter capacity as an alternative, that Manston would be the only solution. This is not the case given available capacity for freighters at airports such as East Midlands (particularly well placed for the distribution of goods across the UK), Stansted and Doncaster Sheffield. These airports are already established and operational and, therefore, well placed to deal with any such requirements in the short to medium term using their existing infrastructure and without the need for any compulsory acquisition of land.

2.82 At paragraphs 2.2.6 and 2.2.7, Azimuth set out the methodology they have used for deriving freight movements and tonnage for Manston. In essence, these movement forecasts are entirely based on claimed confidential discussions with airlines, airports and others involved in the industry, which are then converted to freight tonnage based on the capacity of each aircraft and assumed load factors. These discussions would appear to be different from the list of interviewees reported in Volume II, which included only 1 airline (unlikely itself to relocate its single European operation to Manston) and no other airports. Although it is claimed (paragraph 2.2.9) that switching costs have been taken into account, there is no explanation as to how these costs have been factored into the assessment of what operations Manston might attract. It is likely that RSP would need to incentivise such a switch of activity and this would impact on the overall viability of the Airport, particularly in the early years. A further consequential issue arising from this is the economic cost of displacement of activity, which we discuss further in Section 5, as this needs to be accounted for in economic assessment of RSP's proposal.

2.83 A vague list of potential operations is set out at paragraph 3.2.3, albeit with specific assumptions then stated about the loadings on each. However, the basic information regarding the likely annual frequency of each operation is not given, which is essential to enable an understanding of the likelihood of such operations using Manston in the context of the UK air cargo market as a whole and taking into account ongoing operations at other airports. Paragraph 3.2.3 appears to set out simply a list of generic airlines that might offer services if Manston is re-opened. It provides no insight into whether the demand to fill those services will be there or whether the services could be operated viably by the airlines concerned and at what weekly or annual frequency. This is simply not an appropriate or robust basis for a forecast.

2.84 Whilst accepting that there may be confidentiality concerns in revealing the specific plans of any individual airline, this is all the more reason why there needs to be some underpinning analysis of the potential scale and viability of each specific market identified in the forecast in order to provide some basis for asserting that any of the airlines might operate to the destinations postulated. As presented, the aircraft movements and the consequential tonnage forecasts are entirely hypothetical with no obvious linkage back to any of the evidence presented in the earlier volumes. This is not acceptable given the implications and importance of any proposed application for a DCO and the requirement that a compelling case be demonstrated for the purpose of compulsory acquisition. At the very least, there is a lack of transparency in the approach that needs to be explained so that consultees can understand the forecast and in order to determine whether or not the proposed DCO application falls within Section 23 of the Planning Act 2008 (as amended).

2.85 To illustrate the lack of credibility of the forecasts, Table 1 shows for Year 2 (the first operational year), a throughput of nearly 100,000 tonnes. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, including bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. It is simply at odds with the verifiable evidence and contrary to all experience there is of operations at Manston. If there is a short term market of that scale available for Manston, why did it historically not exceed 43,000 tonnes (2003)? Without full explanation of the scale of each of the markets and a reasoned justification for the number of movements assumed for each of the operations identified at paragraph 3.2.3, the forecasts as presented cannot be considered robust and substantial further evidence is required to validate the basis of the RSP DCO proposal.

Long Term (10-20 years)

2.86 As noted earlier in this section, the long term forecasts wrongly apply a 4% per annum growth rate as a basis for deriving the longer term freighter aircraft movement forecasts for Manston. To reiterate, this is inappropriate and unrealistic given that it is based on forecasts by Airbus for freight tonne kilometres at the global level[36]. Even if the short term forecasts were credible, which they are not, their extrapolation is on an unrealistic basis. At most, any extrapolation should more realistically have been based on the 2013 DfT freighter movement growth rate of 0.4% per annum and the latest DfT estimates[37] suggest that even this may be too high.

2.87 Table 6 then sets out the infrastructure requirements for cargo, which are based entirely on the forecasts put forward. However, even then, we are not told how these infrastructure requirements have been derived in terms of the operating pattern over the day, turnaround times, the number of night movements and other key assumptions for each aircraft type stated or indeed how they relate to the capability of Manston Airport with its existing infrastructure. Such information is critical to validate the infrastructure required (if indeed any is required given our assessment of the capability of Manston Airport), as well as to carry out the assessment of the environmental impacts.

[36] Now reduced to 3.8% in the latest Airbus forecasts.
[37] Department for Transport, UK Aviation Forecasts, October 2017, paragraph 2.56.

Passenger Forecasts

2.88 Although not the main focus of this summary report, we note that the passenger forecasts, set out by Azimuth in Section 2.4, suffer from many of the same problems as the freight forecasts. They appear to be based almost entirely on supposition and inferences that cannot be relied upon. There appears to be no consideration of what is known about market sizes, nature or previous performance, nor a recognition of the extent to which growth will need to be incentivised through discounting of airport charges and marketing support payments. Similarly to the freight forecasts, and for reasons that are not given, Boeing global growth rates appear to be used by Azimuth for passenger operations beyond year 10 rather than the UK specific forecasts produced by the DfT[38], which are substantially lower. This, once again, is a substantial overstatement of the potential for growth.

Overall Conclusions on Forecasts

2.89 Azimuth's entire analysis of the air freight market is focussed on the existence of a theoretical opportunity based on estimates of spill from London in the event of the third runway at Heathrow not being built or being delayed, an unsupported hypothesis that there is a trend away from bellyhold freight, and based on a small sample of interviews with largely marginal players in the UK air freight sector and/or local interests.

2.90 Azimuth's reports do not at any point provide any substantive evidence or analysis as to whether Manston Airport can effectively, viably and sustainably compete in that market. Azimuth's reports do not explain how Manston Airport will be able to price effectively against the bellyhold rates offered by growing established and operational UK regional airports or the continental hubs. Azimuth's reports do not explain how Manston Airport will compete against the range of destinations offered by the long haul passenger networks of the continental hubs or the much greater freighter network offers of East Midlands or Stansted airports. We agree that there may be a niche market for Manston, just as there was previously, and that this market will probably grow in the future in line with the pure freighter market overall (noting that the DfT does not see growth in this market to 2050), but we cannot see how Manston will provide a sufficiently attractive alternative in a broader freight market to attract a market share sufficiently large as to reach the volume and movement numbers envisaged by Azimuth and required to justify RSP's proposals to be considered under the Planning Act 2008 (as amended). Indeed, if we look at past history, it seems highly unlikely that commercially viable operations for the Airport would be attainable for the foreseeable future.

2.91 In overall terms, the forecasts presented by Azimuth at Table 1 of Volume III are simply not credible and do not provide a robust basis for promoting a DCO. We present analytically derived cargo movement forecasts in Section 3 of this report to evidence and support this conclusion that any future projected use of Manston Airport would be significantly lower than that asserted by RSP.

[38] Department for Transport, UK Aviation Forecasts 2013 and 2017.

2.92 In terms of Azimuth's key questions, as set out at paragraph 2.3 at the start of this section, the first two tests may well be met in terms of the need for more airport capacity in the South East of England. That is why the draft Airports National Policy Statement is promoting the development of a third runway at Heathrow as a solution in the period up to 2030. The first two questions are, therefore, irrelevant to RSP's proposals. However, in relation to the third test, the key point is that for Manston to be a long term solution to the UK's capacity problems, it must be a sustainable, commercial proposition, capable of attracting airlines, passengers and shippers to use it. Azimuth's analysis ignores the history at Manston and does not provide any evidence to conclude that any future projected use of Manston Airport would require an increase in the capability of the Airport.

2.93 Indeed, whilst we have provided in this report our assessment of the capability of Manston Airport (Section 4), we note that nowhere has RSP done the same exercise. The failure of RSP to provide their own evidence of the capability of Manston Airport and the amount by which the proposals would increase that capability by is a major omission in RSP's consultation material. Rather, the only information that they present is a forecast of future freight movement demand, which has no credibility as explained in this report. This failure means that, in our opinion, the requirements in Section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

3 FREIGHT FORECASTS

Introduction

3.1 In this section, we present our view of demand in the UK air cargo market at present and consider how this market will develop in the future, setting out a number of potential cargo forecast scenarios for Manston Airport specifically over the period to 2039/40 (RSP's assessment year). This is a more robust approach than the qualitative approach adopted by Azimuth and builds on the approach adopted in our work for TfL and the FTA, by updating this work and assessing Manston's potential share of the market. This is the correct way to use our earlier work to inform an assessment of the potential at Manston.

3.2 The analysis presented here builds on our previous work but supersedes it and extends it in terms of:

- considering changes in the market and circumstances since the time of the previous research, notably the decision to move forward with a third runway at Heathrow, the increasing long haul passenger operations at regional airports and the continued commitment from Stansted Airport to the freight market through its future plans;
- examining the demand and capacity position not only in London but across the UK as a whole;
- analysing potential cargo capacity growth in more detail using Airports Commission traffic forecast data, not available at the time of our previous work;
- more explicitly considering the nature of air cargo that might be affected by any form of constraint within the London airport system or in the UK;
- providing some indication of how cargo demand is spread geographically in the UK to aid consideration of how it might be served in the future.

3.3 Our previous work did not consider in detail the role that might be played by Manston Airport or indeed other UK regional airports. It considered, in broad terms, the effect of a constrained London system capacity on freight demand and how this demand might be met within the confines of the capacity position at the time, noting particularly the role that might be played by the major continental hub airports, given the price advantages that they might offer through the availability of bellyhold capacity.

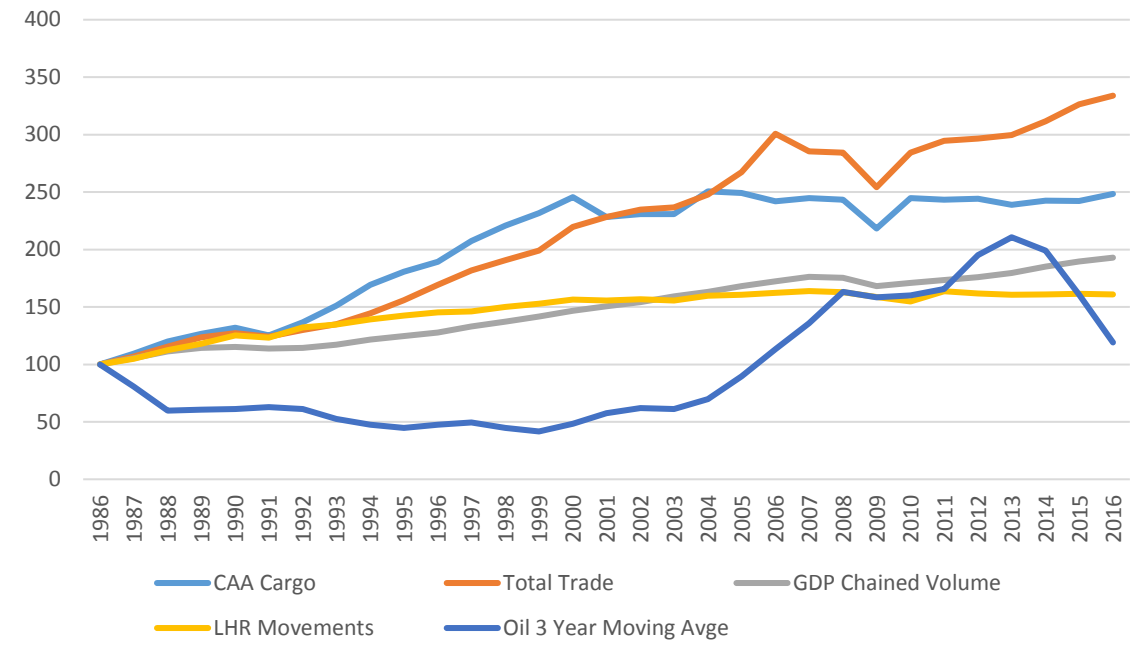
3.4 In this report, we now consider specifically the potential role for Manston by way of a scenario analysis that draws on the analysis of the overall market and the past performance of the Airport. The use of scenarios rather than a single forecast is intended to show a range of possible outcomes for Manston, allied to an assessment of the likelihood that the scenarios might be achieved in a manner which properly reflects the uncertainties identified in air freight forecasts.

Historic Performance of the UK Air Cargo Market

3.5 Our assessment of the quantum of air freight demand in the UK is fundamentally driven by analysis of the past performance of UK air cargo against a range of key economic and market indicators, notably UK trade in goods, GDP, oil price and ATM numbers at Heathrow. **Figure 3.1** shows the indices for these various metrics over time (with each indicator set to 100 in 1986).

3.6 This analysis reveals a number of interesting patterns. Until around 2000, UK air cargo was strongly related to UK trade in goods, with what would appear to be some stimulus provided by falling oil prices that would have made the cost of air cargo relatively more competitive with other cheaper modes. However, in around 2000, the market changed and this relationship appears to break. UK trade in goods continues to grow but growth in air cargo essentially stalls.

Figure 3.1: UK Air Cargo and Economic Metrics (Index: 1986 = 100)



Source: CAA Statistics, ONS

3.7 It is, therefore, helpful to look at why this might have happened. There are two main factors that need to be considered. The first is the oil price, which, through much of the late 80s and 90s, had been on a relatively benign downward trend. However, in around 2000, it started to rise again, accelerating through the mid-2000s and peaking in around 2013. The price of fuel is a key factor in the attractiveness of air cargo compared to other modes, particularly for pure freighter services, where the full direct operating costs of the flight must be borne by the cargo being shipped (as opposed to bellyhold freight where direct operating costs are largely covered by passenger operations, with cargo revenue essentially treated as a marginal benefit). This change in oil prices slowed demand for air freight globally and, in particular, drove users towards bellyhold rather than freighter options[39]. We set out the effect in the UK further below.

[39] Department for Transport, *UK Aviation Forecasts 2013*, paragraph 3.48, Steer Davies Gleave for Department for Transport, *Air Freight: Economic Drivers and Environmental Impacts*, 2010, Executive Summary.

3.8 The second point to note is the relationship to Heathrow ATMs. Up until around 2000, Heathrow was still growing its annual ATMs, which ultimately was driving the availability of bellyhold capacity in the UK air freight market. However, with runway capacity constraints biting, from around 2000, the rates of growth in ATMs at Heathrow initially slowed dramatically then stalled as it reached its consented limit.

3.9 When these two factors are combined, it is possible to understand what has happened in the UK air cargo market. It also has two key implications for considering the growth of the air cargo market moving forward and specifically in relation to Manston:

- ✈ it is reasonable to assume that the fundamental link between economic or trade growth and air cargo still exists and that, ultimately, with economic growth and increasing trade, demand for air cargo will grow. However, with oil prices remaining higher than seen in the past, it is likely that the growth path will be lower. We have assumed that it is likely to be more in line with the growth in real GDP over time;
- ✈ the capacity position at Heathrow is clearly a constraining issue for UK air freight demand but it is noticeable that this constraint has not resulted in significant gains being made by other airports in the London system. This suggests that, while there is probably a degree of constrained demand in the London system at present, this is affecting bellyhold air cargo and that is not translating through into substantially greater freighter growth at, for instance, Stansted or East Midlands. We examine this issue further below.

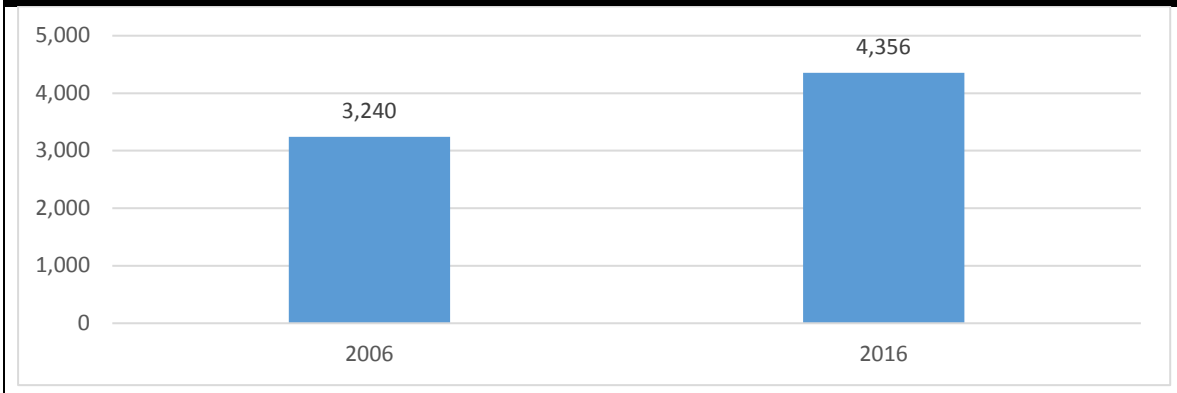
3.10 This is particularly important as it suggests that the market for bellyhold freight is different from that for pure freighter traffic. This is a function of price and urgency in relation to general air freight, as opposed to either express freight or niche products. For express freight or niche products, shippers are prepared to pay a premium which allows the use of freighters because either speed is of the essence or the destination is hard to reach or the cargo is difficult to handle in some way. For general air freight, these drivers are not the same. Accepting that all air cargo is to some degree sensitive to speed of delivery, it seems that what is likely to be being pushed from bellyhold capacity, in a capacity constrained environment, is less time sensitive and shippers' willingness to pay is lower. Hence, in the current market with relatively high fuel prices, freighter options are not an adequate substitute.

3.11 This is very important from the perspective of considering the potential role of Manston. It suggests that it will be very difficult for the Airport to compete effectively for any traffic displaced as a result of constraints in the London market as it cannot and will not be able to provide the price, frequency and breadth of destination advantages that bellyhold freight can offer. The airports competing for cargo traffic being pushed away from Heathrow, now and in the future, are the large UK regional airports with growing long haul passenger networks and the near European global hub airports, which offer the closest substitutes to Heathrow and are within easy trucking time of, certainly, the London and South East market. In any event, bellyhold capacity at Heathrow is expected to increase substantially once the third runway becomes operational so driving down the competitive prices in the market, making it even more difficult for freighters to compete. Even if there are delays to the provision of additional runway capacity at Heathrow, we would not expect a change to the pattern of behaviours observed since 2000, namely that cargo displaced from Heathrow will be trucked to other airports with available competitively prices bellyhold capacity.

3.12 Whilst the volume of air cargo flown to/from the UK's airports over the past 15 years has remained relatively static, there have been considerable changes in the way that demand has been serviced, which again reflect the drivers and constraints on demand described above. Essentially, the market has been consolidating to a small number of airports and bellyhold cargo has become more dominant.

3.13 The Herfindahl-Hirschman index (HHI) is a commonly accepted measure of market concentration[40]. **Figure 3.2** shows the HHI for the UK air cargo market in 2006 and in 2016. The change in the concentration level in the market over the last 10 years has been marked. The HHI for the UK air cargo market has increased by around 34%. The consolidation in the UK air cargo market in the last 10 years has resulted in an increase in the HHI of nearly 1,100. This continued concentration in the market can also be seen by examining the drivers of change in UK air cargo over the last decade. **Figure 3.3** sets out a bridge diagram between 2006 and 2016 showing the change in freight handled via bellyhold and pure freighter at major UK freight airports.

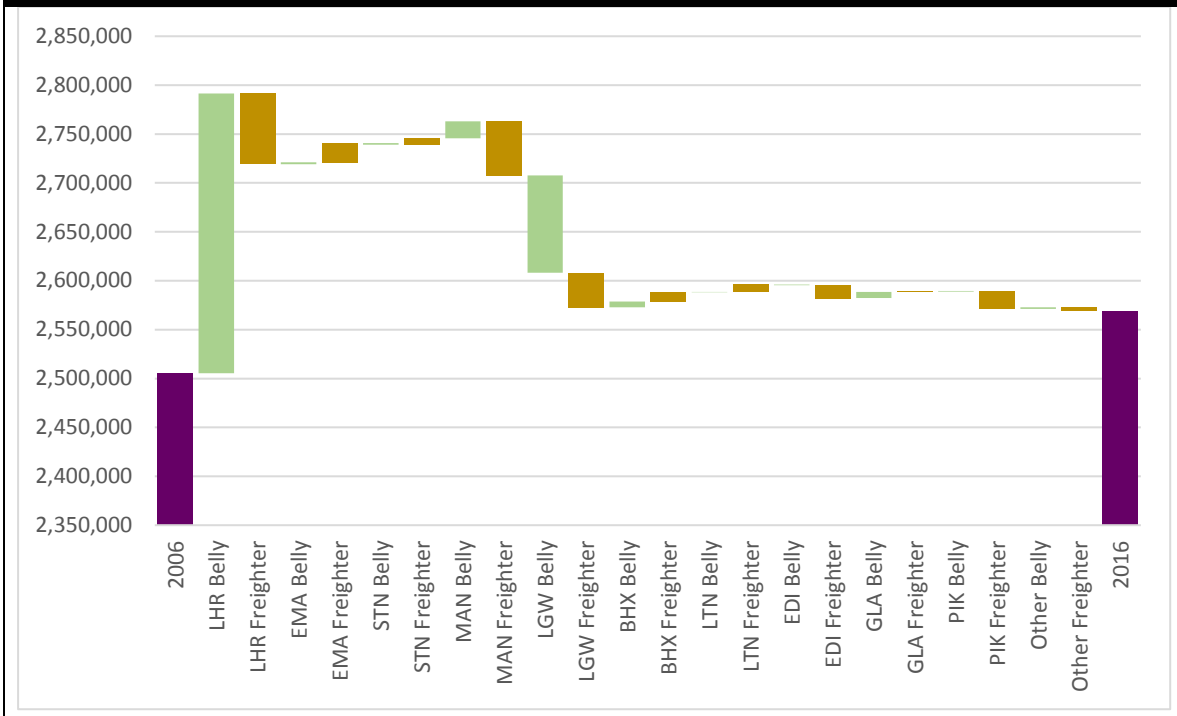
Figure 3.2: UK Air Cargo Market Herfindahl-Hirschman Index of Market Concentration



Source: York Aviation analysis of CAA Statistics

[40] It is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers, and can range from close to zero to 10,000. The closer a market is to being a monopoly, the higher the market's concentration (and the lower its competition). If, for example, there were only one firm in an industry, that firm would have 100% market share, and the HHI would equal 10,000, indicating a monopoly. If there were thousands of firms competing, each would have nearly 0% market share, and the HHI would be close to zero, indicating nearly perfect competition.

Figure 3.3: Drivers of Change in the UK Air Cargo Market – 2006 to 2016



Source: York Aviation analysis of CAA Statistics

3.14 There are a number of key points to note:

- the market has continued to consolidate into Heathrow through increased bellyhold capacity due to the increasing focus on long haul destinations. These gains have been offset by significant erosion of freighter capacity;
- elsewhere in London, Gatwick has seen both bellyhold and freighter capacity significantly eroded as that airport has become more capacity constrained and it has focussed increasingly on short haul low fare passenger services, albeit this trend is starting to reverse as more long haul operations come on stream. Stansted and Luton have seen some growth in freighter tonnage but this does not come close to offsetting what has been lost from elsewhere with Stansted heavily focussed on the integrator and express services market;
- East Midlands, with major DHL and UPS bases, has been the only airport that has seen significant growth in pure freighter traffic, but again this has not offset losses in freighter traffic from elsewhere, suggesting that, for more general air cargo, bellyhold capacity is fundamentally more attractive, even potentially if this involves trucking to distant airports;
- this is reinforced by what has happened at Manchester, which has seen growth in its bellyhold market, relating to its growing long haul network, but with its freighter traffic falling away. The growth in bellyhold traffic at Birmingham is also probably reflective of its growing long haul passenger network;
- in general, there has been a noticeable switch towards the use of bellyhold capacity. Since 2006, pure freighter cargo's share of the UK market has dropped from 37% to 30%, while actual freighter tonnage has dropped by 17%;

- the performance of Prestwick (PIK) provides perhaps the most obvious direct comparator to Manston, with a similar sized freighter operation in 2006 to Manston at its peak. Freighter traffic at that airport has dropped by 64% since 2006. In the meantime, Prestwick was nationalised to maintain operations as it had been heavily loss making for a considerable period of time.

3.15 The implications for Manston are clear. Bellyhold is the preferred option for a significant proportion of the air cargo market and this preference has intensified in recent years. The only airports experiencing freighter growth are those with significant integrator activity. This suggests that Manston's likely niche freighter offer will struggle to penetrate the market. There has been consolidation into larger airports, which again suggests that Manston will struggle to establish market presence. Finally, the experience of Prestwick, its nearest comparator in many ways, is not encouraging for Manston. Prestwick's well established pure freighter operation has been heavily eroded and the airport has had to be nationalised to maintain its operation due to inherent lack of commercial viability.

The Geographic Distribution of UK Air Cargo Demand

3.16 At the outset, it should be made clear that there is very limited data on where air cargo originates from or is destined for within the UK. However, some indications are available from other research, notably recent work by MDS Transmodal, in conjunction with York Aviation, for TfN in relation to its International Connectivity Strategy[41]. MDS analysed a series of datasets on air freight and road haulage and estimated that around 14% of UK air freight demand originates in or is destined for the North of England. We also know that air cargo is often trucked a considerable distance before being loaded on to aircraft.

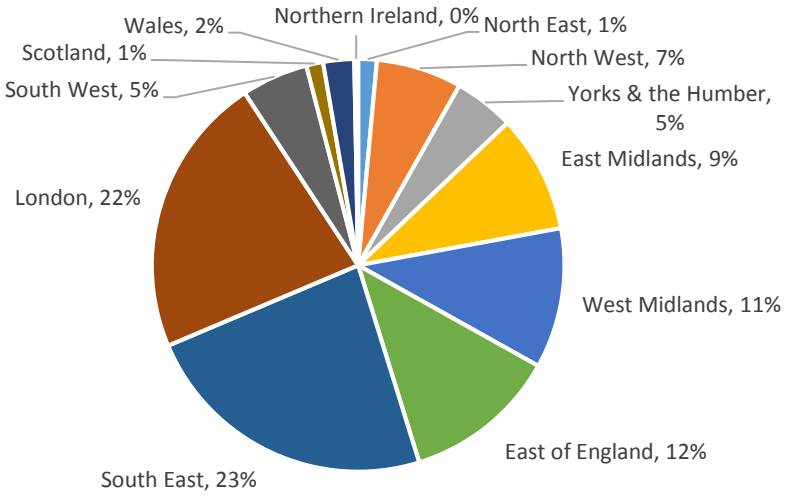
3.17 We have, therefore, developed a simple gravity model that distributes air cargo regionally across the UK based on:

- for exports, the distribution of manufacturing employment in the UK. This is intended to reflect that air cargo exports are likely to be primarily manufactured goods;
- for imports, the distribution of UK population. This is intended to reflect that imports are, in many cases, destined either for consumers directly or retailers. This is clearly a simplification but we believe a sensible one given the data available;
- a relatively low distance decay factor of 1.5, reflecting the relative insensitivity of air freight to trucking times. This has, in part, been calibrated based on observed distance decay factors using data available in the TfN work. This is generic and we have no reason to believe that the balance between trucking costs and the use of air freight would vary across the UK.

3.18 The resulting distribution of air cargo demand is shown in **Figure 3.4**. While there is a heavy concentration of demand in the Greater South East, there is significant demand located across the country. The issue for Manston is that it is poorly placed geographically to serve this demand, even for London and the South East, particularly once the location of distribution centres for import freight, which cluster around the M1 and M6, is taken into account.

[41] Transport for the North, *International Connectivity Evidence Report*, York Aviation/MDS Transmodal July 2016, Appendix C.

Figure 3.4: Modelled Regional Distribution of UK Air Cargo Demand



Source: York Aviation analysis of CAA Statistics, ONS and Google Maps Data

3.19 In the event of air cargo capacity constraints in London, this demand is likely to look initially for cargo capacity closer to home at the major regional airports, particularly those that are developing broader long haul passenger networks. Even if freighter aircraft are required for this demand, there are likely to be substantially better options than Manston. Not least the national freight hub at East Midlands, with its central location in the UK and excellent multimodal connectivity to a wide geographic area.

Future Demand for Air Cargo in the UK

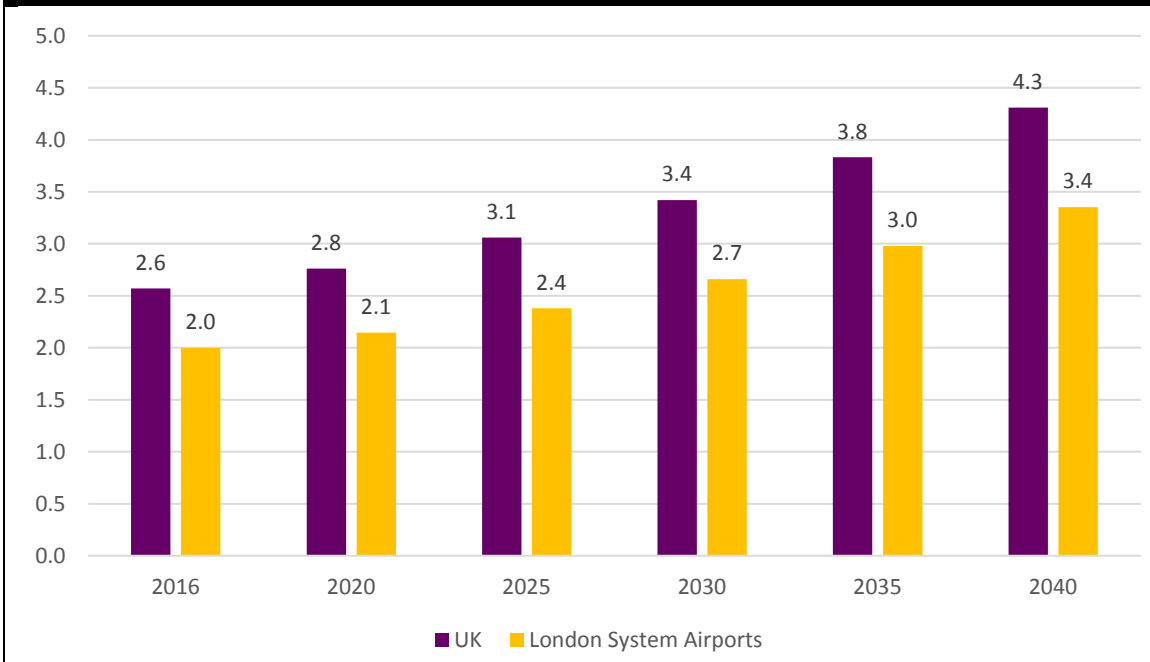
3.20 The initial step in producing our cargo forecasts for Manston is to consider the likely size of the London system and UK air cargo markets in the period to 2040. This is an unconstrained forecast and does not, at this stage, consider whether capacity will be available to deliver this demand.

3.21 In line with our analysis above and consistent with our 2015 report for the FTA, we adopted a relatively simple approach, growing existing air cargo demand forward in line with GDP projections for the UK economy. The GDP forecasts used are the latest forecasts produced by the Office for Budgetary Responsibility at the time of writing. These are taken from:

- Economic & Fiscal Outlook (March 2017), which provides short to medium term forecasts;
- Fiscal Sustainability Report (January 2017), which provides long term forecasts for the UK economy.

3.22 These forecasts suggest average real growth in UK GDP of around 2.2% over the period to 2040. The resulting projections of air cargo demand at the London system airports and across the UK are set out in **Figure 3.5**. This analysis sees total UK air cargo demand reach around 4.3 million tonnes by 2040 and demand in the London system[42] of around 3.4 million tonnes by 2040. At this stage, we have assumed that the split of tonnage between the London airports and the rest of the UK remains as currently, driven by the large concentration of freight forwarders in the vicinity of Heathrow in the light of its major air freight hub role. This may well overstate the scale of demand in London given increasing long haul networks at regional airports.

Figure 3.5: Air Cargo Tonnage Forecasts (million tonnes)



Source: York Aviation

Air Cargo Capacity at UK Airports

3.23 The second stage in our assessment is to consider the extent to which the demand identified above could be met by UK airports and the London system airports. This is, again, in line with our approach taken in our work for the FTA in 2015. However, the analysis undertaken for this research is more detailed, uses more up to date and detailed information on future passenger ATM forecasts and, specifically, considers Stansted's more recent statements in relation to continuing growth in the cargo market to around 400,000 tonnes[43] and removal of the existing 35 mppa passenger planning cap and extension to 43 mppa[44]. Had we been specifically asked, we would have advised Azimuth of the need to carry out such an assessment so as to understand the implications of our earlier work for TfL and the FTA.

[42] Based on the London airports current share of the national market.
[43] Sustainable Development Plan – Stansted Airport (March 2015).
[44] Press Release – Stansted Airport (17 October 2017).

3.24 In order to estimate the likely bellyhold capacity that will be available through the period to 2040, we have produced projections of passenger ATM demand for each of the top 10 freight airports in the UK in 2016, along with a residual forecast for Other UK airports. For Heathrow, Gatwick and Manchester, these forecasts have been split into domestic, EU and non-EU ATMs. The future years for each airport have been based on the ATM forecasts produced by the Airports Commission for which detailed data files have been released[45]. Years prior to the opening of Runway 3 at Heathrow, uses the Base ATMs scenario, while post opening uses the HAL ATMs scenario, which reflects the third runway.

3.25 The existing freight loads per passenger ATM for each airport have been estimated using CAA Statistics. These average loads have then increased by 1.0% per annum tapering to 0.5% per annum for Heathrow and 1.6% per annum tapering to 1.0% per annum for other airports. This reflects trends in average loads identified from CAA Statistics over the last five years.

3.26 In relation to pure freighter capacity, we have, in the first instance, considered what might be termed a business as usual view of capacity moving forward. This considers the likely number of freighter ATMs that might be flown rather than considering the actual movement capacity of individual airports, which may be greater. This is, ultimately, a more stringent view of capacity moving forward and is more likely to lead to a conclusion that there is a lack of freighter capacity to meet any demand than simply considering what any given airport could actually handle, especially given that Stansted is some distance from its freighter ATM cap and East Midlands is not close to any form of ATM limit. To enable this analysis, we have grown freighter ATMs at each airport by 0.4% per annum, in line with the expected growth rate from the DfT's Aviation Forecasts 2013[46]. However, we note that the most recent DfT forecasts[47] suggest that no growth in freighter movements to or from the UK is now expected. Hence, our use of the previous DfT growth rate may overstate the market for pure freighter operations but we have retained this approach so as not to understate the extent of any potential overspill market for Manston.

3.27 Once again, average loads per freighter ATM have been estimated for each airport from CAA Statistics. As with bellyhold cargo per ATM, there has been an upward trend in average loads on freighters in recent years of around 1.1% per annum (York Aviation analysis of CAA Statistics). This is assumed to continue over the period.

3.28 In addition to this business as usual view, we have also taken a view as to the likely total tonnage capacity over time of the two largest freighter airports in the UK, East Midlands and Stansted, based on those airports' development plans:

- the Stansted Sustainable Development Plan talks about developing cargo capacity to handle around 400,000 tonnes of cargo. We have assumed that current capacity is around 300,000 tonnes and that this grows steadily over time to 400,000 tonnes by 2040;

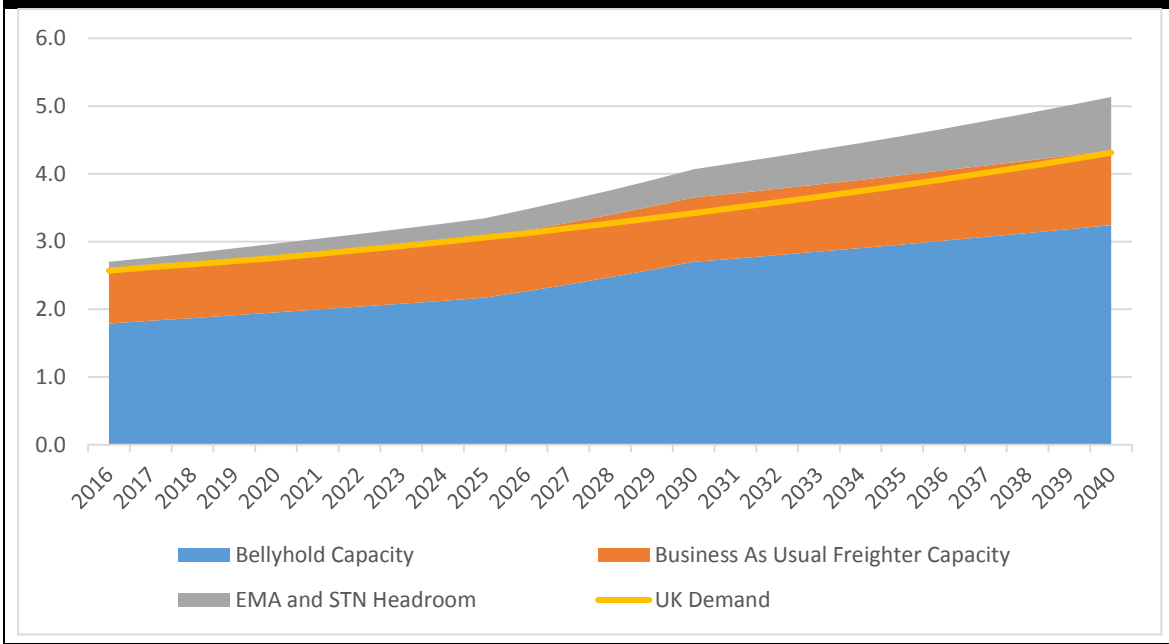
[45] https://www.gov.uk/government/publications/airports-commission-documents-and-data.
[46] The exception to this is the small number of freighter movements at Heathrow, which are not allowed to grow until the Third Runway is opened.
[47] Department for Transport, *UK Aviation Forecasts*, October 2017, paragraph 2.56.

- the East Midlands Sustainable Development Plan describes its runway capacity as able to support a 10 million passenger and 1.2 million tonne cargo airport[48]. We have assumed that this capacity could be developed over time to 2040 from a base capacity of 400,000 tonnes.

3.29 This assessment of the cargo capacity headroom at Stansted and East Midlands helps provide a view of how any excess demand identified could be handled by freighters in the UK if this were the response of the market to any shortage of bellyhold capacity, although it is important to note that we do not believe this would be the primary market response given the lower cost of bellyhold alternatives. It should, however, be recognised that the speed of build-up of this headroom is to a significant degree a matter of conjecture. There will be infrastructure developments required to enable capacity but, if demand were there, it is likely that these could be brought forward as they would be incremental expansion of existing facilities which could be phased in to meet demand more easily and cheaply than the substantial cost involved in re-opening Manston.

3.30 The resulting estimates for air cargo capacity for the UK as a whole and the London system over time are shown in **Figures 3.6** and **3.7**.

Figure 3.6: UK Air Cargo Capacity

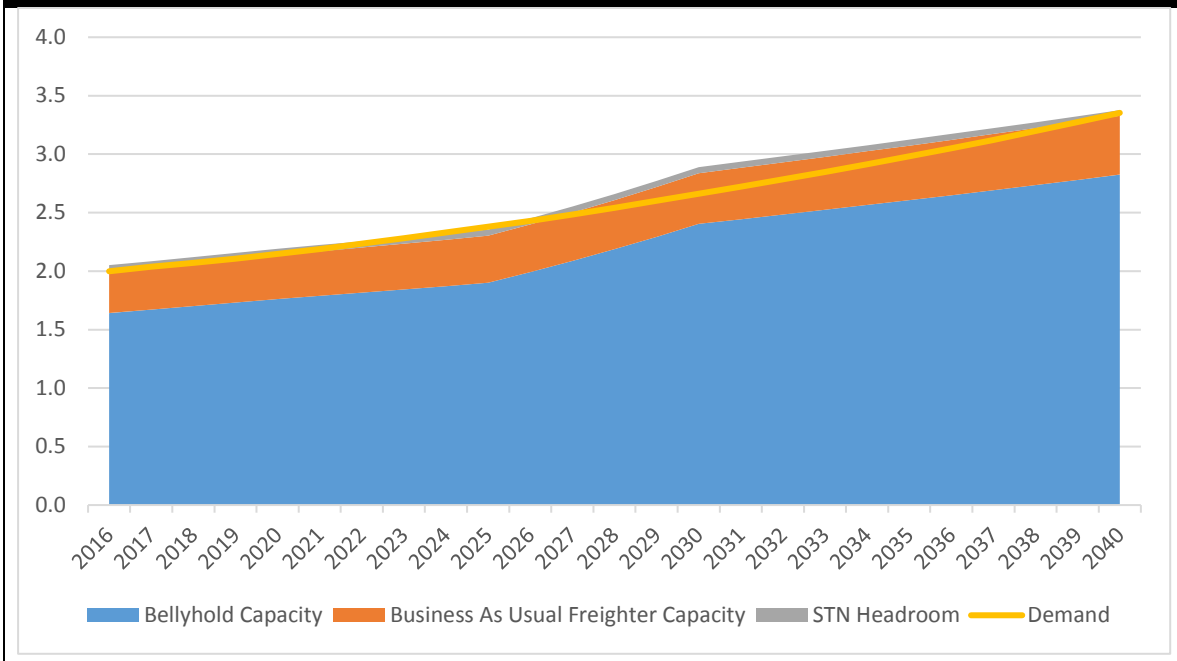


Source: York Aviation

[48] East Midlands Airport Sustainable Development Plan, 2015. Page 75.

3.31 At a UK level, our analysis suggests that there are unlikely to be capacity issues in the cargo market prior to 2040 even on a Business As Usual Freighter Capacity basis. Once the third runway is opened at Heathrow, there is in fact likely to be excess capacity in the market, which is likely to soften demand for supporting freighter capacity dedicated to general air freight (accepting that integrator/express freight is a separate market to a significant degree). It should, however, be noted that capacity on a Business As Usual Freighter Capacity basis is likely to become constrained shortly after 2040 but this can easily be addressed by exploiting the inherent airport capacity headroom still available at Stansted and East Midlands if it is appropriate to serve the market in that way. Overall, we can conclude from this analysis that there will be no shortage of freighter capacity in the UK before 2040 and overspill from other airports would not provide a rationale for re-opening Manston.

Figure 3.7: London System Air Cargo Capacity



Source: York Aviation

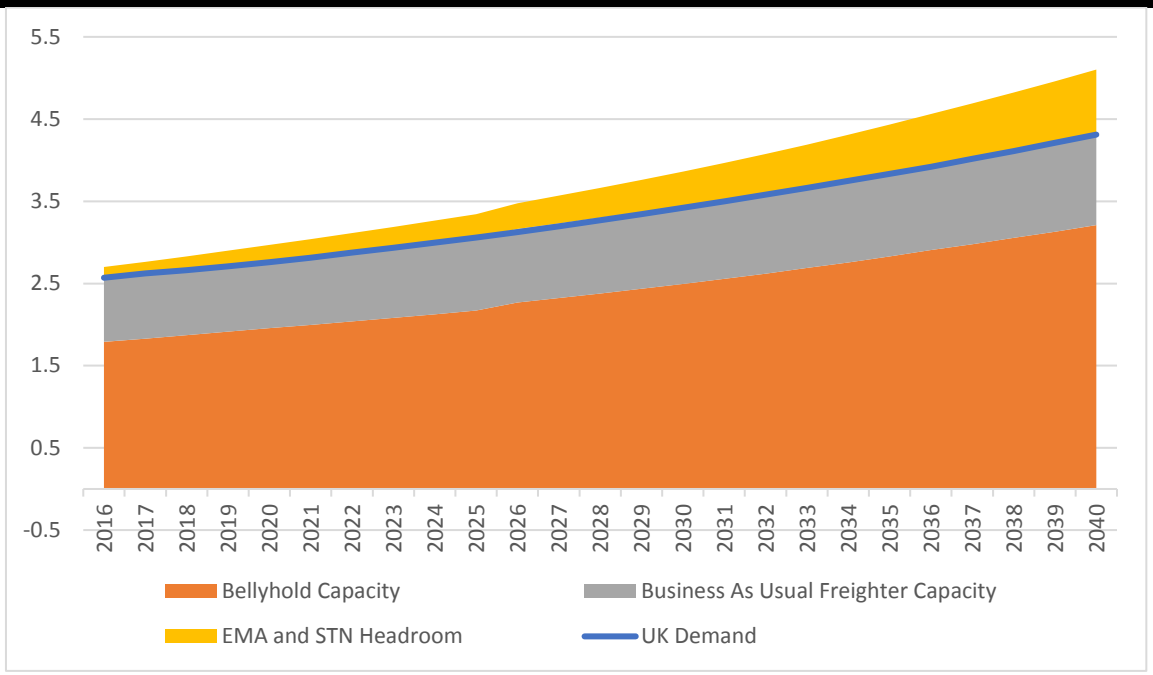
3.32 The situation at the London airports is slightly different if we assume that London maintains its market share of the overall market and there is no natural 'clawback' to the regions. With Heathrow's bellyhold growth relatively constrained, there are potentially some limited capacity constraints in the medium term before the third runway opens but, if there was demand, we would expect Stansted to develop additional freighter capacity sooner. Any constraint would be fleeting. Once the third runway is opened, excess capacity develops rapidly. Potential capacity issues do not then start to re-emerge until around 2040, when it appears that Heathrow is likely to become runway capacity constrained once more.

3.33 The implications for Manston Airport are that, even in pure volume terms, push factors from other airports in London are unlikely to provide opportunities for growth before 2040, and this is before any consideration is given to Manston's suitability to serve the markets in question. In the short to medium term, there is likely to be some limited constraint in the London system before the third runway at Heathrow is opened. However, this is largely a function of bellyhold constraints at Heathrow and it is highly questionable as to whether the type of cargo that is likely to be forced out will be suitable for Manston or indeed would switch from bellyhold to pure freighter operations at all.

3.34 Logic would suggest that what will be pushed out is relatively low yielding, general air cargo that is more sensitive to price and less sensitive to time. Essentially, this is akin to business passengers forcing leisure passengers out of Heathrow. This type of air cargo is not likely to see pure freighters as an effective alternate, given the higher prices involved. It is more likely to seek out alternative bellyhold capacity at UK regional airports (which might actually be closer to its point of origin given our analysis above) or travel via truck to the continental European airports.

3.35 Our analysis here has been predicated on the construction of a third runway at Heathrow, as this is clear stated Government policy. In the event that the third runway is delayed or does not happen at all, it is expected that there would be other adjustments in the UK air transport market, including the provision of more long haul services from other airports offering bellyhold capacity. In this case, whilst there could theoretically be a level of capacity shortfall at the London airports assuming that they maintain a constant market share, we would expect demand and capacity to keep pace at the UK level as growth at regional airports is accelerated. This is illustrated in **Figure 3.8**. We consider that analysis at the UK level remains the most relevant and this does not suggest that there will be a capacity shortfall before 2040.

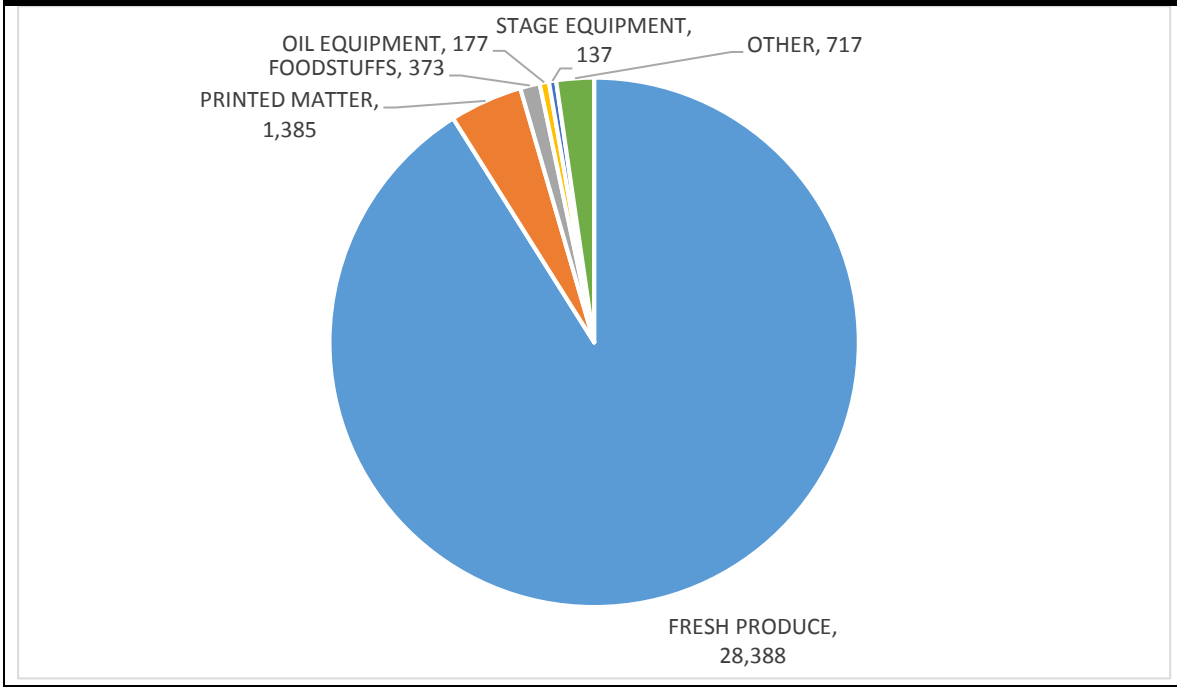
Figure 3.8: UK Air Cargo Capacity with No Third Runway at Heathrow



Source: York Aviation

3.36 An examination of the nature of cargo traffic that used Manston in the past also supports this assessment. Data provided to York Aviation by the current owner and set out in **Figure 3.9** shows that the Airport was essentially an import point for fresh produce (91% of total tonnage in 2012). This is a time critical market with associated high yields (hence allowing freighter operations) but also one that is dominated by Heathrow through its perishables hub and its bellyhold capacity to Africa. It is unlikely that Heathrow would shed significant amounts of this traffic with cargo constraints and certainly it would likely gain market share once the third runway is opened. Heathrow remains better located for the distribution of this produce to the core London market given its location inside the M25.

Figure 3.9: Air Cargo at Manston by Commodity Type in 2012 (tonnes)



Source: York Aviation analysis of Stone Hill Park data

3.37 It should also be remembered that this assessment assumes that Stansted does not accelerate its cargo development plans to meet any excess demand that is suitable for freighter activity. Indeed, we understand that the perishables activity that used to use Manston has shifted back to Stansted and that the operation at Manston was supported by low charges to the airline to compensate for the less attractive location.

Specific Air Cargo Market Forecasts for Manston Airport

3.38 Building on the analysis above, we have considered three scenarios for future cargo growth at Manston Airport. In each case, we have considered the likelihood of the scenario coming forward. It should be noted that, in the air transport market, demand is the driver of airport usage not capacity. Provision of capacity at Manston is no guarantee that airlines, shippers and passengers will use it unless there is demand and Manston represents the most efficient way for that demand to be met.

Scenario 1: Relief for Capacity Constraints in London (Highly Optimistic and very unlikely)

3.39 In this scenario, we have assumed that Manston is able to capture the excess demand that is seen in the London system in the medium term when only Freighter Business As Usual capacity is considered. It is then able to maintain its market share into the long term, even once the excess demand has disappeared with the appearance of the third runway.

3.40 We ultimately regard this scenario as highly optimistic and very unlikely to occur. We do not believe that the nature of excess demand is likely to suit freighter operations. This fits with the current market, where Heathrow is almost certainly constrained in terms of its ability to offer bellyhold capacity and yet there remains significant freighter capacity elsewhere and there has been no upturn in the demand for air freighter operations. We also feel it is highly unlikely that Manston could maintain market share in the context of the opening of a third runway at Heathrow. Even in the absence of a third runway, pure freighter capacity at Manston is not likely to be attractive for most of the freight displaced which would still choose cheaper bellyhold capacity available elsewhere in the UK and Europe.

3.41 We consider this scenario to be an upper bound to the envelope for Manston Airport. Even in this scenario, forecast tonnage only reaches around 105,000 tonnes by 2040 or around 4,470 cargo aircraft movements. The estimate of aircraft movements assumes loads similar to that of Manchester Airport's current freighter operations, growing by around 1.1% per annum. This appears to be a relatively low loading compared to Manston's previous operations[49] (hence providing a higher ATM number for any given tonnage and thus likely to overstate the number of movements).

3.42 We note that Azimuth have assumed an even lower tonnage per cargo air transport movement of under 20 tonnes, so leading to an overstatement of the number of aircraft movement at any predicted tonnage, but this does not appear realistic based on Manston's past operations nor tonnages seen elsewhere.

[49] We estimate that the number of tonnes per cargo ATM previously at Manston was 35-40 tonnes, taking into account empty aircraft backhauls.

Scenario 2: Manston Achieves Its Previous Market Share (More Likely but still with optimistic elements)

3.43 This scenario assumes that Manston essentially re-enters the market as a niche player in the key markets that it served previously, mainly fresh produce. This reflects the view that, in reality, very little has changed in the market compared to when Manston was last operational, not least that Heathrow was already suffering from runway capacity issues prior to 2014. There are no major changes that we would consider sufficient to alter Manston's attractiveness fundamentally compared to 2014. We note Azimuth's contention that Brexit will make trucking to Europe more difficult but would point out that the freight involved is most likely to be general air cargo heading for bellyhold capacity that is relatively less sensitive to time and that additional regulatory burdens are likely to be found at airports as well post Brexit. Hence, the impact on relative transit times may actually be comparatively limited. Furthermore, it is far from clear to us, from the evidence presented by Azimuth, that there were concerns regarding the quality of service offered at Manston historically sufficient to have constrained its share of the market in the past. Hence, it is not unreasonable to start from a position that its past market share was representative of what it might attain in future and that the provision of more infrastructure would not give rise to a change in the market or a higher level of underlying demand.

3.44 We regard this as the most likely of our three scenarios but it also has optimistic elements. Notably, it is highly optimistic to assume that Manston will be able to maintain market share in the face of expanded capacity at Heathrow. We would also note that the Airport was not viable at similar demand levels previously and would appear to have only been able to reach its recorded market share by 'buying' traffic through very low airport charges based on our discussions with SHP and its staff that worked at the Airport when operational. In this scenario, the Airport reaches around 47,000 tonnes by 2040 and around 2,000 cargo aircraft movements.

Scenario 3: Relief for Capacity Constraints in London (More Realistic but still with some optimism)

3.45 Scenario 3 is a variant of Scenario 1 that takes a more realistic view on how the limited excess demand in London in the medium term (allowing for pure freighter Business as Usual activities only) might be served. We would view this scenario as substantially more realistic than Scenario 1 but still with highly optimistic elements.

3.46 In this scenario, the excess demand is split as follows:

- 50% is assumed to be to diverted via truck to make use of bellyhold capacity at UK regional airports or at the continental hubs in Europe. This reflects the view that, in the majority of cases, this freight is likely to be relatively price sensitive, less time critical general air cargo for which pure freighters are not likely to be an appropriate substitute;
- the remainder is assumed to be split evenly between East Midlands, Stansted and Manston airports. This is, again, probably an optimistic assumption given the economies of scale and better proximity to markets overall offered by the other two airports compared with Manston.

3.47 Once the excess demand in London has peaked (just before the opening of a third runway), Manston is assumed to be able to maintain its market share into the future. This is again an optimistic assumption given what will be an excess of capacity in the market for much of the following period through to 2040. This scenario involves the lowest cargo throughput of the three options. By 2040, the Airport is handling only 17,500 tonnes of freight and handling around 750 aircraft movements each year.

Summary of Cargo Forecast Scenarios

3.48 The cargo tonnage and freighter ATMs associated with each of the three scenarios are set out below in **Table 3.1**.

Table 3.1: Summary of Manston Cargo Forecast Scenarios						
	Scenario 1: Relief for London (Highly Optimistic)		Scenario 2: Previous Market Share		Scenario 3: Relief for London (More Realistic)	
	Tonnes	ATMs	Tonnes	ATMs	Tonnes	ATMs
2020	7,608	402	30,359	1,605	1,268	67
2021	18,407	963	30,966	1,619	3,068	160
2022	31,758	1,643	31,616	1,635	5,293	274
2023	45,571	2,332	32,280	1,652	7,595	389
2024	59,860	3,029	32,958	1,668	9,977	505
2025	74,638	3,736	33,650	1,684	12,440	623
2026	76,205	3,773	34,357	1,701	12,701	629
2027	77,958	3,818	35,147	1,721	12,993	636
2028	79,751	3,863	35,956	1,742	13,292	644
2029	81,585	3,909	36,782	1,762	13,598	651
2030	83,462	3,955	37,628	1,783	13,910	659
2031	85,381	4,002	38,494	1,804	14,230	667
2032	87,345	4,050	39,379	1,826	14,557	675
2033	89,354	4,098	40,285	1,848	14,892	683
2034	91,409	4,147	41,212	1,869	15,235	691
2035	93,511	4,196	42,159	1,892	15,585	699
2036	95,662	4,246	43,129	1,914	15,944	708
2037	97,958	4,300	44,164	1,939	16,326	717
2038	100,309	4,355	45,224	1,964	16,718	726
2039	102,716	4,411	46,310	1,989	17,119	735
2040	105,182	4,468	47,421	2,014	17,530	745
Source: York Aviation						

3.49 Our updated analysis of the market and specific consideration of three potential scenarios for freighter growth at Manston Airport demonstrate that, even on the most optimistic assumptions, it is not likely to generate above 4,470 annual movements by air cargo aircraft. On a more realistic basis, it might attain similar levels of tonnage as seen in 2003 by 2040 but with a higher number of aircraft movements due to the assumption we have made that freighter loads would be similar to those seen elsewhere in the UK rather than the higher loads actually observed at Manston in the past. On past performance, the number of movements at Manston might well be lower. **None** of our scenarios suggest that there is a need to increase the capability of Manston Airport given our assessment in Section 4.

4 CAPABILITY OF THE SITE

4.1 Our start point for this assessment is the capability of the Airport site based on its historic and consented planning status and on the basis that the existing infrastructure could all be 'made good'. This assessment is based on the existing Lawful Use in planning terms. The existing Airport's permitted use is for civil aerodrome use, and there are no conditions limiting either passenger numbers or ATMs.

Capacity of Existing Facilities

4.2 In the first instance, it is important to highlight that Manston Airport did not operate under any form of restriction on the number of aircraft movements. The planning agreement between TDC and Manston Airport, which governed the permitted activity of the Airport, was entered into in 2000. In respect of night-time flying it sets out the limitations on such operations until a "Night-time Flying Noise Policy" is in place. Clause 1.1 of the Second Schedule states:

"The Owner agrees not to cause suffer or permit any Regular Night Flying Operations at any time (subject to Paragraph 1.4 below) before a Night-time Flying Noise Policy shall have been prepared and a copy lodged with the Council."

Further, it defines:

"Regular Night Flying Operation means Flight movements which are scheduled or programmed and which occur frequently or regularly to the same or similar patterns for the same operator during Night-time"

4.3 It is understood that the Night-time was defined as 23.00-07.00, though Manston Airport was also seeking a Night Quota Period which would have run from 23.30-06.00. In practice, there were a number of night movements which were deemed to be ad-hoc and often driven by technical delays but that were permitted to operate in any event.

4.4 We have assessed the capability of the existing infrastructure at Manston Airport assuming that the range of existing facilities, as at the time of its closure, are made good. There are three principal elements – runway, passenger and freight:

- **Runway:** for the handling of commercial passenger and freight aircraft, the runway would operate without a parallel taxiway. The current marked parallel taxiway is too close to the runway centreline to allow such aircraft to taxi independently of a runway movement. Landing and departing flights would then need to back track along the runway to and from the entry/exit taxiways. The achievable maximum runway rate with this operation might be around 20 to 24 flights per hour depending on the mix of aircraft types. This runway movement rate, even at 50% utilisation of available slots, would be capable of accommodating around 64,000 aircraft movements a year. However, we recognise that this is in excess of the capability of the passenger and freight handling facilities as existing.

- **Passenger:** the passenger apron has been designed to accommodate 4 E-Jet FK100 passenger aircraft. These aircraft types are now rare and have a wingspan that is much less, at 28 metres, than the typical low fares airline Code C type aircraft that Ryanair, easyJet and Wizzair, for example, use. These airlines typically use aircraft such as the B737-800 and A320, with wingspans of 36 metres. On this basis, the passenger apron would be able to accommodate up to 3 of these larger Code C aircraft simultaneously and could, in the alternative, be used for handling cargo flights. The terminal itself is quite compact and would have a maximum of 6 check-in desks and very small baggage make up area, and a departure lounge that could depart a maximum of 2 flights within the same 30 to 40-minute period, with an hourly capacity in total of around 250 passengers. There are more than 1,000 car parking spaces. We estimate that the passenger terminal at its current size could support around 0.7 to 0.9 mppa based on there being up to two based Code C aircraft with a reasonable number of other visiting flights across a typical day.
- **Freight:** the aircraft parking area close to the freight sheds can park up to 2 or 3 small to medium sized cargo aircraft or one large aircraft. There are two freight sheds that were originally organised to be used one for imported freight and one for export. Adjacent to these is an 'equine' handling facility for processing livestock. In practice Manston, when operational, normally handled one large freight aircraft at a time due to size and juxtaposition of the freight sheds and apron to each other and the single taxiway connecting to the runway. Whilst Manston handled up to 30,000 tonnes of freight at its peak, our understanding is that the freight facilities could have handled substantially more tonnage.

4.5 Our assessment into the capability of Manston Airport is based on the reinstatement of the runway, air traffic control, fire station, navigational aids, apron (stands) and taxiways. We have taken into account the use of both apron areas, one to the west adjacent to the cargo sheds and one to the east, adjacent to the passenger terminal. These could accommodate collectively up to 4 freight aircraft simultaneously. The assessment is also based on an 18-hour operational day (allowing for a small number of ad hoc night movements consistent with previous operations) and with a turnaround window of up to 2½ hours from the arrival to departure of each freight aircraft resulting in the capability of each stand to handle over 7 aircraft rotations a day, or over 14 cargo aircraft movements.

4.6 On this basis, across a year, this would equate to a capability for at least 21,000[50] annual air cargo aircraft movements with the existing consented infrastructure, subject only to reinstatement. This assessment is consistent with the assertion made in presentations on behalf of RSP[51], which stated that the 10,000 cargo aircraft movement threshold, necessary to pass the Section 23 test in the Planning Act 2008 (as amended), could be met by providing for 14 aircraft arrivals and 14 aircraft departures each day. As the existing infrastructure could provide for 4 cargo aircraft being handled simultaneously, this would equate to 20,440 annual air transport movements by cargo aircraft. This would be more than sufficient to accommodate any reasonable forecast of the cargo related movement demand that Manston might attract as we have set out in Section 3.

[50] Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.
[51] RSP, Presentations for Thanet District, Dover District, and Canterbury City Councils

4.7 We recognise that the actual usage of that capability will depend on how an airport is used in terms of the daily and seasonal pattern of movements but this does not, of itself, reduce the capability offered by the existing consented infrastructure for air transport movements. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

Land Required to accommodate RSP's Forecasts

The RSP Master Plan

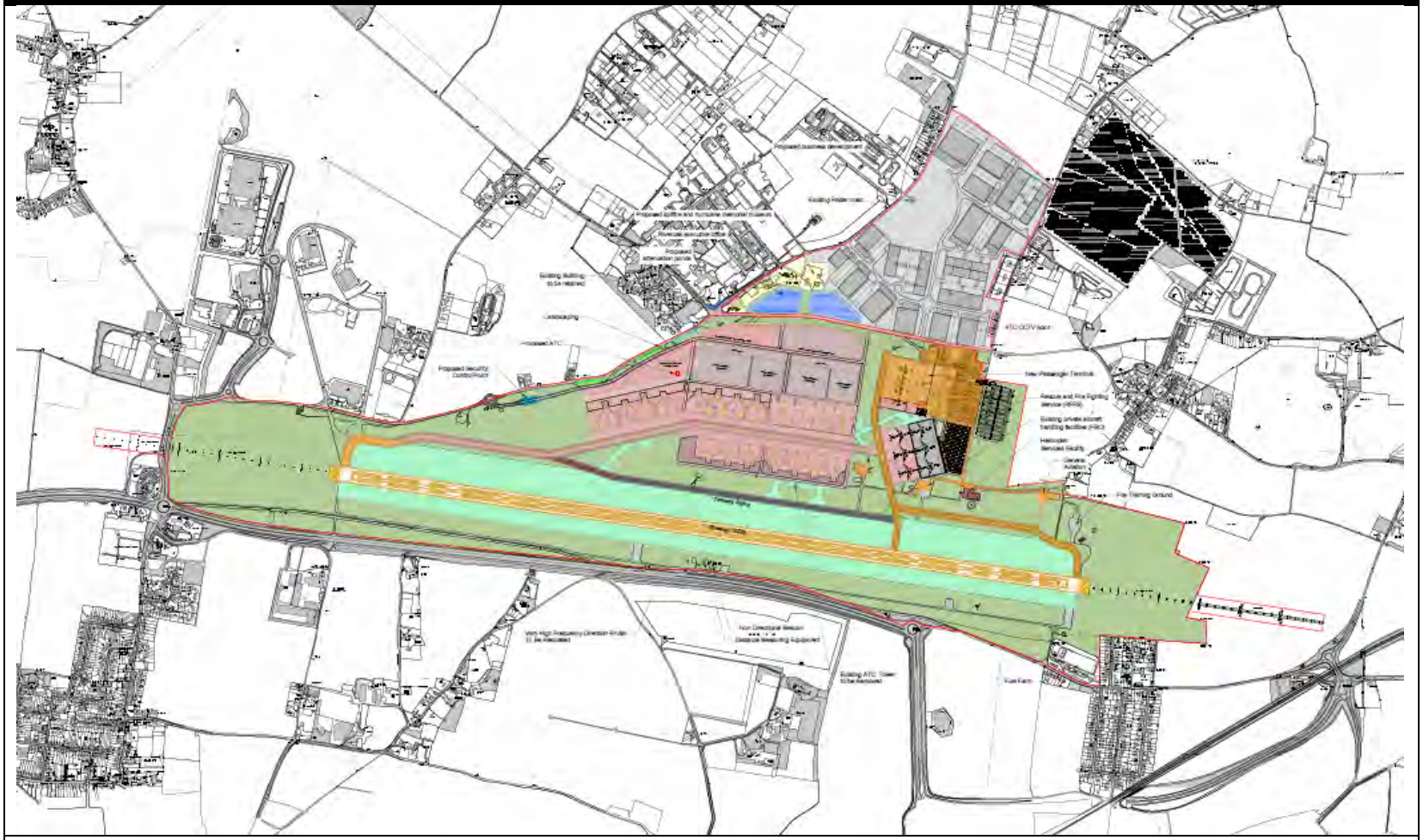
4.8 The Master Plan presented by RSP for the Manston Airport site is shown at **Figure 4.1**. It makes use of the full length of the runway and provides a full length parallel taxiway. The western side of the site is dedicated to freight handling activity and has 19 Code E aircraft stands for cargo flights and 4 large cargo sheds for the processing of freight supported by truck loading and parking areas. The eastern side of the site shows as a new passenger terminal and apron along with a MRO hangar and apron. The existing private aircraft handling facility (FBO) and fire station site is retained. We are not entirely clear how such works would be phased, although we understand that 4 phases of development are planned. RSP projects that Manston will need to be able to handle 17,171 cargo related ATMs and that 1.4 mppa of passengers will be handled by 2039. These represent the basis for the proposed DCO application and we assume, therefore, that these will be the limits on the number of movements and passengers which the site would be capable of accommodating as these form the basis for the assessment of environmental and other impacts. However, this is unclear from the consultation documentation.

4.9 We are unclear why 19 Code E stands are proposed given that the fleet mix at 2039[52] shows 85% of aircraft (at 17,171 annual cargo aircraft movements) being by aircraft smaller than Code E dimensions. Even allowing for some larger Code F types (<2% of movements), it would be possible to reduce the area of apron required for the fleet mix proposed, leaving aside whether 19 stands are required for the simultaneous parking of cargo aircraft at any one time, which we discuss further below.

4.10 To the north of the site, on the 'Northern Grasslands', a new development is shown, which appears to consist of commercial sheds and factory buildings with no obvious connection to the operation of the Airport being located entirely on the landside of the B2050. We assume that RSP's intention is to lease out these landside commercial buildings on this northern site so as to provide a rental income to cross subsidise the operation of the Airport. We discuss the need for this land further below.

[52] Azimuth Volume III, Table 2.

Figure 4.1: RSP Masterplan – Proposed Site Layout



Source: RSP

Land Required

4.11 Without prejudice to our position that we do not consider that RSP's proposals are credible in terms of the level of demand that might be attracted to Manston, we do not consider that the scale of development proposed by RSP for 17,171 cargo related movements is necessary, justifiable or reasonable, based on the principles set out at paragraph 4.5 above.

4.12 At **Figure 4.2**, we illustrate the justifiable and reasonable extent of land required at Manston Airport to support a cargo operation of 17,171 ATMs and passenger operation of 1.4 mppa (even though we do not accept that these ATMs and passenger numbers can be reached). This is based on our experience of airport operations around the world.

4.13 We recognise that there could be an opportunity for maintenance hangars for heavier aircraft maintenance activities but the need for these will not necessarily be triggered by the establishment of passenger operations. Depending on the nature of the freight and passenger carriers that set up services at Manston, the need for maintenance hangars cannot be ruled out and we have allowed for one twin bay hangar with a footprint of approximately 6,000m2 or two single bay hangars at 3,000m2 each.

4.14 It is also reasonable to expect that there will be some business and some general aviation activity. However, unless a bespoke FBO is set up, which we believe is unlikely given the distance from the main business aviation market in London and with Biggin Hill much closer to the core market, there would be very limited use by business aviation. Any small general aviation or flying school activity can be accommodated within the land area shown. These facilities, and any aircraft dismantling activity as also suggested in Azimuth's forecasts, would need to have direct airside access and so would need to be located to the south of the B2050. In other words, all of the operational facilities to support the operation of the Airport would require to be located to the south of the road and not on the 'Northern Grasslands' site.

4.15 We have clearly marked the area of land to the south of the B2050 that is not required for the defined airport operations in green on Figure 4.2. To the north of the Airport site, the 'Northern Grasslands' are marked in yellow and is not required for the scale of airport activity proposed by RSP. We discuss the potential use of this area further below. Figure 5.2 clearly shows that the extent of airport land needed to support the scale of freight and passenger activity proposed by RSP is significantly less than that proposed by the RSP. There are surplus areas of land within the core airport site as well as the 'Northern Grasslands' that are not required to support the throughput proposed.

Figure 4.2: Airport Land for 17,121 Freight ATMs and 1.4 mppa Operation – Surplus Land: Airport Land (Green), Northern Grasslands (Yellow)



Source: York Aviation

4.16 We summarise at **Table 4.2**, those facilities proposed by RSP in its Master Plan but are not, in fact, required to support essential airport operations.

Table 4.2: Classification of RSP Proposed Airport Facilities at Manston Airport

	RSP proposed airport-related development	Facilities not Essential for an Operational Cargo Airport
4	Retention & Extension of Passenger Apron	✓
11	New replacement Passenger Terminal building	✓
12	New and extended passenger car parking areas	✓
23	Relocation of the two existing museums	✓
24	Demolish old Control Tower in northern area	✓
25	Airport related businesses on Northern Grasslands	✓
26	New MRO aircraft maintenance hangars	✓
27	New FBO in refurbished business aviation terminal	✓

4.17 Although a replacement radar is shown by RSP re-using the old radar tower within the 'Northern Grasslands' area, it is not clear that a replacement radar would actually be required, although a radar service would be required. It is likely that a radar service could be procured more cheaply by buying in radar coverage from an alternative radar position rather than re-providing a radar on site. This is increasingly common practice at smaller airports. In the event that a replacement radar was required, this would not need to be located on the 'Northern Grasslands' but could be located within the airfield site to the south of the B2050.

4.18 In terms of the use of the 'Northern Grasslands', there is no particular requirement for extensive freight forwarding facilities on site as consolidation of loads is likely to continue to take place in and around Heathrow as currently. Any freight forwarding activity directly to support 17,171 cargo aircraft movements is likely to be containable within the area shown for freight warehousing within the airfield site.

4.19 No other justification is given for the extent of the commercial development shown on the 'Northern Grassland' part of the site. In our view, it is certainly not 'associated development' required to support the operational airport, other than in terms of providing a financial cross subsidy from rental income for general commercial buildings.

4.20 The need, then, for such an extensive development across the 'Northern Grasslands' cannot, in our opinion, be justified and is substantially in excess of what is seen elsewhere. The scale of supporting infrastructure proposed appears substantially greater than exists at the UK's main pure freight hub at East Midlands. We have seen no reasoned justification for the scale of facilities proposed. It appears to cover an area (c.48 hectares), which is more than double the size of the associated Pegasus Business Park area at East Midlands Airport (c.21 hectares), which currently handles virtually the same cargo tonnage as projected by Azimuth for Manston at 2039. Furthermore, it is significant that a substantial part of the East Midlands area is occupied by hotel development (3 hotels) in support of the much greater passenger throughput at that airport, a Regus office complex, and many of the other occupiers of sites within the Pegasus Business Park are not related to the activity at the Airport and include companies such as PwC, Laser Optical Engineering, Nikon Metrology UK, Medstrom Healthcare, Rail Vision and PKF Cooper Parry making use of an accessible location close to the M1. None of these activities would be essential in relation to freight activity at the airport and so would not meet the test for associated development required for inclusion with a DCO.

Realistic Requirements

4.21 Clearly, as is evident from earlier sections of this report, our opinion is that RSP's projections for the use of Manston Airport cannot be realised. Hence, the area of land required to accommodate lower levels of activity would be proportionately smaller, occupying a substantially smaller area of land to the south of the B2050 than shown on Figure 4.2.

Conclusions on Capability

4.22 The existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo transport movements[53]. However, the actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.

4.23 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we consider that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan.

4.24 We can see no justification for the inclusion of the 'Northern Grasslands' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston and any requirement could be accommodated south of the B2050. The development on the Northern Grasslands site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[53] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

5 SOCIO-ECONOMIC IMPACT

Introduction

5.1 In this section, we examine the socio-economic benefits that are put forward by Azimuth and the flaws that are apparent in their approach. These render the socio-economic case put forward unreliable. We then move on to provide our own estimates of the socio-economic impacts of Azimuth's traffic forecasts based on more appropriate assumptions and also set out the socio-economic impacts associated with our own traffic forecasts to provide a more reasonable basis for considering the extent of the benefits that might realistically accrue from the re-opening of the Airport.

Comments on Azimuth Socio-Economic Assessment

5.2 Volume IV of the Azimuth's Report sets out the socio-economic case for the DCO for Manston. This assessment naturally relies on the traffic forecasts presented in Volume III. This means, of course, that the socio-economic assessment is rendered unreliable by the failings of the traffic forecasting approach and the incorrect inferences drawn from the assessment of the market. However, there are also substantial failings in relation to the methodology used for the socio-economic impact assessment itself, which result in significant over estimates of the impacts. We would also re-emphasise that the Airport must be commercially viable to be able to deliver these benefits, otherwise it will simply fail and no level of benefit will be delivered. RSP has not clearly demonstrated that the operation of the Airport would be viable at any level of throughput and, in the light of the conclusions of Aviasolutions in their advice to Thanet (see Section 6 of this report), viability must be in serious doubt based on our analysis of the likely usage as set out in Section 3. This renders any analysis of the socio-economic impacts to a large extent moot. Setting aside the issue that the Airport is highly unlikely to be viable and that the traffic forecasts set out are significantly overstated, we have identified below a number of key flaws in Azimuth's approach and analysis of the economic impacts.

5.3 At the outset, it is probably helpful to highlight the key area in which we agree with Azimuth's analysis and conclusions. We agree that the East Kent area is in need of regeneration. It is simply that we do not believe that Manston Airport can deliver the benefits set out. Any attempt to re-open the Airport is not likely to succeed as it is hard to see that viability could be attained with realistic forecasts of usage. Another failure of the Airport would be more likely to damage the image of Kent as a place to invest than enhance it.

5.4 Azimuth spend some time considering the appropriate employment density on which to base an assessment of direct employment. They ultimately conclude that East Midlands Airport provides an appropriate comparator (see paragraph 4.1.4 of Volume IV). This information is then used to drive large parts of the benefit calculations for Manston. York Aviation provides economic impact advice to MAG in relation to both its major freight airports, East Midlands and Stansted. From this knowledge, we would suggest that the job numbers quoted and used here are an incorrect base as they include substantial numbers of non-airport related jobs located on the business park at East Midlands Airport, discussed in the previous section. This means that the employment density used by Azimuth is far too high for genuine airport related activity. In any event, the employment at East Midlands is higher than might be anticipated anyway given the very significant employment supported at the site by DHL's UK main base of operations, which is not likely to be replicated at Manston.

5.5 We accept that it is difficult to identify an ideal comparator for a re-opened Manston in the UK but would suggest that an airport such as Glasgow Prestwick would be a much more appropriate comparator. The Airport has a low fares operation by Ryanair and has a reasonably significant pure freighter operation (although this has been substantially larger in the past). There is also detailed information on the economic impact of that airport in the public domain from work undertaken by both York Aviation[54] and SQW[55]. We have used information from this research later in this section to provide a more realistic base for assessing the economic impact of Manston.

5.6 The multipliers used by Azimuth for indirect and induced employment and economic activity in their assessment are simply inappropriate. Firstly, the multipliers adopted are for the impact at a national level. The study area for this economic assessment and the focus of Azimuth's comments is the sub-region around Manston Airport. Multipliers appropriate to this much smaller area should have been used and would have been substantially smaller. Secondly, the multiplier used (2.1) is a European average taken from research by InterVISTAS for ACI EUROPE[56]. The adoption of this Europe-wide multiplier is strange given that that the research does actually provide a specific multiplier for the UK[57], which is substantially smaller at 1.5. Use of the appropriate multiplier would, of course, have significantly reduced the job impacts suggested, even at a national scale.

5.7 There is a further issue in relation to the use of an inappropriate multiplier covering national level effects in that displacement of activity from other airports should have been taken into account. To the extent that any of the activity projected for Manston is displaced from other airports, as our analysis strongly suggests it will be, there will be a relative reduction in employment and economic activity in the vicinity of these other airports. So whilst, correctly calculated, the employment and economic effects local to Manston would be additional, the effect of displacement of activity would need to be netted off wider national or regional (South East) impact assessments.

[54] The Economic Impact of Glasgow Prestwick Airport – York Aviation (2012). http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=509
[55] Economic Impact of Glasgow Prestwick Airport – SQW (2008). http://www.sqw.co.uk/files/4413/8712/8925/99.pdf.
[56] The Economic Impact of European Airports – InterVISTAS for ACI Europe (2015).
[57] Ibid. Page 103.

5.8 As well as using a multiplier for indirect and induced impacts, a multiplier is used to assess the wider catalytic employment[58]. The multiplier used is taken from out of date research for ICAO[59] and it should be said that catalytic impacts remain a difficult area in terms of quantification. There is not sufficient detail in the ICAO report[60] that Azimuth rely on to understand how this catalytic multiplier has been derived. However, again, there are issues with the use of this multiplier. Firstly, it appears to be a global multiplier, which would again be completely inappropriate for use in considering sub-regional impacts around Manston and it has been wrongly applied to total job numbers rather than direct job numbers. In practice, the correct approach would have been to consider the specific additional connectivity that Manston Airport might provide for Kent and assess how this might relate to attracting additional business activity and tourism to the area.

5.9 In examining the employment projections presented (Section 5.1 of Volume IV), it appears that no allowance has been made for either productivity growth or returns to scale over time and as the Airport grows. While information on potential on-site productivity growth can be hard to come by, we would expect some allowance to have been made. A typical figure might be around 2% per annum based on our experience at other airports. The result of this omission is that future direct job numbers, in particular, are likely to be significantly overstated given the compounding effect of failing to account for productivity growth.

5.10 Section 7 of Volume IV discusses other socio-economic impacts. In particular, it talks about contributions to GDP. Para 7.1.1 describes GDP as *"a monetary measure of the state of a Region's or a Country's economy"*. This is not correct. It is a measure of the size of the economy. It does not comment on the state of the economy or the prosperity or wealth within it. The calculations of GDP impacts presented are based on the job numbers estimated earlier in the report. They are, therefore, likely to be significant overestimates given the flaws in the demand forecast method and the job density and multiplier assumptions.

5.11 The comments in Paragraph 7.1.7 describing how Manston could contribute significantly to Thanet's Economic Growth Strategy aspirations in terms of GVA per job and per capita are, in reality, unsupported. Given the methodology adopted, which essentially measures Manston's impact at a national level, it is actually very difficult to know what the effect might be on the Thanet economy. Undoubtedly, the Airport could support local jobs if it is re-opened but, in reality, the number of those jobs and their value has not been effectively calculated here. The aviation supply chain in the UK is heavily concentrated around the major airports, particularly in relation to air cargo. So, in practice, much of the economic benefit claimed would be realised in and around Heathrow rather than locally if Manston were to re-open. To the extent that any activity would be displaced to Manston, there would be negative economic implications elsewhere.

[58] Catalytic employment is related to additional economic activity generated in areas adjacent to an airport as a result of the additional connectivity offered by the airport.
[59] ICAO – International Civil Aviation Organisation, which is the inter-governmental body which regulates air transport globally.
[60] ICAO – Economic contribution of civil aviation: Ripples of prosperity, 2000.

The Socio-Economic Impact of the Azimuth Traffic Forecasts

5.12 Below, we have set out an estimate of the socio-economic impacts of the Azimuth traffic forecasts using more appropriate assumptions. We have retained the same basic analytical framework, which considers direct, indirect, induced and catalytic impacts, but we have used different basic assumptions in all areas:

- we have estimated the direct employment associated with the re-opening of the Airport based on employment densities observed at Glasgow Prestwick Airport during the production of our 2012 report for Scottish Enterprise[61]. This includes considering which elements of on-site employment are likely to be driven by passenger growth and which by cargo growth. Given the slightly differing approach, it is hard to provide a perfect comparison of job density. However, in Year 3, when both cargo and passenger operations begin, the York Aviation job density is around 650 jobs per million workload units, compared to around 890 assumed by Azimuth;
- we have used an indirect and induced multiplier for Kent of 0.4[62]. This is again taken from our work on Prestwick and reflects impacts of that airport in the Ayrshire economy, which would seem a sensible comparator. This multiplier is also in line with the benchmark multipliers set out in the Homes and Communities Agency Additionality Guide (2014)[63]. At this level, displacement affects do not need to be accounted for albeit they would still arise to the extent that activity at Manston displaces activity elsewhere;
- we have used catalytic multipliers for air freight taken from Steer Davies & Gleave's report on the UK Air Freight Industry for the DfT[64]. This identified national level catalytic multipliers for air freight of 3.46 and 3.76 (inclusive of the direct impact). There is no simple way to adjust these multipliers to the Kent economy. We have, therefore, reduced these multipliers by 75%. This is broadly akin the difference between sub-regional and national level multipliers for indirect and induced effects. As with all estimates of catalytic impacts, these should be regarded with some caution in the absence of a more detailed and specific assessment of the potential effects;
- we have assumed productivity growth at Manston Airport of around 2% per annum. This is typical of our experience of productivity growth rates at UK airports;
- in order to estimate the GVA impacts of the re-opening of the Airport, we have used GVA per job estimates from ONS for Kent. On-site jobs are assumed to generate GVA in line with the Transportation & Storage sector (£57,763), while jobs in the wider economy are assumed to reflect the average GVA per job for Kent (£52,623).

5.13 In **Tables 5.1** and **5.2**, we have set out our estimates of the socio-economic impact of the Azimuth traffic forecasts compared to the original estimates produced by Azimuth.

[61] *The Economic Impact of Glasgow Prestwick Airport* – York Aviation (2012).
[62] Note that this excludes the initial direct effect.
[63] See page 36.
[64] *AIR FREIGHT Economic and Environmental Drivers and Impacts* – Steer Davies and Gleave for DfT (2010). Page 106.

Table 5.1: Employment Impact of Manston Airport – YAL Socio-Economic Assumptions Comparison					
	Y2	**Y5**	**Y10**	**Y15**	**Y20**
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	856	2,150	2,749	3,438	4,271
Indirect & Induced	1,798	4,515	5,773	7,220	8,970
Catalytic/Wider	0	8,601	10,996	13,753	17,085
Total	**2,654**	**15,266**	**19,518**	**24,411**	**30,326**
YAL Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	688	1,555	1,791	2,033	2,291
Indirect & Induced	275	622	716	813	917
Catalytic/Wider	475	1,073	1,236	1,403	1,581
Total	**1,439**	**3,250**	**3,743**	**4,249**	**4,789**
YAL Total as % of Azimuth	**54%**	**21%**	**19%**	**17%**	**16%**
Source: York Aviation and Azimuth Associates					

Table 5.2: Gross Value Added Impact (£ million) – YAL Socio-Economic Assumptions Comparison					
	Y2	**Y5**	**Y10**	**Y15**	**Y20**
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£43	£108	£138	£173	£215
Indirect & Induced	£78	£195	£250	£312	£388
Catalytic/Wider	£0	£391	£499	£625	£776
Total	**£121**	**£694**	**£887**	**£1,110**	**£1,379**
YAL Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£41	£99	£126	£158	£197
Indirect & Induced	£15	£36	£46	£58	£72
Catalytic/Wider	£25	£61	£78	£97	£121
Total	**£82**	**£196**	**£250**	**£313**	**£389**
YAL Total as % of Azimuth	**68%**	**28%**	**28%**	**28%**	**28%**
Source: York Aviation and Azimuth Associates					

5.14 The differences between the two sets of estimates are marked. Our assumptions result in economic impacts being around a half to two thirds of those estimated by Azimuth initially. However, the gap widens over time as the impact of Azimuth's failure to allow for productivity growth and high multiplier assumptions feed through. In our view, the Azimuth estimates simply cannot be relied upon as a measure of the potential economic impacts of re-opening of Manston Airport. Not only are they infected by the errors in traffic forecasting, but the approach itself is highly flawed. A more realistic and robust assessment suggests that the local impacts within Kent, even on Azimuth's forecasts, would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and impacts in assessing the acceptability of the proposed development, including the loss of SHP's proposed mixed use development and the socio-economic benefits deriving therefrom.

A More Realistic View of the Socio-Economic Impacts of Manston

5.15 As we have described above, the socio-economic assessment undertaken by Azimuth was destined to fail before it started because of the failings in the traffic forecasts that feed the approach. We do not consider there is any realistic prospect of the Airport attaining 10,000 annual movements by cargo aircraft and the build up of traffic would be materially slower than Azimuth estimate.

5.16 We have, therefore, set out below an assessment of the socio-economic benefits that might be associated with re-opening Manston on the basis of York Aviation's most likely cargo forecast (that Manston is able to regain its previous market share) and our passenger forecasts, which are around half those assumed by Azimuth. Once again, we have used our socio-economic impact assumptions as described above. The resulting employment and GVA impacts are again set out compared to Azimuth's assessment of the economic impact of reopening Manston in **Tables 5.3** and **5.4**.

Table 5.3: Employment Impact of Manston Airport – YAL Forecasts Comparison

	Y2	Y5	Y10	Y15	Y20
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	856	2,150	2,749	3,438	4,271
Indirect & Induced	1,798	4,515	5,773	7,220	8,970
Catalytic/Wider	0	8,601	10,996	13,753	17,085
Total	**2,654**	**15,266**	**19,518**	**24,411**	**30,326**
YAL Impact Assumptions with YAL's freight + passenger forecast					
Direct	216	391	409	442	486
Indirect & Induced	87	156	164	177	194
Catalytic/Wider	149	270	283	305	335
Total	**452**	**817**	**856**	**925**	**1,015**
YAL Total as % of Azimuth	**17%**	**5%**	**4%**	**4%**	**3%**

Source: York Aviation and Azimuth Associates

Table 5.4: Gross Value Added Impact (£ million) – YAL Forecasts Comparison

	Y2	Y5	Y10	Y15	Y20
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£43	£108	£138	£173	£215
Indirect & Induced	£78	£195	£250	£312	£388
Catalytic/Wider	£0	£391	£499	£625	£776
Total	**£121**	**£694**	**£887**	**£1,110**	**£1,379**
YAL Impact Assumptions with YAL's freight + passenger forecast					
Direct	£13	£25	£29	£34	£42
Indirect & Induced	£5	£9	£11	£13	£15
Catalytic/Wider	£8	£15	£18	£21	£26
Total	**£26**	**£49**	**£57**	**£68**	**£83**
YAL Total as % of Azimuth	**21%**	**7%**	**6%**	**6%**	**6%**

Source: York Aviation and Azimuth Associates

5.17 Unsurprisingly, the socio-economic impacts associated with the Airport are reduced even further on the basis of more realistic forecasts. The operation is simply of a much smaller scale. In Year 2, in generates 452 jobs, only 17% of the Azimuth estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs, but with our estimates at only just over 1,000. More likely, the Airport would cease operating again due to the inability to attain viable operations. In these circumstances, it becomes a moot point as there would be no jobs and economic impact over the medium to long term.

Conclusion

5.18 Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated and, in any event, would not be realised if the operation of the Airport is not commercially and financially viable.

6 PEER REVIEW OF OTHER REPORTS

6.1 In this section, we set out a brief review of other reports produced on the potential for a re-opened Manston Airport.

Aviasolutions for Thanet

Commercial Viability of Manston Airport – September 2016

6.2 We note that this assessment was focussed on the likely viability of a re-opened Manston Airport. Hence the main focus was on scenarios for passenger growth as passenger operations make a significantly greater financial contribution to operating an airport given the ability to earn revenue from retail, catering and car parking as well as direct revenue from airport charges (landing, aircraft parking, passenger fees and any cargo handling fees). We note that Avia took a much more optimistic view than we do of the scope for passenger overspill from the main London airports to Manston but, to an extent, these scenarios were designed to assess whether re-opening Manston would be commercially viable rather than to assess a realistic level of demand.

6.3 Having assessed the historical performance of Manston, Avia assumed that it would be possible for the Airport to regain the broad level of cargo activity that is was handling before it closed. This is not dissimilar to our 'most likely' assumption. Significantly, Avia noted that:

"Our freight interviews indicated that the demand to use the airport for freight was very limited. This, in large parts, is due to two factors; the infrastructure investments that have already been made by the industry around Heathrow and Stansted, and the geographical location of the airport. Infrastructure, and the associated knowledge, skill and supporting industry at airports such as Heathrow and Stansted, as well as the major European hubs such as Frankfurt, and Paris, would be almost impossible for Manston to replicate. The geographic location of the airport, tucked into the corner of the UK, cannot compete with airports such as East Midlands for Integrator services that are sold as fast delivery, due to the increases in surface transportation times. The interviews did however indicate that charter services and ad-hoc freighter flights would certainly return, providing some revenue income for the airport"[65].

This accords with our view of the most likely prospects for Manston.

6.4 Overall, the Avia 2016 work concluded that Manston was not likely to be a commercially viable prospect if re-opened, certainly if it is assumed that another runway would be built at either Heathrow or Gatwick. We concur with this conclusion and, on the basis of our more realistic assessment of the level of passenger demand that the Airport might attract, commercial viability is even less likely to be attained.

[65] Aviasolutions, *Commercial Viability of Manston Airport*, September 2016, Section 8.3.

Local Plan Representations - Final Report – August 2017

6.5 This report largely deals with individual specific representations one at a time. Overall, Avia conclude that their *"opinion, based on updated market information since the publication of our previous study, is consistent with our earlier view that Manston Airport does not represent a financially viable investment opportunity under normal market conditions."*[66]

6.6 In relation to these representations, Avia state clearly that:

"The Local Plan Representations do not make a credible case, nor provide the evidence for AviaSolutions' to change its views on the financial viability of Manston Airport. We remain of the view that whilst Heathrow Airport continues to offer substantial freight capacity to a truly global network, and Stansted Airport utilises only around half of the statutory provision of air freighter movements, the London air freight market has capacity to grow without the re-introduction of capacity at Manston Airport. Freight Forwarders have invested heavily in infrastructure around these core airports, carriers have developed their networks as such, and without clear value drivers that support relocating services to Manston Airport, the case remains to be made that demand exists for a freight facility at Manston Airport. This view is reinforced by the empirical evidence of multiple failed attempts to develop profitable operations at the airport."[67]

6.7 Again, Avia's analysis concurs with our own in terms of the limited role that there would be for a re-opened Manston Airport given the evolution of the air freight market. We concur with Avia's analysis of the potential for other activities at Manston such as business aviation or aircraft dismantling and note that, in our experience, income generation from such activities would be low.

6.8 We note that, in this report, Avia correctly interpret our work for the FTA in terms of the potential for the equivalent of 80,000 air freighter movements to be accommodated away from the main London airports by 2050 in the event of no new runway being constructed. As Avia note, this demand is likely to be accommodated at a variety of other airports, including Manchester and East Midlands, with the former offering a substantial amount of bellyhold capacity by that date and the latter offering a dedicated freighter service. Displacement to regional airports is also a logical response given the amount of cargo from the regions which is currently trucked to the London airports. We have had no dialogue with Avia regarding the interpretation of our work but their interpretation of it confirms that Azimuth have simply misused headline figures from our work to support RSP's case without considering or understanding the broader meaning of our analysis in 2015 as Avia demonstrate.

[66] Aviasolutions, *Local Plan Representations - Final Report*, August 2017, Executive Summary.
[67] Ibid.

Review of Azimuth and Northpoint Forecasts for Manston – August 2017

6.9 In this report, Avia conclude that the Azimuth and Northpoint forecasts are *"highly ambitious"* and that *"the likelihood of these forecasts being realised is very low"*[68]. Avia do not, themselves present any updated forecasts of their own in this report. They make clear that neither report presents *"a credible case"* sufficient for Avia to change its view on the likelihood of viable commercial operations being attained at Manston Airport.

6.10 Avia conclude that:

> *"We remain of the view that whilst Heathrow Airport continues to offer substantial freight capacity to an extensive global network, and Stansted Airport offers capacity for air freighter movements, the London air freight market has capacity to grow without the re-introduction of capacity at Manston Airport. Freight Forwarders have invested heavily in infrastructure around the UK's core cargo airports and carriers have developed their networks as such. Without clear value drivers that support relocating services to Manston Airport, the case remains to be made that demand exists for a freight facility at Manston Airport.*
>
> *Provision of capacity alone is no guarantee of financial success, a view reinforced by the empirical evidence of multiple failed attempts to develop profitable aviation operations at Manston Airport."*[69]

This accords with our view.

6.11 Like ourselves, Avia point out[70] that provision of infrastructure is not of itself sufficient to ensure a financially viable airport at Manston and that this will depend on the demand that can be attracted. Avia conclude, like ourselves, that *"Azimuth's report does not provide sufficient evidence of demand at Manston Airport from air freight operators to support the required investment in facilities and profit generation potential to re-establish Manston Airport as a going concern."*[71] Avia, like ourselves, highlight that if there had been a market for Manston to accommodate any overflow from Heathrow, this would have been evident prior to the Airport's closure in 2014. Avia also conclude[72], in relation to the extensive interviews carried out by Azimuth, that they largely address the overall issues of airport capacity in the South East of England and do not effectively explain why Manston, at the tip of Kent, would be an attractive solution for the UK air freight sector.

6.12 Avia also note that the other activities that Manston might attract, as suggested by interviewees, such as maintenance, repair and overhaul, aircraft dismantling, a fixed based operator for business aviation and the establishment of an integrator base could have been attracted previously if there was demand at Manston but that such demand was not evident. We concur that the reports of interviews set out by Azimuth do not constitute real evidence of actual demand for such facilities or the likelihood of them locating at Manston.

[68] Aviasolutions, *Review of Azimuth and Northpoint Forecasts for Manston*, August 2017, Executive Summary
[69] Ibid.
[70] Ibid, page 9.
[71] Ibid.
[72] Ibid, page 11.

6.13 Like ourselves, Avia point out that Azimuth's freight forecasts would suggest that Manston would be a major presence in the UK air freight market from Year 2[73] and that by the end of the period would be on a par with the UK's main freight hub at East Midlands by 2039. They go on to note that the methodology adopted by Azimuth to forecast cargo movements could be acceptable, which we take to mean a 'bottom up' movement driven approach. However, they caution that the primary data used (from the interviews) *"has significant potential to exaggerate or overstate the market"*[74]. As Avia note, the aspirations of the interviewees, that as we have noted earlier were largely local interests in Kent, would need to be tempered by commercial realism and the risks attaching to the operations put forward. Avia conclude, in relation to Azimuth's freight forecasts, that *"the probability of such an outcome remains very low"*[75]. We concur.

6.14 In overall terms, Avia conclude that there is nothing in the Azimuth analysis which would give rise to them changing the conclusions set out in their earlier 2016 report.[76]

6.15 Avia then go on to consider the Northpoint report, discussed further below, which was prepared as a direct rebuttal of their 2016 report. In the first instance, they note that they do not accept that the benchmark airports[77] cited by Northpoint as comparators for what Manston could be are relevant:

There are clearly structural and geographical reasons as to why each of these airports is different to the proposal for Manston Airport. As such, suggesting these are comparable benchmarks is not realistic. In order for Manston Airport to acquire the status of these airports it would need to demonstrate key elements of development, namely; commitments from key express players (DHL / UPS / FedEx / Amazon / Alibaba); an ability to operate night operations with few regulatory restrictions; and geographical advantages from nearby cities, industrial parks, and population centres.

We agree. These benchmark airports serve different roles, principally based around their selection by large integrators/distributors as main distribution hubs for large urban conurbations. These are simply not comparable to Manston and it would be misleading to believe otherwise.

[73] Ibid, Section 2.3.2.
[74] Ibid, Section 2.3.3.
[75] Ibid.
[76] Ibid, page 15.
[77] Alliance Fort Worth in Texas, USA, Hamilton Airport in Ontario, Canada, Bergamo in Italy, Liege in Belgium and Leipzig in Germany.

6.16 In relation to air freight forecasts, Avia again note RSP's reliance on our work for the Freight Transport Association. Again, Avia correctly interpret this work as being based on the assumption that *"freight growth is bellyhold focussed"* going on to note that our *"report also questions Boeing and Airbus' forecast growth rates, which are utilised in the long term growth forecast by Dr Dixon."*[78] Avia go on to note Northpoint's use of the 55,000 air cargo movements figure from our earlier work for Transport for London (2013) and cite Northpoint's claim that we asserted that Manston was the only realistic opportunity to accommodate this level of freighter movements if they were displaced. As we have discussed at length in Section 2, this is simply a misapplication of our 2013 work. Unsurprisingly, Avia could not find these figures in the 2015 report for the FTA.

6.17 Avia also highlight Northpoint's misinterpretation of the interaction between bellyhold and pure freighter demand. We agree with their conclusions in this regard, which explain why the market for more pure freighter operations to/from the UK is limited:

"AviaSolutions' experience in the freight industry is that many bellyhold operators can, when supply exceeds demand, reduce rates to such a level as to cover the marginal cost of freight plus a margin. The business is often operated as an addition to the passenger service, and therefore its real marginal costs are low. It is simply impossible for a freighter operator to reduce its rate to match this marginal cost and operate at profitably [SIC]*. Therefore, freighters tend to operate on thick routes where the economies of scale of a freighter operation can be realised. These routes are also curtailed by a non-related market, that of passenger demand. Where large scale passenger demand exists e.g. UK to USA, a residual effect of this is large scale freight capacity, which is unmatched to demand. The reverse can be seen on routes to the East, where passenger demand is less, but freight demand, particularly inbound to the UK, is high. As such, many freighters operate on these routings."*[79]

We agree that the extensive passenger based route network and the availability of bellyhold capacity limits the need for a substantial pure freighter operation to/from the UK, in contrast with other parts of the world where passenger air route networks are less developed. This is why global data on the demand for air freighters is simply not relevant in the UK context.

Northpoint

6.18 We have largely addressed key points of Northpoint's rebuttal of the original Aviasolutions work above on the basis of Avia's most recent report. We highlight here a few other key observations on Northpoint's *"The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston"* prepared for RSP.

6.19 As with Azimuth's work, the key criticism of this work is that it is based on assertion rather than evidence or systematic analysis of the potential market for Manston. As noted above, benchmark airports in the middle of Continental Europe or adjacent to major conurbations in the US and Canada do not provide robust examples of how Manston might develop given its geographic position. Northpoint set out that:

[78] Ibid, page 17.
[79] Ibid, Section 3.1.6.

"RSP's plans are centred on a developing a strategically important air cargo operation focused dedicated freighters importing and exporting a range of perishable and high-value/time-critical goods to markets in London and across the wider south-east." [80]

And that these operations would be supplemented by a *"modest"* passenger offering, a variety of business and general aviation activities as well as maintenance, repair, overhaul and aircraft dismantling activities. However, the report does not, itself set out how the scale of such activity could be assessed and whether it would, in combination, secure a viable operation.

6.20 In terms of forecasting the volume of air freight that Manston might secure, Northpoint make an unsubstantiated leap from noting the reasons why Heathrow is dominant in the market to asserting that the key determinant for pure freighter operations is the infrastructure provided at an airport and supply driven factors, noting that it is important that these latter are *"transparent"*[81]. We have already noted the lack of transparency in relation to the air cargo forecasts produced by Azimuth upon which RSP rely. Nor are the projections set out in Northpoint's Appendix A any more transparent in terms of how the estimated tonnage to be accommodated by freighter movements at Manston has been derived.

6.21 Although lacking transparency, it would appear that Northpoint, like Azimuth, have relied on Boeing's global forecasts for freight revenue tonne kilometres as a basis for projecting UK air cargo tonnage[82]. For the reasons set out in Section 2, this is inappropriate and will lead to a material overstatement of the overall market.

6.22 Like Azimuth, Northpoint see cross channel movement of air cargo as an opportunity for pure freighter operations at Manston[83] rather than simply the natural economic response to shortage of bellyhold capacity at Heathrow. Northpoint then seek to rely on our assessment of displaced tonnage equivalent to 55,000 annual movements by air cargo aircraft in 2050 from our 2013 work for TfL as corroborating evidence of Manston's potential[84]. This is to misrepresent the conclusions from this work, which indicated clearly that, in practice, there was unlikely to be a problem even if Heathrow did not get a third runway, albeit that there might be some additional trucking costs to make use of bellyhold capacity in Europe. This would still be cheaper for shippers than the alternative use of pure freighter aircraft from Manston or elsewhere. Furthermore, in assessing the scope for airports to accommodate more freighter aircraft[85], we do not agree with their assessment in respect of Stansted for the foreseeable future and Northpoint appear to ignore the main pure freight hub at East Midlands.

[80] Northpoint, *The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston*, paragraph 1.3.
[81] Ibid, paragraph 2.4.
[82] Ibid, paragraph 2.18.
[83] Ibid, paragraph 2.21.
[84] Ibid, paragraph 2.24.
[85] Ibid, paragraph 2.30.

6.23 In dismissing the potential for these other, established airports, Northpoint seek to highlight the constraining effect of night movement restrictions on air cargo operations. By inference, then, Northpoint appear to assume that Manston will not suffer from such restrictions so making it more attractive. This appears to be corroborated at Appendix A[86] where it is claimed that the presence of a logistics centre at Manston without significant night movement restrictions would be one of the attractions and a factor in the forecasts being attainable. However, it is our understanding that night movements will at best be limited to 8 per night and could be limited further if the promises of no night movements are upheld.

6.24 In relation to the potential in the aircraft maintenance and dismantling/recycling market[87], we note that these are activities being 'chased' by many airports. There is no analysis of competition nor of the likelihood of Manston capturing any of these activities in Northpoint's report. In any event, the level of activity generated by such activities is unlikely to make the difference between the Airport being viable or not.

6.25 Overall, Northpoint present no real evidence in its Conclusions[88] to substantiate why the operation at Manston could be viable. Its forecasts of cargo movement and passenger demand are no more transparent nor based on market analysis than those set out by Azimuth and do not justify why the RSP application would meet the tests set out in Section 23 of the Planning Act 2008. In general, we agree with Avia's conclusions regarding the robustness of this report.

[86] Ibid, Appendix A, A.8.
[87] Ibid, Section 4.
[88] Ibid, Section 5.

7 CONCLUSIONS

7.1 In this report, we have examined the case for RSP's proposed development at Manston Airport. Our overall assessment is that RSP have failed to provide their own evidence of the capability of Manston Airport and the amount by which their proposals would increase that capability by (all we have are forecasts which have no credibility as explained in this report). This results in glairing omissions in RSP's consultation material. This failure means that, in our opinion, the requirements in section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

7.2 RSP's case is principally based on circumstantial evidence presented in the Volumes I to IV of *Manston – A Regional and National Asset* prepared by Azimuth Associates. Much of the material upon which Azimuth seek to rely as the basis for the case for Manston relates to the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050. This is not relevant to the specific question as to whether there would be sufficient demand for pure freighter aircraft movements to be operated to/from Manston in the foreseeable future.

7.3 The analysis presented by Azimuth shows a lack of understanding of the economics of the air freight market. This leads to a misinterpretation of work by ourselves, upon which Azimuth seek to rely to support their case. Just because there could be excess freight demand in 2050 in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a relatively nearby airport over the use of available bellyhold capacity from a more distant airport which can be provided at a lower cost to the shipper with only marginal penalty in terms of time. Our previous work simply cannot be relied on to support RSP's case.

7.4 Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Hence, reopening the Airport, in the face of a limited market, has the potential to damage the productivity of the UK aviation sector overall, particularly, as we have demonstrated in our own assessment of cargo demand for Manston in Section 3 that there are more economically efficient alternatives available for any freight displaced due to specific capacity constraints at Heathrow both now and in the future.

7.5 Whilst there may be a role for Manston, on the margin, providing some niche specialist air freight operations, the market for such services is small and often ad hoc, which will impact on the prospects for a viable operation of the Airport.

7.6 Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses, for example as suggested in terms of the use of the 'Northern Grasslands' part of the overall airport site, is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations. It is simply in the wrong place to serve the market being in the far south east at the end of a peninsular, away from the main centres of population and distribution in the UK.

7.7 In the absence of hard market evidence of the need for Manston Airport, Azimuth undertook an interview survey to supplement the need case and inform the forecasts. However, the list of interviews was small, with few national players interviewed compared to a large number of local companies with something of a vested interest in seeing Manston re-opened. Even so, if anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. The scale of this opportunity was never quantified by Azimuth. It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' airport for London.

7.8 The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is simply not possible to relate the proposed services to be operated with the responses by the interviewees. There is a complete absence of any explanation for or justification of the services postulated. At the very least, there is a lack of transparency in the approach that needs to be explained so that consultees can understand the basis of what is proposed and to ascertain whether there is a credible forecast for why an increase in Manston's capability is required.

7.9 In our view, the Azimuth forecasts simply lack credibility. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, which includes a substantial amount of bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. This lack of credibility is important in reaching any decision under Section 23 of the Planning Act 2008 (as amended).

7.10 We have updated and further developed our analysis of the UK air freight market from than previously undertaken for TfL and the FTA, and upon which RSP seek to rely as corroboration of their own cargo movement forecasts. When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that there is plenty of freighter capacity at Stansted and East Midlands to the extent that there is a need for more pure freighter capacity. Overall, we conclude from this analysis that there will be no shortage of freighter capacity in the UK before 2040 (RSP's forecast assessment year) and that overspill from other airports would not provide a rationale for re-opening Manston.

7.11 Our initial assessment of the passenger market is that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, this are unlikely to contribute substantially to the overall viability of the Airport.

7.12 The existing infrastructure at Manston Airport, if made good, is capable of handling 21,000 annual air cargo aircraft movements[89]. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of Section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

7.13 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we have considered that the land required to accommodate such a number of movements. Our assessment is that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land. Any development required to handle 17,171 annual movements by air cargo aircraft can all be accommodated to the south of the B2050 and, even allowing for passenger operations and other activities, would not require all of the airfield land to the south of the road. Obviously, on the basis of more realistic forecasts of future demand, the area required to support the ongoing operation of the Airport would be materially smaller.

7.14 We can see no justification for the inclusion of the 'Northern Grasslands' within the DCO on the basis of it being for associated development as there will be little or no requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston and any requirement to support Manston operations could be accommodated south of the B2050. The development on the 'Northern Grasslands' site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[89] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

7.15 In terms of the socio-economic implications of the proposed development, Azimuth has shown a lack of understanding of how such impacts should properly be calculated. Leaving aside the use of inappropriate multipliers, the impacts have been assessed at a national scale and should have taken displacement of activity from other airports fully into account, reducing the impacts below those stated. Furthermore, the assessment should have considered the impact on alternative uses of the site, including SHP's proposed mixed use development and the socio-economic benefits deriving therefrom. We have set out a more realistic and robust assessment, which shows that the local impacts within Kent, even on Azimuth's forecasts would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and impacts in assessing the acceptability of the proposed development.

7.16 Unsurprisingly, the socio-economic impacts associated with the Airport are reduced even further on the basis of more realistic forecasts of likely usage if it re-opened. The operation is simply of a much smaller scale. In Year 2, in generates 452 jobs, only 17% of the Azimuth estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs, but with our estimates at only just over 1,000.

7.17 Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated. In any event, these benefits would not be realised if the Airport ceases operation again due to it not being commercially viable.

7.18 As well as the Azimuth reports which form the basis of RSP's case, we have also reviewed a number of other reports on the potential for Manston. In overall terms, we agree with Aviasolutions for Thanet District Council that there is little realistic prospect of the re-opening of Manston Airport being a commercially viable proposition. We have reviewed their original report and the more recent reports and concur with their views on the overall structure of the UK air cargo market, noting that they, unlike Azimuth, have correctly understood the implications of our 2015 work for the FTA. We do not accept Northpoint's rebuttal of the Aviasolutions work. Like Azimuth, Northpoint's work is largely aspirational without any robust evidence or analysis of the market. Northpoint, too, misinterpret our previous work for the FTA and TfL.

7.19 **In overall terms, then, we do not consider that the case for the development of Manston Airport has been robustly substantiated. In any event, the capability of the existing infrastructure at the Airport, once made good in line with existing planning consents, is at least 21,000 annual air transport movements by air cargo aircraft. This means that, in practice, RSP are seeking permission to increase the number of cargo air transport movements that Manston Airport is capable of handling from 21,000 to at least 31,000 a year, well beyond the level assessed in the PEIR. Indeed, RSP's consultation material does not provide any detail as to what the increase in capability would be as a result of its proposals (i.e. the increase in capability as a result of its proposed alteration to Manston Airport). As a minimum, the increase in capability would be to 31,000 annual air transport movements by cargo aircraft, but in our view their proposals would result in a significantly higher 'new' capability which is not revealed or assessed by RSP.**

APPENDIX A

York Aviation

Transport for London

Note on Freight Connectivity

1. This note explains the approach taken to estimating the number of pure freighter air transport movements at the London airports in 2050 under three different scenarios of capacity growth:

   - ✈ Maximum use of existing capacity;
   - ✈ 2+2+2 – additional runways at each of Gatwick and Stansted;
   - ✈ New 4 runway hub.

2. The number of additional freighter movements required depends on the volume of passenger flights providing bellyhold capacity under the different scenarios. Under the constrained Max Use scenario, 48,000 pure freighter movements could be required, up from 14,000 at the London airports today. As there would be no spare runway capacity at the main London airports, this capacity would need to be provided from smaller airports serving the London area or from regional airports, with loss of economies of scale and producer efficiency, or through trucking to alternative hubs in Europe with implications for speed of transit.

3. With the provision of additional runways, increased bellyhold capacity reduces the number of additional freighter movements required to 28,000 and 21,000 respectively under the 2+2+2 and 4 runway hub scenarios. In both cases, we believe there will be sufficient runway capacity available to accommodate these freighter movements, albeit the 2+2+2 scenario will still result in dispersal of air freight capacity across a range of airports with the consequent loss of economies of scale and efficiency which could be attained at a single hub.

Freight Volumes

4. In 2012, the London airports handled 1,805,761 tonnes of freight[1]. Only 17% of this freight was flown on pure freighter aircraft. 83% was flown in the bellyhold of passenger aircraft. This may be as a result of limited capacity for freighter operations at Heathrow, where the bulk of air freight consolidation activity is concentrated. However, it may equally reflect the scale of bellyhold capacity offered at Heathrow, which reduces the need for pure freighter capacity to serve the London market as a whole.

5. Using data from ACI EUROPE[2], the volume of freight flown from the London airports is compared with that flown from other key European cities in Table 1.

[1] CAA Airport Statistics.
[2] The small discrepancy to CAA Statistics is noted but it is not considered to be material. The * against Hahn indicates estimated freight taken from airport's own website.

Table 1

	Tonnes
Heathrow	1,464,596
Gatwick	97,565
Stansted	214,904
Luton	29,637
London	**1,806,702**
Paris CDG	1,935,180
Paris Orly	94,700
Paris	**2,029,880**
Frankfurt	1,986,180
Frankfurt Hahn*	223,000
Frankfurt	**2,209,180**
Amsterdam	1,483,450
Milan MXP	405,858
Milan LIN	15,513
Milan BGY	116,733
Milan	**421,371**
Brussels	394,870
Luxembourg	614,906
Madrid	359,360
Zurich	281,683
Vienna	178,128
Dublin	102,717
Lisbon	90,264
Helsinki	176,987

6. There is no clear evidence that London is currently disadvantaged in terms of air freight capacity as the majority of freight is flown from Heathrow in the bellyhold of passenger aircraft rather than in pure freighter aircraft. To the extent that there is a need for freighter capacity, it can be provided at Stansted where there is ample spare capacity for additional movements and areas are set aside to increase aircraft parking and freight handling facilities if required. Although it is possible that limitations on bellyhold capacity at Heathrow may force greater trucking of freight to Europe, this is not evident from a comparison of overall air freight carried compared to other major European countries. In any event, the fact that freight is trucked rather than flown to Europe may have only a marginal impact on total transit times and, hence, limited economic detriment.

7. As well as the main city airports, there are a number of other specialist freight airports in both the UK and western Europe. Those handling over 75,000 tonnes in 2012 are shown in Table 2.

Table 2

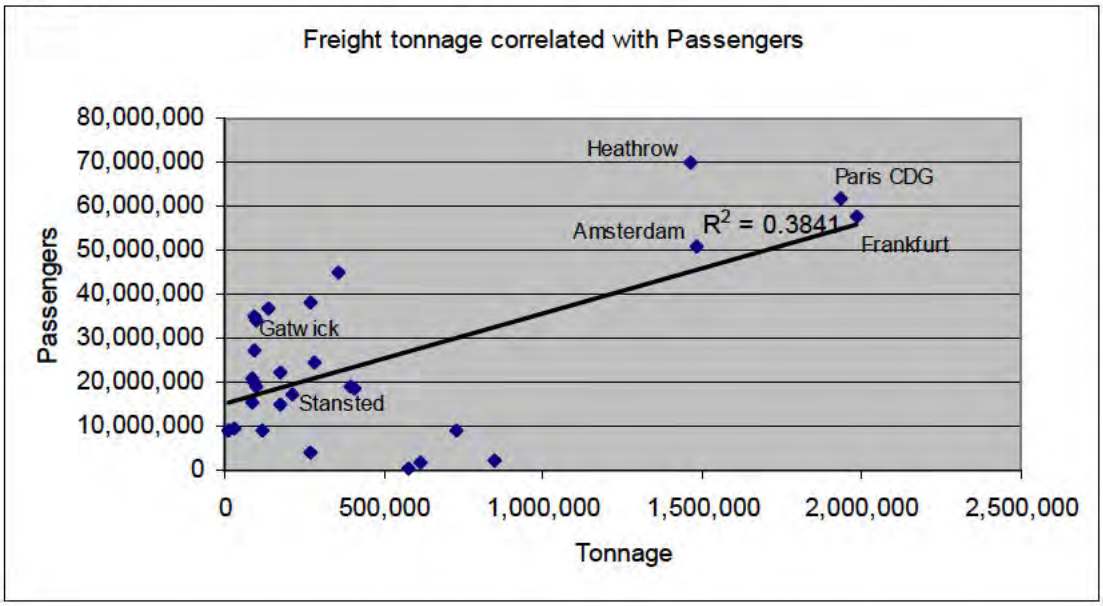
	Tonnes
Manchester	97,215
East Midlands	267,350
Cologne	730,040
Munich	272,203
Dusseldorf	86,729
Leipzig	846,086
Rome	135,777
Liege	577,226

8. Overall, on the basis of substantial air freight flows recorded by ACI EUROPE, the UK handled around 2.2 million tonnes of flown freight, France a similar amount, Italy around 600,000 tonnes and Spain around 500,000 tonnes. This does not suggest that the UK is disadvantaged in terms of freighter capacity overall currently.

9. However, the role of the low countries and Germany in acting as the major freight centre in western Europe is noticeable. In total, the main German freight airports handled almost 4.2 million tonnes of freight in 2012 which, when combined with the Netherlands and Benelux countries, amounted to 7.2 million tonnes of air freight flown. These airports have developed major and specialist air freight roles, with freight being trucked from all over Europe to feed these freight hubs. The integration of trucking with air freight should not be overlooked, even within the UK. In practice, it is unlikely that the UK could replicate this role, even with unconstrained airport capacity, due to its island location on the western edge of Europe.

10. There is some correlation between air freight flown to/from an airport and passengers carried as shown in Figure 1 below but this relates in large part to belly hold capacity. Figure 1 shows the correlation between flown freight and passengers across 29 European airports in 2012 as recorded by ACI EUROPE and which were either major airports in terms of freight handled or secondary airports serving the same cities.

Figure 1



Freighter Operations

11. The pattern of freighter operations is complex. As well as air freight carried in the bellyhold of passenger aircraft, there are freight charters for specialist and ad hoc consignments and large numbers of flights by the integrators (DHL, Fedex, UPS) etc. Obtaining detailed timetable information for freight operations is not possible as most do not publish timetables. Only scheduled freighter operations are shown in OAG and there is some uncertainty over whether this data is comprehensive.

12. Using OAG data for the week of 17th June 2013, the London airports have 49 scheduled freighter departures (98 freighter movements). According to CAA statistics for 2012, there were just over 14,000 freighter aircraft movements at the London airports or around 270 per week. This suggests that the OAG recorded movements account for only around 37% of total freighter aircraft movements to/from the London airports.

13. Similar data has been extracted for other western European airports. The table in Appendix A summarises the main pattern of freighter departures at airports with more than 30 freighter departures per week. This table also includes the principal UK freight airports and secondary airports serving major cities which in combination had more than 30 scheduled freighter departures per week in June 2013.

14. The number of scheduled freighter departures at the main freight airports is summarised in Table 3 along with the freight tonnage handled and passengers carried. It is evident that there is no clear correlation between freight tonnage handled and the weekly number of scheduled departures. This is illustrated in Figure 2. Amsterdam and Frankfurt have a high number of scheduled movements relative to the total volume of air freight whilst Paris and Heathrow handle similar volumes of air freight but with significantly fewer scheduled movements. We believe that the principal reason for these differences is in the relative importance of bellyhold freight but also the extent to which integrator activity is present; for example Fedex has its principal European hub in Paris and its movements are not recorded in OAG.

Figure 2

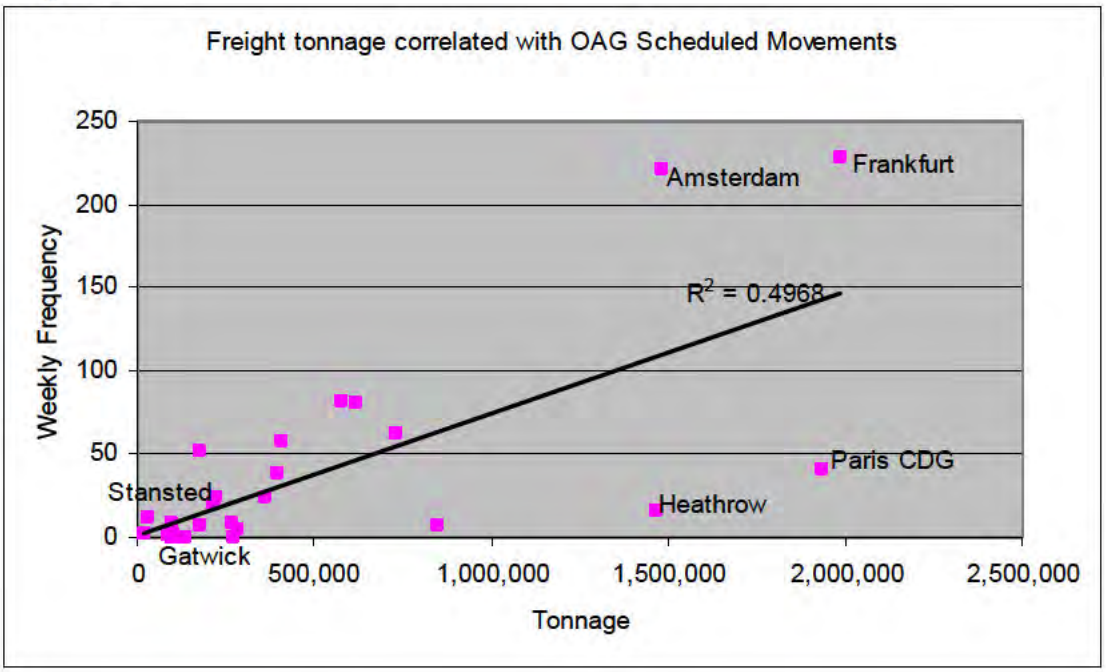


Table 3

	Freight tonnes	Pax	2013 wk freighters
Heathrow	1,464,596	70,038,804	16
Gatwick	97,565	34,222,405	0
Stansted	214,904	17,463,794	21
Luton	29,637	9,630,128	12
Manchester	97,215	19,841,747	8
East Midlands	267,350	4,086,849	9
Paris CDG	1,935,180	61,611,934	41
Paris Orly	94,700	27,232,263	0
Frankfurt	1,986,180	57,520,001	228
Frankfurt Hahn*	223,000		24
Cologne	730,040	9,280,070	62
Munich	272,203	38,360,604	0
Dusseldorf	86,729	20,833,246	1
Leipzig	846,086	2,279,221	7
Amsterdam	1,483,450	51,035,590	221
Milan MXP	405,858	18,522,760	58
Milan LIN	15,513	9,176,997	3
Milan BGY	116,733	8,888,017	0
Rome	135,777	36,980,161	0
Brussels	394,870	18,943,688	38
Liege	577,226	300,813	82
Luxembourg	614,906	1,912,806	81
Madrid	359,360	45,175,501	24
Barcelona	96,519	35,131,771	2
Zurich	281,683	24,751,649	5
Vienna	178,128	22,165,650	52
Dublin	102,717	19,096,572	1
Lisbon	90,264	15,301,236	1
Helsinki	176,987	14,859,981	7

*2011 data from airport website

15. Examination of the detailed information set out in Appendix A also shows how complex the pattern of freighter operations actually is. Few freighters, particularly those serving markets beyond Europe, operate on a strict point to point basis. Many transit more than one of the main European freight airports and a number of points overseas. Examination of arriving freighter patterns also reveals that the inbound pattern does not necessarily mirror the outbound pattern. Hence, there is already considerable flexibility to add new points if the market warrants.

16. Some freighters operate simple round trips. Others operate on a triangular basis, e.g. Lufthansa operating Frankfurt-Dallas-Detroit-Dallas-Manchester-Frankfurt. Inbound freight from the US to Manchester will be flown direct but outbound freight will transit Frankfurt. Other freighters operate effectively round the world journeys, e.g. British Airways operating Chicago-Houston-Stansted-Dammam-Dubai-Shanghai.

17. There is simply no way of knowing how much of the freight capacity on such aircraft is assigned to or used by freight originating in or destined for any airport, which may vary day by day. Freighter departures are, hence, not a reliable proxy for how much air freight capacity is available to uplift goods to and from any country or city.

18. Overall, our analysis of current freighter operations suggests that it is hard to distinguish a relationship between freighter movements and tonnage of freight carried.

19. Nor is it evident that the UK air freight capability is adversely affected today by shortage of capacity at Heathrow. There is ample spare airport capacity at Stansted for pure freight aircraft to the extent that there is demand for such aircraft operations given the amount of bellyhold capacity available at Heathrow. The volume of freight uplifted probably reasonably reflects the UK market, allowing for transit freight, and the limitations of the UK acting as a hub for freight trucked from continental Europe based on its geographic position. The principal issue is one of producer efficiency as a consequence of splitting locations, with the bulk of freight forwarding/consolidator activity being located around Heathrow and freight needing to be trucked to Stansted, Luton, or continental hubs. Whilst concentrating all freight activity at the main hub might make additional freighter flights viable by facilitating onward connections between bellyhold freight and pure freight operations, it is not clear the extent to which this would result in higher volumes of air freight being carried to/from the UK (as distinct from transit freight) as the UK does not appear to be significantly underperforming in aggregate terms compared to countries such as France, Spain or Italy.

Predicting Future Freighter Operations

20. In order to predict the volume of freighter activity in future at the London airports, we have developed a simple spreadsheet as set out in Table 4.

21. We have first projected forward total flown freight demand to and from London[3] on the assumption that it grows in line with overall passenger demand growth at 2.1% per annum in the absence of any specific forecasts of freight tonnage from DfT. We note that the DfT 2013 forecasts only give information for expected growth in pure freighter movements at 0.4% per annum but the basis of this is not clearly stated. Prima facie, this appears to understate unconstrained demand for pure freighter movements over the period to 2050.

22. In contrast, OE have identified that the expected average freight growth to and from Europe would be in the range 3.37% (Boeing) to 3.99% (Airbus). However, this would lead to substantially higher estimates of freight tonnage growth than passenger growth. Recent trends would suggest this to be unlikely so we have adopted the more cautious approach of using the same underlying growth as for passengers.

23. We have then estimated the bellyhold capacity offered at the London airports in 2050 based on the current average tonnage carried per international movement in 2012 at Heathrow, including both EU and non-EU flights, based on CAA Airport Statistics assuming average tonnes per movement increase by 0.5% per annum. This allows us to estimate the residual volume of freight under each scenario which would need to be accommodated on pure freighter aircraft.

[3] This is a simplifying assumption as it assumes the same proportion of UK regional air freight is trucked to London for uplift and the same proportion of freight is trucked to the continental freight hubs. On balance, this is likely to be a neutral assumption for the situation of unconstrained hub capacity as the proportion of regional freight flying direct from major regional airports might be expected to increase, particularly as more long haul flights develop, whilst the proportion being trucked from London to Europe might be expected to decrease with unrestricted capacity available.

Table 4

	2012	2050 Max Use	2050 2x2x2	2050 New Hub
Freighters 2012	14,123			
Freight in Freighters	310,022			
Total Freight	1,805,761	3,977,759	3,977,759	3,977,759
Tonnes per freighter	21.17	25.59	25.59	25.59
Tonnes per international bellyhold movement London	1.76	2.13	2.13	2.13
Forecast International Movements	834,725	1,051,034	1,298,981	1,375,452
Bellyhold Capacity	1,469,116	2,235,836	2,763,285	2,925,960
Freighter tonnage required		1,741,923	1,214,474	1,051,799
Freighter movement		68,077	47,463	41,106
Additional Freighters Required		53,954	33,340	26,983

24. We estimate that the number of freighters required to accommodate projected air freight demand would rise from 14,000 in 2012 to around 41,000 in the New Hub case, 47,000 in the 2+2+2 case and 68,000 in the Max Use case. In both the New Hub case and 2+2+2 case, we estimate there will be sufficient runway capacity available to accommodate these movements at 2050, at the New Hub and/or Stansted respectively. However, in the Max Use case, the London airports will, by definition, be full with passenger aircraft movements. Whilst we believe there will still be a small number of pure freighter operations accommodated in off-peak periods (as today at Heathrow), the number of freighter operations will be constrained.

25. It is reasonable to assume that around 14,000 freighters a year could still be accommodated in the vicinity of London by using capacity at airports such as Manston, which already handles some long haul freighters. However, capacity equivalent to an additional 54,000 freighter movements per year could be required to ensure demand is met, although this could be mitigated to an extent if the freighter capacity was prioritised for freight to and from the UK with less transit freight.

26. A key question is the extent to which such freighter capacity would be provided at airports such as East Midlands, Manchester and Birmingham. This could serve to reduce trucking movements from the regions to London, as take place today, with environmental benefits but it would reduce producer efficiency through split operations. In the absence of detailed data regarding freight trucking movements today, it is difficult to determine whether this would have positive or negative impacts overall..

27. In terms of the specific destinations of future freighter movements, our analysis of the existing patterns of service reveals the difficulty of defining market demand and aircraft routings. We do not believe it is sensible to attempt to determine the future geographic split by destination in either the constrained or unconstrained cases as a single freighter may serve a variety or markets as necessary. In the constrained case, it is likely that more freight would be trucked to the continental hubs as well as to UK regional points, which would potential add to shipment costs.

Conclusions

28. Overall, we have made a best estimate of the number of freighter aircraft movements likely to be using the London airports (or near London airports) under each of the capacity scenarios. These are as follows:

✈ Maximum use of existing capacity	14,000
✈ 2+2+2 – additional runways at each of Gatwick and Stansted	33,000
✈ New 4 runway hub	27,000

29. In the latter two cases, our assessment is that, across both bellyhold capacity and pure freighter activity, there would be sufficient capacity to meet expected demand for air freight to and from the UK. Our estimates for additional freighter capacity are substantially above those made by DfT. Hence, to the extent that our baseline is understated (although we do not believe this to be substantial) due to the current patterns of trucking freight to the continent, this will offset any overstatement as a consequence of assuming higher growth than DfT and by reductions in the amount of trucking to London from regional airports due to expected growth in their own freighter operations over the period to 2050.

30. The key difference between these two scenarios would be in terms of the efficiencies and economies of scale gained by the industry arising from the concentration of freight activity at a single hub. In both cases, the overall volume of air freight to and from the UK is expected to be broadly the same, although the actual freight carried including transit freight would be higher in the hub case. However, under the new hub scenario, savings from greater efficiency may be passed onto users, so reducing shipping costs and facilitating trade leading to higher freight volumes, but it is beyond the scope of the current exercise to assess this.

31. In the constrained, max use, case, there would be severe limitations of pure freighter movements at the London airports, which could amount to around 26% of the required air freight capacity to/from London. The extent to which this would act as a limitation on overall air freight volumes would depend on the extent to which the freight is still carried from regional airports or by truck. Clearly this would impact on the cost/efficiency of shipment, which in turn could impact on freight volumes carried. Again, it is outside the scope of the current exercise to assess these effects.

32. Overall, in assessing the economic value for air freight between the scenarios, the main difference is likely to lie in producer costs passed through to users and the impact that would have on business costs and hence output/freight generated. It would not be safe to assume that the reduction in cargo ATMs at the London airports necessarily translates to lost shipment value in its entirety.

23 May 2013

Appendix A

				Total Airport	Total City	Total Country
Heathrow	Amman	1				
	Amsterdam	1				
	Amsterdam	1	onwards to Sharjah and Singapore			
	Brussels	1				
	Copenhagen	1				
	Copenhagen	1	onwards to Sharjah and Singapore			
	Dubai	1				
	Frankfurt	1				
	Leipzig	1				
	Lisbon	1				
	Milan	1				
	Milan	2	onwards to Hong Kong			
	Paris	1	onwards to Delhi and Hong Kong			
	Seoul	2		16	49	71
Stansted	Amsterdam	1	originates in Bogota, Puerto Rico			
	Amsterdam	2	originates in Miami, Buenos Aires, Bogota and Puerto Rico			
	Cologne	1	onwards to Madrid and Johnannesburg			
	Cologne	1	onwards to Tbilisi			
	Cologne	1	onwards to Tbilisi and Delhi			
	Dammam	1	originates in Chicago and Houston, onwards to Dubai and Shanghai			
	Dubai	1	onwards to Hong Kong			
	Frankfurt	1	originates in Chicago and Atlanta, onwards to Shanghai			
	Frankfurt	2				
	Frankfurt	1	onwards to Chicago			
	Frankfurt	1	onwards to Hong Kong			
	Frankfurt	2	originates in Seoul and Moscow			
	Frankfurt	1	originates in Atlanta, onwards to Delhi and Hong Kong			

	Frankfurt	2	originates in Moscow, onwards to Seoul			
	Luxembourg	2	originates in Hanoi and Hong Kong			
	Zaragoza	1	onwards to Bahrain and Hong Kong	21	49	71
London Luton	Frankfurt	3				
	Istanbul	1				
	Istanbul	2	originates in Paris			
	Istanbul	2	originates in Cologne			
	Milan	4		12	49	71
Manchester	Amsterdam	1	onwards to Dubai and Hong Kong			
	Brussels	1	onwards to Dubai and Hong Kong			
	Dubai	1	originates in Amsterdam, onwards to Hong Kong			
	Frankfurt	2	originates in Detroit and Dallas			
	Frankfurt	1	onwards to Dubai and Hong Kong			
	Frankfurt	1	originates in Toronto and Houston			
	Milan	1	onwards to Hong Kong	8	8	71
East Midlands	Frankfurt	1				
	Keflavik	2	originates in Liege			
	Keflavik	2				
	Liege	2	originates in Keflavik			
	Paris	1		8	8	71
Prestwick	Los Angeles	1	originates in Luxembourg, onwards to Seattle			
	Luxembourg	1	originates in New York and Houston			
	Luxembourg	1	orginates in Los Angeles and Seattle			
	Paris	2	originates in Chicago			
	Seattle	1	orginates in Luxembourg, onwards to Calgary	6	6	71
Amsterdam	Abu Dhabi	4				
	Abu Dhabi	1	onwards to Taipei			
	Almaty	2	onwards to Hong Kong, Delhi, Sharjah			
	Bahrain	1	onwards to Mongolia, Hong Kong, Chennai			
	Baku	2	onwards to Kuala Lumpur			

	Bangalore	1	onwards to Singapore
	Beijing	7	
	Beirut	2	
	Budapest	2	onwards to Moscow
	Chengdu	4	
	Chennai	1	originates Nairobi, onwards to Singapore
	Chennai	1	originates in Chicago and Atlanta, onwards to Singapore
	Chicago	2	originates in Doha
	Chicago	7	
	Chongqing	2	onwards to Shanghai
	Copenhagen	1	originates in Nairobi, onwards to Sharjah and Singapore
	Copenhagen	2	onwards to Sharjah and Singapore
	Curitiba (Br)	1	onwards to Sao Paulo
	Dacca	1	originates in Nairobi, onwards to Singapore
	Doha	1	originates in Chicago
	Doha	3	
	Dubai	2	
	Dubai	1	originates in Eldoret and Nairobi
	Dubai	1	originates in Nairobi
	Dubain	1	originates in Manchester, onwards to Hong Kong
	Entebbe	1	onwards to Nairobi
	Frankfurt	1	originates in Hong Kong
	Frankfurt	1	onwards to Mumbai and Hong Kong
	Gothenburg	3	onwards to Dubai
	Guangzhou	5	
	Harare	3	onwards to Nairobi
	Heathroiw	1	
	Hong Kong	7	
	Houston	7	

	Jeddah	2	
	Johannesburg	1	onwards to Dar-Es-Salaam and Nairobi
	Khartoum	2	onwards to Nairobi
	Kigali	1	onwards to Nairobi
	Kuala Lumpur	1	
	Los Angeles	4	
	Luxembourg	1	originates in Libreville, Brazzaville, Nairobi
	Manchester	1	onwards to Dubai and Hong Kong
	Mexico City	7	
	Miami	2	onwards to Buenos Aires, Bogota, Puerto Rico and Stansted
	Miami	1	onwards to Buenos Aires, Quito and Guayaquil
	Miami	2	onwards to Santiago, Quito, Bogota and Puerto Rico
	Miami	2	onwards to Santiago, Quitoand Guayaquil
	Milan	3	originates in Tokyo
	Milan	2	onwards to Moscow
	Milan	4	onwards to Tokyo
	Mongolia	2	onwards to Hong Kong and Chennai
	Moscow	2	
	Moscow	2	onwards to Shanghai
	Nairobi	1	
	New York	3	orginates in Bahrain
	New York	1	originates in Bahrain
	New York	7	
	Paris	1	onwards to Mumbai and Hong Kong
	Puerto Rico	1	onwards to Bogota
	Puerto Rico	2	onwards to Quito
	Riyadh	1	
	Riyadh	2	onwards to Sharjah, Singapore and Kuala Lumpur

	Santiago	1				
	Sao Paulo	2	onwards to Buenos Aires and Santiago			
	Sao Paulo	1	onwards to Curitiba and Santiago			
	Seattle	1				
	Seoul	7				
	Shanghai	21				
	Sharjah	1	originates in Heathrow, onwards to Singapore			
	Sharjah	2	onwards to Guangzhou			
	Sharjah	1	onwards to Muscat and Hong Kong			
	Stockholm	2	originates in Seoul			
	Stockholm	4	onwards to Seoul			
	Taipei	1				
	Tel Aviv	1				
	Tenerife	1	onwards to Sao Paulo, Quito and Bogota			
	Tenerife	3	onwards to Sao Paulo, Quito and Guayaquil			
	Tianjin	15	onwards to Shanghai			
	Tokyo	1	originates in Frankfurt Hahn			
	Tokyo	5				
	Toronto	4				
	Tripoli	1				
	Vienna	3	onwards to Shanghai	221	221	221
Brussels	Amman	1	onwards to Jeddah			
	Chennai	1	originates in Los Angeles and Dallas, onwards to Singapore			
	Dammam	1				
	Dubai	3	originates in New York			
	Dubai	1	originates in Frankfurt, onwards to Hong Kong			
	Dubai	1	originates in Manchester, onwards to Hong Kong			
	Heathrow	1				
	Istanbul	1	originates in Jeddah			
	Kolkata	1	originates in Los Angeles, onwards to Singapore			
	Milan	2	originates in Riyadh			

			originates in			
	Milan	1	Jeddah			
	Mumbai	1	orginates in Los Angeles and Chicago, onwards to Singapore			
	New Guinea	1	onwards to Seoul			
			originates in			
	New York	1	Jeddah			
			originates in Jeddah, onwards to			
	New York	1	Houston			
	New York	6	originates in Dubai			
	Riyadh	1				
	Riyadh	1	onwards to Jeddah			
	Seoul	1	orginates in New York			
	Seoul	2	originates in New York			
			originates in Dallas, onwards to			
	Sharjah	2	Singapore			
	Sharjah	1	originates in Chicago and Dallas, onwards to Singapore			
	Taipei	1				
	Tianjin	1	onwards to Seoul			
			originates in			
	Vienna	2	Riyadh	36	36	118
Liege	Accra	2	onwards to Lagos and Addis Ababa			
	Addis Ababa	5				
	Bahrain	11	originates in New York			
			onwards to Tel			
	Bucharest	1	Aviv			
	Dubai	12	onwards to Hong Kong			
			onwards to			
	East Midlands	4	Keflavik			
	Entebbe	1				
	Istanbul	5				
	Keflavik	4				
			onwards to New			
	Keflavik	1	York			
	Lagos	2	onwards to Addis Ababa			
	Lagos	1	onwards to Ougadougou			
	Lagos	1	onwards to Port Harcourt			

	Lome	2	onwards to Congo, Addis			
	Luxembourg	1	Ababa			
	New York	1	originates in Tel Aviv			
	New York	2	originates in Tel Aviv			
	New York	5				
	Ougadougou	1	onwards to Congo			
	Shanghai	1				
	Shanghai	2				
	Siauliai Lithuania	1				
	Singapore	1				
	Tel Aviv	3	originates in New York			
	Tel Aviv	1	originates in Chicago			
	Tel Aviv	6				
	Vienna	5		82	82	118
Luxembourg	Abidjan	1	onwards to Accra			
	Abu Dhabi	1	onwards to Taipei			
	Almaty	1	onwards to Hong Kong			
	Atlanta	1	onwards to Atlanta			
	Atlanta	1	Chicago			
	Atlanta	2	originates in Doha, onwards to Houston			
	Baku	1	onwards to Almaty and Shanghai			
	Baku	1	onwards to Hong Kong			
	Baku	4	onwards to Shanghai			
	Baku	1	onwards to Singapore and Hong Kong			
	Baku	1	onwards to Singapore and Kuala Lumpur			
	Baku	2	onwards to Taipei and Bangkok			
	Beijing	1	onwards to Xiamen			
	Beirut	1	onwards to Amman and Hong Kong			

			onwards to Amman and
	Beirut	1	Istanbul
	Chicago	1	onwards to Atlanta
	Chicago	1	onwards to Los Angeles
	Congo	1	originates in Liege, onwards to Addis Ababa
	Dallas	1	
	Dammam	1	onwards to Saigon and Hong Kong
	Doha	1	onwards to Hanoi and Hong Kong
	Doha	1	onwards to Singapore and Kuala Lumpur
	Doha	1	originates in Houston
	Doha	1	originates in Chicago
	Dubai	1	onwards to Bangkok and Hong Kong
	Dubai	1	onwards to Hong Kong
	Frankfurt Hahn	3	originates in Shanghai
	Indianapolis	1	onwards to Chicago
	Indianapolis	1	onwards to Los Angeles, Calgary
	Johannesburg	3	
	Komatsu	2	onwards to Seoul
	Kuwait	2	onwards to Hanoi and Hong Kong
	Lagos	1	onwards to Port Harcourt and Kinshasa
	Libreville	1	onwards to Brazzaville
	Libreville	1	onwards to Kinshasa
	Los Angeles	1	onwards to Seattle
	Los Angeles	1	
	Mexico City	1	
	Mexico City	1	onwards to Guadalajara
	Miami	2	onwards to Houston
	Milan	1	onwards to New York and Chicago
	Milan	4	

	Ndjamena	1	onwards to Lagos			
	New York	1	originates in Tel Aviv			
	New York	1	orginates in Tel Aviv, onwards to Chicago			
	New York	1	onwards to Atlanta			
	New York	1	onwards to Houston			
	New York	1	onwards to Mexico City and Guadalajara			
	Prague	2	originates in Chengdu			
	Prestwick	1	onwards to Los Angeles and Seattle			
	Prestwick	1	onwards to Seattle and Calgary			
	Riyadh	1	onwards to Dammam and Hong Kong			
	Sao Paulo	1				
	Sao Paulo	2	onwards to Curitiba			
	Sao Paulo	1	onwards to Manaus			
	Seoul	1				
	Sharjah	1	onwards to Karachi			
	Singapore	1	onwards to Kuala Lumpur			
	Taipei	2				
	Tbilisi	2	onwards to Baku and Shanghai			
	Yerevan	1		80	80	80
Paris	Beirut	1				
	Cairo	1	onwards to Reunion			
	Chicago	5				
	Cologne	2	onwards to Istanbul			
	Delhi	1	originates in Heathrow, onwards to Hong Kong			
	Djibouti	1	onwards to Reunion			
	Hannover	4				

	Heathrow	1				
	Istanbul	1				
	London Luton	2	onwards to Istanbul			
	Mexico City	6				
	Milan	1	onwards to Delhi and Hong Kong			
	Mumbai	2	onwards to Hong Kong			
	Mumbai	1	originates in Amsterdam, onwards to Hong Kong			
	New York	1	onwards to Chicago			
	Niamey	1	onwards to Ouagadougou and Bamako			
	Njamena	1	onwards to Bangui, Brazzavile and Port Harcourt			
	Porto	1	onwards to Mexico City			
	Seoul	2				
	Shanghai	2	originates in Copenhagen			
	Shanghai	2				
	Tokyo	2		41	41	41
Cologne	Basle	4				
	Berlin	5				
	Bucharest	4				
	Bucharest	2				
	Istanbul	2	originates in Paris			
	Istanbul	2				
	Katowice	4				
	Keflavik	5				
	Ljubljana	4				
	Ljubljana	1	onwards to Zagreb			
	London Luton	2	originates in Istanbul			
	London Luton	2	onwards to Istanbul			
	Madrid	1	originates in Stansted			
	Prague	5				
	Sofia	1				
	Tblisi	1	originates in Stansted			

	Tblisi	1	originates in Stansted, onwards to Delhi			
	Tel Aviv	12				
	Zagreb	4		62	62	304
Frankfurt Hahn	Almaty	1	originates in New York			
	Almaty	6	originates in New York, onwards to Shanghai			
	Amsterdam	1	onwards to Tokyo			
	Amsterdam	1	originates in Tokyo			
	Atyrau	1	onwards to Almaty			
	Baku	3				
	Beijing	3				
	Chatearoux	1	onwards to Kabul			
	Doha	2				
	Johannesburg	2				
	Milan	1	onwards to Tokyo			
	Toronto	1	onwards to Mexico City			
	Yerevan	1		24	242	304
Frankfurt	Abu Dhabi	5				
	Almaty	1				
	Almaty	1	onwards to Guangzhou			
	Almaty	1	onwards to Hong Kong			
	Almaty	2	onwards to Shanghai			
	Amman	2				
	Amsterdam	1	originates in Hong Kong and Chennai			
	Atlanta	4				
	Baku	1	onwards to Bangkok and Kuala Lumpur			
	Baku	2	onwards to Kuala Lumpur			
	Bangalore	3	onwards to Chennai			
	Bangalore	1	onwards to Hyderabad and Guangzhou			
	Bangkok	2				
	Beijing	3	onwards to Shanghai			
	Brussels	1	onwards to Dubai and Hong Kong			

	Cairo		3		
	Chicago		7		
	Chicago		1	onwards to Los Angeles	
	Chicago		4	onwards to Mexico City	
	Chicago		2	onwards to Mexico City and Guadaljara	
	Chicago		1	originates in Stansted	
	Coventry		10		
	Dakar		3	originates in Dubai, onwards to Sao Paulo	
	Dammam		2	onwards to Sharjah and Hong Kong	
	Delhi		4	onwards to Singapore and Bangkok	
	Delhi		1	originates in Atlanta and Stansted, onwards to Hong Kong	
	Detroit		2		
	Doha		1		
	Dubai		1	originates in Lagos and Accra	
	Dubai		4	originates in Sao Paulo and Dakar	
	Dubai		3		
	Dubai		1	originates in Dusseldorf	
	Dubai		1	originates in Manchester, onwards to Hong Kong	
	East Midlands		1		
	Heathrow		1		
	Helsinki		1		
	Hong Kong		3		
	Hong Kong		1	originates in Stansted	
	Istanbul		6		
	Istanbul		1	onwards to Tel Aviv	
	Jeddah		1	onwards to Sharjah, Hyderabad and Guangzhou	
	Kabul		1		
	Krasnojarsk		1		
	Krasnojarsk		6	onwards to Beijing and Seoul	
	Krasnojarsk		1	onwards to Seoul and Shanghai	
	Krasnojarsk	y		onwards to Shanghai	

	Krasnojarsk	7	onwards to Tokyo and Osaka
	London Luton	3	
	Madrid	4	
	Malta	1	
	Milan	1	originates in Hong Kong and Dubai
	Milan	1	onwards to Dubai and Hong Kong
	Milan	1	onwards to Hong Kong
	Moscow	10	
	Moscow	2	onwards to Tokyo
	Moscow	1	onwards to Tokyo and Seoul
	Mumbai	1	
	Mumbai	1	onwards to Chennai
	Mumbai	3	onwards to Hong Kong
	Mumbai	1	onwards to Hyderabad
	Mumbai	1	originates in Amsterdam, onwards to Hong Kong
	Nairobi	5	onwards to Johannesburg
	New York	5	
	Riyadh	3	
	Riyadh	1	onwards to Dammam
	Riyadh	1	onwards to Sharjah and Hong Kong
	Sao Paulo	3	
	Sao Paulo	1	onwards to Curitiba
	Sao Paulo	1	onwards to Curitiba, Quito and Puerto Rico
	Sao Paulo	2	onwards to Manaus, Quito and Puerto Rico
	Sao Paulo	2	onwards to Montevideo and Buenos Aires
	Seoul	1	originates in Vienna
	Seoul	2	originates in St Petersburg
	Seoul	12	

	Seoul	2	originates in Atlanta and Stansted			
	Seoul	1	originates in Moscow and Vienna			
	Shanghai	1	originates in Chicago, Atlanta and Stansted			
	Shanghai	18				
	Sharjah	2	onwards to Kolkata and Hong Kong			
	Stockholm	1	onwards to Dubai and Hong Kong			
	Stockholm	4	onwards to Seoul			
	Taipei	3				
	Tel Aviv	3	onwards to Istanbul			
	Toronto	1	onwards to Houston	218	242	304
Milan	Abu Dhabi	2				
	Almaty	1	onwards to Osaka and Hong Kong			
	Baku	1				
	Dammam	1				
	Delhi	1	originates in Paris, onwards to Hong Kong			
	Doha	2				
	Dubai	2	onwards toHong Kong			
	Dubai	1	originates in Frankfurt, onwards to Hong Kong			
	Heathrow	5				
	Hong Kong	1	originates in Frankfurt			
	Hong Kong	2	originates in Heathrow			
	Hong Kong	1	originates in Manchester			
	Istanbul	1				
	Istanbul	2	originates in Lagos			
	Istanbul	1	orginates in Tirana			
	Jeddah	1				
	Luxembourg	1	originates in Chicago and Los Angeles			
	Luxembourg	4				
	Luxembourg	1	orginates in Chicago and New York			
	Madrid	1				
	Moscow	2	originates in Amsterdam			

	New Guinea	1	onwards to Seoul			
	Osaka	1	onwards to Hong Kong			
	Riyadh	1				
	Sao Paulo	1				
	Seoul	1	originates in Uzbekistan			
	Seoul	9				
	Shanghai	4				
	Tokyo	4	originates in Amsterdam			
	Tokyo	1	originates in Frankfurt Hahn	57	57	57
Vienna	Amman	1				
	Copenhagen	2	orginates Seoul			
	Frankfurt	1	orginates Seoul			
	Istanbul	2				
	Kiev	5				
	Liege	5				
	Milan	3	orginates Seoul			
	Moscow	2	orginates Seoul and onwards to Gothenburg or Frankfurt			
	Oslo	3	orginates Seoul			
	Oslo	6				
	Riyadh	2				
	Seoul	1	via Frankfurt			
	Seoul	3	via Gothenburg			
	Seoul	1	via Tel Aviv			
	Seoul	4	via Copenhagen			
	Seoul	1	originates Moscow			
	Shanghai	3	originates Amsterdam			
	St Petersburg	1	orginates Seoul and onwards to Gothenburg			
	Tel Aviv	1	orginates Seoul			
	Timosoara	5		52	52	52

APPENDIX C: INDEX OF AZIMUTH PARAGRAPH REFERENCES IN YORK AVIATION NOVEMBER 2017 REPORT

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.3 – "Although Azimuth state at paragraph 1.2.1 of Volume 1 "*RiverOak, who specialise in identifying market opportunities, has identified the substantial need for additional and specialised airport capacity for dedicated freighters in the southeast of England*", we are unaware of any other research upon which RSP rely. All other documents produced in support of the prospective DCO appear to rely on the work of Azimuth".	Paragraph 1.2.1 of Volume I in section "**RiverOak's vision for Manston Airport**"	Para 1.2.1 of Vol I in section "**RiverOak's vision for Manston Airport**"	Re-worded *"RiverOak, whose directors specialise in……."*
2.10 – "Furthermore, the reference at paragraph 5.1.4 to concern expressed in the Aviation Policy Framework regarding the implications of capacity shortfalls on the range of destinations served does not, as Azimuth infer, indicate a need for additional aircraft movements by dedicated freighter aircraft as these would require a concentration of freight flows to a specific destinations to fill a single aircraft at a time. Rather, the Aviation Policy Framework refers to the need for a wide range of global destinations being available at the UK's national hub airport, offering	Paragraph 5.1.4 of Volume I in section "**Political Setting**"	Para 2.3.8 in Vol I in section "**Political Setting**"	Original report made reference to Aviation Policy Framework citing the circumstances where no additional airport capacity was provided. The updated report now refers to a quotation from the Airports NPS, which still relates to the circumstances in the absence of any additional capacity at the London airports.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
passenger and bellyhold capacity so as to maximise the choice and convenience for both passengers and shippers of airfreight. It is this variety of destinations and, importantly, the high frequencies of service that lead the market to favour a bellyhold hub and spoke system so that freight can reach its end destination in the most efficient and cost effective way possible."			
2.18 – "In this paper for TfL, we estimated the excess air freight that could not be accommodated in bellyhold capacity on passenger aircraft under different scenarios of additional capacity at the London airports and converted that excess to an equivalent number of freighter movements. The 54,000 potential additional freighter movements that Azimuth (and Northpoint) cite at paragraph 3.4.5 are the additional freight carrying capacity required in the event of there being no further runway capacity at any of the London airports (a severely constrained scenario) that is simply no longer realistic as we have set out above. Azimuth's (and Northpoint's) use of	Paragraph 3.4.5 of Volume I in section "**The need for air freight capacity in the South East**"	The point discussing TfL forecasts predicting that the South East will be short of capacity for around 54,000 air freight movements is made twice in the new report: Paragraph 4.2.8 in section "**Freight-focussed findings**"; Paragraph 5.1.8 in section "**Channel Crossings and Trucking**".	Point repeated in two sections.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
this figure as a potential market for Manston is misleading."			
2.19 – "The note then goes on to set out how this requirement for additional freight capacity might be met and the economic consequences. In the first instance, we noted that around 14,000 additional freighter movements could be accommodated in the London system if no capacity expansion takes place, and this included the use of additional available freighter slots at Stansted. Azimuth appear to have taken our inclusion of Manston, as an example of a smaller airport in the South East that could accommodate some movements, as an indication that it could play a substantial role, wrongly stating in the Executive Summary and at paragraph 3.4.5 that we said that Manston was expected to handle 14,000 freighter movements. Manston was given simply as an example of an airport with freighter activity at the time of writing (2013) with the potential to accommodate some additional movements (as we set out in Section 4 of this report, the	Paragraph 3.4.5 of Volume I in section "**The need for air freight capacity in the South East**"	Azimuth continue to claim that our work for TfL stated that Manston could accommodate 14,000 displace freighter movements in the **Executive Summary** to Vol I. There are numerous other references to the 14,000 movements, including at paragraph 3.1.3 of Vol III where Azimuth claims that Manston is the only airport that could accommodate these movements.	The updated Azimuth Reports continue to misrepresent the implications of our work for TfL.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
capability of Manston Airport is 21,000 annual cargo aircraft movements before allowing for any night operations)."			
2.23 – "Azimuth, at paragraph 3.3.2, incorrectly characterises our note to TfL as expressing a concern about the amount of trucking to Europe. Significantly, the last part of paragraph 9 is omitted by Azimuth. When looked at in its entirety, it is evident that we were noting that trucking is an inevitable part of the market, for reasons which we explain later in this section: [quote]"	Paragraph 3.3.2 of Volume I in section "**The UK's competitive position**"	Paragraph 4.3.4 in section "**The UK's competitive position**"	Reference corrected from TfL to York Aviation. Quotation still not given in its entirety and continues to be misconstrued.
2.27 – "Azimuth's interpretation of our work for FTA appears to erroneously assume that excess demand in the London system will need to be met by additional freighter movements from an airport in the vicinity of London. For instance, at para 4.2.3, they state that "Even so and as York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050".	Paragraph 4.2.3 of Volume I in section "**London Heathrow Airport**"	Paragraph 5.2.3 in section "**London Heathrow Airport**"	No change
2.38 – "At Para 4.0.2, Azimuth suggest the reasons why cargo airlines choose airports. In reality,	Paragraph 4.0.2 of Volume I in section "**Airfreight Capacity at UK Airports**"	Paragraph 8.0.2 of Vol I in section "Potential opportunities for Manston Airport"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
Manston does not fulfil a number of these key criteria meaning that, even in the most favourable circumstances, it can never be more than a niche player in the market…"			
Footnote 25 (on page 20) – "Azimuth Vol 1 paragraph 7.1.6 quotes from a 2005 MORI survey that people were not impacted by night flights but this would reflect that there were no scheduled night flights when the airport was operational. Local resident support for re-opening (paragraph 7.1.1) needs to be seen in this context."	Paragraph 7.1.6 of Volume 1 in section "**Support for Manston Airport**" Paragraph 7.1.1 of Volume 1 in section "**Support for Manston Airport**"	Both points removed.	Both points removed.
2.39 – "A key consideration is Manston's geographic position substantially away from the economic spine of the UK and with very limited local demand. It is remote from most markets with a journey time to the M25 of nearly 1 hour and accessibility beyond would be subject to the general levels of traffic congestion in the London area. Azimuths's suggestion (paragraph 1.2.2) that Manston might effectively serve as a 4th runway for Heathrow for air cargo flights is merely fanciful given the journey time of 1¾ hours, which is	Paragraph 1.2.2 of Volume 1 in section "**RiverOak's vision for Manston Airport**"	Paragraph 1.2.2 in section "**RiverOak's vision for Manston Airport**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
little shorter than the time from Heathrow to East Midlands Airport with an already well developed infrastructure for handling air freight and more likely to fulfil such a role in relation to freight overspill from Heathrow that is time critical or of such a special nature as to warrant the use of pure freighter aircraft."			
2.40 – "Many of the other points raised by Azimuth regarding security, e-commerce and just-in-time delivery are all factors relating to the overall efficiency of the industry. If anything, what the analysis presented by Azimuth demonstrates is the importance of developing efficient freight networks serving the whole of the UK rather than the need for a re-opened freight focussed airport in the South East of England. Manston could only recapture economic benefits from cargo being trucked to the continent, as asserted at paragraph 4.8.4, to the extent that it provides a more economically efficient solution…"	Paragraph 4.8.4 of Volume I in section "**Other South East UK airfields**"	Points relating to Operation Stack etc. are made in Paragraphs 6.4.11 to 6.4.12 of Vol I in section "**Air freight trucking**"; Paragraph 6.4.13 again makes the point that by flying freight from Manston Airport, negating the need to truck to and from European airports for some types of air transportation, should help to ease congestion in the area…	Redrafted text but claims about Manston's role in relation to intercepting trucking to Europe retained in new text.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.41 – "One of the key reasons that the UK aviation sector is so productive, as cited by Azimuth at paragraph 5.2.1, is that it allows the market to work. Inefficient and unnecessary actors in the market are allowed to fail…"	Paragraph 5.2.1 of Volume 1 in section "**The Potential Effect of BREXIT on UK Aviation**"	Paragraph 6.2.1 in section "**The Potential Effect of BREXIT on UK Aviation**"	Final sentence "As such, it seems counter-productive to allow a potentially viable airport such as Manston to be used for housing" has been removed.
2.42 – "Azimuth asserts, paragraph 6.2.2, that the perceived lack of investment in Manston by the previous owners was an impediment to freight growth."	Paragraph 6.2.2 of Volume I in sub-section "Previous Operations"	Paragraph 7.2.2 of Vol I in sub-section "**Previous operations**"	Identical, although wording of last sentence changed slightly.
2.44 – "Volume II of Azimuth's work begins with an assessment of different forecasting approaches for cargo, noting that forecasting of cargo is not as well developed as that for passenger activity. We agree that air freight forecasting is difficult and that there is a lack of hard data. However, we do not agree with Azimuth's assertion that quantitative methods are, therefore, not suitable and that qualitative methods are more appropriate. The evidence cited by Azimuth at Table 3 does not support this conclusion and suggests that causal methods (regression analysis) remain the most appropriate for	Table 3 of Volume II titled "**Attributes of Aviation Forecasting Techniques**"	Table 2 of Vol II, titled "**Attributes of Aviation Forecasting Techniques**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
forecasting demand for cargo and freighters.)			
2.46 - "As well as reviewing forecasting methodologies, Azimuth sets out some air freight growth forecasts produced by others. At paragraph 3.6.1, Azimuth cite the DfT's assumption for growth in freighter movements in its 2013 UK Aviation Forecasts at 0.4% p.a"	Paragraph 3.6.1 of Volume 2 in section "**Department for Transport National Level Forecasts**"	Paragraph 2.6.1 in section "**Department for Transport National Level Forecasts**"	No change. However, the DfT 2013 UK Aviation Forecasts have been superseded by the DfT 2017 UK Aviation Forecasts that now assume no growth in freighter aircraft movements.
2.47 – "Given the existence of a definitive 'official' UK forecast for freighter movements over the period to 2050, it is not clear why Azimuth rely on global forecasts for air freight produced by the manufacturers Boeing and Airbus for the purpose of selling aircraft (paragraph 2.1.10) as a basis for the longer term projections of freighter movements at Manston in their Volume III (paragraph 2.3.2)."	Paragraph 2.1.10 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.3.2 of Volume III in sub-section "**Long-term Freight Forecasting Model**"	Paragraph 2.1.11 of Vol III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.3.2 in sub-section "**Long-term Freight Forecasting Model**"	No change
2.48 – "Taken together, these reports point to a declining market share for freighter aircraft in mature markets such as the UK, where there is a good supply of bellyhold capacity. It is, hence, not reasonable to use the Boeing and Airbus growth rates as a basis for projecting future growth in movements by pure	Paragraph 2.3.2 of Volume III of sub-section "**Long-term Freight Forecasting Model**"	Paragraph 2.3.2 of Vol III in sub-section "**Long-term Freight Forecasting Model**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
freighter aircraft to and from the UK, particularly given the existence of DfT projections for such movements. Rather than being conservative, as suggested at paragraph 2.3.2 in Volume III, the use of a 4% per annum growth rate for years 10 to 20 at Manston is highly optimistic, and is certainly not supported by the DfT's analysis of the UK market."			
2.49 – "Having rejected the recognised methodologies for forecasting freight demand at an airport, Azimuth rely on interviews with 24 individuals and/or organisations as set out in Table 4 of their report. To a large extent, these are people with past connections with Manston and who may not have a totally unbiased view on the desirability of it re-opening. It is notable that few cargo airlines or large scale air freight operators were interviewed, rather the list is dominated by local interested parties and logistics firms, not all of which are still in business. In some cases, throughout the remainder of Volume II, individuals are referred to who are not listed in Table 4 and,	Table 4 of Volume II in sub-section "**Interview data collection**" Paragraph 4.3.1 of Volume II in sub-section "**Semi-structured Interview Schedule Design**"	Table 3 in sub-section "Interview data collection" Paragraph 3.3.1 of Volume II in sub-section "**Semi-structured Interview Schedule Design**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
in other cases, individuals or organisations are referred to in different terms to those listed in the table. This does not suggest a very robust or rigorous approach to setting out the potential for Manston. Although the framework of questions is set out at paragraph 4.3.1, we are unable to identify any questions that would enable an assessment to be made of future passenger or freight volumes that would be likely to use Manston and which could be used as the basis for any forecast of future usage."			
2.51 "This analysis is generic and of no direct relevance to the potential for Manston. In particular, no linkage is drawn between the commodities which typically use air freight set out at paragraph 5.1.2 and the economic sectors active in Kent. Significantly, at paragraph 5.1.5, Azimuth cite a respondent that made clear that "tendered" prices determine how air freight moves. This is a powerful reason why bellyhold will in most instances win over pure freighter operations. Issues of price for pure freighter operations are reinforced at	Paragraph 5.1.2 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.5 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.10 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.2 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.5 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.10 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
paragraph 5.1.10, particularly in relation to the risks associated with higher fuel prices."			
2.52 - "There are then a number of comments regarding the current difficulties of operating at Heathrow at paragraph 5.1.6ff."	Paragraph 5.1.6ff of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.6ff of Volume II in sub-section "**Findings by Category of Interview Question**"	No change
2.54 – "Again, paragraph 5.1.15 highlights the dominance of bellyhold freight. Whilst noting that the A380 aircraft has more limited space for bellyhold cargo than B747s at paragraph 5.1.14, Azimuth neglect to point out that other new aircraft, such as B787 and A350 aircraft, do not suffer from similar reductions in space and capacity and continue to offer substantial bellyhold opportunities and capacity."	Paragraph 5.1.15 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.14 of Volume 2 in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.15 of sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.14 of sub-section "**Findings by Category of Interview Question**"	No change
2.55 – "The response cited at paragraph 5.1.19 makes clear that the most important factor in considering freighter operations is "cost, speed and access to road networks", which is not a condition which Manston can meet for the majority of the UK. The local transport firms (paragraph 5.1.21) clearly saw an advantage for them in Manston re-opening but it is far	Paragraph 5.1.19 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.21 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.20 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.19 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.21 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.20 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
less clear that this was reflected by the broader industry. Significantly, paragraph 5.1.20 does not address the operational reasons why major freight forwarders seek to locate close to Heathrow, Stansted or East Midlands, except possibly for their city centre sales offices."			
2.56 – "The response quoted at paragraph 5.1.23 makes clear that for Manston to be an attractive option to freighter operations, it would need to offer night operations."	Paragraph 5.1.23 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.23 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change
2.58 – "The one airline interviewed made clear (paragraph 5.2.3) that "success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward". We would have expected the remainder of the report to concentrate on quantifying the size of this niche market, including any Brexit implications for exports (paragraph 5.2.1)."	Paragraph 5.2.3 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.1 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.3 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.1 of Volume II in sub-section "**Freight-Focussed Findings**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.59 – "The spurious suggestion that freight might be "banned" from Heathrow (paragraph 5.2.6) and Manston might benefit is clearly nonsense in the context of the Government's support for a third runway to provide capacity for freight in the bellyholds of passenger aircraft as much as for passengers."	Paragraph 5.2.6 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.6 of Volume II in sub-section "**Freight-Focussed Findings**"	No change despite the clear statement in the Airports NPS that R3 at Heathrow is intended to double the freight capacity of Heathrow.
2.60 – "Whilst the suggestion from Coyne Airways about the potential for Manston to offer fuel cost savings when flying south from the UK (paragraph 5.2.11) is interesting, it appears not to take any account of the locations where freight is generated in the UK or where it is consolidated into viable loads."	Paragraph 5.2.11 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.11 of Volume II in sub-section "**Freight-Focussed Findings**"	No change
2.61 – "Azimuth also claim that the bellyhold model is broken and that there is about to be a shift back to pure freighter operations at paragraph 5.2.25 but this is pure speculation and at odds with other industry commentators (see Airbus freighter forecasts which project an increasing share of bellyhold globally) and the UK Government's view as expressed by the Department for Transport."	Paragraph 5.2.25 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.25 of Volume II in sub-section "**Freight-Focussed Findings**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.62 – "Whilst paragraph 5.2.24 says there was underinvestment in facilities by the previous owners, the quotation from Finlays at paragraph 5.2.26 makes clear that Manston previously offered a good level of service. Hence, there is little evidence to suggest that underinvestment was any impediment to Manston attaining its natural share of the market in the past. Although Finlays have now relocated their operation back to Stansted, we would accept that they might choose to return to Manston with a similar number of movements as previously if the facilities were reinstated and provided the cost of operating was competitive compared to Stansted. There may also be scope for some humanitarian and military flights (paragraph 5.2.48) but these will be small in number and not the basis for a viable operation of the Airport."	Paragraph 5.2.24 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.26 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.48 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.24 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.26 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.49 of Volume II in sub-section "**Freight-Focussed Findings**"	No change
2.63 – "At paragraph 5.2.45, Fedex's criteria for an airport to be attractive to an integrator are set out and these seems to describe the characteristics of their main UK base	Paragraph 5.2.45 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.46 of sub-section "**Freight-Focussed Findings**"	No change No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
at Stansted. There is then a discussion about some of the problems DHL perceive at Heathrow but, of course, DHL's principal UK operation is focussed at East Midlands where they have an extensive operation. From our work with the integrators and with the Freight Transport Association, we know that Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses (paragraph 6.2.6) is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations (6.3.24-27)."	Paragraph 6.2.6 of Volume II in sub-section "**Market Opportunities for Manston Airport**" Paragraphs 6.3.24-27 of Volume II in sub-section "**External Environment Scenarios**"	Paragraph 5.2.6 of Volume II in sub-section "**Market Opportunities for Manston Airport**" Paragraphs 5.3.24-27 of Volume II in sub-section "**External Environment Scenarios**"	Removed explicit quote from Atlas Air indicating support for Manston Airport, replaced by comment on discussions with Atlas Air. The position regarding Atlas Air's support needs to be clarified.
2.67 – "Again, there is reliance on our work for TfL and the FTA (paragraph 6.1.8) to justify the conclusions reached. As stated	Paragraph 6.1.8 of Volume II in sub-section "**Attracting Air Freight to Manston Airport**"	Paragraphs 5.1.8 of Volume II in sub-section "**Attracting Air Freight to Manston Airport**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
above this work does not support RSP's case."			
2.69 – "At paragraph 6.3.1, Azimuth set out 9 potential scenario drivers for Manston. However, it is not clear how these scenario drivers have been taken forward to the forecasts set out in Volume III, which do not set different potential scenarios for growth…"	Paragraph 6.3.1 of Volume II in sub-section "**External environmental scenarios**"	Paragraphs 5.3.1 in Volume II in sub-section "**External environmental scenarios**"	No change
2.70 – "Section 7 sets out the conclusions from Volume II. According to Azimuth (paragraph 7.1.1), the key issues that are seen to favour Manston are…"	Paragraph 7.1.1 of Volume II in sub-section "**Recommendations**"	Paragraph 6.1.2 of Volume II in sub-section "**Recommendation**"	No change but prefaced now by paragraph 6.1.1 which states *"It is recommended that the airport operator incorporate the opportunities shown below into their future development and marketing plans".* This suggests strongly that there is less certainty about the deliverability of the opportunities at Manston than is implied by <u>all</u> of these opportunities being included within the RSP forecasts for Manston.
2.71 – "Based on their analysis, Azimuth then set out (at paragraph 7.1.2), the markets which it believes that Manston could attract"	Paragraph 7.1.2 of Volume II in sub-section "**Recommendations**"	Paragraph 6.1.3 of Volume II in sub-section "**Recommendation**"	No change
2.73 – "The key conclusion drawn by Azimuth is that "This report demonstrates the potential demand	Paragraph 7.0.1 of Volume II in sub-section "**Conclusions**"	Paragraph 6.0.1 of Volume II in sub-section "**Conclusions**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
for Manston Airport, indicating its viability and clearly showing that Manston Airport is a valuable local, regional and national asset, providing airport infrastructure badly needed by the UK." (Paragraph 7.0.1)"			
2.76 – "The forecasts set out in Volume III draw extensively on the analysis in Volumes I and II. Although stated to be derived on a 'bottom up' basis (Executive Summary Page 1) and claimed to be more conservative than top down, econometrically driven, projections, reliance is still placed, at paragraph 1.1.1…"	Paragraph 1.1.1 of Volume III in sub-section "**Background**"	Paragraph 1.1.1 in sub-section "**Background**"	Minor rewording of language. No substantive change to continued reliance on York Aviation work despite the reliance on this work having been refuted.
2.77 – "Paragraph 2.1.2 again suggests that the literature review undertaken showed that "a qualitative approach was the most appropriate method through which to gather data on the potential demand for an individual airport". Whilst we agree that freight forecasting is difficult, as Azimuth themselves note, at paragraph 2.1.4, qualitative forecasts still need to be based on "market data" and, at paragraph 2.1.6, Azimuth go on	Paragraph 2.1.2 of Volume III in sub-section "**Air Freight Forecasting Method"** Paragraph 2.1.4 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.6 of Volume III in sub-section "**Air Freight Forecasting Method**"	Paragraph 2.1.2 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.4 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.7 of Volume III in sub-section "**Air Freight Forecasting Method**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
to refer to the anecdotal information collected in the interviews as primary market data."			
2.80 – "Azimuth place reliance on both the overspill argument (paragraph 2.2.2) and that there will be a reversal away from the existing preference for bellyhold for most types of air freight, despite the overwhelming evidence that this is likely to remain the case in future due to the lower freight rates available…"	Paragraph 2.2.2 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	Paragraph 2.2.2 of Volume III in sub-section "Short and Medium Term Freight Forecasting Model"	No change
2.82 – "At paragraphs 2.2.6 and 2.2.7, Azimuth set out the methodology they have used for deriving freight movements and tonnage for Manston. In essence, these movement forecasts are entirely based on claimed confidential discussions with airlines, airports and others involved in the industry, which are then converted to freight tonnage based on the capacity of each aircraft and assumed load factors. These discussions would appear to be different from the list of interviewees reported in Volume II, which included only 1 airline	Paragraph 2.2.6 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.7 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.9 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	Paragraph 2.2.6 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.7 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.9 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
(unlikely itself to relocate its single European operation to Manston) and no other airports. Although it is claimed (paragraph 2.2.9) that switching costs have been taken into account, there is no explanation as to how these costs have been factored into the assessment of what operations Manston might attract."			
2.83 – "A vague list of potential operations is set out at paragraph 3.2.3, albeit with specific assumptions then stated about the loadings on each…" [Also mentioned in YAL para 2.85]	Paragraph 3.2.3 of Volume III in sub-section "**Freight Forecast by Tonnage**"	Paragraph 3.2.3 of Volume III in sub-section "**Freight Forecast by Tonnage**"	Acknowledgement that some return legs can be empty has been added. In some cases, global growth rates from IATA have been added but these are not relevant to assessing the potential for such operations at Manston.
2.88 – "Although not the main focus of this summary report, we note that the passenger forecasts, set out by Azimuth in Section 2.4"	Title for sub-section 2.4 in Volume III "**Passenger forecasting method**"	Title for sub-section 2.4 in Volume III "**Passenger forecasting method**"	No change
2.91 – "In overall terms, the forecasts presented by Azimuth at Table 1 of Volume III are simply not credible and do not provide a robust basis for promoting a DCO."	Table 1 in Volume III "**Summary 20 year freight and passenger forecast"**	Table 1 in Volume III "**Summary 20 year freight and passenger forecast"**	Table unchanged. Paragraph below has now removed "*Nonetheless, the forecast shows the airport exceeding the Nationally Significant Infrastructure Project (NSIP) criteria for 10,000 freight movements by Year 6*".
Footnote 52 [from YAL Para 4.9] – "We are unclear why 19 Code E	Table 2 in Volume III "**Freighter Movements by Year by ICAO**	Table 2 in Volume III "**Freighter Movements by Year by ICAO**	Code F column has been removed. Code D movements have

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
stands are proposed given that the fleet mix at 2039 shows 85% of aircraft (at 17,171 annual cargo aircraft movements) being by aircraft smaller than Code E dimensions."	**Design Code"** in sub-section "**Freight Forecasts by Movements**"	**Design Code"** in sub-section "**Freight Forecasts by Movements**"	significantly decreased whilst Code E movements have significantly increased. The reasons for this is unexplained and this is inconsistent given that the total tonnages and tonnage assumptions per movement have not changed. This cannot be correct.
5.4 – "Azimuth spend some time considering the appropriate employment density on which to base an assessment of direct employment. They ultimately conclude that East Midlands Airport provides an appropriate comparator (see paragraph 4.1.4 of Volume IV)…"	Paragraph 4.1.4 of Volume IV in sub-section "**Macro Level Forecasts**"	Paragraph 4.2.1 of Volume IV in sub-section "**Comparator airport figures**"	Similar points but different wording, and a clarification over the calculation has been added.
5.8 – "In examining the employment projections presented (Section 5.1 of Volume IV), it appears that no allowance has been made for either productivity growth or returns to scale over time and as the Airport grows.	Section 5.1 of Volume IV titled "**Forecast Job Creation Resulting from Operations at Manston Airport**"	Section 5.1 of Volume IV is titled "**Forecast Job Creation Resulting from Operations at Manston Airport**"	No change here but some allowance has been made for productivity effects as set out in Volume IV at paragraph 4.3.3. Other points regarding the inappropriate employment density have not been addressed.
5.10 – "Section 7 of Volume IV discusses other socio-economic impacts. In particular, it talks about contributions to GDP. Para 7.1.1 describes GDP as "a monetary measure of the state of a Region's or a Country's economy"	Paragraph 7.1.1 of Volume IV in sub-section "**Gross Domestic Product**"	Paragraph 8.1.1 of Volume IV in sub-section "**Gross Domestic Product**"	Same error repeated. Definitions for acronyms are added.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
5.11 – "The comments in Paragraph 7.1.7 describing how Manston could contribute significantly to Thanet's Economic Growth Strategy aspirations in terms of GVA per job and per capita are, in reality, unsupported."	Paragraph 7.1.7 of Volume IV in sub-section "**Gross Domestic Product**"	Paragraph 8.1.7 of Volume IV in sub-section "**Gross Domestic Product**"	No change

APPENDIX D: YORK AVIATION FEBURARY 2018 NOTE

York Aviation

Manston Airport

RSP Consultation January 2018 – Further Comments on Azimuth Report *"Manston Airport – A Regional and National Asset"*

1. In this note we comment on the revised material presented in the 4 volumes of the Azimuth Report. However, much of this report remains unchanged and the significant shortcomings identified in our earlier report[1] have largely not been addressed and, where new material has been added, this fails to correct the previous misinterpretations.

2. Ultimately, Azimuth still seek to rely on our work for the Freight Transport Association and for Transport for London to justify their freighter aircraft movement forecasts despite our having made clear in our earlier report that this work cannot be interpreted in the way that Azimuth seek to do.

3. In this note, we address the new points made by Azimuth in each of the 4 volumes in turn.

Azimuth Report Volume I – Demand in the South East of the UK

Section 2 – UK Airport Capacity

4. As we pointed out at paragraphs 2.8 to 2.11 of our earlier report, almost all of the evidence presented by Azimuth to highlight the need for more airport capacity in the South East of England relates to the need for more airport capacity to meet growing passenger demand for flights to a wide range of global destinations fed by hub connecting services at Heathrow. These passenger flights also provide significant bellyhold freight capacity. Indeed, the recent non-statutory consultation material published by Heathrow Airport makes clear that, overall, the new passenger services and additional capacity made possible by the third runway will result in a doubling of freight capacity at the Airport[2].

5. The reference, at paragraph 2.1.2 of the Azimuth Report, to the Secretary of State for Transport's introduction to the new UK Aviation Forecasts in October 2017, stating that the runways at the London airports will be full at an earlier date than previously thought, needs to be seen in this context. It is clear that the reason that runway capacity is filling up more quickly than previously thought is due to growth in passenger aircraft as the actual decline in pure freighter flights is highlighted in the document at Figure 4.5[3] reproduced below.

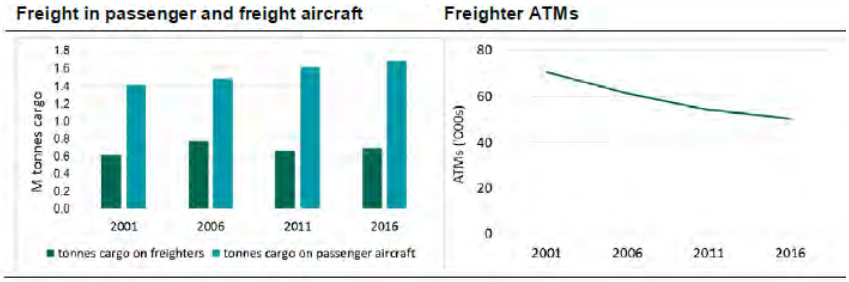


Figure 4.5 Historic freight carried at all modelled airports

[1] "SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT" submitted to PINS and made available on the Stone Hill Park website in November 2017.

[2] The Case for Heathrow Expansion, Heathrow Airport Ltd, January 2018.

[3] UK Aviation Forecasts, Department for Transport, October 2017, corrected version issued 25th January 2018 as a result to discrepancies in the use of CAA Statistics data in the original report brought to the DfT's attention by York Aviation.

6. These forecasts do not support the need for more capacity for pure freighter aircraft. Reference, at paragraph 4.0.1 of the Azimuth report, to the difference between the constrained and unconstrained passenger forecasts are simply irrelevant to the requirement for capacity for freighter aircraft and, in practice, the constrained forecast represents an unrealistic situation of no further capacity expansion at any of the UK airports over the period to 2050. The Department for Transport's (DfT) long term assumption is that there will be no growth in pure freighter aircraft movements across all UK airports as we highlighted at paragraph 3.26 of our previous report and this is the relevant context for considering whether there is a 'need' for Manston. Azimuth are simply wrong when they say that the DfT's assessment of the extent to which runway capacity is full *"may not reflect the need for freighter aircraft going forward"* as it is clear from Table 68 of the UK Aviation Forecasts report that freighter ATMs are included within the assessment

7. Hence, Azimuth's inference from this information that there is a strong economic case for more freighter airport capacity in the South East of England is simply not correct and the evidence regarding the economic benefits of additional passenger aircraft capacity has been misapplied.

Section 3 – Air Freight Capacity

8. Additional references have been added, at paragraphs 3.15 and 3.16 of the Azimuth report, to the prospects for growth in demand for pure freighter operations globally. However, this is not relevant to the prospects for Manston as more specific information is available of the actual trends and requirements in the UK market, where there are high levels of bellyhold capacity available at a high frequency of service negating the need for substantial additional freighter markets. The UK market for freighter aircraft is analysed in detail in Section 3 of our November 2017 report. The fact that freighters carry a lower proportion of cargo to/from the UK than the global average (Azimuth paragraph 3.2.1) is a reflection of the strong global position of the UK in terms of the provision of long haul scheduled services offering passenger and freight capacity. There is simply no need for additional freighter operations given the high quality offer made available on passenger aircraft. These flights offer more than sufficient competition to ensure that shippers are not disadvantaged, with the costs of bellyhold being lower than pure freighter tariffs in any event.

9. Nor does the additional information about short term shortage of freight capacity in the run-up to Christmas 2017, consequential increases in freight rates across Europe and congestion in and around the cargo centre at Heathrow (para 3.1.8), demonstrate a requirement for additional pure freighter operations. What this additional information evidences is the shortage of bellyhold capacity, otherwise, if pure freighter operations were an economic solution for shippers, additional ad hoc flights would have been operated to Stansted or East Midlands to cover the shortfall, both airports having spare capacity for additional freighter movements. The fact that such extra flights were not operated is clear evidence that even at higher freight rates, additional freighter operations were not economic. The position is further evidenced by the reference at paragraph 3.2.5 to a 10% increase in cargo handled at Heathrow in 2017. Heathrow's current consultation on its expansion makes clear an intention to resolve congestion issues in and around the cargo centre, improving facilities and access to accommodate 100% growth in cargo throughput[4].

10. As noted earlier, this section of the Azimuth report continues to place inappropriate reliance on our earlier work for Transport for London and the Freight Transport Association. As we made clear at paragraphs 2.17 to 2.28 of our earlier report, this work cannot be interpreted in the way Azimuth seek to do. It is simply wrong to state, as Azimuth do at paragraph 3.4.6 of their report that we identified *"that an operational Manston Airport is the only viable option"*. This serious misrepresentation of our 2015 report for the Freight Transport Association, which did no more than mention that Manston had handled some freighter traffic prior to its closure, has not been corrected.

[4] Our Emerging Plans, Heathrow Airport Ltd, January 2018.

Section 4 – Air Freight Capacity in the UK

11. Section 4.1 of the Azimuth report relating to Stansted Airport has been extensively revised, noting that the Airport no longer intends to seek an increase in its annual movement limits but neglects to mention the fact that movements are reserved for freighter aircraft under the 2008 planning permission under condition ATM1: *"a limit on the number of occasions on which aircraft may take-off or land at Stansted Airport of 264,000 ATMs (Air Transport Movements) during any 12 calendar month period, of which no more than 243,500 shall be PATMs (Passenger Air Transport Movements) and no more than 20,500 shall be CATMs (Cargo Air Transport Movements)."* Of the 20,500 movements reserved for freighter aircraft, only 11,600 were used in 2016 meaning that there were almost 10,000 freighter aircraft movements of spare capacity at that airport alone. Indeed, the inference that Stansted will seek to displace freighter activity, at paragraph 4.1.5 of the Azimuth report, is simply not borne out by the facts. Attaining the planned 43 mppa with 243,500 PATMs would require an average number of passengers per aircraft of c.176, up from c.161 in 2017, which is a realistic target given that the new generation of Ryanair aircraft (Boeing 737 max) will provide increase in seat capacity by 9 passengers on each aircraft before any allowance is made for Stansted's growing portfolio of long haul services. The Stansted Airport Sustainable Development Plan 2015 makes clear that Stansted intends to increase pure freighter activity and expressly states the potential to increase from 230,000 tonnes to 400,000 tonnes of freight on dedicated aircraft[5].

Section 5.3 – E-commerce

12. A section has been added to the Azimuth report regarding growth in e-commerce and the effect on demand for air freight. However, of itself, this tells us nothing about the requirement for more pure freighter aircraft and may simply reflect growing demand for bellyhold capacity at economic freight rates.

Section 6 – Manston Airport

13. Section 6.1 of the Azimuth report adds substantial text about the history of Manston Airport, expanding on the original assertions that the failure of the Airport can be attributed by the failure of the previous owners to invest in facilities. As we noted at paragraph 2.62 of our earlier report, users of Manston previously appeared happy with the standard of service offered so there is no evidence that lack of investment was an impediment to growth, rather it was an absence of a market. Furthermore, investment in freight facilities at Stansted and East Midlands Airports was in response to clear demand from particular operators (e.g. DHL's own facility at East Midlands) rather than speculatively ahead of proven demand. Despite investment in cargo facilities, Doncaster Sheffield Airport attracted only 688 air freighter movements in 2016.

14. Reference has been added, at paragraph 6.2.3 of the Azimuth report, to our 2011 report on the Economic Impact of Night Flying Report for Manston where we noted that Manston stood to benefit from the levels of air freight growth being projected by Boeing and Airbus. It is important to recognise that these remarks were made in the context of a Government policy position which did not support the provision of any additional capacity across the London airports and whilst Manston was still operational in the market. This is not the situation today. Furthermore, at the time that this report was written, it was assumed that the decline observed in pure freighter movements to/from the UK could be attributed to the recession and that there would be an upturn in such movements with economic recovery. Clearly, we now have evidence that this has not been the case and there has been a structural change in the industry notwithstanding the availability of spare capacity for freighters at airports such as Stansted and East Midlands.

[5] Stansted Airport, Sustainable Development Plan 2015, Summary page 9.

Section 7 – Future Potential Opportunities for Manston

15. Whilst noting the responses to RSP's initial Summer 2017 consultation (paragraph 7.1.6 of the Azimuth report), it is important to note that this consultation does not represent a systematic or unbiased sample, particularly given the shortcomings in the case presented. As in the original Azimuth report, the findings of an earlier comprehensive resident survey conducted by MORI are referenced (paragraph 7.1.7). Azimuth seek to construe this as being supportive of growth on the basis that residents say they were little affected by noise from airport operations, including at night. Of course, at that time, the Airport was operating under the restrictions of a Section 106 Agreement which did not allow operations at night (other than for emergencies). Hence, it is hardly surprising that residents report that they were little disturbed by operations at night. However, when the MORI report is examined more fully, it is evident over half of the residents were concerned that expanded operations would give rise to negative impacts from night operations (page 5 of the MORI report[6]). This needs to be seen in the context of the substantial number of night movements being projected by RSP, as we discuss later in this note.

16. A new Section 7.5 has been added on slot restrictions at Amsterdam, presumably to counter our questioning of why Coyne Airways would relocate from Amsterdam to Manston in our earlier report. This sub-section neglects to mention that Schiphol Group is extending the runway at nearby Lelystad to accommodate overspill traffic[7], primarily for leisure flights so as to free up slots for 'Mainport' related activity at Schiphol which would include cargo services. Indeed, Schiphol Group is also investing in improving its cargo handling facilities[8] so, notwithstanding the application of the 80% 'use it or lose it' rule[9] in the short term which could impact disproportionately on cargo operators to the extent that they do not use all of their allocated slots, Schiphol has put in place plans to address the forthcoming capacity constraint through enabling Lelystad to act as a reliever airport, albeit that Airport will not be available until 2019. There are also ongoing discussions regarding the long term future of the existing movement limit[10]. In any event, the existence of a potential constraint does not automatically make Manston a preferred alternative as Brexit is likely to make the airport an unattractive alternative for cargo airlines seeking to serve the EU market more broadly. Other available airport capacity in continental Europe, including that at Lelystad, is more likely to be a first choice for any operations displaced from Schiphol.

Azimuth Report Volume II – A Qualitative Study of Potential Demand

Section 3 – Review of Air Freight Forecasting Literature

17. At paragraph 3.6.4, Azimuth have added a reference to the DfT 2017 UK Aviation Forecasts but seek to dismiss the projected no growth in freighter aircraft movements as merely an assumption (see Volume III, paragraph 2.1.14), referring to the historic tonnage growth percentages cited by the DfT. Unfortunately, Azimuth do not appear to have realised to what the percentage growth figures refer. The 5% growth referred to by DfT[11] is total growth in cargo carried across freighter and passenger aircraft combined over the period 2011 to 2016. When mail is included, tonnage growth over the 5 years has been only 3.2%, and there has be negative growth in combined tonnage on freighter aircraft of -2.2%[12]. In contrast, the combined tonnage of freight and mail carried on passenger aircraft grew by 1.1% over the period. Unfortunately, Azimuth's misunderstanding of the DfT data has been carried through to the forecasts in Vol III, which cover both freight and mail operations projected for Manston.

[6] http://hbm2015.com/wp-content/uploads/2016/08/2005-04-S106-Consultation-MORI-results.pdf
[7] https://www.lelystadairport.nl/en/future
[8] http://www.annualreportschiphol.com/results/our-results/competitive-marketplace
[9] EU Slot Allocation Regulation 95/93 as amended.
[10] https://theloadstar.co.uk/schiphol-artificially-restricting-airport-cargo-capacity-illegal-slot-rules/
[11] In the amended version of UK Aviation Forecasts 2017.
[12] CAA Airport Statistics, adjusted for Belfast International data as advised by DfT.

Azimuth Report Volume III – The Forecast

Section 2 – Review of Air Freight Forecasting Literature

18. At paragraph 2.1.6, Azimuth refer to a peer review of the forecasting methodology by Loughborough University but this peer review has not been published as would be normal best practice. We have set out at length in our previous report (paragraphs 2.76 to 2.87) the flaws in the approach adopted. These criticisms have not been addressed. In our view, the forecasts are purely aspirational and not grounded in the evidence. As such, they are highly likely to have been infected by optimism bias within the RSP team.

19. At paragraph 2.1.10, Azimuth cite recent growth in freight tonnage from an IATA bulletin and capacity growth but, again, these are combined freighter and bellyhold figures and fail to take account that load factors remain low in Europe at 46.4% over the 12 months as reported by IATA[13]. This suggests that there is substantial potential to increase cargo tonnage flown without the need to increase aircraft movements, notwithstanding the comments at paragraph 2.3.5 of the Azimuth report that there may be instances where volume is a better measure of how full an aircraft may be rather than weight, an issue which is likely to relate to special consignments rather than the majority of high value, low volume goods carried as air freight. Azimuth continue to rely inappropriately on combined cargo tonnage figures and projections as a proxy for expected growth in cargo aircraft movements. As made clear in our earlier report (paragraphs 2.47 to 2.48), the use of such data is not appropriate for considering the prospects for Manston.

20. At paragraph 2.1.13, Azimuth cites CAA Airport Statistics for cargo growth for 2016, seeking to suggest some reversal of past trends away from freighter aircraft movements. Paragraph 2.3.6 also cites short term tonnage increases on freighter aircraft to infer a longer trend. There is danger in relying on single year figures but the data for 2017 show cargo tonnage across the London airports growing by 9.8%, in line with the UK average, but that carried on freighter aircraft growing by only 7% with a 5.5% fall in cargo aircraft movements in the London area. This tends to confirm the long term trend towards the increasing use of bellyhold capacity on the wide global network served from the main London airports.

21. Most significantly, in the light of this misinterpretation of short term trends, Azimuth compound the error by taking the 4%[14] figure for growth in cargo tonnage on freighter aircraft over a 5 year period, cited in the original DfT Aviation Forecasts 2017[15] , and use this as a justification for continuing to use the Boeing/Airbus forecast of 4% per annum growth in global freight tonne kilometres as the basis of forecasting freighter movements at Manston for years 10 to 20 of the forecast. Leaving aside the questionable validity of using a freight tonnage forecast as the basis for forecasting freighter aircraft movements, this is mathematically wrong and the average annual growth rate in cargo tonnage on pure freighter aircraft is no more than 1% per annum based on the updated DfT growth of 5% in cargo tonnage (see paragraph 17 above). On this basis, the updated Azimuth report presents identical forecasts as previously, although how clearly based on an error in the growth rate applied. Even if the short term 'bottom up' forecasts were correct, which we dispute (see paragraphs 2.80 to 2.85 of our earlier report), the eventual forecast at year 20 should be no greater than 12,789 freighter movement rather than 17,171 movements.

Section 3 – Manston Airport Freight Forecast

22. The updated Azimuth report has provided no further substantiation of the short term forecasts, nor of the forecast fleet mix, so undermining the weight which can be attached to the reliance on the short term forecasts.

[13] IATA Air Freight Analysis, November 2017, page 4.

[14] Now revised to 5%.

[15] Paragraph 4.4.

23. Despite the lack of the required explanation of the derivation and make up of the forecasts in the Azimuth report, some further detail is now provided in the noise section of the updated PEIR, which sets out the details of the freight movement forecasts by airline and aircraft type (Appendix 12.3). This information is set out in a table appended to this note and we have added the relevant QC count information to illustrate some of the issues arising from the fleet mix. Significantly, the fleet mix assessed for noise is not the same as contained in Azimuth Vol III. The inconsistencies are unexplained and give rise to further doubt as to the robustness of the forecast and whether it is deliverable:

	Azimuth	**PEIR App 12.3**
Code C	43%	41%
Code D	42%	17%
Code E	13%	37%
Code F	2%	6%

24. When examined in detail, the projections underlying the whole application lack realism for the following reasons:

- ✈ Amazon - this is suggested as a B777-300ER freighter but there is no freighter variant of this aircraft; the only B777 freighters being -200 variants. Other airlines are also shown as using this type and it accounts for 26% of all freighter movements shown.

  In any event, it is not clear why Amazon would operate 5 flights a day from the US to Manston as the goods which Amazon sells in the UK are not, in the main US manufactured. This seems to confuse the claimed potential (Azimuth Vol II, section 6.3), which we dispute, for an Amazon distribution hub at Manston to serve the UK with long haul freight operations.

- ✈ Cargolux - this assumes reinstatement of the previous Cargolux flower operation which has relocated to Stansted.

- ✈ Fedex/DHL- the aircraft types shown appear to indicate a DHL operation (e.g. A330-343 aircraft, which are only operated by DHL). The integrator operation is expected to account for 22.8 movements per day or 46% of the total. Based on our knowledge of the integrator market, this is completely unrealistic as Manston is quite simply in the wrong location to serve as an integrator hub in the UK. It would also require a substantial night operation, for example at DHL's main UK base at East Midlands Airport has some 63% of freighter aircraft movements operating within the night period.

  Overall, the number of movements shown in the PEIR would imply around 8,322 annual movements by the integrator. This is around 43% of the total number of freighter movements at EMA in 2016 or around 2/3 of the current DHL operation. This is hardly realistic as it would imply Manston would be a major integrator hub, duplicating the EMA operation. It is also important to note that

freight tonnage continues to grow at EMA but the number of freighter movements have not systematically grown over the last decade.

- Pakistan Airlines - the airline no longer operate pure freighter aircraft.
- Postal - the B737 operation presupposes the development of a mail hub. Royal Mail have pared back on flying even at their main hub at EMA so it is unclear why a dedicated B737 operation would be operated from Manston.
- Russian - the types indicated have QC counts of 8 and 2 respectively on arrival and 16 on departure, with some movements shown as operating at night, in contravention of the proposed Noise Mitigation Plan banning such aircraft at night.
- TAAG Angola – the airline does not operate B747 freighters, which is the type shown, and, in any event, their operations by most aircraft types are banned from European airspace on safety grounds.

25. These basic errors reinforce the doubts expressed in our earlier report about the realism of the short term freighter movement forecasts.

Implications for Night Operations and Night Noise

26. The Noise Mitigation Plan sets out a Night Quota period from 2300-0600 and a Shoulder period from 0600-0700. The quotas proposed for each of these periods are 4,000 QC points and 2,000 QC points per annum respectively. These QC budgets can be compared to other airports where such quotas are in place:

- Luton 3,500 from 2330-0600 and 7,000 from 0600-0700
- Heathrow (from Nov 18) 5,150 from 2330-0600
- Gatwick (from Nov 18) 6,935
- Stansted (from Nov 18) 7,960

27. The proposed night noise quota of 4,000 QC points is higher than the night quota for Luton Airport and not significantly lower than that for Heathrow. Local residents will be subject to a substantial amount of noise during the sensitive night period.

28. The fleet mix information provided in Section 12 of the update PEIR shows an average of 7.1 aircraft movements per night[16] for the 7 hour night quota period. Based on the aircraft types shown and the relevant QC points, this would amount to 3,222 annual QC points, within the 4,000 quota proposed. The proposed quota would allow up to around 9 aircraft movements per night on average, assuming the same aircraft mix, equivalent to around 3,217 annual aircraft movements. It follows, therefore, that the 2,000 quota for the shoulder hour 0600-0700 would allow 4-5 aircraft movements a day. In total, the extended 8 hour night period quotas would allow 4,826 annual aircraft movements on the basis of the fleet mix shown. This could be higher if quieter aircraft were operated over time.

29. However, a key issue is the realism of the projected day/night split. The RSP/Azimuth projections indicate only 14% of freighter aircraft movements being at night whereas, at EMA, some 63% of freighter movements operate at night. Given the dominance of integrator operations within the total RSP/Azimuth forecast, this would suggest a far greater reliance on night movements than shown. Correcting the day/night balance just for the integrator operation would imply at least 14.4 aircraft movements per night on average for the integrators, rather than the 4 movements shown for these airlines in the detailed fleet forecast. Accommodating these additional movements would breach the night noise quota constraint by c.1,000 a year. In other words, either the noise quota will need to be increased or the forecast will need to be constrained to reflect that these movements are unlikely to operate.

[16] The number will clearly vary day by day in practice.

30. Indeed, the proposed night movement constraint reinforces the view that the establishment of an integrator hub at Manston is simply not credible. If an integrator hub cannot be established this would reduce the movement forecasts by 46%. At Year 10, this would mean no more than 6,425 freighter aircraft movements, even if the remainder of the forecast were correct. If this were to be grown for the longer term using the DfT's historic freight tonnage figures (see paragraph 21 above), the freighter movement forecast at Year 20 would not exceed 7,000 movements, below the threshold for a DCO.

Capability of the Airport

31. We made the point in our earlier report (paragraph 2.93) that we would have expected a clear explanation of how the forecasts for aircraft movements translated into the requirements for infrastructure. This explanation has still not been provided.

32. Prima facie, on the same basis as we assessed the 'capability' of the existing infrastructure at Manston (paragraphs 4.5 and 4.6 of our earlier report), the infrastructure proposed by RSP could have a capability of over 100,000 freighter aircraft movements a year, taking into account the night movement quotas and the passenger operations. This is clearly excessive but not explanation or justification for the scale of the facilities has been provided by RSP.

Azimuth Report Volume IV – The Economic and Social Impacts of Airport Operations

Section 3 – Forecasting the Socio-Economic Impact of Airports

33. Despite the substantial errors in the assessment of socio-economic impacts identified in Section 5 of our earlier report, Azimuth have made no attempt to correct these errors and the economic impact assessment remains as in the original Summer 2017 consultation documents.

34. At Section 3.4, further reference has been added to our 2004 study into the socio-economic impact of airports for the Airports Council International Europe. We had already pointed out to Azimuth in direct correspondence[17] that it was inappropriate to rely on 2004 data as representative of the position in 2017, not least because of increasing efficiency of passenger and cargo handling. Furthermore, as is made clear in Figure 6.5 of our 2004 report[18], the employment densities can vary quite widely across airports dependent on their characteristics so the use of averages is entirely inappropriate for any specific airport. The on-site employment estimates set out at paragraph 5.12 of our earlier report are the correct basis for assessing the employment impact of Manston as these are based on recent experience of specific UK airports, where detailed analysis of the impact has been carried out in recent years, rather than on the generic Europe-wide ratios that Azimuth seek to apply. We have not factored any extraordinary assumptions regarding future automation or productivity growth into our estimates (Azimuth paragraphs 3.46-3.47) so these are conservatively based on average rates of productivity growth as airports grow.

Section 4 – Employment Forecasts for Manston Airport

35. For the reasons explained in our earlier report, the methodology used by Azimuth for deriving indirect, induced and catalytic impacts remains flawed.

36. A new section 4.3 has been added on the location of employment, referring to work by Oxford Economics (OE) for London Luton Airport[19]. This is used by Azimuth to justify the assertion that all on-site employment will be taken by local residents. Unfortunately, Azimuth have not realised that the way in which the employment estimates were derived by OE, using Government business statistics, only measures employment by place of employment and does not reflect the place of residence of those employees so cannot be taken as a reflection of the extent to which jobs at Manston might be taken up by local residents from Thanet.

[17] E-mail of 6th October 2017.

[18] The social and Economic Impact of Airports in Europe, York Aviation for ACI EUROPE 2004

[19] The Economic Impact of London Luton Airport, Oxford Economics, November 2015.

Section 5 – Training and Education

37. New sections have been added in relation to support from East Kent College and Canterbury Christ Church University expressing support for activities that would generate jobs in East Kent. This is not specific to the RSP proposals but would also apply to employment generated through Stone Hill Park's proposals. The future of the Museums would, of course, be enhanced by Stone Hill Park's specific proposals for new facilities and a heritage aviation airport within its proposals. The prospects for a Manston Training Facility are speculative and depend, ultimately, on whether the proposals for the use of the Airport were realised in practice.

Section 6 - Tourism

38. Section 6 is a new section on tourism which is entirely aspirational, with precedents being drawn from the experience of Southend (Azimuth paragraphs 6.4.2 to 6.4.8) following expansion of passenger flights at the Airport. However, the evidence presented is circumstantial and compares tourism expenditure in the Southend area during the recession with more recent (2015) data. It does not directly relate the growth in tourism expenditure of visitors to any data on the extent to which the Airport was a factor in this increase. As is made clear in the reference to Bournemouth Airport (Azimuth paragraph 6.4.14), the ability to use an airport to leverage additional tourist visitors is dependent on the destinations offered, with Germany, Scandinavia and the Netherlands particularly highlighted as places where there is a greater propensity to visit the UK on holiday, although it must be noted that these countries tend to prefer ferry travel and the use of their own car transport more generally over the use of air services.

39. Ultimately, the extent to which Manston might act as a catalyst to inbound tourism depends on the likely route network. The fleet mix forecast (PEIR Appendix 12.3) shows Ryanair as operating 76% of all passenger flights, with the remainder, other than the assumed return of the KLM service, expected to be largely ad hoc charter. Taking an example of the route network which Ryanair might operate from a similar scale of base at Leeds Bradford where the airline handles around 1 million passengers a year similar to the Azimuth projection for Manston, the airline serves the following destinations[20]:

Alicante	Las Palmas
Bratislava	Malaga
Corfu	Malta
Chania	Murcia
Dublin	Palma
Faro	Pisa
Fuerteventura	Riga
Gdansk	Tenerife
Gerona	Venice
Ibiza	Vilnius
Krakow	Warsaw
Limoges	Wroclaw
Lanzarote	

40. The majority of flights (over 59% in the summer tourist season) are to typical outbound leisure destinations and such destinations would, in all likelihood, be those operated initially particularly if our assessment (see paragraph 2.88 of our earlier report) that Azimuth's passenger forecasts are substantially overstated by reference to the level of demand in the Manston catchment area. Overall, it is hard to see how Manston would support a portfolio of routes likely to contribute significantly to inbound tourism nor to greatly assist St Augustine's Divine Retreat Centre (Azimuth paragraph 6.5.2) in marketing its activities, not least as its principal marketing focus appears to be to UK residents.[21]

[20] Based on OAG data for February and July 2018.

[21] http://divineuk.org/about-us/ramsgate/ The organisation operates another retreat centre in Darlington.

41. The suggestion that Manston might support services from China (Azimuth paragraph 6.5.4) lacks any foundation; such services do not form part of the forecasts, passenger aircraft stands and the passenger terminal would not be appropriately sized to handle flights to/from China and only Heathrow and Manchester Airports in the UK manage to sustain regular flights from China at 78mppa and 28mppa respectively. The Manston catchment area would simply not be sufficient to sustain such services and it is not credible that an airport in the 1-2 mppa range (or smaller) would support regular flights to/from China.

42. Overall, the additional material added in relation to the value of tourism does not demonstrate any linkage between the re-opening of Manston Airport and the actual potential impact on tourism in Thanet and Kent.

43. The other comments made by Azimuth about the lack of impact of airport operations on the value of tourism in Southend, Bournemouth and the Southampton area (Azimuth paragraphs 6.4.7, 6.4.14) have to be seen in the context that these airports do not have flight paths over a major tourist area as would clearly be the case with Manston in relation to Ramsgate. In the case of Manston, any negative implications might be expected to be more significant.

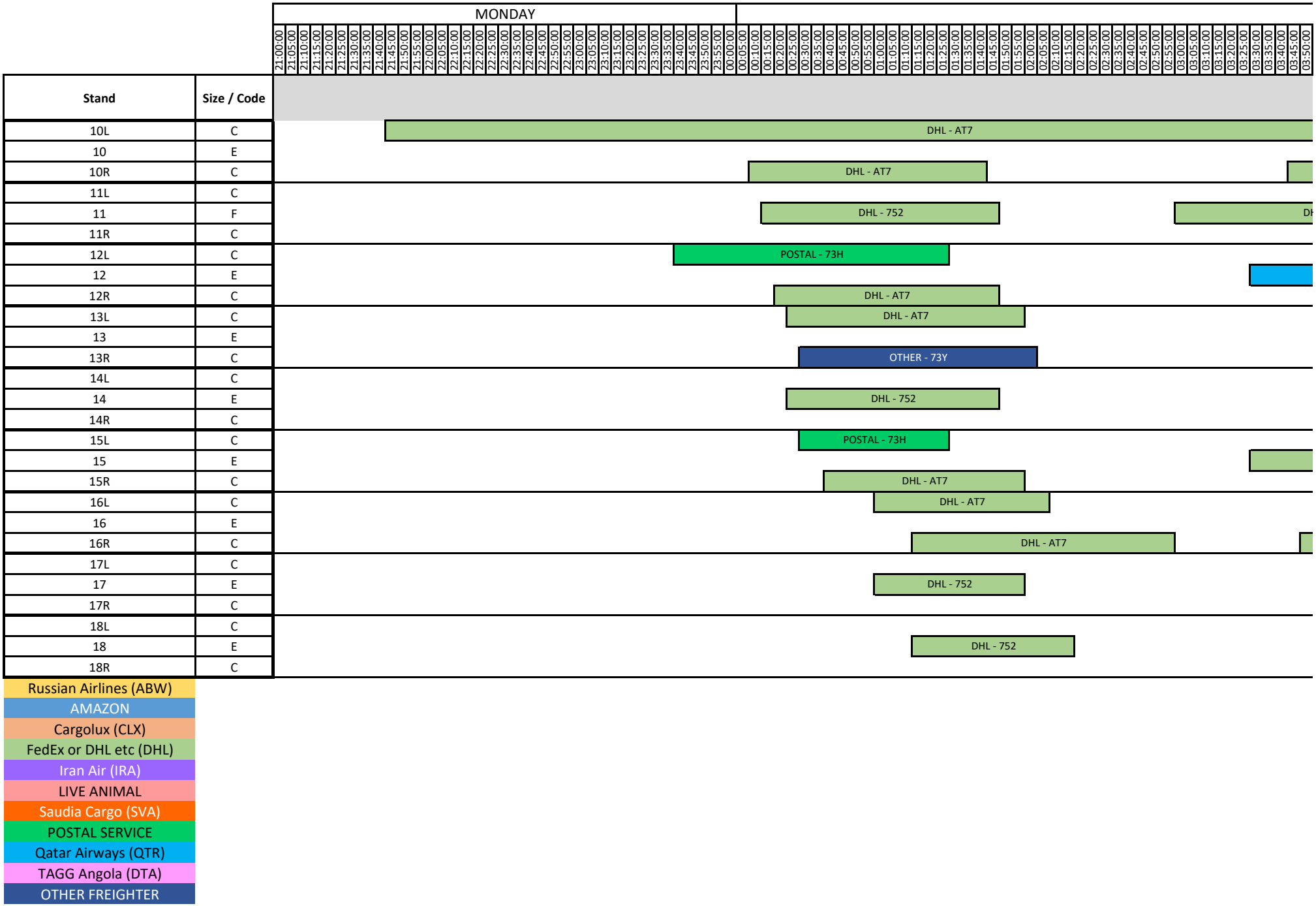
8th February 2018

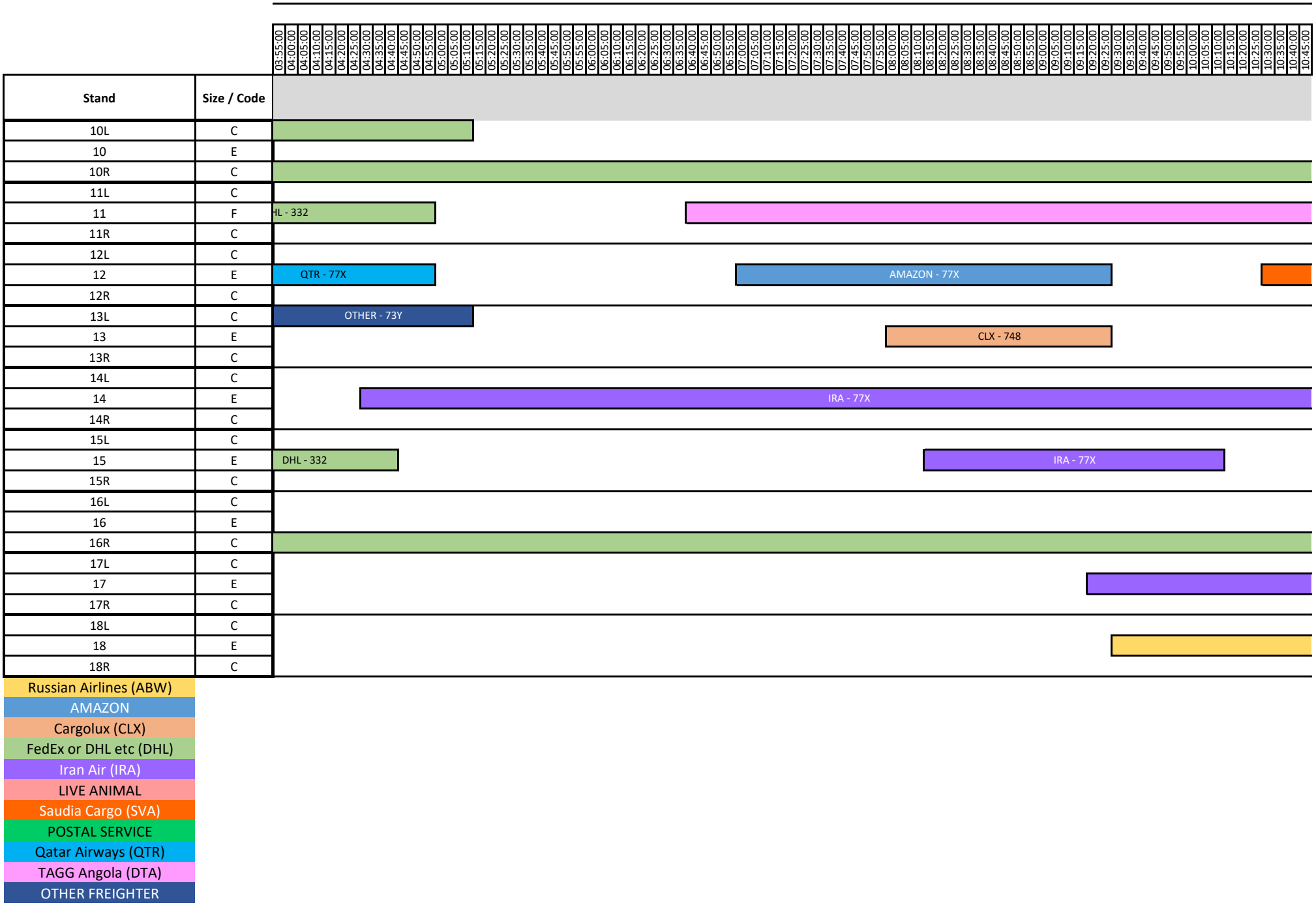
Appendix 12.3 Fleet Mix, QC points and Aircraft Categories

Airline	Type	Av Movements Day	Av Movements Night	QC A	QC D	Av QC	Total QC	Code
Amazon (US)	B777-300ER	4.6	0.5	1	2	1.5	0.75	E
Cargolux (Africa/Nairobi	B748	1.1	0.1	1	2	1.5	0.15	F
Fedex/DHL	B752	4.1	1.4	0.25	0.5	0.375	0.525	D
Fedex/DHL	A332	4.1	1.4	0.5	1	0.75	1.05	E
Fedex/DHL Feeders	ATR72	10.6	1.2	0.25	0.25	0.25	0.3	B
Fish and crabs (Dubai)	B777-300ER	0.4	0	1	2	1.5	0	E
Iran Air	B777-300ER	4.2	0	1	2	1.5	0	E
Live Animals	B777-300ER	0.4	0	1	2	1.5	0	E
Middle E (Egypt/Saudi	B777-300ER	0.9	0.1	1	2	1.5	0.15	E
PIA	B777-300ER	0.2	0	1	2	1.5	0	E
Post	B737-800	1.1	1.1	0.5	1	0.75	0.825	C
Qatar	B777-300ER	1.6	0	1	2	1.5	0	E
Russian	IL76	2.3	0.3	8	16	12	3.6	D
Russian	AN124	0.8	0.1	2	16	9	0.9	F
TAAG Angola	B748	0.7	0.1	1	2	1.5	0.15	F
Other	B737-300	5.7	0.6	1	0.5	0.75	0.45	C
Military	C17	0	0.1	0.5	2	1.25	0.125	D
Military	C130	0	0.1	0.5	2	1.25	0.125	D
Humanitarian	B748	0.1	0	1	2	1.5	0	F
KLM	F70	4	0	0	0.25	0.125	0	C
Charter	A320	1	0	0.25	1	0.625	0	C
Blue Air	B737-800	1.3	0	0.2	1	0.6	0	C
Cruise Flights	B757-300	0.8	0	0.25	1	0.625	0	D
Ryanair	B737-800	21.9	0	0.5	1	0.75	0	C
Total Freight		**42.9**	**7.1**				**9.1**	
Total		**71.9**	**7.1**				**9.1**	

APPENDIX E: INDICATIVE STAND ALLOCATION OF RSP/AZIMUTH AIRCRAFT MOVEMENT PROECTIONS BASED ON A RATIONAL TIMETABLE OF OPERATIONS

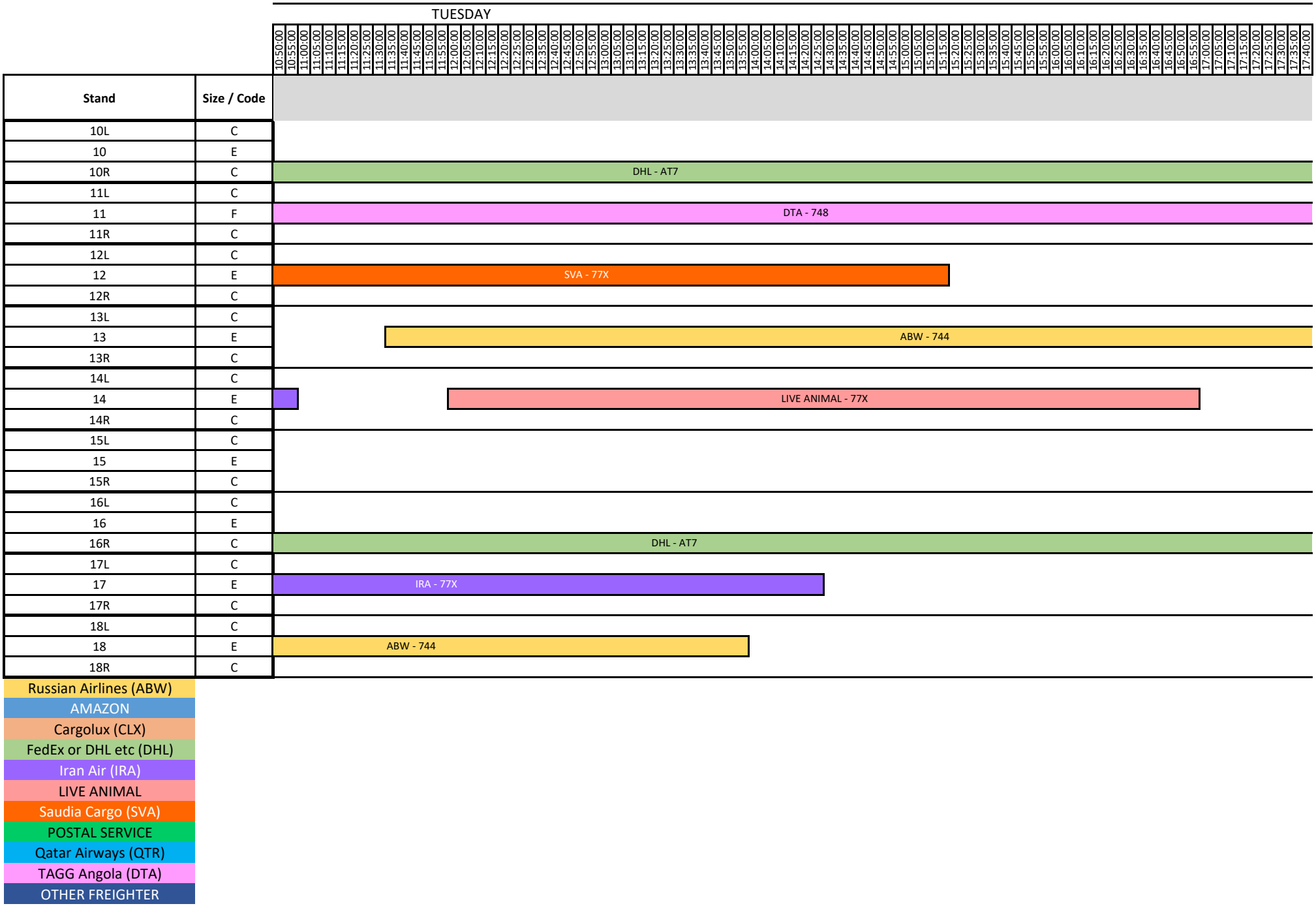
STAND ALLOCATION CHART FOR RSP FORECAST SCHEDULE BASED ON RATIONAL DAY NIGHT SPLIT





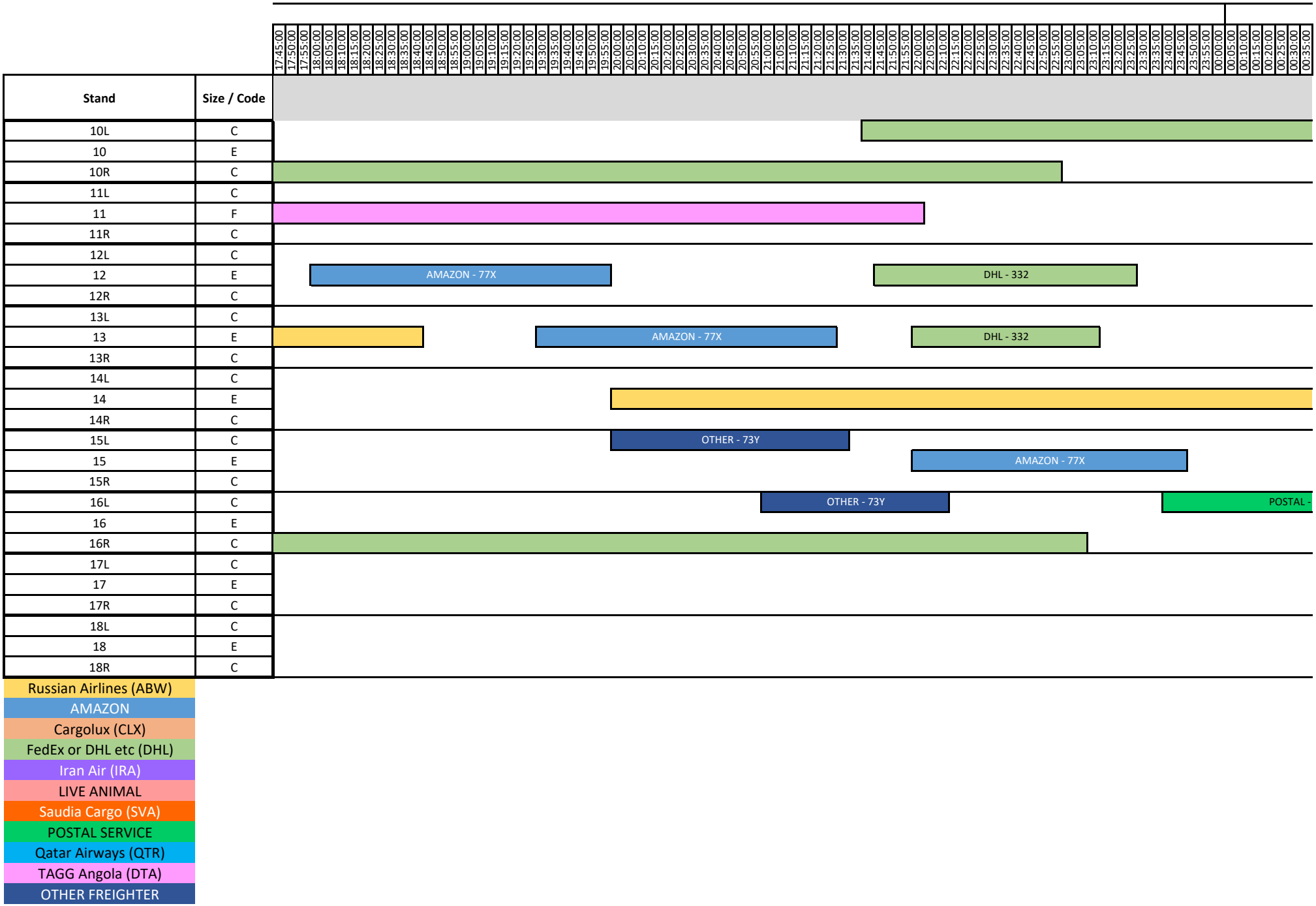
Stand	Size / Code
10L	C
10	E
10R	C
11L	C
11	F
11R	C
12L	C
12	E
12R	C
13L	C
13	E
13R	C
14L	C
14	E
14R	C
15L	C
15	E
15R	C
16L	C
16	E
16R	C
17L	C
17	E
17R	C
18L	C
18	E
18R	C

Russian Airlines (ABW)
AMAZON
Cargolux (CLX)
FedEx or DHL etc (DHL)
Iran Air (IRA)
LIVE ANIMAL
Saudia Cargo (SVA)
POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER



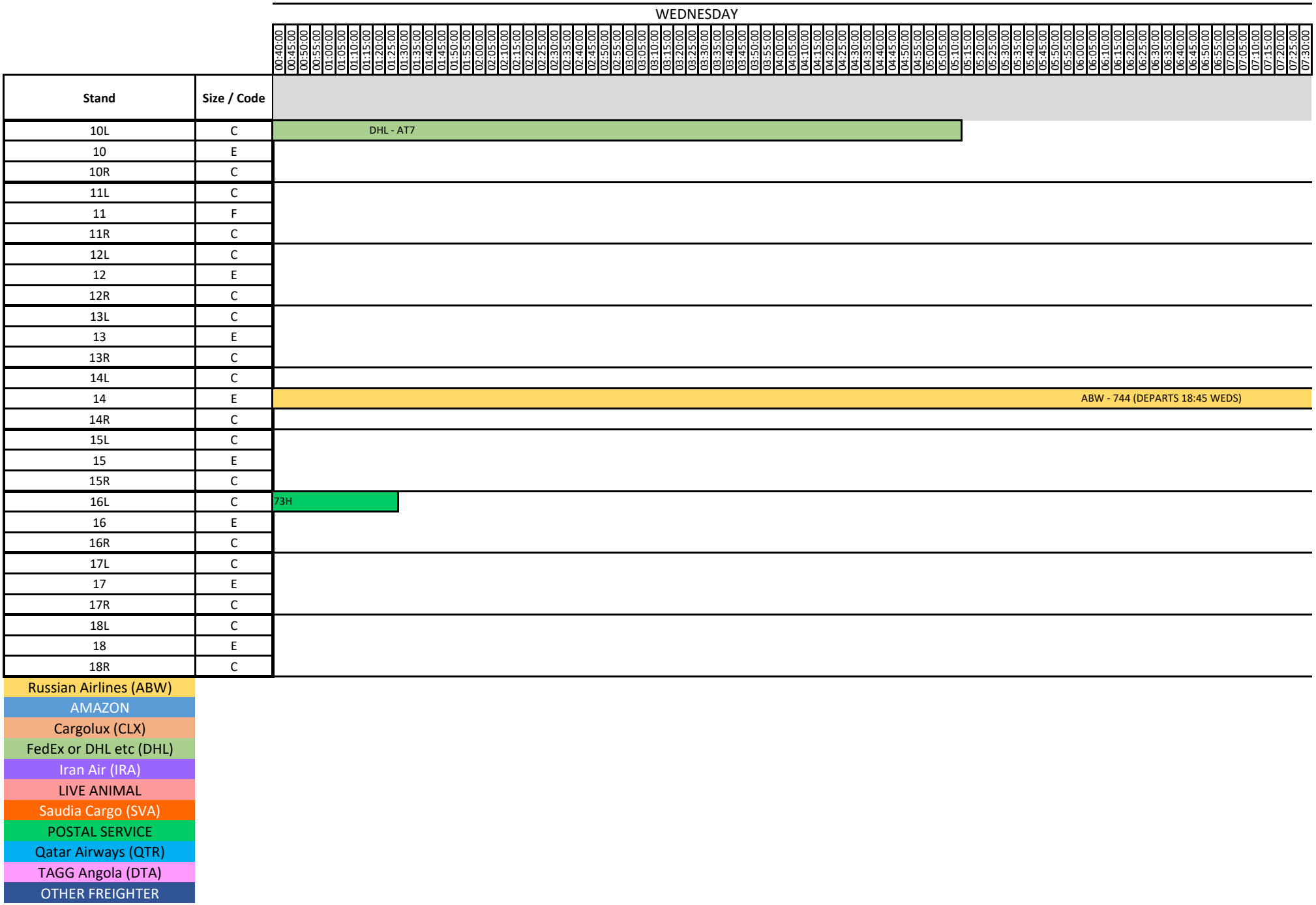
Stand	Size / Code
10L	C
10	E
10R	C
11L	C
11	F
11R	C
12L	C
12	E
12R	C
13L	C
13	E
13R	C
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16R	C
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17	E
17R	C
18L	C
18	E
18R	C

Russian Airlines (ABW)
AMAZON
Cargolux (CLX)
FedEx or DHL etc (DHL)
Iran Air (IRA)
LIVE ANIMAL
Saudia Cargo (SVA)
POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER



Stand	Size / Code
10L	C
10	E
10R	C
11L	C
11	F
11R	C
12L	C
12	E
12R	C
13L	C
13	E
13R	C
14L	C
14	E
14R	C
15L	C
15	E
15R	C
16L	C
16	E
16R	C
17L	C
17	E
17R	C
18L	C
18	E
18R	C

Russian Airlines (ABW)
AMAZON
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LIVE ANIMAL
Saudia Cargo (SVA)
POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER



Stand	Size / Code
10L	C
10	E
10R	C
11L	C
11	F
11R	C
12L	C
12	E
12R	C
13L	C
13	E
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17L	C
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17R	C
18L	C
18	E
18R	C

Russian Airlines (ABW)
AMAZON
Cargolux (CLX)
FedEx or DHL etc (DHL)
Iran Air (IRA)
LIVE ANIMAL
Saudia Cargo (SVA)
POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER

Appendix 05

York Aviation
Comments on Applicant's DL6 Responses to Second Written Questions from the ExA

York Aviation

Manston Airport NSIP

Comments on Applicant's Deadline 6 Responses to Second Questions from the Examining Authority

Introduction

As with other submissions made by the Applicant, we note that the answers given are in places inconsistent and contradictory and this serves to undermine their credibility and to cast further doubt upon the overall robustness of the need case. Many of the responses simply repeat material already submitted and do not provide the further requested clarification nor, in some cases, respond to the question put.

We comment here on points of relevance to the need case and the forecasts of usage for the development that underpin the entire NSIP Justification, including the assessment of socio-economic impacts. We have referenced our answers to the ExA's question number but do not repeat in full the question and answer given. We cross refer as required to the York Aviation 2017 Report, the 2019 Update Report (appendix 4 of REP3-025), our previous comments on the Applicant's Deadline 3 Responses [REP4-065] and submissions made following the Compulsory Acquisition and Need and Operations Hearing as required where points have already been addressed in our evidence. Where we have nothing to add to our previous analysis, we do not comment on the specific question and answer.

Question	Commentary
Draft DCO	A definition of 'airport related' development is now provided. This does not appear to adhere to the principles set out in the Planning Act 2008 (Guidance on associated development applications for major projects). This guidance requires that associated development should be directly related to the principal development, supporting either its construction or operation and of a proportionate scale not merely to provide a cross subsidy to the cost and operation of the principal development. The definition provided by the Applicant includes uses related to passenger aircraft operations, business/general aviation and aircraft maintenance/recycling, none of which are directly related to the principal development, namely the alteration of an airport to increase by at least 10,000 a year the number of air transport movements of cargo aircraft for which the airport is capable of providing air cargo transport services. Hence, of those uses covered by the proposed 'airport related' definition, applicable to the Northern Grass, the following cannot be considered as directly related to the principal development, namely *"flight catering, car hire activities, maintenance and valeting operations, support functions for aircraft maintenance …… business aviation facilities"*. Furthermore, for *"airline training centres, airline*

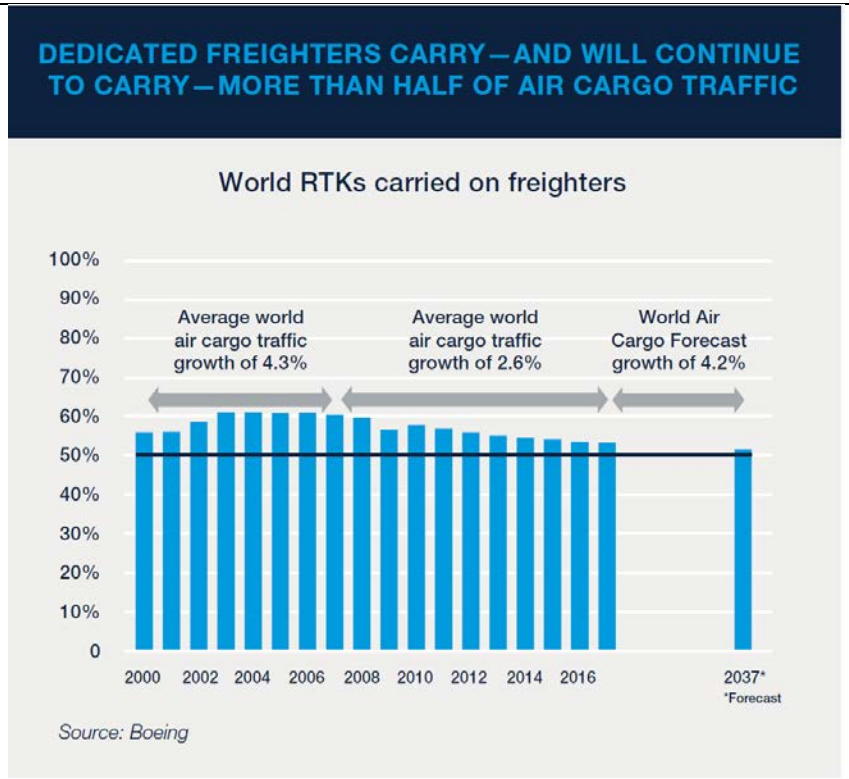
	computer centres, security facilities … and storage facilities for airlines" to meet the test they would need to be clearly demonstrably related to cargo airline activity. It is not appropriate, in the context of the associated development test to construe the definition of 'airport-related' more widely, as the Applicant seeks to do, to include all activities *"related to, or associated with, or supportive of operations at Manston Airport"* as it is not the entirety of the operation of Manston Airport that constitutes the principal development. Indeed, the development of the passenger terminal and the maintenance/recycling hangars are themselves designated as Associated Development in Schedule 1 to the Draft DCO (as indeed should the general aviation hangars/FBO at Work No. 2 and the apron associated with the maintenance recycling hangars at Works No. 10 and 11 as neither of these are part of the cargo operation forming the principal development). By definition, then, activities associated with passenger terminal operations and maintenance operations cannot be associated development and should be excluded from the airport related definition in this case. It would be normal practice for an airport related definition to also include some requirement for an operational linkage between the development proposed and the actual operation of the airport. The use of the term supportive or associated with could imply acceptance of any development providing, inter alia, financial cross subsidy to the operation of the principal development.
AQ.2.1	The aircraft types, PA28 and PA34, used in the noise and air quality assessment as representative general and business aviation aircraft types are not representative of the full range of aircraft that could be operated for business aviation purposes if an FBO is provided as claimed by the Applicant. It would be expected that at least some proportion of the 38,000 general aviation movements assessed for the EIA would be operated with small jet aircraft leading to higher emissions and higher noise. This is yet another example of where the environmental assessment has not considered a worst case.
CA.2.18	See answer above regarding the inadequacy of the proposed definition of 'airport related' in the context of the DCO principal development.
CA.2.19	The Applicant's response fails to address the extent to which the proposed development on the Northern Grass is likely and/or intended to provide a cross subsidy to the principal development. If there was a need for such uses to support the operation of Manston Airport, for which we can find no supporting evidenced based on airport operations elsewhere (see comments on the answer to OP.2.5), the suggestion that such facilities would need to be located elsewhere on an unplanned basis is simply not relevant. The Applicant has failed to substantiate the need for the proposed quantum of development on the Northern Grass. The answer given is nothing more than obfuscation.
DCO.2.10	As noted above, the Act requires associated development to be directly related to the principal development. It is not sufficient for such development to be merely *"associated"* with the principal development.
DCO.2.44	The Applicant here presents a different definition of associated development stating that support in this context means: *"to have its ordinary meaning of 'strengthen, maintain' (Collins), i.e. the facilities provided by those works would, together with the airside facilities, provide a more complete service for the airport's cargo customers.* *ii. By supporting works that are a nationally significant infrastructure project concerning aviation, this wording would ensure that they were for aviation purposes (although note that the word 'required' does not appear in the guidance). To make doubly sure, however, each work is additionally required to be 'aviation-related'."* As noted above, in relation to the Draft DCO, the exemplar uses given in the proposed definition of aviation related include uses totally unrelated to providing *"a more complete service for the airport's cargo customers".* Given the clear requirement for associated development

	to be directly related to the operation of the principal (in this case cargo) development, it is important that there is absolute clarity in the DCO as to the appropriate test and its applicability.
ND.2.1	The Applicant continues to claim that Vol II of the Azimuth Reports *"is an evidence based assessment of likely levels of cargo and passenger traffic at Manston"*. This is patently nonsense as was made clear at the Oral Hearing on Need and Operations, where Dr Dixon conceded that she had provided a general assessment of the scale of the market that Manston might attract rather than a specific forecast of what it would attract when considerations of cost and viability are properly taken into account. In this answer, the Applicant seeks to construe that commercial viability is considered independently of Azimuth forecast, which may be true in relation to the viability to the Applicant in its own business model (albeit this is not what is stated in the Application Documents – see York Aviation Report February 2019, para. 7.3). However, a forecast of the use of an airport cannot be made without giving consideration to the relative price to users. Usage is not independent of cost, as indeed Northpoint acknowledge in their report submitted at Deadline 4 at para. 67. Price is vital to understanding the extent to which any capacity provided might actually be used in practice. Given the Applicant's stated intention to be a 'price setter' and the high level of charge per movement or per tonne indicated in the 'business model' spreadsheet submitted, applying these to the likelihood of the capacity being taken up or, in other words, the forecasts being realised, is essential.
ND.2.2	We note that the ExA asked for evidence on *"interviews and conversations with other experts and industry figures"* carried out by the Applicant and their *"conclusions relating to the proposed scheme"*. It is extraordinary that there are only 3 examples cited in response, none of which are leading cargo industry experts. First of all, an invitation to attend the London Infrastructure Summit is nothing more than an invitation to send a delegate to a conference. There is no evidence that RSP has been invited to speak at the Summit, nor the extent to which the proposed development at Manston is supported by London First or other sponsors of the Summit. The second company/organisation cited, BAS international, are a broker leasing aircraft for business aviation use. They are not a player, major or otherwise, in the international airfreight sector. Any comments made by them will relate solely to slot constraints for business aviation activities at the main London airports and are not relevant to the position for freighters. The third company, Sound Moves, operate a niche business for moving music equipment and staging. At best, this would be a limited operation with a handful of flights a year. By way of example, they are stated as currently using Doncaster Sheffield Airport for their operations (Answer ND.2.5). Total cargo ATMs at Doncaster in 2018 were less than 150 according to CAA Airport Statistics, of which Sound Moves will not account for all of the movements. This would represent a very small niche operation. In total, this response provides no evidence of an ongoing dialogue with any of the users which it is claimed by the Applicant might use Manston for cargo operations. In order for the Applicant's forecasts to be realised, it would be necessary for an operator of dedicated cargo flights on a substantial scale to be attracted. There is absolutely no evidence that the Applicant is actually engaged in any sort of dialogue with such operators.
ND.2.3	This response by the Applicant ignores nature of fish and shellfish trade. Somewhat misleadingly, the Applicant cites figures for total export volumes related to seafood. This includes exports in refrigerated ships to countries such as Ireland, France and Spain which are 3 of the 4 top markets and, self evidently, most likely to be served by refrigerated ships or trucks. As is made clear in the Steer Report for Airlines UK (see York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5, para. 20) [REP5-

	031], export of salmon products makes up a substantial portion of the trade and this is distributed globally using bellyhold capacity available from Heathrow, with the US being a large market related to its place in the top 4 export markets for fish from the UK. In any event, it is far from clear how 1 flight a week (for 26 weeks of the year) would meet the requirements of this trade and would offer any practical time advantage such as to justify the use of air freight rather than sea or truck. Other niche markets related to race horses, F1 and rock bands are cited as potential for Manston. However, it is far from clear how the suggestion of 2 based aircraft operating 4 flights a week would be viable for an airline. Furthermore, there is no evidence of this scale of demand for such niche markets. The comment made that Manston may only receive part loads on such aircraft strongly suggests, in any event, that any such operations would not be by aircraft based at Manston. Furthermore, as has previously been pointed out at the Hearings, other airports such as Stansted and Doncaster are better located in relation to much of the horse racing trade and East Midlands would be the best located airport for F1 operations which are to a large extent centred in the East Midlands Region in the vicinity of Silverstone. The claim that such services might use Manston relies, once again, on the unsubstantiated assertion that MAG will seek to displace such freighter activity from Stansted. Even if that was the case, which we do not believe, for such niche air cargo operations, it is hard to see how 1 or 2 flights a week by such activity would justify the investment of £186 million necessary to reopen Manston as a cargo airport in the first instance.
ND.2.4	The Applicant again provides secondary data about export and import markets. This response is not supported by any analysis of what commodities would use Manston or why. On what basis is it considered realistic that Manston would obtain a 6% share of import tonnage and 14% share of export tonnage to/from the UK's top 15 Non-EU trading partners. No explanation is provided as to what would drive a preference by exporters to use Manston. All the response does is to take the Azimuth forecast as a given and then describe the consequences. This provides no evidence as to the likelihood of it being achievable.
ND.2.5	This response simply repeats thesis of congestion at other airports, which we dispute (see York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4 – ND.1.13, ND.1.15, ND.1.16, ND.1.18) and that Manston will be state of the art, meaning that it will attract operators away from these other airports (i.e. displacement of activity). This appears to ignore investment in new state of the art cargo handling facilities at East Midlands and Heathrow, in particular the developments underway at both locations by SEGRO. This response also contains the extraordinary claim that Manston would offer a *"value for money proposition"*, despite the fact that the business model shows the costs of using the facility to be between 3 and 6 times the charges levied at other airports (see York Aviation Report February 2019, para. 7.36). There is no evidence that other airports would not provide facilities for *"refrigerated storage and outsized freight"* if there was a business case for doing so. The response goes onto say that automation would have no effect on predicted job numbers. However, on the one hand the Applicant claims airports like East Midlands are not operating state of the art facilities employing the latest technology, on the other hand it persists in wrongly applying the overall employment density (jobs per workload unit including non-aviation jos) for East Midlands as the basis for its employment projections (see further comments on answers to SE.2.2 and SE.2.4 below). This is contradictory and inconsistent.

ND.2.6	The tonnage per movement set out in the Azimuth report is reflective of the erroneous fleet mix, including a substantial number of ATR72 turboprop aircraft necessarily carrying a limited load. The explanation provided by the Applicant in this response is simply illogical. If the intention is for the e-commerce integrator to be supplying product to fulfilment centres in the UK, why would outbound flights by larger aircraft carry 100% load and inbound flights 20%. Nor does it make sense for the small feeder flights to carry 100% inbound as this would imply that Manston would be functioning as a hub operation with product shipped in on small aircraft to be shipped out again on larger aircraft. This does not fit with the business model otherwise described by the Applicant or its attempt at a justification as to why such an e-commerce integrator would locate at Manston. The whole story of the role of e-commerce is illogical. To the extent that there is a market for this type of activity, it is to bring product to the UK for UK-wide distribution. Any hub would logically be located near the centre for production of the goods within the UK, to the extent to which there are UK goods for export, and be far more likely to be in the Midlands for the distribution of inbound goods and not at Manston.
ND.2.7	It is notable that the Applicant is unable to identify any research or data which disputes our analysis of the order of cost difference between dedicated freighter operations and bellyhold freight (York Aviation Report February 2019, para. 4.7) [REP3-025] but, nonetheless says it continues to dispute the estimated order of magnitude of the cost difference. It is simply not credible for the Applicant to say that the cost difference is not relevant to RSP's business model as there will be other reasons why dedicated freighter aircraft will be used. This may be true for niche specialist cargos but does not apply to the bulk of general cargo. It is this latter cargo which makes up most of the trucking operations, the interception of which Northpoint rely on to justify its version of the tonnage forecasts for Manston (see York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5, paras. 37 and 38) [REP5-031]. All the evidence points to cost efficiency being a significant factor in the decision as to how cargo is moved, particularly for trucked freight upon which the Applicant continues to rely in this response. In the light of the business model information provided by the Applicant, it is not credible to claim that Manston would offer "a strong value for money proposition". To the extent that asserted time savings are a factor due to lack of congestion, the Applicant offers no quantification of the value of these time savings to cargo shippers, taking into account access times from the origin/destination of the goods, which could be offset against the higher charges it proposes to levy.
ND.2.8	Whilst faster growth of freight activity at East Midlands Airport may not be reflective of a stronger regional economic performance, it is reflective of the emergence of a 'golden triangle' for UK Logistics operations in the Midlands, which is able to serve large parts of the UK effectively. It is clear that East Midlands is geared up for major increase in freight tonnage, supported by extensive logistic infrastructure development in the East Midlands Gateway and with the express support of local planning policy. Trucking of freight to Liege and to East Midlands is reflective of the air freight industry structure, not the specific consequence of constraint in London, and reflects the efficiency of centrally located hub operations. The repeated assertion that East Midlands is facing capacity constraints is not borne out by the facts, including evidence that the Airport is constructing additional aircraft stands as demand grows, alongside facility developments by other parties such as UPS and Amazon (see York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4 – ND.1.15 [REP4-065] and https://mediacentre.eastmidlandsairport.com/new-facilities-for-east-midlands-airport-passengers/).
ND.2.9	In this response, the Applicant seeks to dismiss the impact of the current downturn in global air freight tonnages. It is important to note that we did not factor the short term downturn into our assessment of whether there is a need for additional cargo handling capacity at Manston (see York Aviation Report, February 2019, Figure 4.7). Even without slowing the growth in the early years, there is no need for Manston.

ND.2.10	This response seeks to downplay the significance of the use of the wrong charts from the Oxford Economics/Ramboll work for Transport for London (TfL). It is clear that, when properly read, this work demonstrates that the growth in demand is for bellyhold capacity not pure freighters in the London area. This is a key point. When read as a whole, in the context of the Mayor's position in relation to the need for hub capacity to serve London (on which York Aviation were concurrently working alongside Oxford Economics and Ramboll), it is clear that this analysis reflects the shortage of hub capacity for passenger and bellyhold operations combined rather than any shortage of capacity for dedicated freighters.
ND.2.11	The final version of Azimuth Reports may not identify carriers specifically but the fleet mix in the ES, which was stated by Wood at the Hearings to be derived solely from the work of Azimuth, does and this level of detail has been used to inform the environmental assessment along with the specific markets proposed and sector lengths (relevant to air quality and climate change considerations). The Applicant cannot resile from this as its evidence. The response continues to claim that the forecasting methodology is robust, relying on Northpoint's attempt to corroborate the Azimuth results (see York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5 (paras. 28-38) [REP5-031]. The response fails to provide the additional evidence to justify the forecasts requested by the Ex A and self-confessedly has failed to take key factors into account (see comment on ND.2.1 above).
ND.2.12	The Applicant claims that two of the new integrators would make an early commitment to Manston but this is not supported by any evidence, nor are such integrators referred in response to question ND.2.2. In any event, East Midlands Airport is expanding facilities expressly for Amazon, which is developing a major fulfilment centre as part of the East Midlands Gateway. The answer does not provide any evidence that could be relied on. The assertion that East Midlands Airport has daytime slot constraints is without evidence and highly unlikely to be true.
ND.2.13	Despite the evidence provide by Altitude Aviation Advisory at Deadline 5 [REP5-029], the Applicant continues to assert that new e-commerce integrators would prefer to fly during the day on the basis that flights are not related to the achievement of delivery times but to restocking of fulfilment centres. However, in order to meet the delivery times required, goods need to be dispatched in the morning from these centres, requiring the restocking operation overnight. Overall, this response is muddled and inconsistent with other answers (ND.2.6, 2.14). If the requirement is for goods from overseas to be air freighted into stock fulfillment centres in the UK, this is inconsistent with the earlier answer that the widebodied aircraft would be carrying 100% outbound loads but only 20% inbound. This simply does not make sense. If the small feeders aircraft from Europe are bringing in imports to be distributed overseas by widebodied aircraft, how does that relate at all to stocking of fulfilment centres in the South East of England.
ND.2.14	In this response, it is claimed that the e-commerce integrator would be serving routes mainly to the US and Far East. It is totally unclear why an e-commerce integrator would be concentrating on exporting goods to the Far East and the USA as stated in the response to ND.2.6. Surely the key feature of Rockford and the role it plays in the US supply chain is its central location between E and W coasts of the USA. The UK equivalent would be East Midlands and, for Europe, this role is fulfilled by airports such as Liege and Leipzig.
ND.2.15	The response provided regarding the accuracy of Boeing and Airbus forecasts shows that Boeing was reasonably accurate in a 20 year projection of the total aircraft fleet but overstated demand for pure freighter aircraft by 25%. What the graphic provided shows is a reasonable degree of accuracy in forecasting total aircraft and revenue passenger miles but a significant overstatement of demand for pure freighters. The Applicant is wrong to state that Boeing does not project a decline in the share of freight carried in dedicated freighters globally. The Boeing 2018 Forecasts (https://www.boeing.com/resources/boeingdotcom/commercial/market/commercial-market-outlook/assets/downloads/2018-cmo-09-11.pdf) actually show a predicted reduction in the share of FTKs on freighters:



The reduction in the share of freighter aircraft movements will exceed that of RTKs due to increased tonnage per aircraft. If cargo growth undershoots 4.2% p.a. as seems likely given short term trends, the role of freighters is likely to be less (compare the previous period with 4.3% growth to the more recent period with 2.6% growth when the role of freighters declined).

The analysis of currently served routes from Heathrow only serves to emphasise the breadth of destinations available on a bellyhold basis from Heathrow. It is the Government's intention that a substantial proportion of the new capacity offered by R3 will be used to allow additional global points to be served. To the extent that there remain gaps in the network, it is difficult to see how the operation of dedicated freighter aircraft to fill these gaps would be viable as levels of demand are likely only to warrant infrequent services, which would result in freight being delayed compared to using well established bellyhold hub routings.

ND.2.16	This response does not address the question posed. Fruit and vegetables are relatively high weight/low value compared to say diamonds or specialist pharmaceuticals or electrical components, for example.
ND.2.17	In relation to the repeated references to York Aviation's work for TfL and the FTA, the reports when read in their entirety do not support the Applicant's view. Whilst TfL may well have stated that the reports were unambiguous and that they had relied on them, it is our understanding that they were not specifically asked in relation to the implications for Manston. The Applicant needs to provide evidence to support its claims. It is simply not reasonable to accept the Applicant's interpretation of these reports over those of the authors, particularly

	when evidence has been produced to demonstrate that the methodologies used within them, when applied to the current market position, simply demonstrate that there is no role or need for Manston (York Aviation February 2019 Report, paras 4.31 to 4.41). We do not resile from the point made in the report regarding the potential additional trucking cost to shippers but it does not follow that the solution was ever the need for a dedicated freighter airport, rather the need was and is for more hub airport capacity at London providing bellyhold freight capacity, which R3 at Heathrow will provide. The ANPS rightly recognises that the 3rd runway at Heathrow is the means of addressing this need.
ND.2.18	To assist the ExA, we have set out below the information on fuel prices relative to 2000. This is taken from Platts (https://www.spglobal.com/platts/en/oil/refined-products/jetfuel). The chart provided by the applicant deals only with fuel prices since 2012, the relativity to 2000 is shown below. **Jet Fuel Prices** New York (Platts)--09May19/0521 pm EDT/ 2121 GMT $201.62 cts/gal

	SHARE IN WORLD INDEX	CTS/GAL	$/BBL	$/MT	INDEX VALUE 2000=100%
Platts Global Index	100%	201.62	84.68	667.73	231.48%
Platts Regional Indices					
Asia & Oceania	22%	194.91	81.86	646.72	233.90%
Europe & CIS	28%	200.10	84.04	662.25	226.43%
Middle East & Africa	7%	192.00	80.64	636.22	240.81%
North America	39%	207.47	87.14	688.39	231.65%
Latin & Central America	4%	209.42	87.96	677.27	243.65%

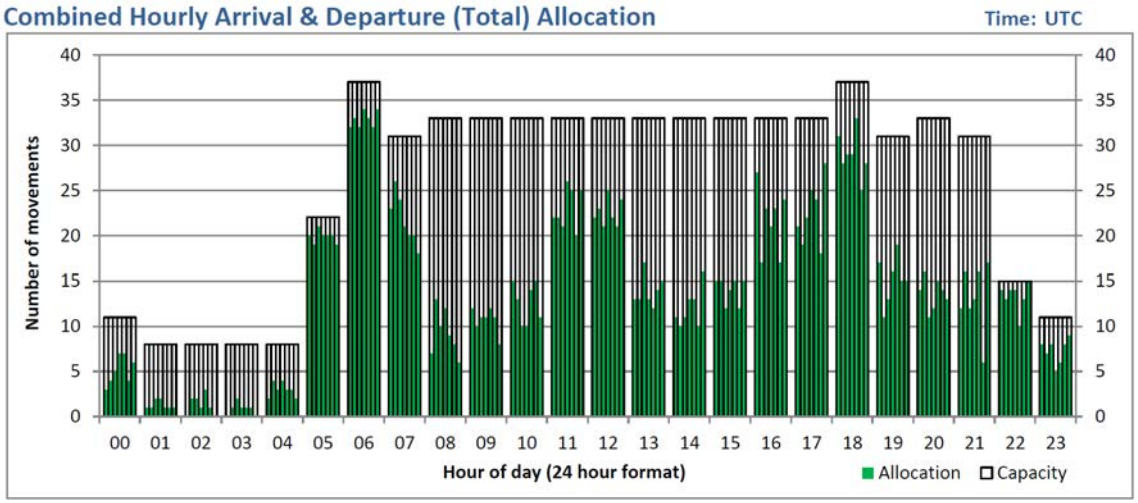
	This data (as referred to in the York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5, para. 19) [REP5-031] confirms that fuel prices have risen by 131.5% since 2000. This increase brought about the change in the trend towards more trucking and less use of dedicated freighters. The more recent smaller magnitude falls have not been sufficient to reverse this trend. The hypothesis that air freight does not lend itself to trucking does not bear examination. As the Steer Report for Airlines UK makes clear (see York Aviation Report February 2019, paras. 4.13-4.15) [REP3-025], there is substantial trucking into Heathrow from Europe to avail of transatlantic bellyhold capacity so the flow is not just one way. The comments made in the response about rapid delivery with e-commerce appears, again, to contradict the claims above that e-commerce integrator freight will be less concerned with overnight speed of delivery and so be willing to operate in the hours when Manston is open.
ND.2.19	This response fails to address the possible economic effects of Brexit on GDP and demand. This is likely to far outweigh any temporary friction at the border, particularly given the emphasis on agreeing electronic solutions to border controls.
ND.2.20	This response simply repeats unsubstantiated assertions about capacity constraints at Stansted. We have already made the position clear at ND.1.13, ND.1.18, ND.1.31, ND.1.39 of York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4. [REP4-065]
ND.2.21	The adjusted limits at Stansted, consequent upon the recent planning consent still provide for 60% growth in cargo flights at Stansted (see ND.1.18 of York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4) [REP4-065]
ND.2.22	The contents of this response in relation to physical capacity at Stansted are again just speculation. The position in relation to available stand capacity for freighter aircraft at Stansted is set out at ND.1.8 of York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4 [REP4-065]. The answer provided by the Applicant appears to ignore the existence of the apron to the east of the Cargo buildings which is available and used for freighters. From the Google Earth image previously submitted (Answer ND.1.8), it is clear that there is no airside road connection to these stands from the passenger terminal so they would be unsuitable for regular passenger use. We strongly believe that the current CAA data indicating that no freight is currently being carried on the Emirates services from Stansted since its inauguration on 2018 is incorrect (See Stonehill Park's Deadline 6 submission in relation to the Need and Operations Hearing, para. 4.43) [REP6-055].
ND.2.23	This answer provided by the Applicant fails to grasp the significant investment at East Midlands Airport in expanded modern freight facilities. New facilities will be just as state of the art as anything at Manston. This answer provided is nothing more than speculation.
ND.2.24	This response appears to be based on the concept that there is a unique market for dedicated freighter aircraft serving London and the South East in isolation from the rest of the country. There is no evidence that this is the case and goods flown from London often originate in the rest of the country but are consolidated in the vicinity of Heathrow as part of the process of seeking the most cost effective means of transport for goods, taking into account both time and cost. There is ample evidence that much of the air freight currently flown from London airports has origins or destinations in the rest of the country (see York Aviation Report February 2019, paras. 2.18, 4.25-4.27) [REP3-025]. Manston would inevitably be in competition with East Midlands to attract a share of this traffic and, given the overall location of demand across the UK, it would be reasonable to expect East Midlands to be the preferred alternative for any overspill from the London

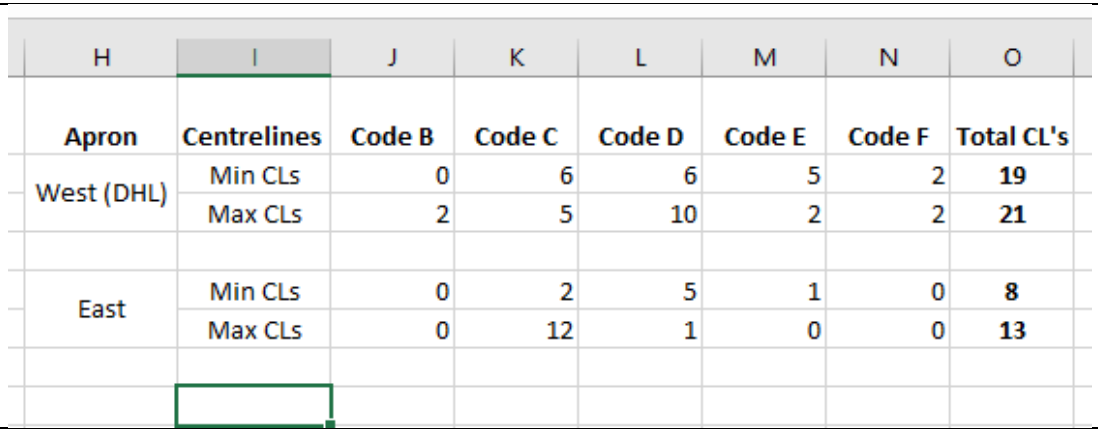
	airports. The Applicant simply has not factored how the industry works in practice into its forecasts, including the role of East Midlands as a growing logistics hub.
ND.2.25	The Applicant is not strictly correct to argue that there would be no displacement of activity from East Midlands. In the counterfactual case of no development at Manston, East Midlands would be expected to accommodate a large part of the demand and is investing, with partners such as UPS, in facilities to enable it to do so, supported by local planning policy (see York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4, ND.1.15) [REP4-065]. If Manston were to enter the market and achieve any share of the projected market, this would be diverted from other UK airports and would need to be taken into account in any national level assessment. Nor is it correct to construe that the conventional integrators (DHL, UPS etc) constitute a distinct market from the 'new' e-commerce integrators (see York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5, paras. 42-45) [REP5-031]. There is growing commentary in the media regarding the competitive inter-relationship between Amazon Air and the conventional integrators, which clearly see displacement of activity (e.g. https://dailymemphian.com/article/4718/Amazon-Prime-One-Day-Will-it-hurt-or-help-FedEx). It is clear that the markets are not distinct. In any event, Amazon is already present at East Midlands and if it was somehow attracted to Manston instead, this would be displacement. There is no evidence that East Midlands is turning general freighters away, the limited operation is more reflective of the limited market for such freighters, which could use East Midlands if any activity was, in future, displaced from Stansted. The critical factor here is proximity to the freight forwarding cluster at Heathrow, where loads are consolidated, not the general South of East of England market. In this context, Manston offers little to no reliable advantage. Hence, some element of any growth at Manston would effectively be displacement, so leading to reduced economic activity at other airports and reduced employment that would need to be taken into account at the national level of the employment forecasts as presented by Azimuth.
ND.2.26	The general description of road traffic issues in the vicinity of Bournemouth Airport could apply equally well to Manston.
ND.2.27	The dominance of long haul freight at the London airports is reflective of the global connectivity offered by Heathrow in bellyhold. The fact that most freight is shipped this way is reflective of bellyhold capacity available. Given the available bellyhold capacity at Heathrow and, increasingly, at other UK airports, there has been little need for dedicated long haul freighters. It is for this reason that the ANPS sees R3 at Heathrow as the primary means to ensure that the UK's air freight requirements are met for the longer term. Although the ExA's question asked about the *"window of opportunity"* for Manston, as raised in the Northpoint Report submitted at Deadline 4, the answer now seeks to construe Manston's role as entirely complementary to Heathrow. It would be helpful to the Examination if the Applicant could clarify what their position is. In practice, if there was realistically a complementary role for Manston, why would this not have manifested itself by growth at Manston prior to its closure in 2014, given long standing congestion and shortage of slots at Heathrow and in the light of the ambitious plans for air freight growth being advanced by its previous owners and operators (including Plane Station for which Tony Freudmann was a Director). It is more likely now that any potential complementary role would be materially lessened as a consequence of the additional capacity provided by R3.

ND.2.28	The response seems confused regarding permitted development rights, as the ExA has pointed out the latest issued questions of 10th May. Cargo aprons and supporting operational buildings could be built as permitted development under Class F of the General Permitted Development Order 2015, albeit they would be subject to environmental screening and, potentially, environmental assessment dependent on scale. The 15% restriction applies only to passenger terminal buildings. Again, the Applicant's answer depends on the unsubstantiated thesis that the other airports (East Midlands and Stansted) will seek to displace general freighter activity. There is no reason why the other airports could not use Permitted Development rights or otherwise apply for permission for such state of the art buildings as the Applicant proposes for Manston if there was, indeed, a business case for them. It is important to recognise that the risk of aircraft being subject to delay at an airport is not due to slot constraints at the airport in question as these slots relate to planned operations. Rather, the issue of *"cargo aircraft being delayed for some considerable time waiting for a slot"* is more often related to the need to obtain an ATFM (Air Traffic Flow Management) slot from Eurocontrol related more generally to congestion in the airspace over Europe as a whole. Manston will also be subject to such potential delays, which happen regardless of congestion or not at the departure airport. This answer further repeats the claim that automation will not affect 'existing' jobs but that is not the point. An automated airport will almost inevitably have a lower employment density than a current cargo airport (see further comments on answers to SE.2.2 and SE.2.4 below). This will impact on the employment forecasts going forward.
ND.2.29	This response misrepresents our position. Integrator bases, and their supporting infrastructure, rely on central locations able to serve large markets, i.e. Leipzig and Liege, and East Midlands in the UK on a smaller scale. Manston is simply in the wrong location to be favoured for this type of operation. The concentration of infrastructure around the main hubs relates to infrastructure supporting bellyhold operations which also, in the case of Frankfurt, supports some dedicated freighter activity to compensate for the lower volume of bellyhold capacity available there. As noted at ND.1.10 of York Aviation Comments on Applicant's Deadline 3 Responses to Questions from the Examining Authority submitted at Deadline 4 [REP4-065], the use of the DfT capacity chart from UK Aviation Forecasts 2017 is not relevant as it relates only to passenger terminal capacity and the circumstance of no third runway at Heathrow. We have not expressed concern about the competitive effect of Manston on the case for R3 but the exact converse.
ND.2.30	This response by the Applicant contains the unevidenced claim that Manston would offer *"lower shipping costs"*. This flies in the face of the Applicant's own business model showing materially higher charges and the evidence related to the relative cost of dedicated freighter operations compared to bellyhold, which stands unrebutted. This statement is not consistent with the 'price setter' claim made by the Applicant.
ND.2.31	This response contains a long treatise on the length of time taken to build new runways in the UK. However, the response does not address the ability of airports to add cargo handling capacity where and when needed. The second part of the answer deals only with the scope for adding hourly capacity on a runway that is already operating at its maximum. Utilisation of a runway can be increased by providing additional infrastructure, e.g. stands, terminals, to allow greater utilisation of existing

	available capacity and by increasing utilisation over a day. In many cases, the declared runway capacity at an airport may reflect the operation of other constraints, often stand/apron constraints, which mean that the full use of the runway cannot in practice be achieved without the provision of other infrastructure, some of which may be permitted development or otherwise considerably easier to obtain planning consent for.
ND.2.32	It is now asserted by the Applicant that the 770 B737 movements shown as operating Postal Services will not in fact be related to mail services, as shown in the ES, due to the night movement restrictions now proposed. This implies they would be for some other unstated purpose. Given the Azimuth 'forecast' relied on for the ES was produced bottom up, airline by airline/route by route, rather than developed from consideration of an overall share of the market, the need for these services does not exist independent of the airline/route expected to operate them. Hence, if these are not mail services, they have to be stripped out of the forecasts. Similarly, any other specific operations which could not operate at night due to the planned restrictions, such as integrator operations, would also have to be stripped out.
ND.2.33	This response seeks to rebut the point made by Stonehill Park regarding CAA data by reverting to using Boeing RPK forecasts and applying these to non-domestic freighter movements to argue that there is sufficient market for Manston. This is nonsense, as we made clear in the York Aviation November 2018 (para. 2.47) and February 2019 (para. 3.23) reports [REP3-025]. This is once again a misapplication of data and growth rates by the Applicant. It is unclear where the up to 1.5 million tonnes cited of excess cargo comes from but, to the extent that this derives from the Northpoint Report submitted at Deadline 4, we have explained how this is not a proper or realistic approach in the York Aviation Supplementary Note following Hearings on Compulsory Acquisition and Need submitted at Deadline 5, paras. 28-38 [REP5-065].
ND.2.34	The only advantages that the Applicant claims for Manston are its runway length, which is no longer than several other airports in the UK, its geographic location in the UK, which is more of a disadvantage then an advantage relative to the totality of the market, and the fact that it is currently unused. This latter point is not an advantage as it means that anyone wishing to use it will have to bear the full cost of bringing it into use. The response again claims, without evidence, that Azimuth's 'forecasts' take into account growth at other airports and that it can intercept demand otherwise being trucked between the UK and Europe. There is no evidence as to why this should be the case (see above in relation to the Northpoint Report). The response implies that shippers will be willing to pay anything to achieve speed of transit. This is simply not so and shippers will balance speed and cost, other than for very specialist consignments (e.g. organs for transplant) where speed is absolutely the critical factor. This latter part of the market is only a small part of the whole.
ND.2.35	The response cites projections for passenger operations produced by Aviasolutions, in its 2016 Report for Thanet District Council, as validating the Azimuth passenger 'forecasts'. Significantly, these projections did not take into account the potential for greater use of infrastructure at Gatwick and Luton airports, both of which are proposing to increase their capacity on their existing runway infrastructure. To the extent that the Aviasolutions projections for Manston were heavily dependent on 'spill' from other airports, these increases in capacity will remove the spill component to a large extent, leaving the projections dependent on the assumption of 800,000 passengers a year as attainable from a Ryanair base. Furthermore, when Aviasolutions put together its projection, the prospect of a restriction on night

	operations at Manston was not known so Aviasolution will not have factored in the deterrent effect that would have on any airline basing aircraft at the Airport. The remainder of the response simply restates the assertions regarding the potential passenger markets from the Azimuth Reports without providing further evidence or explanation. Claims that the Azimuth 'forecasts' take into account the elderly who would prefer to use small airports and the importance of pilgrims are simply distractions. The response does not provide any quantification of the size of these markets. In relation to Southend Airport, it has seen strong growth in recent years but examination of its latest published accounts for FY2017/8 (London Southend Airport Ltd – Companies House) shows that its operating losses worsened from £3.6 million to £6.5 million, which strongly indicates that it has been 'buying traffic'. On the basis of the aeronautical charges proposed by RSP for Manston in its business model, it would not be realistic to assume that similar growth could be seen at Manston without substantial erosion of the projected income. The list provided of Ryanair flights after 23.00 at regional airports may be correct but the important consideration is not what proportion of flights operate at night but the impact that a night constraint would have on the flexibility to maximise use of any based aircraft over a week. This is an important consideration for an airline considering where to base aircraft and needs to be taken into account (see para. 4 of York Aviation's Note of Oral Evidence given at the Noise Hearing submitted at Deadline 5) [REP5-065]. The Applicant should be asked explicitly if Ryanair is aware of the night flying policy and whether it is still committed to basing 3 aircraft in these circumstances and at the price that RSP expects to charge for using the Airport as shown in the business model. The fact that Ryanair has no based aircraft at Exeter simply highlights that flexibility to schedule some flights to operate after 23.00 is essential to attaining based operations.
Ns.2.3	This response fails to acknowledge the potential impact of small general aviation aircraft flying circuits associated with flying training on the persistent levels of noise over local populations.
Ns.2.18	It is not clear what the impact of a commitment to a noise contour area cap would have on the 'forecasts' of usage if, for example ATR72s were replaced by B737 or other jet aircraft or if the GA movements included some element of business jet operations consistent with the proposal to develop an FBO (Fixed Base Operation).
Ns.2.19	The Applicant's response addresses why new flightpaths are needed to reflect latest R-NAV practices but does not answer the question as to whether the proposed noise minimised flight paths are likely to be acceptable or whether an R-NAV variant of the previous flight paths should have been adopted as a more realistic basis for assessment in the first instance
Ns.2.21	As noted in response to ND.2.35 above, the Applicant clearly does not understand the point being made: with 15% of arrivals at night this equates to 40% of based aircraft requiring a movement in the night period as part of their overall daily pattern of rotations as, by definition, the remainder of flight operations are outside of the night time period. Therefore, the effect of any restriction in operations after 23.00 (notwithstanding that Manston many avail of marginally shorter flight times on some sectors) reduces the likelihood of aircraft being based. As the majority of passengers forecast to use Manston are claimed to be on based aircraft, this is an important consideration. The reason that Luton was chosen as the example in York Aviation's Note of Oral Evidence given at the Noise Hearing submitted at Deadline 5 [REP5-032] is because that was Mr Freudmann's example given in oral evidence. The night movements arise by consequence of the rotation pattern of aircraft to maximise economic usage of the available flying hours not any slot restrictions in the period leading up to the night time. To the extent that there are operational constraints at Luton currently, the limiting factor is availability of stands for overnight aircraft

	parking rather than slots in the period leading up to 23.00 as can be seen in Luton's pre-season scheduling report for Summer 2018 (https://www.acl-uk.org/airport-info/), which shows ample slots to be available. 
OP.2.2	We do not believe the response regarding FASI-S to be correct and that the risk of delay to opening remains.
OP.2.3	In terms of the need for dedicated aircraft stands for based aircraft, the comment about a requirement for dedicated equipment on each stand is nonsense as this implies specialist equipment for each individual aircraft. Operators are highly unlikely to want to pay for dedicated stands or dedicated equipment as this would not be consistent with cost efficiency. There is no evidence that the aircraft cannot be scheduled and stand allocation planned to allow MARS (multiple apron ramp system) use. Such multiple centerline operations take place at virtually all major airports with a mix of Code C and Code E operations so as to ensure that the efficient use of valuable apron space is maximised. We do not believe the information provided by the Applicant regarding East Midlands Airport having 24 Code E stands to be correct. There are multiple centerlines for different aircraft types in use at East Midlands and our information as to the stand availability is as set out in the table below. Not all of these stands could be used at the same time. Maximum Code E occupancy would be 8 Code E aircraft. There are more Code D centerlines available reflecting the nature of the fleet mainly operated at East Midlands today.

Apron	Centrelines	Code B	Code C	Code D	Code E	Code F	Total CL's
West (DHL)	Min CLs	0	6	6	5	2	**19**
	Max CLs	2	5	10	2	2	**21**
East	Min CLs	0	2	5	1	0	**8**
	Max CLs	0	12	1	0	0	**13**

OP.2.4	In this response, the Applicant wrongly asserts that road based freight is not a major factor at EMA (see York Aviation Report February 2019, para 6.23) [REP3-025]. In the response, the Applicant still does not set out any robust basis justifying the scale of facilities proposed. If there is to be no road based freight at Manston then this validates the need for the cargo handling facilities to be much smaller than East Midlands. The response does not address the IATA benchmarks for the scale of development required for efficient automated cargo centres in future (see York Aviation Report February 2019, paras 6.21-6.22).
OP.2.5	As noted in relation to the Draft DCO, many of the listed Associated Uses for the Northern Grass are not related at all to the principal development as they are passenger not cargo related or related to the maintenance/recycling of aircraft. In any event, the response provides no justification for the proposed scale (floor area) of these uses and why they are needed, e.g. how is an Aviation Academy in any way associated development related to a cargo airport and surely this would be more likely to be located at a local college. Even in relation to those uses which are freight related, the largest of these is a Logistics Centre for the new integrator. Such a Logistics Centre would need airside access, as is the case with the DHL facility and the new UPS facility at East Midlands and so would not be able to locate on the Northern Grass. Manston is simply in the wrong location for a Fulfillment or Distribution Centre, which would necessarily need to be located closer to major urban areas and not on the Northern Grass. The Applicant again seeks to justify the overall floor space requirement by reference to other airports (Appendices to OP.2.5 Response). However, when properly understood the comparisons are not supportive of its case. In Appendix OP.2.5, RSP start by stating that they aim to illustrate the relationship between 'airport associated development' and the requirement for the Northern Grass through comparison to 4 cargo airport examples. They then explain the method used to measure the floor spaces at the 4 airports, which they caveat as being desk based only and 'approximate'. Whilst we do not attempt to question the accuracy of any of the areas measured, we would certainly question the inclusion of most of the areas as in any way relevant to the principal cargo related development. As stated, the proposal for the Northern Grass is for an area of 105,100m^2 of floor space for B1/B2/B8 uses. It, therefore, makes no sense at all that the exercise as detailed by RPS catalogues/includes areas for the passenger terminals, cargo sheds, maintenance and parking

	hangars, airside facilities buildings within airside locations with direct access to the runways, as well as a wide variety of office and industrial buildings occupied by businesses that clearly have nothing at all to do with aviation. If you take East Midlands as an example, the total floor area stated by RPS is 194,615m^2. However, if you remove all the front line cargo sheds from the total (as they are airside facing and could not be provided in a landside area like the Northern Grass), the passenger terminal and the airside maintenance hangars and buildings, you remove approximately 72% from the total floor area. If you then remove all the passenger related hotels and businesses that have no aviation links, such as Price Waterhouse Coopers, Medstrom Healthcare and Western Power Distribution, then you come down to an area of around 25,750m^2 which is only 13% of RSP's stated total. If you take out all of the 'unknown' business space then you are left with just under 15,500m^2 which is only 8% of the total area quoted or just over 15% of the area proposed for the Northern Grass. The same approach to including all areas has been taken in the other comparator examples where the passenger terminal, front line cargo shed and airside hangars etc have been included in the totals. None of these functions bear any relevance to the question of 'Associated Development' in the context of a landside business park for B1/B2/B8 uses directly related to the purpose of the principal development at Manston. To highlight the absurdity of the approach used by RPS, the Liege example includes an area of 4,360m^2 comprised of a poultry farm. Clearly, this is not remotely relevant to the comparison of areas devoted to equivalent uses to those that might be permitted on the Northern Grass. At no point does this exercise seek to actually explain how any of these areas compare to their proposal for the Northern Grass. It is merely an exercise in documenting the various areas of all the buildings located within the general bounds of 4 cargo dominated airports.
SE.2.2	In relation to employment, the Applicant continues to rely on out of date general ratios for employment density and, in any event, these relate to averages over the whole of Europe, including the major hub airports with major airlines headquartered at them, so driving up employment density. This is simply not a relevant basis for a dedicated cargo/low cost airport where employment densities would be significantly lower. The response does not address the ExA's points about the structure of employment at East Midlands Airport specifically. In terms of the location of employees, it is not correct to say that employees at East Midlands Airport live locally to the Airport. The East Midlands Airport Sustainable Development Plan states that 89% of employees live within the neighbouring 3 counties https://live-webadmin-media.s3.amazonaws.com/media/2931/ema-sdp-2015-economy-and-surface-access.pdf. This is quite a wide area covering Derbyshire, Leicestershire and Nottinghamshire, some 85% larger than the total area of Kent and 67 times the area of Thanet. Hence, on a comparative basis, it is reasonable to expect that the catchment area for employment at Manston would not be localised in the manner asserted by the Applicant. We note that the Applicant has made some attempt to adopt our recommendations regarding the inclusion of a productivity factor (see York Aviation Report February 2019, paras. 3.53-3.54) [REP3-025]. However, this is meaningless if the initial employment density has been set too high. Our comments on the validity of the socio-economic assessment need to be seen in the round and not 'cherry picked' as the Applicant seeks to do.

SE.2.4	We note that the Applicant seeks to rebut our adoption of Prestwick as a relevant benchmark for employment at Manston. We still consider Prestwick to be the appropriate benchmark for employment density (jobs per workload unit) at 650. If they wish to use East Midlands as a benchmark, it is essential that the jobs related specifically to the relevant activity only (cargo handling, passenger processing and aircraft maintenance) are included, i.e. excluding non-airport related jobs that are located in the vicinity of the Airport, e.g. Pegasus Business Park. As made clear at paras 3.53-3.54 of York Aviation's February 2019 Report, the aviation related employment density at East Midlands is substantially lower than 887 jobs per workload unit and closer to the density seen at Prestwick. To the extent that operations at Manston are more highly automated than at East Midlands, as is claimed by the Applicant, the relevant employment density would be proportionately lower still.
SE.2.6	As noted above, the job numbers in Thanet have been substantially overstated due to inaccurate assessments of direct local employment as distinct from in-commuting and also through the application of national rather than local level indirect/induced multipliers (see York Aviation Report November 2017, para. 5.6) [REP3-025].
SE.2.7	It is unclear why there would be 4 shifts of handling staff when the Airport is shut at night and the normal pattern is 3 shifts even where an airport is a 24 hour operation. There are no precedents stated for the assumed levels of employment in MRO activity. Based on information available elsewhere, the assumption of 600 staff employed in aircraft recycling is heroic. The ExA should ask for evidence as to the justification for this figure. By way of comparison, Monarch Engineering, prior to going into administration, employed 553 staff operating large hangars and substantial aircraft maintenance across 3 large airports. Air Salvage International at Cotswold Airport, which has facilities for between 20 and 50 aircraft to be dismantled at any one time employs only 40 staff - http://airsalvage.co.uk/asi-celebrates-its-20th-anniversary-milestone/. We note that the figures for staff bussing appear to be based on a 3 not a 4 shift system which is inconsistent. In any event, why would 14 drivers per shift be required just for staff bussing. This begs the question as to whether the costs of these staff and the busses been factored into the operational costs within the business model.
SE.2.8	If national figures are used as the basis of the employment estimates, including indirect and induced employment, displacement effects from other airports need to be taken into account. It is vitally important for there to be clarity on the geographies used in the assessment to ensure that employment and economic effects are not overstated.
SE.2.9	In this response, the Applicant tries to argue that there will be no displacement of activity as jobs lost will be backfilled by other jobs. What is the evidence for this? The ExA's question as to whether the development would solely be handling unmet demand is simply not addressed. As the evidence makes clear, demand is being met currently but by other airports and by trucking. Hence, there is displacement of activity from somewhere and certainly displacement of growth at a national level. Clawback of trucked activity is shown in the Northpoint model to reach between 125,000 and 600,000 tonnes in year 20, so citing 1st year of operation figures for displacement from trucking is disingenuous. No explanation is given as to why this trucking would be intercepted and fly from Manston in any event.
SE.2.12	This response speculates that older visitors are more likely to stay overnight prior to flying from an airport. There is no actual evidence that this is so. The use of Dubai as a comparator for the tourism industry is self evidently absurd. The ExA's questions about the catchment are for passengers and the likelihood of them staying overnight locally is simply not addressed. No evidence is provided as to the extent to which the listed hotels in the vicinity of Southend Airport are actually used by air passengers as distinct from more general visitors to the Southend area who chose to use new rather than older hotels.

SE.2.15

In this response, the Applicant first of all uses average data from all UK airports (including Heathrow) as a basis for its estimate of potential inbound tourist numbers that might use Manston and then concedes that data for smaller airports might be more relevant. It is somewhat misleading, therefore that is includes Gatwick, Stansted and Luton in its list of smaller airports, handling 45.9 mppa, 25.9 mppa and 16 mppa respectively in 2017.

More relevant comparators for Manston would be Cardiff, surveyed in 2015 when it was handling 1.1 mppa, and Doncaster Sheffield surveyed in 2014 when it was handling 0.7 mppa. Using detailed CAA survey data, the split of passengers by residence and purpose is shown in the table below.

	UK			**Foreign**			
	Business	Leisure	*(of which) VFR*	Business	Leisure	*(of which VFR)*	**Total**
Cardiff Airport (2015)	85,421	812,959	*156,153*	60,761	170,523	*84,370*	1,129,664
	7.6%	72%	*19%*	5.4%	15.1%	*49%*	100%
Doncaster Sheffield Airport (2014)	11,310	603,022	*180,458*	8,742	98,691	*93,903*	721,766
	1.6%	83.5%	*30%*	1.2%	13.7%	*95%*	100%

The proportion of foreign leisure passengers visiting friends and relatives (VFR) is important as such visitors do not typically stay in hotels and generate a substantially lower economic injection locally. The expected levels of true inbound tourism are likely to be substantially less than asserted by the Applicant.

lc/16.5.19

Appendix 06

York Aviation
Supplementary Submission Following Hearings into Compulsory Acquisition and Need Held on 20th and 21st March 2019

York Aviation

Manston Airport

Supplementary Submission following Hearings into Compulsory Acquisition and Need held on 20th and 21st March 2019

1. This note expands on points made on behalf of SHP during the Hearings held on 20th and 21st March 2019 in the light of the very limited time afforded to SHP to present its case and test the case made on behalf of the Applicant. This note provides further evidence to assist the Examining Authority in considering the Need case presented by RSP and whether there is a compelling case in the public interest. This submission should be read alongside the Summary of Oral Evidence submitted by SHP.

Correct Interpretation of YAL's work for TfL and the FTA

2. In their comments on Written Representations (Deadline 4) and at the Need Hearing, RSP persisted in relying heavily on quotations from our work in 2013 and 2015 for TfL and for TfL and the FTA respectively. This is despite being told repeatedly that, when read in their entirety, neither of these two notes/reports supported the interpretation being made of them by RSP and its advisers in relation to the asserted need for a freight focussed airport in the South East of England.

3. At the outset, we would reiterate that we do not resile from either of these pieces of work and, as stated to RSP in 2016, the report for TfL and the FTA is in the public domain and, therefore, could be cited by them. The same is not true of the note for TfL, which was an initial informal briefing note intended for the client's internal use only. We have made clear to RSP since 2017 (see correspondence submitted as Appendix B to our comments on RSP's Responses to the ExA's first set of questions) that their interpretation of these two notes/reports was in error. We understand that TfL and the FTA similarly confirmed that the 2015 Report was in the public domain and that they had relied on the contents of the report in submissions to the Airports Commission and Government. However, it is our understanding that neither body has expressed any direct view on the use made by RSP of the note and report, contrary to the inference made by RSP at 4.18.3 of its commentary on Written Representations. RSP did not check directly with us whether its interpretation of our work was correct nor has it addressed the criticisms made of its interpretation in both our 2017 and 2019 reports.

4. To summarise the meaning of these documents:

TfL Note

5. This was an informal briefing note prepared by York Aviation for TfL relatively early in the process of the Airports Commission's work. It considered three scenarios, Max Use (i.e. no additional runway capacity at any of the London airports), 2x2x2 (i.e. additional runways at Gatwick and Stansted) or a New 4 Runway Hub (with the closure of Heathrow). It did not consider the Government's adopted strategy of the development of a new runway at Heathrow.

6. It is important to note that the market was considered in the first instance in terms of tonnage capacity expected to provided in the bellyhold of passenger aircraft as the primary requirement, with the need for additional capacity for air freight being expressed as a residual. The reference in the note to 14,000 freighter movements that might still use an airport, such as Manston, in the vicinity of London in the 'Max Use' case was a reference to the then existing 14,000 freighter movements operated at the London airports, which might need to be displaced by 2050 if no additional capacity was provided at any of the main London airports. To reiterate comments made in our 2017 and 2019 Reports, Manston was only referenced on the basis that it was, at the time, an airport handling a number of freighter movements and the context of the 'Max Use' scenario only, i.e. a heavily constrained case.

7. Table 4 presents the potential excess cargo tonnage, after considering bellyhold capacity, as 'freighter tonnage required' and converts this to an indicative number of freighters so as to consider whether, prima facie, there would be runway capacity available to accommodate additional freighter movements under each of the scenarios, to the extent there was any shortage of bellyhold capacity by 2050. Para. 24 makes clear that the only in the case of no new capacity being provided (Max Use) would there be an effective shortfall in capacity:

   "We estimate that the number of freighters required to accommodate projected air freight demand would rise from 14,000 in 2012 to around 41,000 in the New Hub case, 47,000 in the 2+2+2 case and 68,000 in the Max Use case. In both the New Hub case and 2+2+2 case, we estimate there will be sufficient runway capacity available to accommodate these movements at 2050, at the New Hub and/or Stansted respectively."

8. It is important to note that the number of international passenger ATMs expected to be provided with a 3rd runway at Heathrow lies between the 2x2x2 and New 4 Runway Hub cases. Given increasing tonnage capacities on new generation passenger aircraft coupled with an emphasis on maximising global connectivity from the new capacity at Heathrow, as set out in the Airports NPS paras 3.18 and 3.19, this means that the bellyhold capability from the new runway at Heathrow is likely to exceed that which we assumed in the case of the two expansion scenarios considered in our 2013 note. The effect of this will be to reduce further any residual element of air freight capacity required over and above bellyhold capacity to be provided. Furthermore, in the circumstances of a 3rd runway at Heathrow and in the light of the available capacity at Stansted (see below), we expect any required freighter movements to continue to operate from the existing airports.

9. Importantly, the note then goes no to explain how any shortfall in capacity would be met, noting in the first instance the clear opportunity for more freight to be handled at the main regional airports such as Manchester and Birmingham alongside East Midlands, citing in particular the benefits of reducing the amount of freight trucked from the regions for carriage from Heathrow (para. 26 of the note). Only in the case of no additional capacity being provided (Max Use) was it considered likely that more freight would need to be trucked to Europe. It is evident, nonetheless, that our note considered that the consequence of any constraint on capacity at the main London airports would be more trucking of freight to find cost efficient bellyhold capacity elsewhere rather than identifying a need for a dedicated freighter airport.

10. The note concludes, at para 29, that *"In the latter two cases, our assessment is that, across both bellyhold capacity and pure freighter activity, there would be sufficient capacity to meet expected demand for air freight to and from the UK"*, going on to conclude that "*The key difference between these two scenarios* (2x2x2 and New 4 Runway Hub) *would be in terms of the efficiencies and economies of scale gained by the industry arising from the concentration of freight activity at a single hub. In both cases, the overall volume of air freight to and from the UK is expected to be broadly the same, although the actual freight carried including transit freight would be higher in the hub case. However, under the new hub scenario, savings from greater efficiency may be passed onto users, so reducing shipping costs and facilitating trade leading to higher freight volumes"* (para. 30). These efficiency benefits will be delivered by facilitating further growth in cargo capacity at Heathrow with a 3rd runway exploiting the existing synergies of consolidation already present around Heathrow.

Report for TfL and the FTA

11. Our work for TfL and the FTA in 2015 adopted the same approach but was based on updated information from the Airports Commission as well as an updated assessment of the underlying growth of the air cargo market as a whole. Again, the excess tonnage expected at 2050 under each of the capacity scenarios under consideration by the Airports Commission was set out. This was again presented in terms of freighter movement equivalents on Page 19.

12. It is significant that the estimated cargo capability at Heathrow assumed in 2050 was 2.6 million tonnes a year with a third runway whereas, given increased bellyhold capacities on newer generation aircraft, the estimated tonnage capacity at Heathrow is now expected to exceed 3 million tonnes a year. This alone wipes out any excess demand that would need to be accommodated in dedicated freighter aircraft.

13. In any event, it is made clear that the actual requirement for dedicated freighter aircraft is limited and, over and above existing operations, a residual to the extent that bellyhold capacity is insufficient:

    "For the purposes of this analysis, we have assumed that freighter aircraft primarily act as a means to supplement bellyhold capacity where insufficient bellyhold capacity is available. This is simplification as there are items that cannot be transported on passenger aircraft or for which freighter transport is preferable and destinations that are not served by passenger aircraft. Consequently, we have further assumed that a residual number of freighter movements will still be accommodated in London in capacity constrained scenarios at 2050, i.e. all scenarios other than the 4 Runway Hub" (Page 20).

14. We then go on, on Pages 22ff titled *"How will the Freight Industry React"*, to explain how the excess tonnage would be accommodated in practice, i.e. not through additional movements by dedicated freight aircraft:

    "The options in relation to the excess demand that cannot be satisfied within the London system are subtly different. Again, some companies may simply choose to step back from the London market, either withdrawing or choosing not to seek to expand with demand. This may be particularly true for major global companies with the ability to shift the emphasis of their activity. However, this will ultimately leave unsatisfied demand in and around London and potentially market space for others to step in and seek to serve the market via a different business model. This is most likely to involve trucking freight from London to other airports either in the UK or on the continent that have the necessary capacity and/or long haul passenger networks to support the required levels of demand. This will, however, come at a cost in terms of both additional trucking costs and a loss of utility to users as these avenues will need more time to ship freight, which in an industry where speed is an essential feature is clearly potentially damaging. Again, there is also the potential for increased service failures and delays via this route."

15. We go on to set out a Gravity Model to examine how any excess demand would be expected to be handled (Appendix C to our comments on RSP's Written Answers) and the cost and time implications of the need for additional trucking. However, to the extent that air freight from the regions simply reverts to using available capacity in the regions, these costs will have been overstated and cost/time to shippers in this case could actually be reduced. Ultimately, any loss of utility/consumer benefit arising from increased costs/time for shippers has to be set against the increased costs implied by the use of more expensive dedicated freighter aircraft and the costs of establishing and operating an airport capable of handling such aircraft. Given our understanding of the cost of trucking compared to the costs involved in the operation of dedicated freighter aircraft, we would expect trucking to remain the most economically beneficial solution. Furthermore, when the increased bellyhold tonnage now expected to be available at Heathrow is taken into account, the issue simply disappears.

16. As made clear during the Hearing on Need, the demand and capacity assessments set out in Section 3 of our 2017 Report and Section 4 of our 2019 Report are an updating of the analysis carried out in 2015 for TfL and the FTA using the most up to date data. Hence, this analysis reflects the correct interpretation of our earlier work in the context of the current market situation and known airport plans for capacity expansion.

17. Correctly interpreted, our previous work explains how, to the extent that any shortfall in capacity exists, the need is likely to be met, i.e. through use of bellyhold capacity at regional airports and, to some degree, an increase in trucking to European hubs to avail of cost effective consolidation of freight loads to a wide range of global destinations. Operation of dedicated freighters on a limited range of routes would simply not provide a viable option for any freight displaced from Heathrow.

Role of Trucking

18. During the Hearing, the Applicant cited unevidenced figures for the number of cross-Channel trucks carrying airfreight. The Applicant also noted that a high proportion of these operated on airline flight numbers. It is important to note that such movements are part of the system of whereby airlines truck freight to and from their hubs to connect to bellyhold operations. By way of example, on 27th March 2019, the Official Airline Guide database (OAG) records a total of 635 truck movements on airline flight numbers to and from airports in the UK (evidence can be provided if required). Of these, 215 truck movements were scheduled from Heathrow, of which 65% were to UK domestic airports suggesting strongly that the primary purpose was the distribution of bellyhold imports. 197 truck movements were scheduled into Heathrow, of which 51% were from UK domestic points for consolidation of goods for onward transport. It is notable that trucking from Europe into Heathrow figures more strongly than trucking from Heathrow, suggesting that the primary purpose is to feed goods into the Heathrow hub for onward transport in the bellyhold of passenger aircraft. Similarly, to/from the UK regions, there were 10 trucks scheduled outbound to Europe but 51 trucks scheduled inbound indicating again a focus on imports. Excluding international trucking to the Republic of Ireland, there are of the order of 180 trucks a day operated across the Channel on airline flight numbers. This equates to of the order of 63,000 trucks a year (assuming not all trucks operate on 365 days a year). These truck movements would not be divertable to Manston as they are strictly related to the cargo hub at Heathrow and equivalent hubs in Europe. We would expect a similar number of truck movements connected with integrator operations also related to their patterns of hub and spoke operations but data is not systematically available.

19. Ultimately, the reason that trucking is common place within the general and integrator sectors relates to the price of aviation fuel, which changed the economic paradigm in terms of the optimum balance between use of dedicated freighters and trucking for part of the journey combined with the use of more economic bellyhold capacity. Since 2000, the price of aviation fuel has risen by 123% (https://www.spglobal.com/platts/en/oil/refined-products/jetfuel). This has impacted on the decision as to the balance between time and cost for shippers. This increase in the cost of air freight, and dedicated freighter operations in particular, is the primary reason why consideration of air freight trends prior to 2000 (which Northpoint seek to do (para. 8) in their report submitted at Deadline 4) is no longer relevant and slowdown in growth in air freight tonnage reflects a shift in the balance towards trucking and even towards shipping for some goods that might previously have used aviation. This is relevant to consideration of the appropriate rates of market growth to assume, as we discuss later in this note.

20. Understanding the economic drivers for shippers and the relationship to consolidation of loads at hub airports for bellyhold and general air cargo, and the hub network structures of the integrators, is vital to assessing the extent to which Manston could plausibly intercept or 'clawback' any part of the air freight currently being trucked across the Channel. In our assessment, the economics of dedicated freighter operations compared to the relative cost of trucking makes the interception of anything other than a small number of special loads highly unlikely. As Mr Cain said in oral evidence, shippers will trade off time and cost but as costs have risen, the balance has shifted and this, in large part, explains why bellyhold capacity is now clearly favoured for the majority of commodities. This would include fresh fish as cited by Dr Dixon in oral evidence (see Case Study on Page 16 of the Steer Report for Airlines UK referred to in our comments on the Applicant's responses to question ND.1.17 (http://airlinesuk.org/wp-content/uploads/2018/10/Assessment-of-the-value-of-air-freight-services-to-the-UK-economy-Final-Report-v22-Oct-2018-b-SENT.pdf). The global change in the price of aviation fuel is a key reason why bellyhold capacity is preferred and why use of dedicated freighters is declining in relative terms, particularly where there is good availability of bellyhold capacity, as is the case in the UK.

21. Furthermore, in the highly unlikely event that some airlines engaged in trucking of freight between hubs considered the use of Manston for dedicated freighter movements as a viable alternative option, this would imply a totally different fleet mix to that assessed in the ES (Appendix 3.3). We discuss issues related to the fleet mix further below.

The Validity of Azimuth's 'Forecasts'

22. In oral evidence, Dr Dixon conceded that the Azimuth Report, which she prepared, was not really a forecast of what would happen but an assessment of the 'potential' need for a dedicated freight airport in the South East of England. She confirmed that she had taken no account of the viability of operating the services for the airlines or the viability of the operation of the Airport (despite the Azimuth Report being referenced as setting out the viability of and the Business Plan for the development in the ES, Planning Statement and Statement of Reasons - see para 2.5 of York Aviation 2019 Report).

23. At para. 2.2.10 of Vol III of the Azimuth Report, a number of key considerations are set out which would impact on the decisions of airlines as to whether to use Manston:

- *"The cost of physical relocation*
- *Cancellation of long-term contracts*
- *Loss of economies of scale, although if an entire operation is switched, economies of scale would be gained at the new airport*
- *Market effects such as marketing new routes and a potential loss of custom in the early years following the switch*
- *Network effects lost by switching to a smaller airport*
- *Capacity constraints at other airports, particularly in slot allocations*
- *Sunk costs such as an airline's investment in the airport from which they are switching"*

24. Although the report claims that these factors have been taken into account in the 'forecasts', it is now clear from answers given in oral evidence that this was not the case and that Dr Dixon simply assumed that the costs would be "*neutral*". We take this to mean that her underpinning assumption was that the costs for an airline of operating from Manston would be the same as from other airports and/or that the costs to shippers for a tonne of air cargo would be the same to/from Manston as from alternatives, including bellyhold options. Without proper consideration of switching costs, the charges to be levied at Manston and the relative price of dedicated freighter operations v. bellyhold for the shipper, the so-called 'forecasts' can have no validity as they do not reflect market realities.

25. Furthermore, as pointed out in our comments on the Written Answer to question FD.1.15, whilst it is claimed that RSP's Business Model is based on being able to offer airport users competitive terms, this is clearly not the case. As we know from the Business Model spreadsheet submitted at Deadline 3, the Applicant plans to charge airlines around four times the equivalent cost at East Midlands Airport and without any countervailing incentives (see separate papers prepared by Altitude Aviation Advisory). Hence, it is clear that, leaving aside its other manifest shortcomings, the Azimuth Report has not assessed the actual position proposed by RSP of charging a significant premium over other airports for dedicated freighter operations, which are already significantly more expensive than bellyhold alternatives.

26. The consequence of this is that on any reasonable assessment of the costs of using Manston and the costs to the shipper of using dedicated freighter aircraft, when coupled with the costs of switching and other costs identified by Azimuth, the share of the market that Manston might hope to attract will be severely reduced below the 'neutral' assessment made by Azimuth. We have set out our view of the maximum potential in Section 4 of our 2019 Report. At the price RSP propose to charge, demand would be significantly lower and the revenues that they assume within the Business Model not attainable. We have already set out in Section 7 of our 2019 Report, the more likely financial position at competitive airport charges and, even then, this was based on the full Azimuth 'forecast' being attained, which is unlikely for the other reasons cited above. Either way, proper analysis strongly suggests that there is no prospect of the proposed investment in the development of a dedicated freight airport at Manston being viable even on the basis of the latest estimate of upfront construction costs, which we now understand from the oral evidence of George Yerrall are likely to be underestimated at this point in time.

27. Put simply, the oral evidence given by Azimuth Associates confirmed that the Report upon which the entirety of the Need Case for the development relies has no realistic foundation as a basis for predicting the extent to which Manston might actually be used.

Northpoint Report

28. The Northpoint Report submitted by the Applicant at Deadline 4 is a clear attempt by the Applicant to produce a post event corroboration of the Azimuth forecasts that are used to underpin the entirely of their case for the development. This attempt at a putting a 'sticking plaster' over the flaws in the Azimuth must also be dismissed as it self-confessedly has not yet taken into account the key variables which should inform a robust prediction of the actual potential usage of Manston as set out at para. 67 of the Report, namely the model (it):

    - *"it does not use differential rates for bellyhold, express and ordinary freight – although the analysis is a level of aggregation where this is not a fundamental determining issue;*
    - *it does not examine aircraft movements – we regard this primarily a function of tonnage volumes and airport location and runway length*
    - *it does not look at the scope for migrating between type of carrier (e.g. bellyhold to freighter) and therefore between airports pairs; and*
    - *it does not examine the impact of price because it is primarily interested in the issue of capacity."*

29. These factors are precisely the reasons why Manston would struggle to penetrate the market to any material extent. It is stated at para. 68. that these factors are taken into account in a more detailed model that is being developed/used to inform the funding process. However, this more detailed model has not been provided to the Examination and would need to be carefully scrutinised once produced.

30. As already pointed out, the thesis underpinning the Northpoint Report that somehow considering the performance of the airfreight market over the last decade is not relevant and that trends from the 1990s need to be included is exposed as flawed when the effect of fuel price rises since 2000 is taken into account.

31. Nor are the benchmark comparisons in terms of cargo tonnage growth set out at para 10, particularly persuasive. The only airport where there appears to be a major jump in tonnage compared to the UK as a whole is Paris and (as set out on page 21 of the Steer 2018 Report for AirlinesUK) data for Paris before 2014 was measured differently so the jump in tonnage shown is not a real jump but the result of changes in data collection. This would have to be corrected for if any comparisons are to be made. The outperformance at Frankfurt is more down to the consolidation in the sector and the use of Germany and the Low Countries as distribution hubs for Europe. However, since 2000, the performance of Frankfurt is not significantly different from the performance at the total UK level and, in any event, a shift from Heathrow to the regions is no bad thing in the context of the proportion of freight with regional origins that has historically been trucked to London. All in all, this pattern is simply reflective of the market working to reduce unnecessary road journeys within the UK.

32. We have already referred in our comments on the Applicant's Written Answers (ND.1.18, ND.1.13, ND.1.18, ND.1.20) on the capacities available at the other airports and will comment further below on specific points made by the Applicant in oral evidence regarding Stansted. Suffice it to say that Northpoint continue to understate the tonnage capabilities of these other airports in paras. 16 to 32.

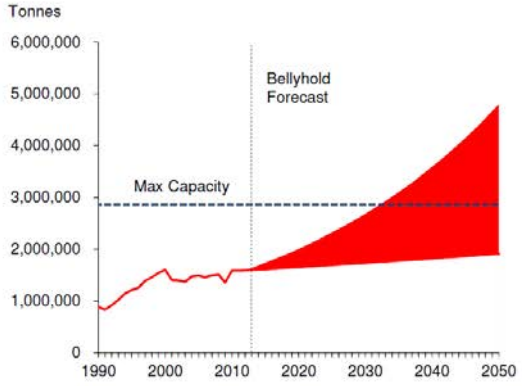
33. In terms of overall freight tonnage to and from the UK, notwithstanding our comments about the inherent invalidity of considering trends back to 1990, the actual freight tonnages projected for the UK and for the South East by Northpoint are not substantially different at 2040 from our own GDP based estimates (see Figures 4.7 and 4.8 of our 2019 Report) as far as the base case of 2.35% per annum growth is concerned (Table above para. 63). However, there is no foundation for the use of any higher underlying rate of growth in cargo tonnage.

34. The work used by Northpoint to corroborate its analysis is work carried out by Ramboll and Oxford Economics in 2014 (http://content.tfl.gov.uk/impacts-of-a-new-hub-airport-on-air-freight-industry.pdf). We note that the quotations from this work by Northpoint are selective and use graphs relating to the UK and London inconsistently. When read properly, this report explains precisely why fewer dedicated freighters are needed at London due to bellyhold capacity. This report also explains why the growth rate in cargo tonnage flown has slowed from the long term trend. Northpoint use Figures 3.7 and 3.8 from this report relating to the expected growth across the UK as a whole when the relevant ones for the South East are Figures 3.5 and 3.6, reproduced overleaf. The charts used by Northpoint illustrate the greater need for dedicated freighters in the rest of the UK on the basis of limited bellyhold growth other than at the London hub. The correct charts for the London airports show very limited need for dedicated freighter operations given bellyhold capacity expected to be available.

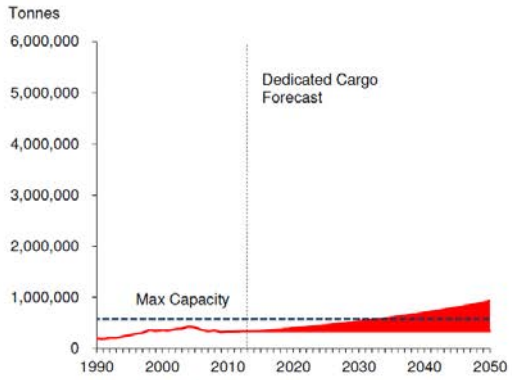
35. This report goes onto predict the extent of any shortage of freighter ATMS at the lower and upper bounds of the forecasts against DfT's capacity constrained forecasts. It shows that the maximum shortage of dedicated freighter capacity at 2040 is 4,000 movements (Table 4.3 reproduced overleaf) on the upper bound forecast. The big shortfall is in bellyhold ATMs. At the lower bound cargo forecast, there is no shortfall and spare capacity for 2,000 dedicated freighter movements (Table 4.2). This analysis confirms our assessment of the position, i.e. that there is limited, if any, need for additional capacity for dedicated freighter ATMs, even viewed from the position as at 2014.

There is a marked difference in the range of growth of dedicated cargo for London Area Airports, as compared to the UK-wide growth rate. This is likely due to the high number of passenger flights originating in London compared to the rest of the UK, which allows for more bellyhold cargo growth as opposed to dedicated cargo growth. As mentioned in Section 2.2, one of the reasons for the much slower growth rate of cargo after 2000 is likely the steep rise in the price of aviation fuel. The fan charts below (charts 3.5 to 3.8) show the range of Oxford Economics trend forecasts for the UK and London area airports[25]. The upper range of the forecast implies that after 2033, the higher range of cargo growth forecasts cannot even be met with a new hub airport. Therefore, the Oxford Economics upper bound forecast has been capped at the line shown in the charts at the capacity that can be built.

Charts 3.5 and 3.6: Actual and Forecast London Trend Bellyhold and Dedicated Freight Growth from 1990-2050

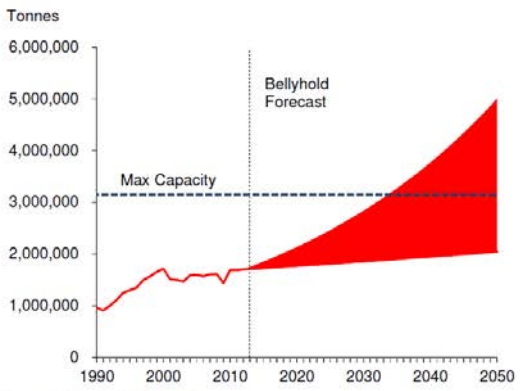


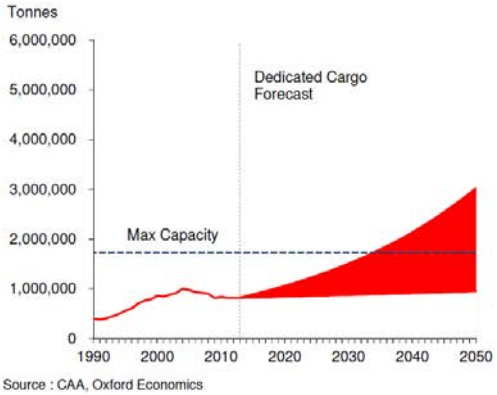
Source : CAA, Oxford Economics



Source : CAA, Oxford Economics

Charts 3.7 and 3.8: Actual and Forecast UK Trend Bellyhold and Dedicated Freight Growth from 1990-2050





Source : CAA, Oxford Economics

Source : CAA, Oxford Economics

[~] Note that the Upper Bound ATM forecast has been capped from 2030 in order to match the ATM supply that could be delivered, using Atkins data.

Table 4.2: Predicted Annual Volumes of Constrained Air Cargo Using OE Lower Bound Trend Forecasts

Year	LAA Constrained Cargo (Thousand ATMs)	Belly Hold Cargo (000 ATMs)	Dedicated Cargo (000 ATMs)	Belly Hold Cargo (Kgs)	Dedicated Cargo (Kgs)
2020	-123	-122	-2	-199,007,217	-41,551,049
2030	-220	-217	-3	-354,390,025	-72,674,570
2040	-174	-172	-2	-281,370,352	-56,671,816
2050	-111	-110	-1	-179,940,132	-35,596,283

Source: DfT, Oxford Economics.

Table 4.3: Predicted Annual Volumes and Value of Constrained Air Cargo Using OE Upper Bound Trend Forecasts

Year	LAA Constrained Cargo (000 ATMs)	Belly Hold Cargo (000 ATMs)	Dedicated Cargo (000 ATMs)	Belly Hold Cargo (Kgs)	Dedicated Cargo (Kgs)	Projected Cargo Value (£/kg)	Belly Hold Cargo Value (£ m)	Dedicated Cargo Value (£m)	Total Cargo Value (£m)
2020	96	95	1	154,672,622	32,294,355	£110	£16,970	£3,543	£20,513
2030	70	69	1	112,960,704	23,164,790	£148	£16,679	£3,420	£20,099
2040	295	291	4	476,166,397	95,906,389	£199	£94,620	£19,058	£113,678
2050	522	515	7	842,454,190	166,656,750	£267	£225,297	£44,569	£269,866

Source: DfT, Oxford Economics.

36. The Northpoint Report then presents a simple spreadsheet model showing the tonnages that Manston might attain under a number of different scenarios. These scenarios are driven by:

- Different growth rate assumptions
- Different assumed capacities at the other airports
- Different assumptions about Manston's ability to clawback an element of the tonnage being trucked across the Channel

No probability is assigned to the achievability of any of these underpinning assumptions and results are simply presented in terms of whether the outcomes are higher or lower than Azimuth's forecasts. We would note that this is a tonnage spill model and does not, as pointed out above, consider how this tonnage would then travel. It is just assumed that in all cases it would choose a dedicated freighter service from Manston regardless of cost.

37. First of all, accepting at face value Northpoint's assertion that import/export tonnage leaked to European airports would amount to 1 million tonnes a year by 2050, the assumed claw back of this leakage is 25% in the base case (almost 20% in the first year of opening 2022 based on current leakage of 500,000 tonnes), 40% in the high case and 60% in the stepped up clawback case. For the reasons set out in paras. 18 to 20 above, this is patently absurd given the reasons for the trucking activity in the first place.

38. If you strip out the assumed clawback, 17 of the 24 Northpoint scenarios show negative demand for Manston at 2040 (with demand significantly less than Azimuth project in earlier years). The only remaining scenarios in which there would be any demand for Manston are those relying on unrealistically high market growth rates in cargo tonnage deriving from the analysis back to 1990 of 2.7% CAGR[1] and 3.0% CAGR and then only in the circumstances where the capacities attainable at the other airports have been understated in aggregate. Overall, the model provides no corroboration of there being material demand for Manston as a dedicated air freight airport. Rather the analysis contained in the report tends to confirm the reasons why the Airport could not succeed.

Night Flying and the Integrators

39. We set out in our commentary on RSP's Written Answers to Questions evidence as to the dependence of conventional integrators on night flights. Hence, leaving aside the locational reasons why Manston would not be a suitable base for an integrator, the proposed night scheduling ban effectively removes any prospect of such operations, a point effectively conceded by the Applicant when it says that an integrator base is not proposed for Manston (Written Answer to ND.1.16).

40. We are now asked to believe that the Azimuth did not mean conventional integrator operations when including them in the 'forecast' as set out at para. 3.2.3 of Vol III of the Azimuth Report, despite DHL/Fedex being specifically identified as the operators of these flights at Appendix 3.3. of the ES, which we were told in oral evidence was based on the Azimuth projections. We are now asked to believe that what was meant was a new form of integrator – Amazon or Alibaba- Cainiao - operating these flights. This is despite Amazon being separately identified in Appendix 3.3. of the ES in addition to the conventional integrator operations.

[1] Compound annual growth rate.

41. The Northpoint Report is used by RSP in an attempt to support this change of emphasis to 'New' integrators and the e-commerce model as the basis of justification for 48% of the aircraft movements claimed for Manston at Year 20 (more in the earlier years). This is no more than speculation as the extent to which the e-commerce operators will seek to operate their own aircraft within the European market and the nature of those operations is largely unknown. We set out below our understanding of the current operations.

Amazon

42. Amazon has set up its own airline operating within the USA so as to control its own supply chain rather than relying on the existing integrators. In essence, it is developing its own sorting facilities and replicating the type of hub and spoke systems used by the existing integrators. It is operating its own aircraft largely for the purpose of distributing goods between its main distribution centres, with onward transport to the customer locally by road (https://aircargoworld.com/allposts/amazon-to-move-prime-air-cargo-hub-to-cincinnati/). It is our understanding that the pattern of flying in terms of day/night operations follows closely that of a conventional integrator, positioning product between distribution centres overnight so as to be ready for delivery next day.

43. Amazon has an embryonic operation in the UK with a leased Boeing 737 freighter operating to East Midlands Airport (https://www.ch-aviation.com/portal/news/63035-amazon-air-boosts-fleet-to-32-b767s-eyes-more). Amazon is opening a 500,000 sq.ft. warehouse and sorting centre immediately adjacent to East Midlands Airport in April 2019 (https://www.leicestermercury.co.uk/news/business/east-midlands-gateway-amazon-nestle-1444182). This would strongly suggest that Amazon is likely to follow the lead of DHL and UPS and establish East Midlands as its UK air hub. Indeed, the two flights currently operated to Milan and Madrid appear to be joint operations with DHL. Like many DHL operations, these rely in part on night flights (based on Flight Radar data), with the departure to Milan at 06.00 and the arrival from Madrid at 02.40. This reinforces our view that, as operations to the UK expand, they would be expected to follow a similar pattern over the day as the conventional integrator operations at East Midlands.

Alibaba-Cainiao

44. Alibaba has committed to establishing its main European hub at Liege Airport (https://www.retaildetail.eu/en/news/general/li%C3%A8ge-officially-becomes-alibabas-first-european-hub). It is not yet clear whether it intends to commence direct operations or to contract with existing airlines at the Airport such as ASL Airlines, which operates for TNT/Fedex with its major hub at Liege and also provides the current Amazon service from East Midlands. Again, it seems most likely that any Alibaba operation in Europe will also mirror pre-existing patterns of integrator operation, using its main base as Liege, for the same reason as Amazon.

45. Overall, we see no reason to assume that the choice of airports for the 'new' integrators would be based on different criteria to the existing integrators nor that they would be any less dependent on night operations. Hence, given the proposed night scheduling ban, the establishment of a 'New' integrator base at Manston with 2 aircraft in Year 2 and 4 aircraft in Year 4 is simply not credible.

Consequences for the Environmental Assessment

46. Mr Hilton of Wood stated in oral evidence that environmental assessment relied on Appendix 3.3 of the ES and that it was derived based on the Azimuth 'forecasts'. However, as we have pointed out in Table 3.1 of our 2019 Report, there are inconsistencies in the proportions of aircraft in each ICAO category between Appendix 3.3 and other parts of the ES, and between the ES and the Azimuth Report. Dr Dixon said she was not responsible for producing Appendix 3.3 and Mr Hilton did not seem to know who was responsible either.

47. In the context that the information in Appendix 3.3 is claimed to be the basis upon which all of the environmental assessments have been carried out, it is important to note that Mr Hilton told the hearing that the assessments were based not only on the aircraft types named in Appendix 3.3 but also on the specific aircraft and engine types operated by the named airlines. Hence, to the extent that these airlines would not or could not operate to Manston (see para 3.10 of our 2019 Report), particularly once the impact of the night scheduling ban is taken into account, this invalidates the specific environmental assessments made. The particular example referred to in oral evidence is the assumption that the ATR-72 turbo-prop aircraft would account for around 25% of all freighter aircraft movements, specifically operating for DHL or Fedex. The 'New' integrator, Amazon, is currently using Boeing B737 jet aircraft for its European operations so, even if it was right that DHL or Fedex would be substituted by Amazon or similar, it could not be relied on that these airlines would use so many turbo-prop aircraft. This means that the ES can no longer be deemed to have assessed the worst or most likely case effects, even if that was ever the case.

48. Appendix 3.3 does not include any General Aviation movements, yet the Noise Mitigation Plan suggests that there could be up to 38,000 such movements a year or 104 a day on average. Elsewhere (para. 12.7.39), the ES states that 16 such movements a day have been included in the assessment. This is clearly inconsistent with the worst case for noise that would be permitted under the Noise Mitigation Plan.

49. As pointed out at the Noise Hearing, a further consequence of the night scheduling ban is to condense all of the aircraft operations into the day-time period. The response given by Mr Hilton that movements that were otherwise assumed to operate in the night (14% of total movements) would simply switch to the 06.00-07.00 hour, and so still be within the 8-hour night noise assessment period, lacks credibility. Faced with a night scheduling ban, the airlines would need to reprogramme their operations in their entirety to fit within a curfew and, to the extent that hypothetically they would still operate to Manston, this would result in proportionately more movements in the 16-hour day period used for daytime noise assessment, resulting in an increase in contour area over that assessed and an increase in the areas eligible for compensation. The veracity of this can only be tested further when RSP produces the more detailed analysis of the profile of flights over the day related to the infrastructure requirements as promised at the Compulsory Acquisition Hearing.

50. We note also that the effect of the night scheduling ban will also impact on the data used in the Transport Assessment as set out in Appendix E to the TA. First of all, Table 1.1 shows freight related truck movements evenly distributed over the day. However, if, as we are now told, more than half of the movements at the Airport are going to be associated with a 'New' e-commerce integrator, it would be reasonable to expect that truck movements would be bunched around the arrival of these aircraft to ensure speed of delivery to the customer. On the basis of the suggested bunching of flights into the 06.00-07.00 hour, this would result in a significant number of trucks on the highway network in the 08.00-09.00 period to ensure deliveries of goods. Equally, for outbound flights before the night curfew, it would be expected that goods would need to be at the Airport 2-3 hours ahead of the last flight (23.00) so this too would require more movements in the day time. It would appear unlikely, therefore, that the TA has assessed the true impact on the highway network including in the morning and evening peak periods.

Policy Tests

51. It was suggested by RSP that there is an overriding policy presumption in favour of more capacity for air freight stemming from the priority placed in this within the Airports NPS and more recent Aviation 2050 Green Paper and that there was an automatic presumption in favour of all airports making best use of existing runways.

52. As stated in our comments on the Applicant's Written Answers (ND.1.2 and ND.1.4), the Government makes clear that the principal means envisaged to ensure that the UK has sufficient air freight capacity is through the provision of a 3rd runway at Heathrow delivering, mainly, more bellyhold capacity. Growth at Stansted and East Midlands in also anticipated. The Government does not go onto identify any further anticipated shortfall in capacity for air freight that needs to be addressed before 2050.

53. In terms of the 'Best Use' policy, it is clear, as we set out at paras. 2.16 and 2.17 of our 2019 Report, that there is no automatic presumption that best use should be made of all runways as policy is clear that each case has to be tested on its merits, including whether there is a demonstrable need and benefits from the proposed use sufficient to outweigh any environmental or other negative impacts. The lack of a coherent Need Case for Manston strongly suggests that there is no presumption in favour of making best or other use of the runway in this instance.

Capacity Available at Stansted

54. We set out the position in relation to the consented capacity at Stansted in our comments on the Applicant's Written Answer to ND.1.18. In oral evidence, there appeared to be some confusion regarding the attitude of MAG (the Airport's owners) to cargo growth there.

55. The Aviation Forecasts underpinning the recent Stansted Planning Application to lift the cap on passengers are set out in Volume 4 of the ES (https://publicaccess.uttlesford.gov.uk/online-applications/files/2C9A5D09B9434B571771AF326D87A423/pdf/UTT_18_0460_FUL-ES_VOLUME_1_-_CHAPTER_4_AVIATION_FORECAST-2634298.pdf). The cargo forecasts to 2028 are set out at para. 4.59. These show the anticipated tonnage to grow to 376,000 tonnes a year by 2028, not far short of our assumed capacity of 400,000 tonnes by 2040, suggesting that we may have understated the true capacity available at Stansted over the longer term. Indeed, the forecasts show slightly more cargo in the with development case than without development (Stansted Planning Statement, para. 6.28).

56. The Stansted Airport cargo forecasts assume 16,000 cargo ATMs a year and an increasing proportion of bellyhold capacity as long haul airlines, such as Emirates expand operations at the airport. We would expect the cargo capacity of Stansted to continue to increase beyond 2028 up to the envisaged capacity of 400,000 tonnes a year as more long haul services commence at the Airport, displacing more marginal short haul routes. The claims by RSP's experts that cargo capacity at Stansted is constrained is without foundation.

Capability of the Proposed Infrastructure

57. We now set out some observations on the capability of the existing and proposed infrastructure that we were prevented, by time constraints, from making at the Compulsory Acquisition hearing.

58. As Mr Rhodes of Quod for SHP made clear, the site has an established lawful use as an airport. Having examined the site in detail and spoken with those who previously managed operations on the ground, it is clear that the facilities, if reinstated, would have a capability of handling of the order of 21,000 freighter aircraft movements a year as set out in Section 4 of our 2017 Report. This assessment is consistent with the basis upon which RSP has calculated a theoretical capability of over 83,000 freighter aircraft movements a year from its proposed infrastructure.

59. Whilst the basis of this theoretical 'capability' assessment is set out by RSP in various documents, it has provided no explanation of how it has assessed that 19 freighter aircraft stands, all of the maximum Code E size, are required to handle the projected 17,170 annual freighter aircraft movements, which is equivalent to 23.5 freighter aircraft (half the number of aircraft movements) being handled each day on average, i.e. most stands would only be used once each day, suggesting an even heavier bunching of movements with consequential implications for vehicular traffic bunching on the highway network. Indeed, the concept that vehicle activity associated with air freight will be spread over the day, as set out in Appendix E to the TA, is inconsistent with the implied need for virtually all freighter aircraft to occupy stands simultaneously. Furthermore, many of the movements in the fleet mix assessed in the ES are shown to be using much smaller aircraft (such as the ATR72 turboprop) for which each Code E stand could easily accommodate two aircraft at a time, reducing the number of Code E stands required in total.

60. Overall, the proposed scale of infrastructure provision is completely inconsistent with claimed cost efficiency of the development (as required by the Airports NPS) nor likely to facilitate RSP being able to offer operators competitive terms as claimed by them, given the scale and cost of the infrastructure it proposes to provide and the consequent implications for the level of charges that it would have to levy to cover the costs of investment as set out in Section 7 of our 2019 Report. In effect, the Business Model spreadsheet corroborates the intention to charge at this level.

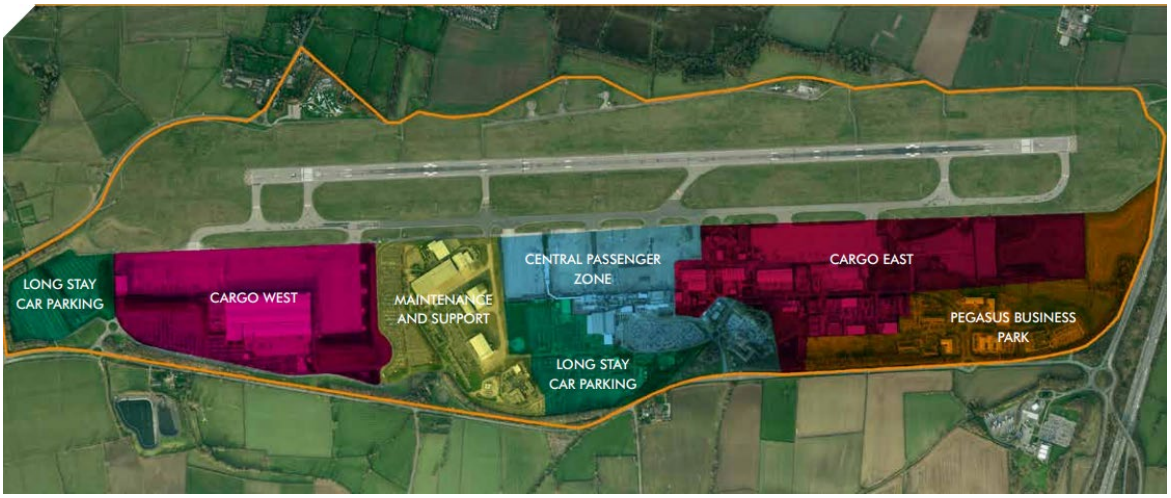
61. At the very least, the ExA needs to investigate further the requirement for the scale of infrastructure proposed to ensure that it is not excessive, particularly in relation to the compulsory acquisition of land. To assist, we have set out a detailed assessment, missing from the Applicant's documents, of the infrastructure required to support RSP's projected freighter airline operations at the times they would want to fly (which must necessarily include an allowance for night operations without which the airlines will be unlikely to operate or base aircraft so reducing the required infrastructure still further). Indeed, the concept that vehicle activity associated with air freight will be spread over the day, as set out in Appendix E to the TA, is inconsistent with the implied need for virtually all freighter aircraft to occupy stands simultaneously. We have explained the basis of our assumptions at paras 3.43 and 3.44 of our 2019 Update Report, with a fuller explanation of the infrastructure required at Section 6. This shows that, even allowing for resilience and flight delays using normal industry standards, the required infrastructure would be less than half of that proposed by RSP – 10 stands and 1/3 of the cargo sheds assuming efficient automated operations as stated by RSP - even if its projections of usage were attainable.

62. The scale of infrastructure proposed on the airfield is simply unjustified.

Airport Related Business Parks

63. There is then the matter of the Northern Grass. RSP's recent comments on the Written Representations suggest that is it confused itself as to its own proposals. The developable area of the Northern Grass, after allowing for the area around the radar and the museum zone is of the order of 83.5 acres, broadly equivalent to the area of the Pegasus Business Park at East Midlands Airport at 70 acres. The 26 acres referred to by RSP in its recent submission (para. 2.9.17) in response to SHP's Written Representation appears to be the footprint of the buildings proposed, which is not, of course, the same thing as the area available for development.

64. We recognise that MAGProperty cite 218 acres of business property space as being available at EMA (https://www.eastmidlandsairport.com/about-us/business/) as referred to in RSP's comments on Written Representations (para. 2.9.16). It is not entirely clear to us which areas are included within this 218 acres, which may include airside as well as landside development zones. Further information on the development zones at EMA was included in our comments on RSP's Written Answer ND.1.15, with its development plan included and reproduced below.



65. Key metrics for the overall plan are:

- *The entire airport covers an area of approximately 900 acres;*
- *Total area of development (coloured areas) approximately 460 acres;*
- *Much of the development area comprises passenger facilities, airside cargo facilities and passenger car parking*
- *Area designated as the landside 'Pegasus Business Park' (commercial development) totals 70 acres, of which 28 acres has been developed[2];*
- *60% of Orange hatched area has yet to be developed for any uses despite the tonnage throughput attained by EMA.*

66. This plan makes it evident that the total business development area cited for the EMA site is in no way equivalent to the Northern Grass with the more relevant direct comparison being with the 70 acres of landside 'Pegasus' business park at East Midlands and the proposed Manston Northern Grass development zone of 83.5 acres, at least on the basis of RSP's original proposals for B1/B8 development for businesses seeking an airport location as both of these zones are entirely landside areas with no direct airfield access.

67. However, the revised NSIP Justification Statement states that it is now intended that the uses on the Northern Grass be limited strictly to those which are 'airport related', presumably to be consistent with the 2006 Local Plan policy which requires the whole of the site, including the Northern Grass, to be used for airside uses. 'Airport related' is normally taken to be those uses required to directly support the operation of an airport, and this would exclude more general business park uses which would simply prefer a location on or adjacent to an airport that formed the basis for the Application. Such a general business park appears to be no longer what is proposed for Manston, particularly given the limitation to airport related uses now contained in the draft DCO, and, indeed, would not constitute Associated Development to the NSIP even if it was.

68. The list of 'airport related' facilities provided as part of the revised NSIP Justification comprises mainly operational facilities, such as crew report offices, offices for Border Force, airside transport offices which would need to be located with direct airside access, i.e. not on the Northern Grass as crossing Manston Road would be unacceptable (See Section 6 of our 2019 Report). Other uses proposed include facilities related to the ground transportation of passengers, which would not be compliant with the local plan policy. In any event, these facilities would be very small in scale using only a fraction of the site and not directly related to the NSIP facilities themselves so as to constitute Associated Development.

[2] This is developed area not building footprint.

69. The proposed restriction of uses to those strictly airport related is significant as the evidence from East Midlands (see our comments RSP's Written Answer to question CA.1.4) is that there is little or no requirement for landside airport related accommodation adjacent to the UK's main air freight hub and EMA is actively seeking to relax the usage constraint on such buildings to non-aviation related uses. Pegasus Business Park is, in practice, a general business park attracting businesses seeking a central location within the East Midlands, close to the M1. Even so, the full 70 acre site area has not yet been developed out, with currently only around 28 acres containing any buildings, car parks or road infrastructure at all.

70. In the absence of the promised (Deadline 3) benchmarking of land areas required for Associated Development, during the Compulsory Acquisition Hearing, the Applicant referenced other airport business parks with airport associated development. Two of those examples were Newquay Aerohub and Prestwick Aerospace Enterprise Zone. As is described below, neither of these examples supports the Applicant's case for the area of development land proposed for the Northern Grass area on the basis of airport related uses.

71. Newquay Airport Aerohub is an Enterprise Zone of that includes both airside development land (231 acres), a landside business park covering 87 acres of land and a further 45 acres of land defined as economic zones related, inter alia, to passenger terminal operations (https://www.aerohub.co.uk/our-offer/development-opportunity). In relation to the landside business park, which is the relevant comparison to the Northern Grass, *"53.5 acres are now serviced and build-ready"* amounting to 115,000 square metres of floor space, and is described by the EZ as being *"Open to businesses from all sectors"* with the caveat that they give priority to aerospace and aerospace supply chain companies (https://www.aerohub.co.uk/business-park/the-development). However, it understood that only 2 businesses currently occupy space within the landside development and that neither of them are 'airport related' businesses or even aero sector related, with one being a manufacturer or prefabricated houses. As the Aerohub was established in 2012, with business park plots serviced and available for development in 2015, it is clear there is very little demand currently for this type of development. There is also limited take up of the airside development area but this is not relevant to the Northern Grass comparison.

72. Prestwick Aerospace is another Enterprise Zone established in 2011 covering 34 acres which includes existing airside and landside developments (hangars, warehouses and offices) plus a number of as yet undeveloped plots. Most of the current occupants are aerospace sector companies, such as BAE Systems and Spirit Aerosystems, but these companies are not airport related nor making extensive use of the airport as parts and supplies are trucked in rather than needed access to the runway[3].

73. It would appear that the benchmark examples being relied on by RSP are general business parks that happen to be located on land holdings adjacent to operational airports. Even on this basis, the take up of these sites does not suggest that a general landside business park site of the scale of the Northern Grass could be justified.

74. Given the requirement for the development to be strictly related to the NSIP Project and with the restriction to strictly airport related uses, as defined in the Amended NSIP Justification Statement, the requirement for land for landside development is even more limited. Such uses as might locate on the Northern Grass are likely to be confined to passenger related car parking and surface transport related activities, which would occupy only a small part of the area at the throughput proposed.

27th March 2019

[3] York Aviation has done a number of studies in relation to Prestwick Airport for Scottish Enterprise and are familiar with the site but the reports remain commercially confidential.

APPENDIX NOPS.5.2: Altitude Aviation Advisory Key Points on Azimuth Freight Projections

Agenda Item 5: Forecasts and freight types / patterns.

Manston Cargo Flight Forecasts

1. PINS questioned RSP in relation to the number of cargo flights forecast for Manston. SHP highlighted how, even if the Manston tonnage forecasts are achieved, the average cargo load per flight assumed was very low, suggesting that the number of flights being forecast was excessive.

2. Expanding on the oral points made:

3. Section 8.7 of the Altitude Aviation January 2018 report (included with Appendix 5 of SHP's Written Representations [REP3-025]) highlights how the assumed average tonnes per flight of 17-20 tonnes was much lower than the airport's historic average of ca. 63 tonnes (see paragraph 364).

    - The 63 tonnes per flight was achieved despite the historic bias towards imports (we understand departing flights from Manston were often largely empty).
    - However, this average disguises a material asymmetry between imports and exports Specifically, in 2013, the last full year of operations at Manston the CAA recorded 511 cargo ATMs carrying 29,297 tonnes of freight on cargo aircraft.
    - Of this, ca. 90% of the tonnage was imports [Manston Airport traffic statistics].
    - Thus, the average load per inbound ATM was over 100 tonnes whereas the average load per outbound ATM was ca. 10 tonnes.
    - Azimuth's forecasts anticipate a similar level of exports to imports at Manston in the future [Azimuth Volume III July 2018, Executive Summary, Table 1].
    - In this light, the difference in average loads between the historic levels and the forecasts are even more stark.

4. The same section of the Altitude report (see paragraph 367-368 and Figure 27) highlighted how the average tonnage per flight was much lower than benchmarks. This analysis has subsequently been updated for 2017 data and expanded to the top 20 EU airports.

    - East Midlands is the only airport in the EU top 20 (by tonnage) with a lower ratio of freight tonnes per freighter flight than the average projections for Manston. The low figure is driven by the extensive integrator operations at East Midlands Airport.
    - Airports without integrator operations (or with a more balanced mix of bellyhold, general freighters and integrator operations) tend to achieve significantly higher freight tonnes per freighter flight.

5. The subsequent discussion on e-commerce airlines (replacing previous assumptions relating to integrators) at Manston further undermines the credibility of the cargo flight forecasts. Amazon Air – the most developed e-commerce airline – uses a mix of B767 and B737 aircraft – which are much larger than the ATR72 aircraft assumed in the Azimuth modelling. This should be a material consideration, when considering whether the environmental effects have been properly assessed by the Applicant.

Components of Azimuth Forecasts

6. PINS questioned RSP in relation to the components of the forecast tonnage. RSP referred to fish/shellfish, luxury cars and racehorses. RSP was unable to state clearly whether the forecast freight was new markets or displacement from other airports (and if so, which airports).

7. RSP's understanding of how the cargo market operates was very limited. Reference was made to a weekly service (for 26 weeks) of a B777 carrying fish exports. Fish is consolidated from a range of different points in the UK (especially Scotland) and then sent to a range of different international destinations. A weekly service from Manston to a single destination seems an unlikely way to serve this market.

8. The Scottish salmon industry was the subject of a case study in a Steer report. The case study stated that "the vast majority (91%) of UK salmon is shipped internationally from Heathrow".

    - Page 16, http://airlinesuk.org/wp-content/uploads/2018/10/Assessment-of-the-value-of-air-freight-services-to-the-UK-economy-Final-Report-v22-Oct-2018-b-SENT.pdf

9. A more detailed review of the shipping of salmon was provided in a published interview with DB Schenker (a global logistics provider):

    - "A considerable percentage of shipments are flown to and from the United States, but also an increasing number of consignments for European and Asian destinations are going via Heathrow."
    - "Heathrow is the largest airport in Europe and has enormous capacity. Due to this high capacity we have to – in order to compete – offer lower freight rates, than for example Oslo, Stockholm, Copenhagen and Amsterdam."
    - "Salmon, in itself has high value, but the industry's slim profit margins rule out paying high airfare rates," explained Kuo. "They pay only 30-40 percent of what other industries pay per kilo of freight. This means the airlines don't make much money on shipping fish, despite the necessary urgency to dispatch the fish to the markets."
    - https://salmonbusiness.com/heathrow-leads-in-salmon-air-freight/

10. It is not disputed that Manston could play a role in the specialist/niche cargo market e.g. racehorses, luxury cars. However, the cargo volumes associated with this activity are minor. Other airports which already serve this market record a low number of cargo flights and tonnage.

11. For example, Bournemouth Airport markets itself as follows:

    - "Bournemouth Airport has a growing number of destinations served by ad hoc carriers, dedicated freighters and passenger airlines. With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits:
        - 2271m / 7451ft runway
        - Excellent good weather record
        - Congestion free, with no slot restrictions
        - Experienced in handling many cargo aircraft including the AN-124 Ruslan
        - 'Freighter friendly' airport management."

- https://www.bournemouthairport.com/doing-business-together/

12. Similarly, Doncaster Sheffield Airport also highlights:

- "First-class cargo facilities for scheduled services and ad-hoc movement of goods."
- "The airport's 2,893m runway is longer and wider than most other airports in the north of England. With CAT III ILS, 24/7 ops and a 55,000 sq. ft. on site transit shed, Doncaster Sheffield Airport can comfortably handle all aircraft up to and including fully loaded B747's, AN-124's and the AN-225."
- "We're a safe pair of hands for specialist handling. As well as being able to handle all types of general airfreight, we have specialist capabilities in areas including:
  - Dangerous goods - We have one of the UK's largest NEQ capabilities for Class 1 Dangerous Goods and Section 5 approved.
  - Heavy lift - We have access to a range of specialist equipment and cranes to handle the largest aircraft and loads.
  - Just in time or automotive - We offer a fully flexible handling service for time critical loads, including on site trucking and direct ramp access for on and offload."
- "If you're looking for somewhere to build your cargo business, we have a wide range of office space, hangars and warehousing. Flexible, central and accessible, there are lots of reasons why basing your operations here makes robust business sense."
- http://dsa.aero/cargo, http://dsa.aero/cargo/why-dsa, http://dsa.aero/cargo/specialist-handling

13. However, in 2018, despite the Applicant making reference to it increasing cargo activity during the hearing, Doncaster Sheffield only managed to achieve 147 cargo flights, while there were no cargo flights at Bournemouth at all.

- https://www.caa.co.uk/uploadedFiles/CAA/Content/Standard_Content/Data_and_analysis/Datasets/Airport_stats/Airport_data_2018_annual/Table_06_Air_Transport_Movements_Comparison.pdf

14. This illustrates the limited market size of specialist cargo market outside the main cargo hubs.

E-Commerce Airline

15. RSP acknowledged that it was no longer forecasting integrator flights at Manston. Instead, an e-commerce airline (such as Amazon or Alibaba) was assumed from Year 2, with 4 base aircraft. It was stated that these flights would not need to take place during night hours.

16. During the hearing, SHP made the following points:

- There is considerable doubt in the freight industry whether the growth of e-commerce represents an economically viable opportunity for cargo airports. Reference was made to a published cargo industry news article where the following observations were made:
  - "*If you had to do a cost analysis to build a cargo airport to accommodate Amazon, you wouldn't do it…. the growth of e-commerce may open opportunities for some airports with existing infrastructure, but would not usher in a renaissance for cargo airports, because the industry was unlikely to see a proliferation of e-tailers with dedicated airfreight operations… Whether an operation would translate into profits for airports which landed a chunk of this business is another question. Few cargo*

airports have managed to produce black figures…… cargo is an unlikely avenue to profitability."

- See paragraphs 138-140 (page 27) of Altitude Aviation February 2019 report [included with Appendix 5 of SHP's Written Representations [REP3-025]).

- An e-commerce airline considering a base at Manston would be likely to seek significant incentives. It has been reported that Amazon has been granted $40m of tax breaks to develop its air operations hub at Cincinnati.
  - As highlighted in the Hearing on the previous day (in relation to funding), the RSP plans do not appear to include any allowances for incentives to airline operators. In contrast. the implied airport charge is much higher than comparable airports.
  - https://aircargoworld.com/allposts/amazon-adds-210-acres-to-future-cincinnati-airport-hub/

17. We wish to add the following observations:

- Growth in e-commerce has displaced high street sales. Similarly, growth in e-commerce airlines is already starting to impact existing air cargo operators. Air freight carried on new e-commerce airlines will be primarily displacing air freight carried on more traditional air cargo operators.
- Even if e-commerce airlines will develop their own air services in Europe, the competitive disadvantages of Manston would make it unlikely to be a preferred option for a base.
  - See Amazon case study below.

Amazon Case Study

18. We consider it unlikely that Manston would be an attractive location for Amazon Air (as a proxy for a new e-commerce airline). Amazon's fulfilment centres in the UK are outlined below. It can be seen that airports such as East Midlands or Manchester would be much better located to act as a UK base for Amazon.



Existing and Projected New Amazon Fulfilment Centres in the United Kingdom.

Source: http://www.mwpvl.com/html/amazon_com.html

19. It is also noted that Amazon Air already has activity at Manchester Airport and we understand already operates flights from East Midlands to Milan and Madrid (https://www.ch-aviation.com/portal/news/63035-amazon-air-boosts-fleet-to-32-b767s-eyes-more).

20. Furthermore, RSP asserted that night flights were not a consideration for e-commerce airlines, due to their different business model. It can be seen from the snapshot of Amazon Air flight activity in the USA that night flights are a key part of the business model.

21. The table below lists all flights for the first 3 Amazon Air aircraft registrations (as listed alphabetically) for the week 15-21 March 2019. The highlighted rows are flights where the arrival and/or departure is between 2300 and 0600, the period of the proposed Manston night flight ban.

Amazon Air Activity 15-21 March 2018, three selected aircraft

DATE	FROM	TO	FLIGHT	Scheduled Time of Departure	Scheduled Time of Arrival
N1013A					
21/03/2019	Ontario (ONT)	San Antonio (SKF)	5Y3507	11:02	15:33
20/03/2019	Honolulu (HNL)	Ontario (ONT)	5Y3599	22:20	06:24
20/03/2019	Riverside (RIV)	Honolulu (HNL)	5Y3598	11:07	12:43
20/03/2019	Chicago (RFD)	Riverside (RIV)	5Y3580	04:55	06:54
19/03/2019	Cincinnati (CVG)	Chicago (RFD)	5Y3063	15:05	15:01
19/03/2019	San Antonio (SKF)	Cincinnati (CVG)	5Y3066	03:15	05:58
18/03/2019	Ontario (ONT)	San Antonio (SKF)	5Y3507	14:20	18:04
17/03/2019	Honolulu (HNL)	Ontario (ONT)	5Y3599	15:15	22:52
17/03/2019	Riverside (RIV)	Honolulu (HNL)	5Y3598	10:04	13:54
17/03/2019	Chicago (RFD)	Riverside (RIV)	5Y3580	05:15	06:52
16/03/2019	Cincinnati (CVG)	Chicago (RFD)	5Y3063	15:05	15:24
16/03/2019	Houston (IAH)	Cincinnati (CVG)	5Y3048	03:45	06:21
15/03/2019	Riverside (RIV)	Houston (IAH)	5Y3602	19:15	23:58
N1049A					
18/03/2019	Cincinnati (CVG)	Miami (MIA)	5Y3163	14:45	17:11
18/03/2019	Portland (PDX)	Cincinnati (CVG)	5Y3013	00:45	07:36
17/03/2019	Cincinnati (CVG)	Portland (PDX)	5Y3159	15:20	16:50
17/03/2019	Minneapolis (MSP)	Cincinnati (CVG)	5Y3000	05:50	08:01
17/03/2019	Baltimore (BWI)	Minneapolis (MSP)	5Y3500	01:34	03:01
16/03/2019	Tampa (TPA)	Baltimore (BWI)	5Y3533	21:15	23:38
16/03/2019	Cincinnati (CVG)	Tampa (TPA)	5Y3067	12:45	14:57
16/03/2019	Stockton (SCK)	Cincinnati (CVG)	5Y3050	01:30	08:16
15/03/2019	Cincinnati (CVG)	Stockton (SCK)	5Y3049	14:55	16:15
15/03/2019	Stockton (SCK)	Cincinnati (CVG)	5Y3050	01:30	08:29
N1093A					
21/03/2019	Cincinnati (CVG)	Portland (PDX)	5Y3159	15:20	16:32
21/03/2019	Minneapolis (MSP)	Cincinnati (CVG)	5Y3000	05:50	07:44
21/03/2019	Baltimore (BWI)	Minneapolis (MSP)	5Y3500	01:20	03:11
20/03/2019	Tampa (TPA)	Baltimore (BWI)	5Y3533	20:45	23:53
20/03/2019	Cincinnati (CVG)	Ontario (ONT)	5Y3066	—	—
20/03/2019	San Antonio (SKF)	Cincinnati (CVG)	5Y3066	03:15	06:25
19/03/2019	Ontario (ONT)	San Antonio (SKF)	5Y3507	15:00	19:28
19/03/2019	Honolulu (HNL)	Ontario (ONT)	5Y3599	05:00	13:05
18/03/2019	Riverside (RIV)	Honolulu (HNL)	5Y3598	09:49	13:08
17/03/2019	Houston (IAH)	Riverside (RIV)	5Y3659	—	—
17/03/2019	Houston (IAH)	Riverside (RIV)	5Y3659	15:16	16:30
17/03/2019	Miami (MIA)	Houston (IAH)	5Y3518	11:14	13:15
17/03/2019	Ontario (ONT)	Miami (MIA)	5Y3504	01:25	08:30
16/03/2019	Honolulu (HNL)	Ontario (ONT)	5Y3599	14:50	22:46
16/03/2019	Riverside (RIV)	Honolulu (HNL)	5Y3598	09:49	12:57
15/03/2019	Baltimore (BWI)	Riverside (RIV)	5Y3563	04:39	07:56

Source: FlightRadar24, Altitude Aviation Advisory analysis

Trucking / Alternative Airports

22. RSP asserted that the level of trucking activity in the UK was as a result of lack of airport capacity for freighters. PINS challenged RSP on a few occasions as to why alternative airports such as East Midlands were not being utilised, given the trucking distances from the South East to East Midlands are much shorter than cross-channel trucking. No explanation was provided by RSP.

23. The reduction in freighter activity has been a clear trend across the UK, with the exception of the centrally located Midlands region.

    - See Figure 10 (page 25) of the Altitude Aviation January 2018 report (see reference in para 3).

Air Cargo Segments

24. RSP asserted that combination carriers (i.e. airlines which operate both passenger flights and dedicated cargo flights) will play an important role at Manston. SHP commented that Air France/KLM – one of the airlines mentioned by RSP – had been shrinking its freighter operations.

    - This is part of a general trend, summarised in the Altitude Aviation January 2018 report (Section 11.4, page 85, see reference in para 3).

25. RSP also asserted that newer passenger aircraft types have lower freight capacity than older aircraft. With the exception of the A380 (which is being discontinued by Airbus), this is not correct.

    - See paragraphs 140-141 (page 28) in the Altitude Aviation January 2018 report (see reference in para 3).

26. Finally, one of the key factors in the growth in bellyhold is simply that passenger demand is growing more quickly than cargo demand. Therefore, cargo demand is not keeping up with growth in capacity in the bellyhold of passenger aircraft (which is linked to passenger demand rates of growth).

    - See Section 11.3 (page 84) in the Altitude Aviation January 2018 report (reference in para 3).

Previous Manston Track Record

27. RSP asserted that the previous failures at Manston were related to lack of capacity, facilities and investment. SHP highlighted that Wiggins had invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes per annum.

    - See paragraphs 313 (page 59) in the Altitude Aviation January 2018 report (ref in para 3).

Agenda Item 6: Existing and future capacity and constraints in the South East and wider UK Airports

Heathrow

28. SHP highlighted that cargo ATMs have been growing at Heathrow in recent years and promised to include the appropriate reference in the written submission. This is provided below.

    - Cargo flights at Heathrow in 2018 were the highest value since 2004.
    - 625 cargo flights added in the last 5 years (2013-18), representing 27% growth (with growth in 4 of those 5 years).

- https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-airport-data/

29. Note. It is not disputed that freighter flights are currently constrained at Heathrow and more freighter operators would, if allowed their preference, operate out Heathrow to benefit from its inherent aviation hub capacity, its existing freight forwarding infrastructure and the large volumes of low cost belly hold connectivity for transhipment. However, there may still be some scope for limited growth before the opening of the third runway, in addition to the trends for increasing average cargo loads per flight.

    - See Figure 13 (page 29) in the Altitude Aviation January 2018 report (ref in para 3).

Summary: Overview of RSP Forecasts

30. Following the Hearing, we put forward the following overarching points in relation to the RSP forecasts.

    Forecast Credentials

    - Azimuth, by their own admission, has almost negligible relevant air freight forecast experience. Given the criticality of these forecasts to the RSP case, it is extremely surprising a more experienced forecaster was not retained.
    - Northpoint Aviation Services has provided peer reviewing to the forecasts. Its aviation experience seems to be focussed on peripheral regions and public sector airports rather than the core freight issue being considered. It is not clear whether the company has direct experience of airport traffic/freight forecasts for commercial clients.
    - In contrast, the Altitude Aviation team has undertaken traffic forecasts covering well over 100 different airports worldwide.

Link to Business Plan

31. It emerged during the Hearing that RSP's business plan and traffic forecasts were not integrated. This is a critical shortfall. The volume forecasts are meaningless unless linked to a pricing strategy - especially for such a price sensitive market as air cargo.

32. As summarised elsewhere (in the oral submissions from Seamus Kealey (Altitude Aviation) at the Compulsory Acquisition hearing), the average aeronautical revenue per work load unit is very high compared to peer airports. Altitude Aviation consider RSP's volume forecasts to be unrealistic even if zero airport charges were applied (i.e. operators were not charged to use the airport). However, their forecasts are even less credible in the light of what are apparent high airport charges with no identified allowances for start-up incentives being paid to attract and retain operators.

33. There is also an underlying logical flaw in RSP's reasoning. RSP/Azimuth assert on many occasions that cargo is less valuable to airports than passenger services, and therefore airports prioritise passenger flights (even low-cost carrier flights) in preference.

    - For example, "…cargo flight timings are likely to be impacted severely since the airport [Stansted] will prioritise servicing Ryanair."

- See paragraph 5.1.7 (page 25) of Azimuth Volume I, July 2018 (reference in para 3).

34. However, the limited "business plan" forecasts for Manston show aeronautical revenue and EBITDA levels much higher (on a unit basis) than airports with more focus on passenger operations (i.e. RSP are showing Manston as being more profitable that passenger focussed airports). This further undermines the credibility of the RSP projections.

    - See Appendix CA.10.1 to Written summary of SHP's oral submissions put at the CA hearing.

Consistency of Forecasts

35. The introduction of a hypothetical new e-commerce airline into the forecasts (and the removal of a traditional integrator operating night flights) is a fundamental change. It is very surprising that this has not led to any changes in tonnage, movements, fleet mix, environmental statement etc. compared to the original forecasts in Azimuth's work from 2017 when e-commerce airlines were not included.

36. For example, the integrator movements assumed in the Azimuth report are in no way compatible with an import-based e-commerce airline model. Azimuth assumes:

    - "Integrator movements – 100% outbound with a backload (import) calculation of 20% included in Years 2 and 3, rising by an additional 5% every two years."
    - "Integrator feeders – 100% inbound (import) traffic with 10% backload possibility added to Year 5, 15% to Year 9, and 20% thereafter."
    - See paragraph 3.2.3 (page 14) of Azimuth Volume III, July 2018 (ref in para 3).

37. This implies that local feeder services will transport freight to Manston for consolidation onto an outbound flight. In contrast, an e-commerce airline would be likely to fly imports into the UK airport before distributing them on local feeder flights. As previously discussed, a more central UK location is much more credible as a potential base for such flights.

38. The indicative aircraft fleet developed by Azimuth (and any environmental assessment of its impact) is meaningless unless it is properly based on realistic airline assumptions, and the aircraft which are operated by (or likely to be operated by) airlines assumed.

Review of Manston Forecasts in Context of Achieved Traffic at Other Airports

39. As context to the freight forecasts at Manston, overall tonnage at UK airports has grown by less than CAGR 1% since 2000. While there was relatively strong growth in 2017, tonnage declined slightly in 2018.

40. Freighter flights at UK airports have fallen by ca. 56,000 movements since 2000 (approximately halving). The overall trend has stabilised in the last 5 years (reduction of ca. 2,600), but nevertheless only 3 airports have added 500+ flights in this time (Birmingham, East Midlands and Heathrow). Most have continued to shrink despite available and used airport capacity.

41. Some of the key aspects of the RSP forecasts are summarised below:

    - 1st year of reopening: ca. 96,500 tonnes.
        - More than twice Manston previous peak volume in period 1990 to its closure in 2014.

- Year 20: ca. 341,000 tonnes.
    - Higher than 2018 throughput at UK's largest dedicated freighter hub (East Midlands, 334.5k tonnes).
    - Only 13 EU airports with higher tonnages in 2017, all but one of which are either major passenger or integrator hubs (Luxembourg being the exception, which is the operating base of Cargolux and enjoys central location in Europe).
    - Forecast tonnage at Manston in Year 20 is more than entire growth of UK freight from 2000 to 2018 (ca. 305,000 tonnes).
- Year 20: ca. 17,000 cargo flights.
    - Only 6 EU airports with higher cargo ATMs in 2017, all of which are either a major passenger hub (Paris CDG, Frankfurt) or integrator hub with 24-hour operations (Leipzig, Cologne, East Midlands, Liege).

42. The RSP forecasts would require remarkable levels of growth from a standing start in what has been a largely flat market, and would be in complete contrast to historic track record. The airport RSP envisage Manston would become would be totally unique in Europe in achieving these levels of cargo flights without being either a major passenger hub or an integrator hub with 24 hour operations.

43. Note. Sources for analysis above are the Azimuth forecasts, UK CAA statistics and Eurostat statistics.

<u>Review of Manston Prospects</u>

44. For the following reasons, there is no realistic prospect of significant cargo activity at a reopened Manston Airport:

- Supply Side (capacity at UK airports)
    - There is no shortage of airport capacity for freight in the UK currently, or envisaged to be over the next 20-30 years with planned expansions.
    - It is very important not to conflate lack of freighter capacity at a single established national hub airport (Heathrow) with the general UK situation.
    - Similarly, it is very important to distinguish between freighter capacity provided by cargo airlines (depends on routes and frequencies that are economically viable to operate) and airport capacity for freighter flights.
    - The vast majority of airports in the UK have the capability to handle more freighter flights than currently - if the demand was there. The suggestion that lack of airport capacity is reason for decline in freighter activity ignores evidence that freighter activity has fallen across a wide range of unconstrained UK airports.
- Demand side – location
    - To maximise the size of the potential market, major freight airports are positioned in the centre of a wide catchment, with truck feeder services arriving from all directions (spokes to the hub).
    - Freight is less time sensitive than passengers, and truck feeder routes of up to 10 hours are not uncommon.
    - Due to its island status, the UK is not a suitable location for a pan-European freighter hub.

- Manston in particular has a poor location within the UK. It is on a peninsula, with no catchment to the East or North and isolated from much of the South East due to the need to circumnavigate London.
- In contrast, airports such as East Midlands are more centrally located to serve the whole of the England and Wales. East Midlands is integrated into the national motorway network, and in close proximity to much of the UK's distribution centre warehousing.

- Demand side – night flight ban
  - Lack of night flight capability is a major competitive disadvantage for general cargo (as well as for integrator operations).
  - It constrains flexibility of airlines (e.g. slot times at other end of route, efficient aircraft utilisation i.e. planes would have to sit idle overnight before they could come back into service). For example, 60% of scheduled cargo flights (i.e. not integrator) at Leipzig are between the hours of 2300 and 0600, whereas the figure for Liege is 40%.
  - There are very few examples of significant cargo focussed airports in Europe without 24-hour operations.

45. SHP's aviation advisers conclude there is no role for Manston as an overflow or reliever airport, while the airport has some fatal structural disadvantages that will limit its role to that of a niche cargo operator. In other words, it will not be able to play a larger role than it did when previously open, and as before will not be financially viable as a result.

APPENDIX NOPS.11.1

REALISTIC CONSTRUCTION PROGRAMME

The Construction programme set out in paragraph 5.2.1 of Volume 1 of the ES, assumed construction starts in Q3 2019 with the airport being operational in Q4 2020.

At the ISH on Need and Operations the Applicant confirmed the programme had slipped but that it still expected to commence construction in Q1 2021 and open in Q1 2022. A more realistic indicative programme is set out below, however as this ignores delays caused in relation to finalising funding and other material risks and impediments, it is unclear how any realistic programme could envisage at an opening date ahead of 2024/25.

There could be an opportunity to progress some of the detailed design and other works that are not reliant on surveys being undertaken, however the scope for accelerating the opening would appear limited. Indeed, the greater risk would appear to be on the downside. For example, how could the Applicant have any certainty over the viability and deliverability of its projects when it is unable to even put a range on what the phase 1 construction costs would be. Whilst a figure of £186m has been put forward by the Applicant in its Deadline 3 submission. This is a dramatic increase on the £100m referred to in the Funding Statement, and must have an impact on the construction timetable. RSP director George Yerrall confirmed at the ISH on CA that the £186m was not even a firm estimate and that the costs could change materially once ground surveys are undertaken. When asked by the EXA to give an indication of how much the costs could deviate, George Yerrall replied that he could not. It is unclear how the Applicant could secure funding commitments until the costs are known.

Based on the programme in the ES, the Applicant appears to believe that the grant of a DCO would allow them to immediately commence construction works. No allowance has been provided in the programme for any of the pre-construction matters outlined in the indicative programme below, none of which can be avoided.

This is consistent with the Applicant's approach to the DCO, where it appears to have done as little as it thinks it can get away with, whilst continually glossing over any issues or impediments to its project. For the sake of fairness to the Examining Authority and the interested parties, including SHP, we consider it essential that the Applicant is requested to provide a realistic programme from grant of DCO through to delivery of an operational airport.

Start	End	Phase	Comments
09/01/2019	09/01/2020	DCO Decision	In line with recent precedent, any decision by the SoS to grant the DCO would be unlikely to occur before January 2020.
09/01/2020	31/12/2020	JR Period	Where judicial review of a decision has been sought, recent cases have taken c.9 months (without appeals). However, given complexity and number of matters on which SHP would reasonably be able to seek a JR, this is unlikely to be settled within 12 months. (There would be scope for appeal beyond that, which could add significant time period of another 12 months, however this has been ignored). This would also coincide with the end of the current Special Development Order at the end of 2020.

			However, given the Brexit situation and general need for the site even before the Brexit referendum (for transport resilience purposes), there could be no certainty that the Operation Stack arrangements would not be extended beyond the end of 2020, as it has been on 3 separate occasions since 2015. The Manston site is considered by Government to be the only current option of its sort.
01/01/2021	30/06/2021	Land acquisition	RSP would need to follow the process for land acquisition, which would take at least 6 months.
01/07/2021	30/06/2022	Pre-construction phase 1	Prior to commencement of the development, RSP would need to undertake the surveys (e.g. archaeological surveys etc) and detailed design and planning and other requirements that would be set out in the DCO requirements. In view of the need for surveys, detailed planning, consultation with numerous statutory bodies, mitigation and complex traffic works, this overall phase realistically would take a minimum of c.12 months, even for an experienced, well-resourced firm (something that cannot be said for RSP). As Gorge Yerrall noted in his evidence, costs could not be determined until this stage.
01/07/2022	30/09/2022	Contracting	Completion of contractor appointments (post tendering process), and other licensing, permits etc.
31/09/2022	30/06/2024	Construction Phase	The 15 month forecast by the Applicant would appear optimistic for an infrastructure project of this scale. A further 6 months has been allowed, which is still considered optimistic.
01/07/2024	30/09/2024		Post practical completion testing, finalising CAA certification processes to ensure the airport would be safe for operations.
Q4 2024			Best case opening day. This programme assumes there are no delays caused by funding, additional groundworks and /or replanning as a result of survey work, planning, construction issues or other impediments such as CAA Airspace Change or Certification processes and /or other material issues such as DIO HRDF Beacon relocation.

Appendix 07

York Aviation
Note of Oral Evidence given by York Aviation
at the Noise Hearing 22nd March 2019

York Aviation

Manston Airport

Note of Oral Evidence given by York Aviation for Stone Hill Park at the Noise Hearing 22nd March 2019

1. This note sets out the key points made in oral evidence to the Noise Hearing. It should be read in conjunction with the Supplementary Note following the Compulsory Acquisition and Noise Hearings.

2. York Aviation identified a number of reasons why the Examining Authority cannot be confident that the noise assessment has identified the potential worst case effects of the development:

   a. There remains confusion in the documents as to what mix of aircraft types has actually been assessed and whether this is consistent with the fleet mix set out in the Azimuth Report (see Table 3.1 of the York Aviation 2019 Report).

   b. Oral evidence given by the applicant at the Need Hearing made clear that conventional integrator operations are no longer expected at Manston and that such movements would be made instead by 'New' e-commerce integrators operating a different pattern of flights not requiring night operations. Given that 48% of the movements in Year 20 are shown in the ES (Appendix 3.3) to be by a conventional integrator, of which half were expected to be using quiet ATR-72 turbo-prop aircraft, the substitution of these movements by a 'New' integrator, expected to use more Boeing B737 types rather than turbo-props, means that the fleet mix assessed is almost certain to understate noise exposure relative to what is now proposed.

   c. Mr Hilton for Wood stated at the Need Hearing that the noise assessments were made on the basis of the specific fleet mix set out in Appendix 3.3. of the ES, including by reference to the individual aircraft and their engine types operated by the named airlines in that Appendix. Given the likely change in the nature of the operators and the fact that several of the airlines do not operate freighter aircraft of the types specified (see York Aviation 2019 Report para. 3.10), there can be no confidence that the noise assessment is robust.

   d. The revised Noise Mitigation Strategy proposing no scheduled movements during the night period 23.00-06.00 means that there will inevitably more movements in the 16 hour daytime period used for noise assessment. It is simply not credible to suggest, as Mr Hilton did, that movements that might otherwise have operated in the night period will all operate in the 06.00-07.00 hour as a ban on night operations for freighters would result in a need for wholesale retiming of the operating programme so as to best fit into worldwide cargo collection and delivery schedules. (If they did bunch as suggested, there would be major implications for truck movements on the highway network in the morning peak due to the need to deliver goods from aircraft arriving in the early morning period. This will need to be addressed in the Transport Assessment). If there are more aircraft movements in the daytime noise assessment period, the noise contour area will increase, so leading to an increase in the number of properties eligible for noise insulation and/or compensation.

   e. The Noise Mitigation Plan allows for 38,000 general aviation movements but the ES (para. 12.7.39) states that the number of movements assessed is 16 per day on top of the estimated 79 daily air transport movements (ATMs), the latter being consistent with Appendix 3.3. 16 general aviation movements a year equates to only 5,840 annual movements, significantly less than allowed under the Noise Mitigation Plan.

f. The assessment appears to be based on assumptions about flight paths that rely on broader airspace changes to be delivered as part of the FASI S Airspace change programme (Government/CAA Airspace Modernisation Strategy), which will require coordination with NATS and other airports. There can be no certainty that the proposed flightpaths will be deliverable and a worst case assessment would need to be based on flightpaths as previously operated when the airport was open.

3. In the light of the change to the night noise policy and the admitted changes to the types of airline expected to operate, it is inevitable that there will need to be changes made to assessment of noise effects. The effects of this will almost certainly increase the financial liability for compensation and mitigation.

4. A further issue that arose during the Hearing was in relation to which aircraft would need to operate on a delayed basis during the night period. The response given by Mr Freudmann for RSP was that there would be a limited number of delayed passenger flights only but that these would be few in number as low fares airlines schedule their arrivals before 22.00. This is incorrect including for the example airport cited by Mr Freudmann, Luton. At Luton, for Summer 2019, 15% of all passenger aircraft arrivals are scheduled to arrive between 23.00 and 06.00. For Ryanair, the carrier shown by RSP as operating to Manston, has 17% of its arrivals in the night period (Source: Official Airline Guide database). This means that, on the basis that each aircraft operates c.2.5 round trips a day, up to 40% of low cost airline aircraft are arriving back to the base in the night period. The pattern at other airports with low cost airline bases is similar. With the restrictions proposed on scheduling operations in the night period, it is now highly unlikely that a low cost airline would contemplate setting up a base at Manston as it would fundamentally restrict the ability to flex. Indeed, we understand that Mr Freudmann himself, when involved in the management of the Airport, is on record as stating the essential requirement for the operation in the night period for commercial operations (see attached letter). Reduction in passenger flights would have a material implication for the asserted revenues in the Business Model.

5. In practice, we consider there to be a greater risk of delayed cargo arrivals in the night period as the nature of cargo operations tends to result in increased risk of delayed operations whereas passenger airlines have an incentive not to delay aircraft due to legal passenger compensation requirements.

28th March 2019

Manston Airport Consultative Committee (M.A.C.C)

13 December 2004

Richard Samuel Esq.,
Chief Executive
Thanet District Council PO Box 9
Cecil Street Margate Kent
CT91XZ

Dear Richard

KENT INTERNATIONAL AIRPORT-MANSTON: SCHEDULED PASSENGER OPERATIONS

1. We are writing to inform you of our plans to support EUjet's summer schedule of operations for the period April- September 2005 and, in the context of the extant Section 106 Agreement between us, to explain the measures we have already taken and intend taking to mitigate any adverse noise impact on residents.

2. Over the first thirteen weeks of its operation EUjet has flown some 71,000 passengers and taken bookings of 151,000 seats. In relation to the target of some 800,000 passengers in the first full year of operation these sales figures are most promising. But without the ability to intensify the use of its current aircraft fleet and in so doing to offer additional destinations in response to passenger demand for additional leisure and business destinations, EUjet risks the ability to capitalise on its early successes and achieve the growth essential for long-term sustainability.

3. It is against that background that EUjet will this Wednesday publish its schedule for Summer 2005. The new schedule (copy attached) will include routes to a range of Spanish destinations, including Seville and Valencia; to Budapest and, in support of the business needs of Kent & Medway, flights to Newcastle, Belfast and Cologne. Securing slots for these new routes has not been without difficulty but EUjet has done exceptionally well and is to be commended on having made every effort to contain as many as possible of these flights within the established operating patterns of Kent International Airport. But it has not been possible to accommodate the entire schedule within the Airport's normal operating hours. And it is to that subject that we are writing well in advance of the actual operation of the Summer 2005 schedule to explain the effects of the new changes.

4. The key effect of these changes is that certain flights will arrive home at Manston after 2300 hours. Specifically, they are:

Weekdays:	Arrival from Glasgow	ETA 2310 (local)
Weekdays:	Arrival from Newcastle	ETA 2315 (local)
Thursdays:	Arrival from Malaga	ETA 0030 (local)
Fridays:	Arrival from Faro	ETA 0040 (local)
Saturdays:	Arrival from Seville	ETA 2335 (local)
Saturdays:	Arrival from Malaga	ETA 2350 (local)
Sundays:	Arrival from Ibjza	ETA 0020 (local)
Sundays:	Arrival from Malaga	ETA 0055 (local)

With four exceptions these late arrivals should have landed before midnight.

5. In deciding whether or not to support EUjet's Summer 2005 schedule we have given careful consideration to the terms of the extant S106 Agreement and to the scenarios that were envisaged when it was drafted. At that time the potential for arrivals and departures at night centred on the use of the Airport by dedicated cargo aircraft with a Quota Count of 4 or more. In addition the S 106 catered for irregular night flights. Throughout, the presumption was that night flights would be by comparatively noisy cargo aircraft as evidenced by paragraphs 1.1 to 1.3 of the Agreement where the emphasis throughout is on only permitting use by aircraft with a Quota Count less than 4.

6. The commercial imperatives and operating circumstances that have prompted EUjet to seek our support for out of hours flying are we believe justified given the overall long-term benefits to the region of securing a successful scheduled passenger operation from Manston. In the context of our noise management policy we know that EUjet has stripped out of its schedule all but essential flights in order to maximise efficiency and limit the impact of noise disturbance to local residents. The fact that the Fokker 100 aircraft operated by EUjet has a Quota Count of 0.5 also means that the actual noise disturbance to residents is at the absolute minimum of any noise disturbance scale; indeed since the introduction of EUjet's operation in September and the withdrawal of MK Airljnes we have clear evidence of a significant reduction in the average Lmax dB(A) (see attached). And, importantly, EUjet's operating ethos assumes that its aircraft fleet is based overnight at Manston; the Summer 2005 schedule envisages no departures from Manston between the hours of 2030 (local) and 0600 (local).

7. We must emphasise: that none of this represents the first step towards 24 hour flight operations at Manston. There is no public demand for night flying, and even if there were, the cost of staffing the airport throughout the night would make the whole operation totally uneconomic. In formal terms, and using the language of the Second Schedule of the Section 106 Agreement, we are consulting the Council on the following very limited night-time flying policy:

> **'That where scheduling imperatives and slot allocations so require, and where reasonable endeavours have been taken to avoid the need for it, the Airport's resident airline shall be permitted to land 12 aircraft per week between the hours of 2300 and 2400 and 4 aircraft per week between the hours of 2400 and 0100 providing such aircraft have a Quota Count of no more than 0.5'.**

8. We very much regret that the full six month consultation period is being curtailed. Here we are the victim of the airline industry's slot allocations cycle. S106 for summer schedules are allocated in at an international conference in November. Airlines' full scheduling exercise cannot be completed until this has happened. In EUjet's case this process ended last week and we are therefore bringing it to you at the first opportunity.

9. As part of the consultation process we now intend to take the following steps, the outcomes ofwhich will be published at the first opportunity:

> **(a) First, to commission Bickerdike Allen to undertake an independent assessment of the impact of occasional night-time aircraft noise on local communities recognising that the approach used for the assessment differs from that used for daytime flights;**
>
> **(b) Secondly, to invite EUj et and the Airport Director to review operating procedures with the aim of identifying operating measures that will minimise arrival noise; and-**
>
> **(c) Thirdly, in the light of the recommendations to emerge from these actions, to consider what further noise amelioration and mitigation measures - embodying the principles of UK best practice and the appropriateness of those principles**

to prevailing local conditions - might sensibly be introduced.

The results of this work will be available for full scrutiny and we are happy that they also be available to inform the consultation process.

We are writing in identical terms to Sir Alistair Hunter as Chairman of the Manston Airport Consultative Committee, who has kindly agreed to allow us to make a presentation to the meeting of the Manston Consultative Committee on 15 December. We should now be grateful if you would ensure that copies of this letter and its attachments are provided to Cabinet Members at the earliest opportunity.

Yours sincerely

Tony Freudmann
Chairman Director,
London Manston Airport plc

Paul Tipple
Corporate Affairs
London Manston Airport plc

KIACC INDEX

Appendix 08

York Aviation
Note of Oral Evidence given by York Aviation
at the Socio-Economic Hearing
5th June 2019

York Aviation

Manston Airport

Note of Oral Evidence given by York Aviation for Stone Hill Park at the Socio-Economic Hearing 5th June 2019

1. This note sets out the key points made in oral evidence to the Socio-economic Hearing and responds to a number of additional points made by the Applicant during the Hearing.

2. These comments are made without prejudice to our view that the 'forecasts' upon which the socio-economic assessment is made are not robust. Discussions at the Need Hearing and subsequent Hearings have revealed the 'forecasts' are nothing more than a wishlist of RSP would like to attract to Manston before taking into account the relevant factors that would determine if they could viably do so. If, as we strongly believe to be the case (see our Reports of November 2017 and February 2019 that were attached as Appendix 4 to SHP's Written Representations [REP3-025]), the forecasts are not capable of being realised then the claimed economic benefits will simply not arise regardless of the errors that we go onto identify in this note.

3. Furthermore, it could also be argued that investing in an airport that is unlikely to succeed is inefficient investment leading to economic harm, not least when there are alternative uses of the site and alternative means of handling the freight using facilities at existing airports. This was made clear at para. 7.4 of our November 2017 Report.

4. Even if the 'forecasts' were right, which they are not, then the socio-economic assessment contains the following errors of assessment:

Employment Density

5. At the hearing, the Applicant continued to assert that is was reasonable to use the overall employment density (direct jobs per mppa or per million workload units (WLU)) from East Midlands Airport of 887 jobs per million WLU as the basis for assessing the direct jobs that would arise at Manston, despite this including non-airport related employment on the Pegasus Business Park. What Dr Dixon may not be aware of is that York Aviation undertakes the economic impact assessment work for MAG Airports, including East Midlands, so the quoted employment density derives from our work. In fact, Dr Dixon appears to have derived her direct employment density by taking the on-site employment in 2013 of 6,730 divided by 2014's passengers and freight WLUs of 7.59 million to derive an employment density of 887 employees per workload unit (see pages 4 and 5 of East Midlands Airport Sustainable Development Plan – Economy and Surface Access[1]). It is made clear on page 5 of that document that this includes employment on the Pegasus Business Park that is not direct airport related employment.

   "There are also a wide range of jobs in the airport's support activity – cargo, hotels and also a range of professions and occupations in companies that are based at Pegasus Business Park." (emphasis added)

[1] https://live-webadmin-media.s3.amazonaws.com/media/2931/ema-sdp-2015-economy-and-surface-access.pdf

6. Hence, it was clear from the source material used by Dr Dixon that not all of the 6,730 jobs were strictly airport related. As we note at para 3.54 of our February 2019 Report and in our Deadline 7 comment on the Applicant's response to ExA's second written questions SE.2.4 [REP7-014]), if non-aviation uses in the vicinity of East Midlands Airport (Pegasus Business Park) are stripped out, the true airport related employment density is virtually identical to Prestwick Airport at c.650 jobs per mppa or million WLUs, which we consider remains the best estimate of likely on-site direct employment density at Manston. Azimuth's dismissal of Prestwick as a relevant comparator is all the more perverse given it has formed the basis of the Applicant's assessment of likely staff and operational costs within its business model.

7. Furthermore, the fact that East Midlands Airport has proportionately more passengers than expected at Manston would tend to suggest that the direct on-site employment density should be lower still at Manston as freight activity tends to have lower employment than passenger handling.

8. At the hearing, Dr Dixon attempted to argue that use of an employment density of 887 was inherently conservative by reference to work undertaken by York Aviation for ACI EUROPE in 2003, which estimated an average employment density across all of Europe's airports in 2002 of 950 jobs per million WLU. We append the summary from this report, which makes clear that this employment density applied to the totality of Europe's airports in 2002. It also makes clear that the employment density varies across different types of airports according to the type of activity at the airport so it is not appropriate to simply use the European average employment density for an individual airport. Furthermore, James Brass of York Aviation did alert Dr Dixon to this report being out of date and inappropriate for current use in an e-mail exchange of October 2017 also appended.

Airport Company Employment

9. In any event, we note that the RSP has sought to justify the use of a high employment density by referring to a 4 shift system for staff in its recent responses (see York Aviation's Deadline 7 comments on the Applicant's response to the ExA's second questions SE.2.7 [REP7-014]). There is no reason for this as most airports operate with a 3 shift system for 24 hour operations and we know that Manston will not operate at night so, in practice, a 2 shift system would be sufficient. Although it was claimed at the hearing that the employment had been worked out in terms of hours of work required, it remains unclear the basis upon which this has been undertaken.

10. Whilst we recognise that the Applicant intends to carry out some element of cargo handling itself leading to relatively higher levels of staff employed directly by the Airport Company than elsewhere, this is irrelevant to the question of the overall direct employment at the Airport, which relates to the totality of employment on-site directly related to airport operations regardless of the employer. To the extent that the new integrator takes freight straight off-site for processing elsewhere (see Applicant's answer to ExA's third written questions ND.3.4 [REP7a-002] that acknowledges that some freight would be taken straight off-site to fulfilment centres necessarily elsewhere closer to the main centres of population), this would tend to reduce the level of on-site employment rather than increase it. Coupled with the effects of automation, this presents a further reason why even the adoption of an on-site direct employment density based on Prestwick may optimistic.

MRO/Aircraft Tear Down

11. In terms of the justification for high levels of on-site employment, the Applicant has also claimed that there would be 600 jobs related to MRO/Aircraft Tear Down (see York Aviation's Deadline 7 comment on response to ExA's second written questions SE.2.7 [REP7-014]). At the Hearing, the Applicant attempted to justify this figure by reference to a) Ryanair's maintenance hangars at Prestwick and b) the activities of Tarmac Aerosave at Tarbes in France. Taking each in turn:

12. Ryanair Prestwick

Ryanair has a 5 bay hangar at Prestwick[2], operated on its behalf by Prestwick Aircraft Maintenance Ltd. Its latest report and accounts showed that it employed 400 people in total (see attached extract from PAML accounts). With 3 bays at Manston, this would suggest a realistic comparable employment figure of 240 jobs.

13. Tarmac Aerosave

Tarmac Aerosave has aircraft teardown facilities across 3 sites in Europe. In 2017 (the 10th anniversary of its operation at Tarbes in France, the company was reported as having 200 employees (see press statement attached). The Tarbes site appears to have 2 hangars capable of accommodating widebodied aircraft, i.e. substantially larger than the hangars proposed at Manston and parking for around 24 aircraft[3], including a substantial number of widebodied aircraft, which again could not be accommodated at Manston, other than by occupying some of the freighter Code E stands so reducing the capability for freight. Hence, it appears highly unlikely that as many as 200 jobs could be sustained in aircraft tear down at Manston with the proposed 3 Code C bay hangar and associated Code C aircraft apron.

14. In overall terms, these examples would suggest that the number of jobs that might be sustained if MRO or aircraft tear down activity could be attracted to the proposed 3 bay hangar at Manston would be of the order of around 200 jobs. We do not take a view here on the likelihood of such activities being attracted to Manston but note that there is intense competition between airports across the UK to attract such activities.

Study Area and Indirect/Induced Employment Multipliers

15. The study area for assessing economic effects was never properly defined in the Azimuth Report, although paragraphs 5.3.3 and 5.3.4 of Vol IV do discuss the potential location where job impacts might be felt, with direct jobs assumed to be local, the indirect and induced effects assumed to be mostly in Kent but extending to neighbouring districts in the Thames Estuary and catalytic effects assumed to be realised mostly in the South East of England.

16. Leaving aside whether the correct multipliers have been used to derive the indirect and induced employment, Section 3.8 of the ES (Chapter 13) [APP-034] takes the figures produced by Dr Dixon and applies them at three levels of assessment:

Local – Thanet

Regional – Kent

UK

17. The ES assesses both the direct on-site job creation and the indirect/induced employment for their significance at both the Local and Regional levels, making no distinction as to the different number of jobs that might be created at these two assessment levels. This is neither correct nor consistent with Dr Dixon's own statements regarding where the jobs might arise. Whilst the on-airport jobs will clearly be located within Thanet, the distribution of employee residence will be wider, so even for direct employment, assessment at the Local level will overstate the significance. Dr Dixon then defines her view as to the relevant area for the indirect and induced effects to be realised, including *"In addition to East Kent, these include Shepway, Swale, Medway and potentially Dartford and South East London"* (Azimuth Reports, Vol IV, para. 5.3.4). It is clear that in assessing the employment benefits of the claimed indirect and induced employment, the ES has been inconsistent with Dr Dixon's work, which forms the entire basis for the assessment of the expected employment and economic benefits.

[2] http://www.prestwickaerospace.com/aerospace-capability/ryanair/
[3] http://www.tarmacaerosave.aero/about-us

18. More fundamentally, it is important to make sure that the multipliers used in deriving indirect/induced employment are relevant to the study areas being considered and these study areas need to be clearly defined in the first instance before estimating the relevant multipliers to be used, typically by reference to the expected supply chain effects, taking into account location specific input output tables. Azimuth did not do this and relied on UK level multipliers from other studies regardless of their applicability to Manston. Despite the clear use by Dr Dixon of a UK level multiplier (Azimuth Reports, Vol IV, para. 5.3.3), the Application Documents treat this employment as local/regional so overstating the significance of the potential employment gain.

19. As stated by the Applicant in response to the ExA's question SE.1.5 [REP3-195], it has adopted an indirect/induced employment multiplier based on work carried out for Stansted and Luton. At the Hearing Dr Dixon relied on the multiplier of 1.8, which she said derived from Oxford Economics work for Luton referenced in Azimuth's Vol IV (which is indeed the multiplier used for induced/indirect effects in the Azimuth Report and ES). This work was published in 2015 and referred to the year 2013. As discussed at the Hearing, this report is appended to this note. We would draw the ExA's attention to the Executive Summary where it is clearly stated that a multiplier of 1.9 is a national UK level multiplier, which will include the entire supply chain of all of the companies operational at the Airport, including aircraft component purchases, vehicles, specialist airport equipment etc:

    "For every direct job the airport supports, another 1.9 are supported elsewhere in the UK economy."[4]

20. The report goes on to set out the impact at the 3 Counties level (Bedfordshire, Buckinghamshire and Hertfordshire), which is wider than Kent as an equivalent for Manston. Although the multiplier is not explicitly stated, it is evident from Table AB2 on page 78 that the indirect multiplier at the 3 Counties level is 0.7 (6,446/9,437) and for Bedfordshire, the equivalent multiplier would be 0.4 (3,724/9,437). For the local district of Luton in which the airport is located, the indirect/induced employment multiplier is 0.25 (2,349/9,437). These figures are in fact set out in Table 7 of Vol IV of the Azimuth Reports. Despite this, Dr Dixon continued to claim at the Hearing that 1.8 was an appropriate multiplier to use for the Local/Regional impacts of Manston. This is simply not correct and, as stated at para. 5.12 of our November 2017 Report, a more appropriate local multiplier for Thanet would be of the order of 0.4, even if 0.7 might be applicable to the wider area of Kent and the Thames Estuary.

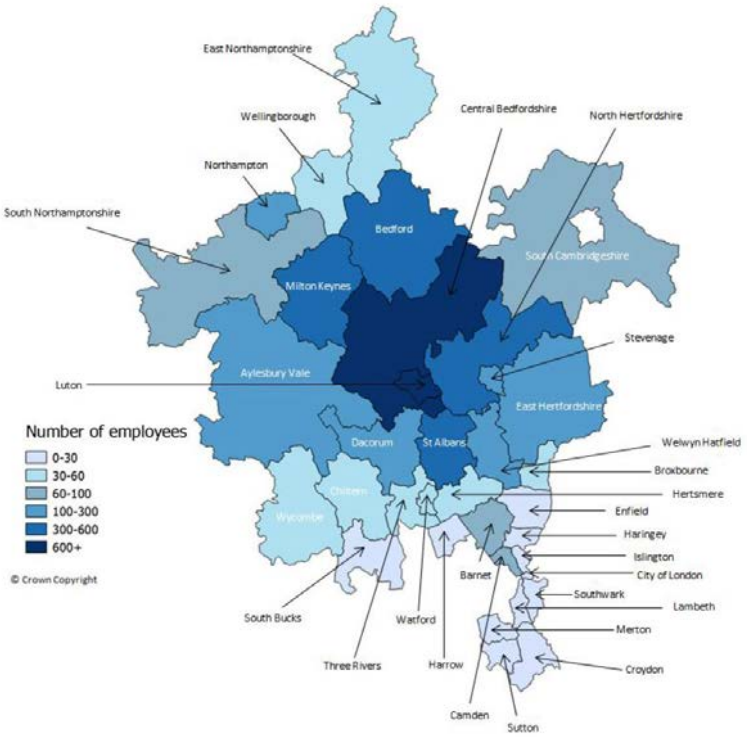
21. On a corrected basis, leaving aside the issues relating to the underlying demand forecasts upon which these employment estimates are based, the local and regional impacts of the development would be far less than claimed by the Applicant.

Employee Residence

22. As well as in relation to multiplier, Azimuth also misinterpreted Oxford Economics work on Luton in terms of employee residence. It is important to note that the Oxford Economics work records jobs by place of employment - not residence. Information on the residence of direct employees is given on page 20 of Oxford Economics' work and reproduced below.

[4] Oxford Economics, Economic Impact of Luton Airport, November 2015, page 8.

Figure 2.2: Estimated place of residence of London Luton Airport employees, 2013



23. In practice, direct airport employees reside over a wide area, certainly far wider than the immediate environs of Manston. We understand, based on the information provided at Table 6.32 of the Applicant's Transport Assessment that it has been assumed that 79% of on-site employees would reside in Thanet and the remainder in neighbouring parts of Dover district. The assumption that all employment would be local will have led to an overstatement of the extent to which bussing is a viable mode for employee transport and this will have implications for the wider traffic assessment of the impact on the highway network.

Catalytic Jobs

24. As pointed out at para. 5.8 of our November 2017 report [Appendix 4 of REP3-025), multipliers are not normally used for estimating the catalytic employment impacts of an airport development project, which are more normally assessed by specifically considering the wider benefits to the economy from connectivity, usually by reference to reliable forecasts of business passenger numbers and freight expected at an individual airport. As we pointed out, Azimuth adopted a wholly inappropriate ICAO multiplier relating to the global impact of the aviation sector. Given that the forecasts for Manston now suggest that its usage will mostly be for outbound tourism purposes and, as we now know, import of e-commerce integrator freight then the catalytic effects on the economy are likely to be much less than would be expected elsewhere.

Displacement

25. Given the way in which the employment estimates have been built up, based on national/global multipliers for indirect/induced and catalytic effects, consideration needs to be given to displacement effects from other airports and even other modes such as trucking. Displacement will apply in an number of ways:

    - *RSP has made clear that Manston seeks to intercept flows of trucked freight and this will be a form of displacement of activity. Although Dr Dixon attempted to claim at the Hearing that this would not matter as most of the truck drivers would be foreign based, this seems*

inconsistent with the notion that Manston might intercept flows of outbound freight being trucked from the UK to Europe.

- *Secondly, given the scale of the overall UK market for pure freighter aircraft, if Manston were to achieve its forecasts, this would imply substantial diversion of movements from other airports. Given the evidence that, with a third runway at Heathrow and developments elsewhere, there will be no shortage of capacity for air freight to and from the UK for the foreseeable future, any freight traffic captured by Manston, necessarily must be displaced from elsewhere. In particular, as we highlighted in our Deadline 7 comment on the Applicant's written answer to the ExA's question ND.2.25, the e-commerce activity now being cited by RSP as the primary role of Manston would be direct displacement from activity already present at East Midlands Airport. The Applicant itself has acknowledged that is seeks to divert niche freighter operations from Doncaster Sheffield Airport.*

These displacement effects need to be accounted for in the socio-economic assessment, given that the quantified effects have been assessed at a national level. They have not been and this is another area where the net impacts have been overstated even at a national level.

26. Another displacement consideration is in relation to the effect of the PSZ on other economic activities in the vicinity of the Airport. Although the Applicant's answer and appendices at OP.2.7 to the ExA's second questions does give some consideration to the effect of a PSZ in future on other developments in the vicinity of the Airport, the effects have not be quantified but would, nonetheless, constitute another form of displacement in terms of opportunities foregone. Furthermore, the Applicant does not seem to realise that the PSZ would need to be put in place as a forward looking restriction on other development, which SHP has estimated would need to be put in place by Year 4, acting as a barrier to growth of economic activity within the area from that point onwards. It should be noted that it is likely that any PSZ for Manston would be materially larger than other airports with the same number of aircraft movements due to the pre-ponderance of cargo and general aviation aircraft that have a higher propensity to crash than commercial passenger aircraft and this has not been factored into the analysis submitted by the Applicant.

Tourism

27. The Applicant seeks to claim significant beneficial effects in terms of tourism benefits to Kent and Thanet. In answer to ExA's question SE.2.15, RSP seeks to imply that 20% of passengers using MSE would be inbound tourists. In the first instance, as we pointed out in our Deadline 7 comment on this answer, RSP has extraordinarily used data for Gatwick, Stansted and Luton as representative of small airports. This is not generally representative at all, as we point out.

28. When considering the scope for airports to support tourism within the local economy, it is important to recognise the role that these named airports play in serving London. When you strip out the passengers travelling further afield from these airports, principally to London, and those visiting friends and relatives, for which tourism spending will be significantly lower, the actual proportions of passengers at these airports that are foreign visitors staying locally (including those staying the night before flying) is 1% at Gatwick, 1.5% at Luton and 0.5% at Stansted from detailed CAA Survey data[5] (see table below).

[5] CAA survey data is available to purchase from the CAA. York Aviation holds all survey data from 2003 and does not rely on published Survey Reports only. This enables more detailed analysis of the performance of individual airports.

Surface Origin / Destination of Inbound Foreign Visitors

Foreign Passengers' Surface Origin / Destination at Select London Airports

Airport	Foreign Passenger % of Total Passengers	Of which: % Surface Origin/Destination in London	Of which: % Surface Origin/Destination within 30 Minutes of Airport	% of Total Passengers who were Foreign and Stayed within 30 Minutes	% of Total Passengers who were Foreign and Stayed with 30 Minutes (excl. VFR)
London Gatwick 2018	29.6%	49.9%	5.2%	1.6%	1.0%
London Luton 2018	30.1%	50.8%	18.5%	5.6%	1.5%
London Stansted 2018	34.6%	59.7%	3.8%	1.3%	0.5%
London Southend 2019 Q1	22.3%	54.8%	19.2%	4.3%	0.8%

Source: CAA Passenger Survey (2018) and (2019 Q1 – Southend Only)

29. At the Hearing, the Applicant cited Southend Airport as a more relevant comparator. Southend has not previously been included in the CAA Survey but is being surveyed in 2019. The provisional issue of the results for the first quarter (Q1) has just been released by the CAA and the results are included in the table above. Whilst these results are provisional, due to the small sample size, it would strongly suggest that the impact of the Airport on tourism in Southend has been negligible as only 0.8% of passengers appear to be foreign visitors staying locally for reasons other than visiting friends and relatives.

12th June 2019

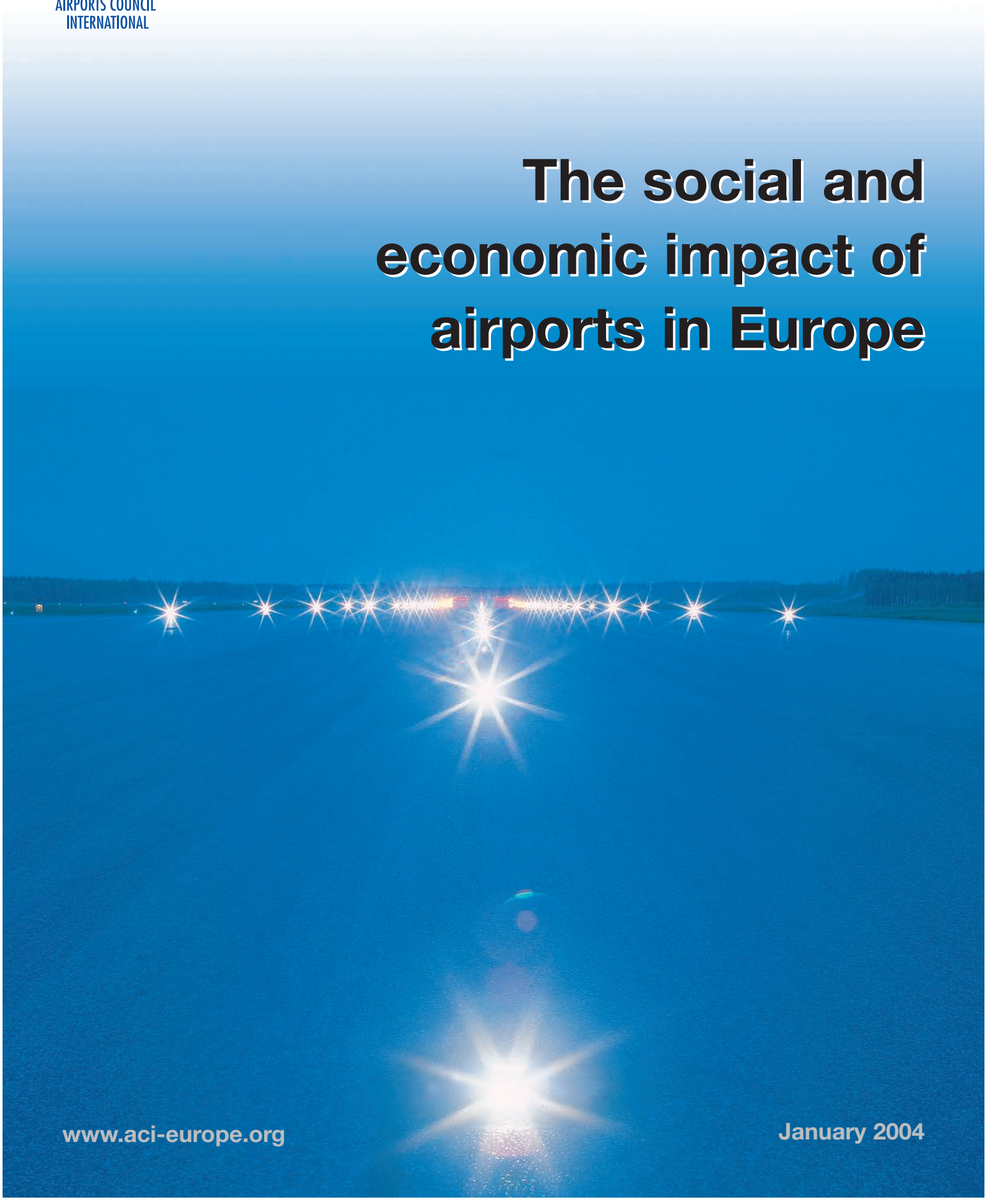
Appendix 08a

York Aviation
Socio-Economic Hearing : YA Appendix
The Social and Economic Impacts of Airports in Europe

ACI EUROPE
AIRPORTS COUNCIL INTERNATIONAL

York Aviation

The social and economic impact of airports in Europe



www.aci-europe.org

January 2004

Preface



John Burke, President, ACI EUROPE and Chief Executive, Aer Rianta

To assess properly the many challenges facing Europe's airports - one must fully grasp the scale and reach of a civil aviation industry that comprises more than 130 airlines, a network of over 450 airports and some 60 air navigation service providers. This complex set-up forms a unique global network linking people, countries and cultures - and plays a vital role in the further integration and development of Europe. Airports play an essential role in realising this economic growth and delivering immense social benefits to the citizens of Europe.

In 1998, ACI EUROPE commissioned a study on the social and economic impact of Europe's airports from York Consulting. York Aviation, its sister company, was appointed to update the 1998 study. Using the most recent data collected from a wide range of ACI EUROPE member airports, 'The social and economic impact of airports in Europe' provides an invaluable insight to role played by European airports in boosting regional accessibility and social expansion, driving tourism development, and serving as national and regional economic motors.

In order to navigate the future as a stronger, more robust and more confident industry, policy makers must better acknowledge the social benefits provided by airports in terms of the freedom to fly. Airports enable remote and island communities to participate more fully in Europe, thus promoting social inclusion, with the social and economic importance of access to Europe's airports to grow further with enlargement of the European Union. This study also highlights the many key economic benefits accompanying airport development. European airports not only have massive economic impacts in terms of direct, indirect and induced employment, but serve as strategic catalysts, enhancing business efficiency and productivity by providing easy access to suppliers and customers.

ACI EUROPE has been striving to help both national and local legislators recognise the social and economic benefits delivered by Europe's air transport industry, and to give these benefits their rightful weight in the debate on sustainable growth. Sustainability is a three-legged stool; while environmental concerns are certainly important, the very significant social and economic benefits of aviation are too easily forgotten. I sincerely hope that the detailed research provided in this study will help to facilitate a better understand the key role played by European airports and better serve to uphold the overall contribution of aviation to our daily lives.

Airports Council International (ACI) is the only worldwide professional association of airport operators. ACI EUROPE represents over 450 airports in 45 European countries. Member airports handle 90% of commercial air traffic in Europe, welcoming over a billion passengers each year.

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Summary

European airports are now widely recognised as having a considerable economic and social impact on their surrounding regions. These impacts go far beyond the direct effect of an airport's operation on its neighbours to the wider benefits that air service accessibility brings to regional business interests and to consumers. Airports provide essential infrastructure to support regional social and economic growth as well as being commercial entities in their own right, capable of generating returns on investment to the benefit of their shareholders, other stakeholders and to society as a whole.

The importance of transport to economic growth has been recognised by the European Commission in their Transport White Paper[1]: "*difficult to conceive of vigorous economic growth which can create jobs and wealth without an efficient transport system that allows full advantage to be taken of the internal market and globalised trade*."

With the enlargement of Europe and the greater travel distances involved, air transport will play an ever more important role in the integration of Europe. This report seeks to explain and expand on the specific **social and economic importance of Europe s airports**.

In 1992, ACI EUROPE published a study 'Airports – Partners in Vital Economies'. This study looked in general at the economic importance of Airports. York Aviation was appointed in December 2002 to update the 1998 report, using the most recent data collected from ACI EUROPE's member airports. We have collected information from 58 airports for this study, covering the largest hub airports to very small local airports. The airports covered accounted for 63% of the workload units at Europe's airports. We have used the broad methodology and definitions from the 2000 ACI EUROPE Study Kit as a basis for collating data for this study. In summary, we consider the overall economic impact of airports under the following headings:

direct - employment and income that is wholly or largely related to the operation of an airport;
indirect - employment and income generated in the economy of the study area in the chain of suppliers of goods and services;
induced - employment and income generated in the economy of the study area by the spending of incomes by the direct and indirect employees; and
catalytic - employment and income generated in the economy of the study area by the wider role of the airport in improving the productivity of business and in attracting economic activities, such as inward investment and inbound tourism.

We have also analysed the social impacts of airports and the effects of restricting capacity or otherwise limiting the growth in demand for air travel.

Air transport in a modern society

The most important contribution of airports is the connectivity they provide, which allows the European economy and society to flourish. Air transport provides the accessibility essential in a modern economy and society. Globalisation of the world economy is a key driver of air traffic growth. Cross-investment between European countries, as well as to and from the USA, Far East and the rest of the world is increasingly a feature of modern business, with mobility of labour a growing factor.

The air transport sector is evolving rapidly to meet the changing needs of society as a whole. It is predicted that, despite recent global events, overall air traffic growth rates are likely to return to previous levels (5-6% per annum) in the medium term, driven in part by the growth in low cost services.

Transport is seen as an important factor in the economic and social integration of Europe, and an important indicator of quality of life. Its importance will grow with the enlargement of the European Union (EU). The EU has recognised the importance of mobility to the social and economic development of nation states and also the integration and realisation of the Union. In addition, in remote regions, air transport fulfils an essential social function, often connecting communities to essential services, such as hospitals and further education.

Airports as national and regional economic motors

Airports constitute necessary infrastructure for a wide range of economic activities. This wider economic role is known as the catalytic impact, arising from the effect that air service accessibility can have on the region served by the airport.

Access to markets and external and international transport links are regarded as “absolutely essential2” to businesses making location decisions. The catalytic effect of an airport operates primarily through enhancing business efficiency and productivity by providing easy access to suppliers and customers, particularly over medium to long distances. Global accessibility is a key factor for business location and success in all regions of Europe.

Large airports are often seen as fundamental national economic motors, for example the role of **Amsterdam Schiphol Airport** as a ‘Mainport’ for the Netherlands economy. The importance of national connections is illustrated by the studies undertaken in Switzerland examining the impact of the loss of direct services from **Zurich Airport** to the Swiss economy following the demise of Swissair. Airports are increasingly developing as multi-modal interchange nodes. Their network positioning creates strategic advantage which enables them to ‘entice’ a broad range of economic activity, functioning as new development poles. This is evidenced by the development of **Amsterdam Schiphol** and **Paris Charles de Gaulle (CDG) Airports**.

Global accessibility can be important at a regional level as well as at a national level. For example, 31% of companies relocating to the area around **Munich Airport** cited the airport as the primary factor in their location decision. A survey of business in the **Hamburg** area found that 80% of manufacturing companies reported air service connections as important to getting customers to look at their products. In 1995, it was reported that 93% of the top Irish companies used **Dublin Airport** for business travel. There is no reason to believe this proportion will have declined.

Where airports have good connectivity, this can act as a powerful magnet for companies:
The Ile de France Region generates 30% of the French national GDP. Accessibility to **Paris CDG Airport** is a powerful factor in company location decisions, particularly for the large global companies headquartered in the Paris area, and to firms engaging in new high-tech, innovative, industries.

Connections to Eastern Europe offered by **Vienna Airport** have enabled Vienna to provide the location for the East European headquarters of several global companies.

The attractiveness of airports and their hinterlands is particularly strong for ‘high tech’ industries as evidenced by **Copenhagen** and **Nice Airports**.

It is possible to define the 'air intensive' sectors of business, namely those sectors of industry that are most dependent upon air service accessibility:

Insurance
Banking and Finance
Other Means of Transport
Printing and Publishing
Coke, Petroleum and Nuclear Fuel
Extraction
Transport
Communication
Other Business Activities
Research and Development
Basic Metals
Computer Activities
Precision and Optical Instruments

Often it is the **financial and business services** sectors which make the greatest use of air transport and for whom accessibility to air services will have the strongest influence on location decisions. For example, there are a high number of foreign owned companies located in the vicinity of **Brussels Airport**, many of whom are active in these air intensive sectors.

Airports with available land are developing **business parks** to capitalise on the attractiveness of air service connectivity to businesses. Often these business parks are used by firms with some connection to the airport or aerospace industries. Otherwise they are chosen as locations for companies making intensive use of air transport. Examples include **Cork, Hamburg, Nice** and the 'Aviapolis' development at **Helsinki Airport**.

The use of **air freight** as a means of transport is increasing, particularly for high value, low weight goods, or those requiring urgent transport. The Organisation for Economic Co-operation and Development (OECD) has estimated that up to a third in value of world trade in merchandise travels by air.

Airports driving tourism development

Tourism is the second main element of catalytic impact. For the EU as a whole, tourism accounts for 5% of total employment and of GDP, and as much as 30% of the total external trade in services.

Airports play a major role in making the development of inbound tourism possible. Many destinations would not be easily accessible without air services, such as the **Spanish** and **Greek Islands.** Good air service connections are vital to their success as tourist destinations.

Even for major European cities, air travel can account for a third or more of their foreign visitors. For example, almost 10 million visitors arrive in the Ile de France area by air via the **Paris Airports**, spending €3 billion. Equivalent spending in the Alpes-Maritime Region from visitors arriving via **Nice Airport** was almost €1.5 billion.

Traditionally, charter carriers have played a major role in facilitating the development of tourism in Europe. Low cost, no-frills carriers are now opening up new markets to tourism and accelerating the growth in tourism, even in traditional markets, such as UK-Ireland.

Airports vital to regional accessibility and social development

Air transport for passengers and freight is an essential component of the modern global economy. The social benefits contribute to the quality of life in Europe. The importance of air transport access has led many European countries, such as **France** and **Norway**, to introduce Public Service Obligations to ensure that essential services are maintained.

The social and economic importance of air transport in Europe will grow with enlargement of the EU. Air transport provides accessibility to the global economy and enables remote and island communities to participate more fully in Europe, thus promoting social inclusion.

Availability of air services can be an important indicator of the quality of life - particularly for remote areas. These social and regional accessibility benefits are far more difficult to quantify. However, they are vital to the development of remote regions of the Europe. Quite simply, without air service access, many regions in Europe would be denied participation in the modern world. This would have profound 'quality of life' implications.

There are many examples of airports engaging in programmes to ensure that their positive social impact is maximised. Such programmes include initiatives in education and training, as well as local cultural and sporting programmes. Many airport operators, including **Paris, Lyon, BAA** and **London City**, take positive steps to ensure that local employment opportunities are maximised.

The direct and measurable impact of airport activities

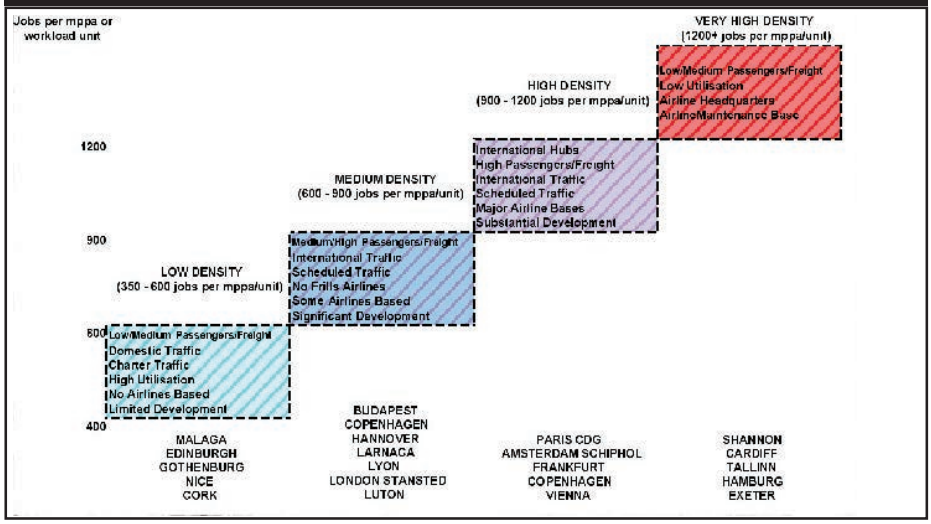
Airports support employment directly on-site and in the surrounding area but also indirectly in the chain of suppliers providing goods and services. In addition, the incomes earned in these direct and indirect activities generate demand for goods and services in the economy, which supports further employment.

In 2001, we estimate that **total on-site employment at airports reporting traffic to ACI EUROPE was around 1.2 million**. In addition, we estimate that there are a further 0.2 million direct airport-related jobs located off-site at Europe's airports.

Nearly two-thirds (64%) of employment comes from airlines, handling agents and aircraft maintenance, with the remainder split between airport operators (14%), in-flight catering, restaurants and bars and retailing (12%), air traffic control and control agencies (6%), freight (1%) and other activities such as fuel companies and ground transport operators (3%).

The evidence suggests that European airports currently support, on average, around **950 on-site jobs per million passengers (workload units) per annum**. This is lower than the number observed in the 1998 study (the 'typical' 1000 jobs per million passengers ratio), indicating the success of measures taken by airports to reduce costs and increase productivity, despite increases in security measures. Other factors include the development of no-frills carriers and the drive towards lower costs throughout the industry, particularly in the airline sector, resulting in productivity improvements across the board. The factors leading to different levels of on-site employment are illustrated in **Figure 1 overleaf**.

Figure 1:
Typology of on-site employment at European airports 2003



Based on the latest ACI worldwide air passenger and freight forecasts, we estimate that total on-site employment at airports reporting traffic to ACI Europe could rise to around 1.4 million by 2010, assuming a 2% per annum continuing growth in productivity. This is an increase of 17% in employment over 2001 levels.

On the basis of this evidence we estimate that, on average, for every 1,000 on-site jobs supported by European airports there are around 2,100 indirect/induced jobs supported nationally, 1,100 indirect/induced jobs supported regionally, and 500 indirect/induced jobs supported sub-regionally. Given that there are 950 on-site jobs created per million passengers - once we factor in the direct, indirect and induced jobs we conclude that f**or every million passengers (workload units), European airports support around:**

- **2,950 jobs nationally;**
- **2,000 jobs regionally; and**
- **1,425 jobs sub-regionally.**

Airports can make a substantial contribution to the overall economy of the areas that they serve, when the combined effect of their direct, indirect and induced impact is taken into account. Estimates vary in the range 1.4-2.5% excluding tourism impacts.

The effect of restricting airport capacity

Restricting airport capacity or pricing off air travel demand could have severe economic or social consequences. Studies suggest that failure to increase capacity to meet demand could **reduce GDP at a national or regional level by 2.5 to 3%**, although this will be heavily dependent upon the level of restriction applied.

Based on forecast growth in passenger and freight traffic at Europe's airports, direct employment at airports is expected to grow by almost 200,000 jobs between 2001 and 2010. However, restricting growth in demand, through limits on capacity or other means, would have the effect of reducing this growth in jobs and under more severe restrictions could result in a nett loss of direct jobs as productivity improvements negate the benefits of traffic growth.

On 6 Oct 2017, at 15:39, James Brass <James.Brass@yorkaviation.co.uk> wrote:

Dear Sally

Thank you for your email and apologies for the slow response. I need to tell you that York Aviation does now have a conflict of interest in this matter and hence I cannot engage further in relation to this. However, just as an observational point, I would highlight that the 2004 ACI EUROPE report is now substantially out of date and we would no longer consider it to be necessarily representative of a 2017 world.

Best regards
James

James Brass
Partner

York Aviation LLP
Primary House
Spring Gardens
Macclesfield
SK10 2DX
United Kingdom

Direct/Mobile: +44 (0)7767 455614
Office: +44 (0)1625 614051
Fax: +44 (0)1625 426159
Email: james.brass@yorkaviation.co.uk

Visit our website at www.yorkaviation.co.uk

NEW: Follow us on Twitter @YorkAviation

York Aviation is the trading name of York Aviation LLP, registered in Cardiff, No. 0C307526. Registered Office: Smithfield House, 92 North Street, Leeds, LS2 7PN

From: Sally Dixon [mailto:sally@azimuthassociates.co.uk]
Sent: 03 October 2017 15:35
To: James Brass <James.Brass@yorkaviation.co.uk>
Subject: Calculations for indirect/induced employment at airports

Dear James,

It has been some while since we have been in touch. I am still engaged on the Manston Airport project, which is progressing rapidly under the DCO process towards a submission to the Planning Inspectorate next month.

I have a query about York's 2004 report for ACI Europe (The Social and Economic Impact of Airports in Europe) and would be very grateful for your clarification. On page 9 there is a calculation of direct/induced employment at airports:

On the basis of the evidence we estimate that, on average, for every 1,000 on-site jobs supported by European airports there are around 2,100 indirect/induced jobs supported nationally, 1,100 indirect/induced jobs supported regionally, or 500 indirect/induced jobs supported sub-regionally. Given that there are 950 on-site jobs created per million passengers, once we factor in the direct, indirect and induced jobs, we conclude that **for every million passengers (workload units), European airports support around:**
• 2,950 jobs nationally;
• 2,000 jobs regionally; or • 1,425 jobs sub-regionally.
Can you tell me what the "or" means here?

I have used your 2,100 figure to calculate a indirect/induced job forecast but would like to be able to split this out geographically. I have assumed that 2,100 is the total across the country (i.e. 1,100 of 2,100 will be regional and of these 1,100, 500 will be sub-regional/local) but am concerned I may have misinterpreted your findings.

On closer inspection, the addition of 950 direct jobs to the 2,100 jobs derives 2,950 jobs nationally and this is where I question my interpretation.

I would be very grateful for your help on this James.
Many thanks and kind regards,
Sally

REGISTERED NUMBER: SC252985 (Scotland)

STRATEGIC REPORT,

REPORT OF THE DIRECTORS AND

FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 JULY 2018

FOR

PRESTWICK AIRCRAFT MAINTENANCE LTD

SATURDAY
S84ASHYX
SCT 27/04/2019 #176
COMPANIES HOUSE

4. EMPLOYEES AND DIRECTORS

	31/7/18	31/7/17
	£	£
Wages and salaries	13,388,197	10,184,031
Social security costs	1,361,679	1,016,994
Other pension costs	158,918	91,685
	14,908,794	11,292,710

The average number of employees during the year was as follows:

	31/7/18	31/7/17
Management / admin	18	13
Engineering	382	313
	400	326

	31/7/18	31/7/17
	£	£
Directors' remuneration	81,457	78,442

5. AUDITORS' REMUNERATION

	31/7/18	31/7/17
	£	£
Fees payable to the company's auditors for the audit of the company's financial statements	3,350	3,350

	31/07/17	31/07/16
Tax compliance services	7,850	6,850
Other services	25,480	20,405
	33,330	27,255

6. TAXATION

Analysis of the tax charge

The tax charge on the profit for the year was as follows:

	31/7/18	31/7/17
	£	£
Current tax:		
UK corporation tax	24,026	19,558
Tax on profit	24,026	19,558

UK corporation tax was charged at 19.67% in 2017.

continued...

Tarmac Aerosave, the European leader in aircraft dismantling services

Safran is one of the founding shareholders in Tarmac Aerosave, a specialist in aircraft storage and dismantling services, which has just celebrated its 10th anniversary. In these few short years, Tarmac has already become the European leader in its sector.

Founded in 2007, **Tarmac Aerosave** is based in Tarbes, southwest France. Today, it has become the European benchmark in the storage and dismantling of both military and commercial aircraft from leading manufacturers such as Airbus, Boeing, ATR, Bombardier and Embraer. Safran is one of the three main shareholders, alongside Airbus and Suez. Safran has been involved since the outset, reflecting its focus on **corporate social responsibility (CSR).** In addition to providing space to **park aircraft** not being used **(**500 capacity) and **store** various parts and subassemblies (50,000 for the moment), Tarmac Aerosave offers the largest capacity for dismantling aircraft at end-of-life in Europe, at two different facilities, in Tarbes and in Teruel, Spain.

"We have dismantled and recycled 125 aircraft to date, and we are capable of recycling more than 90 percent of each aircraft, by weight," explains CEO Philippe Fournadet.



Rémy Michelin / Tarmac Aerosave

Complementary maintenance operations

Over the last decade Tarmac Aerosave has also developed its **maintenance capabilities**, to carve out a position as an MRO provider for both aircraft and engines. For example, the company has set up a workshop to dismantle and service **CFM56 engines**, with the help of Safran. François Planaud, Vice President, Services & MRO at **Safran Aircraft Engines,** explains: "Since our engine MRO activities complement those of Tarmac Aerosave, we helped the company create a flexible engine maintenance shop, allowing them to carry out minor servicing jobs on CFM56 engines. Their workshop was certified to Part 145 in January 2017, proving the quality of their services and also underscoring the expertise developed by Tarmac Aerosave with our support."

About Tarmac Aerosave

Tarmac now has more than **200 employees** and over **15,000 square meters** of storage space. It has a **12% share of the global market for stored aircraft.** In addition to a planned expansion of its original site in Tarbes, Tarmac will shortly open a new facility at Toulouse Francazal airport.

Appendix 08b

Socio-Economic Hearing : YA Appendix
The Economic Impact of Luton Airport
(Oxford Economics)



The economic impact of London Luton Airport

A report for London Luton Airport Operations Limited and London Luton Airport Limited

November 2015

OXFORD ECONOMICS

Foreword:

Nick Barton – CEO London Luton Airport
Councillor Andrew Malcolm – Acting Chairman LLAL



Nick Barton

This is the first aviation focussed report published in the post-2015 election environment and one that has been conducted on a wholly independent basis by Oxford Economics. London Luton Airport Operations Limited, the airport operator, and London Luton Airport Limited, the airport owner, commissioned this report to highlight the current and future economic benefit of London Luton Airport to both the local and national economies.

We believe that this report will make a significant contribution to the development of an integrated transport policy for the United Kingdom; one in particular that reconciles the rebalancing of the UK economy with the need for sustainable development. The Oxford Economics report sits alongside the vital strategic work undertaken by Sir Howard Davies and provides our new Government with additional corroboration of the importance of aviation to the UK economy.



Andrew Malcolm

In commissioning the report we were mindful of the depth of the Davies Commission's review of macro runway capacity requirements, but also of how broadening the analytical scope to micro or regional considerations could complete the roadmap of UK aviation needs.

Through this report, Oxford Economics has demonstrated how the presence of a strong regional airport can boost UK economic growth and deliver greater choice, value and service to aviation passengers.

Regional airports play a vital role in supporting aviation capacity growth in the UK. They will sustain the supply of slots for airlines and destinations for passengers throughout the period of new runway construction in London and enhance the reputation of the UK as a place to visit, invest or reside in. For its part, London Luton Airport has proven its role in meeting the aviation demands of the 21st century and this is demonstrated by the economic benefits that are created by its presence in Southern England.

It is imperative that London Luton Airport fulfils its potential to serve more passengers, deliver greater competition between carriers and achieves all of this on an environmentally sustainable basis. That is why we are proud of our airport and the contribution that it will make to the lives of business and leisure passengers alike in coming decades.

We urge all stakeholders with an interest in the future of UK aviation to take note of this report's conclusions and the potential that exists for London Luton to serve ever greater numbers of passengers and draw overseas investors into our economy.

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Executive Summary

In February 2015 London Luton Airport Operations Limited (LLAOL) and London Luton Airport Limited (LLAL) commissioned Oxford Economics to undertake an analysis of the nature and scale of the economic impact of London Luton Airport on the UK as a whole, and on the surrounding sub-regional and local economies.

The report sets out the results of that analysis, measuring the economic contribution of the airport in terms of jobs created, contribution to GDP and government tax receipts. We present results for the value of this impact in 2013 and forecast it out to 2030 under two scenarios for the future of the airport.[1,2] The report goes on to explore the value that London Luton Airport creates for its passengers by offering them low-cost and local air transport, and by relieving pressure on the air transport system elsewhere in the south east of England.

Measuring the impact of London Luton Airport

To quantify the contribution of London Luton Airport to the UK and local economy, we consider a range of potential impacts in turn, following a standard analytical technique known as an economic impact assessment. This approach considers three channels of economic impact arising from the airport's operations: direct, indirect and induced impacts.

- The direct impact is generated by the immediate activities of the airport itself.
- The indirect impact encapsulates the economic activity supported in the airport's UK supply chain as a result of its procurement of goods and services.
- The induced impact comprises the benefits arising as the workforce (including that in the supply chain) spends its wages generating further rounds of economic activity.

The impact through each channel is quantified using three metrics: Gross Value Added (GVA) contribution to GDP; employment, in terms of jobs sustained; and the exchequer impact, in terms of additional tax receipts accruing to the Treasury or local authorities.

Quantifying the wider 'catalytic' economic benefits that the airport offers to those who use its services involves other metrics. The benefits that proximity and low-cost air travel offer for millions of Luton passengers are quantified in terms of the equivalent cash value to those passengers each year.

[1] This report updates a previous exercise relating to 2011, undertaken by Halcrow. However, methodological differences mean the two reports are not directly comparable.

[2] We use the term 'London Luton Airport' to refer to all activities and businesses which are inherent to the operation of the airport, and including both direct onsite employment and direct offsite employment within firms located in close proximity to the airport whose activities form an integral part of the activities of the airport.

London Luton Airport's impact in 2013

In 2013, the economic activity created by London Luton Airport contributed some £1.3 billion to UK GDP.[3] For every pound London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. In 2013 this impact comprised:

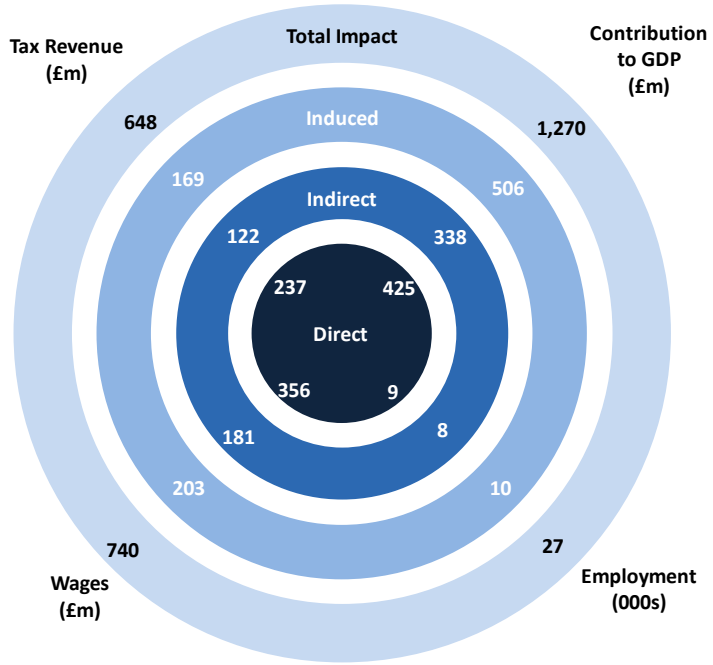
- £425 million in direct impact (which is equivalent to 10 per cent of the local Luton Borough economy);
- £338 million in indirect impact within the supply chain of the airport; and
- £506 million in induced impact as employees of the airport and its supply chain spent their wages.

The airport is estimated to have sustained 27,000 jobs in 2013, comprising:

- 9,400 direct jobs (10 per cent of all employment in Luton Borough);
- 7,700 indirect jobs within the supply chain of the airport;
- 10,000 induced jobs as employees of the airport and its supply chain spent their wages.

For every direct job the airport supports, another 1.9 are supported elsewhere in the UK economy. By sustaining this level of employment, London Luton Airport contributed £740 million in gross wages in 2013, and also produced tax receipts of £648 million for the Treasury, primarily in the form of employee and employer taxes, air passenger duty and corporation tax.

Total UK economic impact of London Luton Airport, 2013

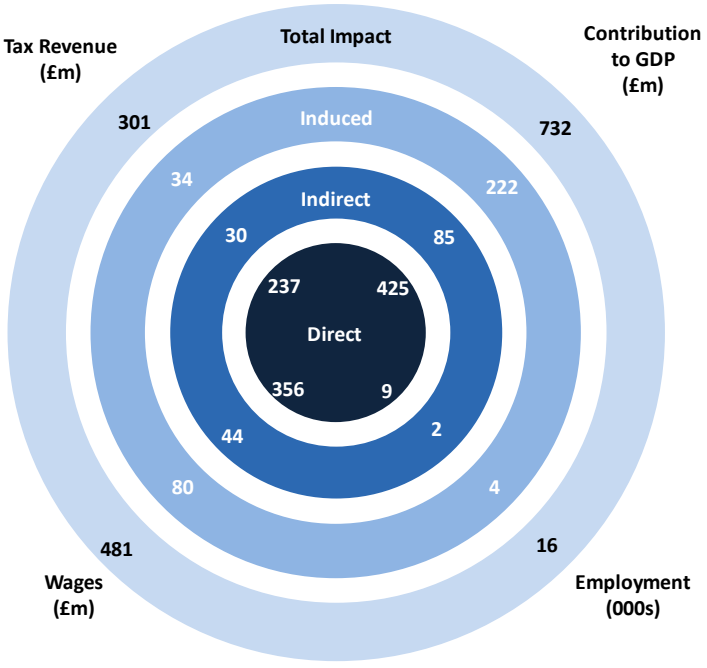


[3] Hereafter referred to as 'contribution to GDP'. Prices are constant 2013 throughout the document unless otherwise stated.

The sub-regional and local economic impact of London Luton Airport in 2013

London Luton Airport plays a pivotal role in economy of the local area and surrounding sub-regions. Within the Three Counties area, which includes Bedfordshire, Buckinghamshire and Hertfordshire, the airport supported a £732 million contribution to GDP and sustained 16,000 jobs in 2013. As would be expected, the greatest impact was felt in the immediate vicinity of the airport. The largest sub-regional impact therefore occurs within Bedfordshire, where the airport delivered a GDP contribution of £600 million. This reflects the direct economic impact of having the airport located within its boundaries, the corresponding strength of the airport's supply chain linkages within the local area, and the fact that 50 per cent of the direct workforce (and therefore much of the associated consumer spending) resides in Bedfordshire. Within the Borough of Luton alone, the airport supported a £533 million contribution to GDP and sustained almost 12,000 jobs.

Total economic impact of London Luton Airport within the Three Counties sub-region, 2013



The future economic impact of London Luton Airport under alternative scenarios

With substantial changes to the capacity of London Luton Airport planned, we are able to forecast how its economic impact is likely to evolve in the years to 2030. Our baseline scenario assumes no significant infrastructure development. Yet the airport's total GDP contribution, including multiplier impacts, is forecast to grow to £1.7 billion[4] by 2030. Productivity growth, however, means that the total number of jobs supported by London Luton Airport (including multiplier impacts) is likely to be 500 lower in 2030 than in 2013 under this scenario.

Under our development scenario - in which a range of infrastructure developments, including improvements to roads, parking and terminal enhancements, are implemented – the economic impact of Luton would be substantially higher.

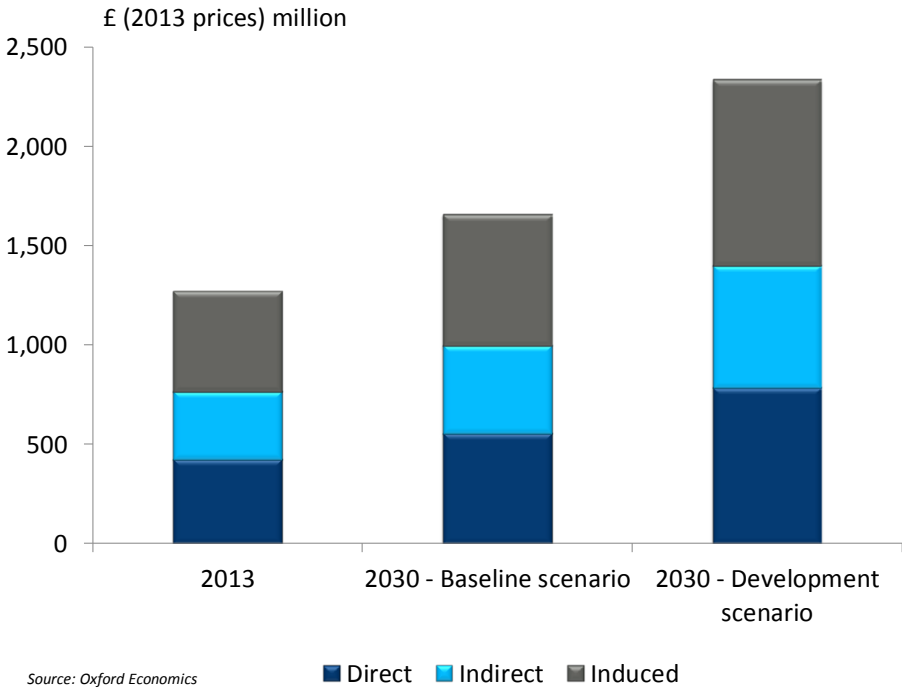
In the development scenario, we assume that infrastructure enhancement results in passenger numbers increasing from around 9.7 million in 2013 to 18 million in 2020, at which point the airport will have reached its new level of capacity. Under this scenario, the total GDP contribution of the airport would reach £2.3 billion in 2030, 41 per cent higher than under the baseline option. The airport and its associated activities would support 37,700 jobs in total.

Key indicators under the baseline and development scenarios, 2013 and 2030

		2013	2030 – Baseline scenario	2030 – Development scenario
Passengers		9.7m	12.6m	18.0m
GDP	Direct	£425m	£554m	£781m
	Total	£1.3bn	£1.7bn	£2.3bn
Employment	Direct	9,400	9,300	13,100
	Total	27,200	26,700	37,700
Wages	Direct	£356m	Not calculated for future years	
	Total	£740m		
Tax revenue	Direct	£237m		
	Total	£648m		

[4] In 2013 prices

Forecast total GDP contribution of London Luton Airport to the UK economy, 2013 to 2030



Source: Oxford Economics

Within the Three Countries sub-region, the total GDP contribution of London Luton Airport is estimated to reach £1 billion in 2030 under the baseline scenario. This increases to £1.4 billion under the development scenario. Under the baseline scenario the total number of jobs supported by London Luton Airport in the Three Counties sub-regional economy in 2030 increases from 15,900 in 2013 to 16,000 in 2030. Under the development scenario employment increases to 22,600.

Under the development scenario, London Luton Airport may need over 1,100 additional workers in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. At the same time, over 2,500 additional workers will be needed for lower-skilled roles such as customer advisors, baggage handlers and storage workers.

We analyse the extent to which the airport's future demand for labour could be met by workers from Luton Borough. Our analysis suggests that while there is likely to be sufficient labour within Luton Borough to fill lower-skilled jobs, the airport will need to look further afield to recruit the people needed to fill the more specialised high-skill roles.

London Luton Airport's value to passengers

Ultimately London Luton Airport exists to serve its passengers, of whom there were 10.5 million in 2014 alone. For around 43 per cent, or 4.5 million, of these passengers Luton was the closest airport to their origin or destination in the UK. For these passengers, flying from an alternative airport would add between 20 and 68 minutes in travel time, and further associated travel costs, for each leg of their journey. Luton also offers among the cheapest available fares for the destinations it serves, with 75 percent of comparable fares cheaper than average among the seven major airports considered.

Taking account of the value of passengers' time, the surface transport costs they face, and the competitive fares offered by airlines at Luton, we estimate that the airport provided additional value for passengers of approximately £120 million in 2014 alone – an average of just over £37 per return trip.

As a result of the extra value offered by Luton more people were encouraged to take a trip than otherwise would have done. We estimate that last year over 900,000 Luton passengers took a flight who would not have flown at all had Luton not existed.

London area airport capacity

London Luton Airport will play an increasingly important role in providing much-needed capacity to the London airports system over the next 10 to 15 years, particularly if expansion plans are implemented.

In 2011 Luton accounted for 7 per cent of passengers at London airports. But based on official DfT forecasts it is expected to contribute 17 per cent of London passenger growth between 2011 and 2030. This demonstrates the degree to which the airport is set to become an even more crucial part of the air transport network of the UK.

1 Introduction

1.1 Purpose of the study

This report has been prepared for London Luton Airport Operations Limited (LLAOL) and London Luton Airport Limited (LLAL). It provides a detailed assessment of the current economic impact of London Luton Airport to its local area, surrounding sub-regions and the national economy. This impact has been estimated for 2013 and forecast for the period to 2030 under two scenarios. We also estimate the consumer value that London Luton Airport creates for its passengers by offering them cheap and local air transport, and by relieving pressure on the air transport system elsewhere in the south east of England.

This report provides a detailed assessment of the economic impact of London Luton Airport

1.2 Introducing economic impact analysis

The economic impact of London Luton Airport is measured using a standard means of analysis called an economic impact assessment. The three 'core' channels of impact that comprise the airport's 'economic footprint' are:

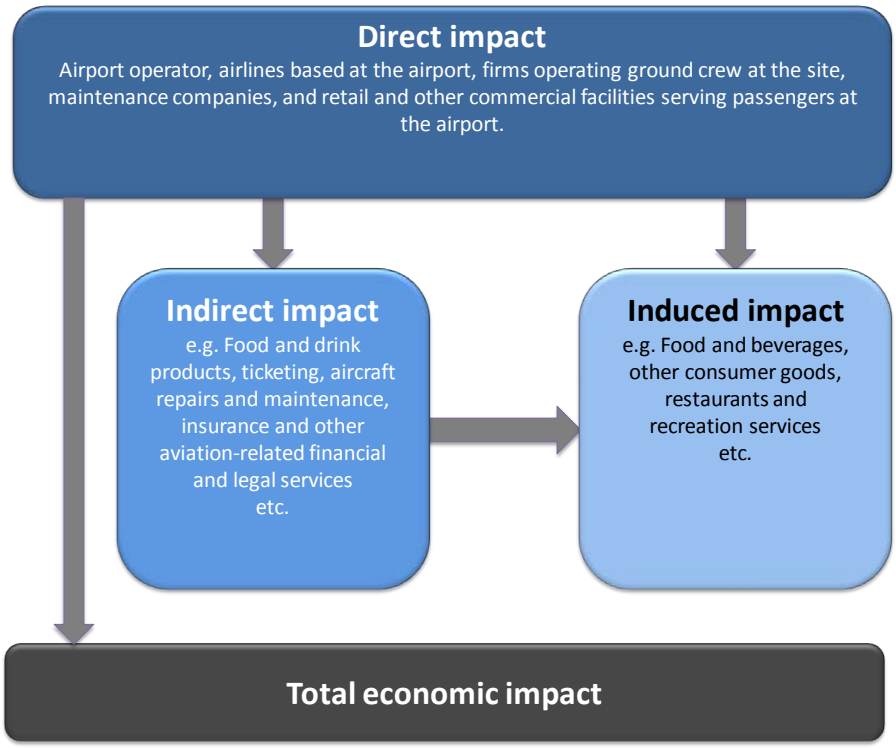
- **direct impact**, which relates to the economic activity generated by the airport itself;
- **indirect impact**, which encapsulates the activity and employment supported in London Luton Airport's UK supply chain as a result of its procurement of goods and services. Economic activity in this category could include, for example, food and drink products, ticketing, aircraft repairs and maintenance, insurance and other aviation-related financial and legal services; and
- **induced impact**, comprising economic benefits that arise when London Luton Airport employees and those in its supply chain spend their earnings, for example in retail establishments.

Using these pathways, a picture of London Luton Airport's economic footprint is presented using four metrics:

- **employment**, as the number of people employed, measured on a headcount basis;
- **GDP**, or more specifically, London Luton Airport's *gross value added (GVA) contribution to GDP*;
- **gross wages** paid to workers; and
- **tax revenue** flowing to the UK government.

Adding together the direct, indirect and induced impacts across the metrics above provides an estimate of the total economic impact of London Luton Airport, as shown in Figure 1.1, below.

Figure 1.1: Channels of economic impact



The main principles of the economic impact methodology are outlined in the respective sections of this report, and there is a full technical description at Appendix A.

In addition to the three core economic impacts identified above, the study considers wider **catalytic impacts** – benefits that accrue to passengers who use the airport's services. This part of the assessment focuses on the cash-equivalent value of the airport's location and low costs to passengers, and goes on to examine Luton's role in providing much-needed capacity to support passenger growth in the London airport system over the coming 10 to 15 years.

1.3 Geographical coverage

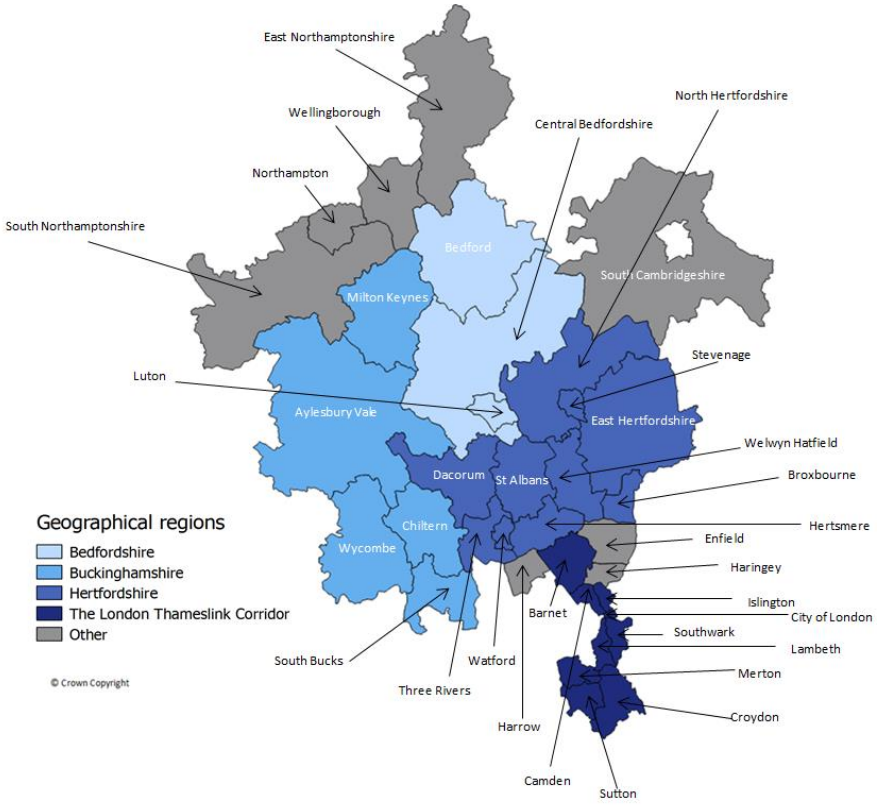
The study assesses the economic impact of London Luton Airport on the economy of the UK as a whole; in the nearby sub-regions that have strong linkages to the airport in terms of workers, supply chains and passengers; and in Luton and surrounding local authority areas (primarily those that fall within the sub-regions identified).

Based on consultation with LLAL and LLAOL, the following sub-regions have been identified for analysis:

- Bedfordshire (comprising Bedford, Central Bedfordshire and Luton)
- Buckinghamshire (comprising Aylesbury Vale, Chiltern, Milton Keynes, South Buckinghamshire and Wycombe)
- Hertfordshire (comprising Broxbourne, Dacorum, East Hertfordshire, Hertsmere, North Hertfordshire, St Albans, Stevenage, Three Rivers, Watford and Welwyn Hatfield)
- The 'Three Counties' area (Bedfordshire, Buckinghamshire and Hertfordshire combined)
- The London Thameslink Corridor, which comprises London boroughs with a direct rail route to London Luton Airport Parkway (Barnet, Camden, Islington, City of London, Southwark, Lambeth, Merton, Sutton, and Croydon).

The study also considers the individual local authority areas that fall within the sub-regions above, plus a small number of other nearby local authorities within which economic impacts were expected to accrue. The latter were, once again, identified through discussion with LLAL and LLAOL.

Figure 1.2: Geographical coverage of the study



1.4 Defining London Luton Airport

Within this study the term 'London Luton Airport' is used to refer to all activities and businesses which are inherent to the operation of the airport, and which are therefore included within the direct impact of the airport. Following the approach taken in the 2012 study by Halcrow,[5] the direct impact of the airport includes both *direct onsite* employment, which is located within the airport boundary, and *direct offsite* employment within firms located in close proximity to the airport whose activities form an integral part of the activities of the airport.

Activities included within the definition of London Luton Airport include the airport operator, airlines based at the airport, firms operating ground crew at the site, maintenance companies, and retail and other commercial facilities serving passengers at the airport.

1.5 Report Structure

The remainder of this report is structured as follows:

- **Chapter 2** presents a detailed analysis of the direct contribution of London Luton Airport;
- **Chapter 3** examines the indirect and induced contributions of London Luton Airport, and adds these to the direct impact to estimate the total economic impact of the airport on the national, sub-regional and local economies;
- **Chapter 4** assesses the potential future economic impact of London Luton Airport under two alternative scenarios; and
- **Chapter 5** considers the catalytic impacts generated by London Luton Airport.

The technical appendices at the end of the report provide a detailed explanation of the methodologies used in the various parts of the analysis, and tables of detailed findings to supplement the results presented throughout the report.

[5] http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF

2 The direct impact of London Luton Airport

Key points

- It is estimated that London Luton Airport directly employed 9,400 people in 2013, which is 10 per cent of all employment in Luton Borough.
- It is estimated that 29 per cent of London Luton Airport employees live in the borough of Luton. A further 31 per cent live in the nearby local authority areas of Central Bedfordshire, North Hertfordshire, Bedford and St Albans. In total, 77 per cent of employees live within the Three Counties area, which comprises Bedfordshire, Buckinghamshire and Hertfordshire.
- The direct GDP contribution of London Luton Airport in 2013 was £425 million. This is equivalent to 10 per cent of the local economy.
- London Luton Airport also directly supported £356 million in gross wages for its workers and generated £237 million in tax revenues for the UK Exchequer.

2.1 Approach to estimating direct impacts

To estimate London Luton Airport's direct impact it is necessary to collect data that correspond as closely as possible to the definition of the airport and its associated businesses outlined in Section 1.4. To do this, the study draws on information provided by LLAL and LLAOL, businesses operating at the airport, and the 2012 employment and economic assessment of London Luton Airport by Halcrow.[6] Where data are not available from these sources results have been estimated using official government statistics and Oxford Economics' UK macroeconomic, regional and input-output models.

We are grateful for the contributions of the following businesses that provided data to inform the analysis:

- The Restaurant Group plc
- Lagardère Services Travel Retail UK & Ireland
- Easyjet
- SSP
- Landmark Aviation.

[6] http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF

2.2 Direct contribution to employment

It is estimated that London Luton Airport directly employed 9,400 people in 2013

The most detailed previous work to estimate the direct impact of London Luton Airport was undertaken for the 2012 Halcrow study. This presented a central employment estimate for 2011 based on data from the Business Register and Employment Survey and Experian.[7] More recent estimates of employment at London Luton Airport are presented in the 2013 London Luton Airport Annual Monitoring Report.[8]

Following discussion with stakeholders it was decided to estimate employment in 2013 by growing forward the Halcrow estimate using the growth rates reported in the Annual Monitoring Report. This approach ensures that the direct employment estimate presented in this study is broadly comparable with the Halcrow study, but also incorporates the latest evidence on how employment at the airport has changed since 2011.

On this basis, it is estimated that London Luton Airport directly employed 9,400 people in 2013, which is an increase of 337 from the figure reported in the Halcrow study. This equivalent to ten per cent of all employment in Luton Borough.[9]

Box 2.1: Comparing the direct employment contribution to the 2013 Annual Monitoring Report

The 2013 London Luton Airport Annual Monitoring Report (AMR) suggests that direct employment at the airport was 8,400 in 2013, 1,000 less than the estimate produced for this study.

While this study has taken growth rates from the 2013 AMR, the estimated *level* of employment was obtained by growing forward the employment estimate from the Halcrow report. That study estimated that there were 7,400 full time and 1,700 part time workers in 2011.

The AMR and Halcrow estimates are based on different ONS datasets. The AMR figure is primarily based on the Inter Departmental Business Register, while the Halcrow study is based on the Business Register and Employment Survey. There is further discussion of the alternative approaches to estimating direct employment in Chapter 6 of the Halcrow report, available at: http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF

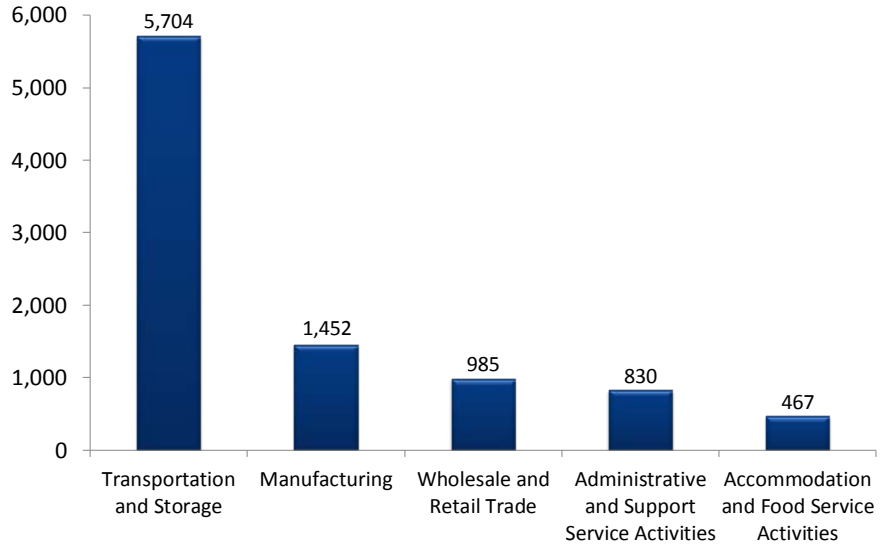
[7] Further details of the methodology used to develop the employment estimate are presented in Chapter 6 of the Halcrow report: http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF

[8] http://www.london-luton.co.uk/en/content/8/243/annual-monitoring-report.html

[9] Based on Oxford Economics' regional model ,total employment in Luton Borough in 2013 was 94,000

Figure 2.1, below, shows the breakdown of London Luton Airport workers by sector. This suggests that 60 per cent of workers are employed in the transportation and storage sector; 15 per cent are involved in manufacturing; 10 per cent are employed in the retail trade and 9 per cent in administrative and supportive roles. The remaining 5 per cent work in accommodation and food service activities.[10]

Figure 2.1: London Luton Airport direct employment by broad sector, 2013



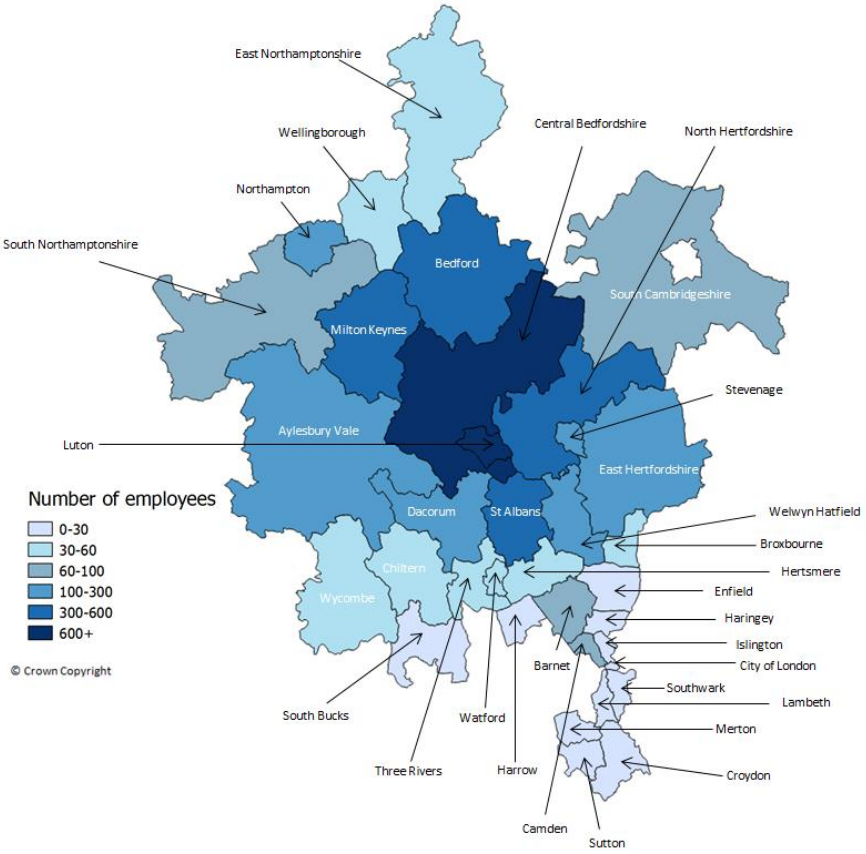
Source: Oxford Economics

To assess commuting patterns amongst those working at London Luton Airport, information on employees' post code of residence was obtained from LLAOL and a sample of airport employers. Using these data, which cover approximately 29 per cent of London Luton Airport employees, it is possible to estimate the number of employees that live in Luton and each of the surrounding local authorities.

[10] The sectoral split for employment was derived from the London Luton Airport employment sector breakdown presented in the Halcrow report. It was assumed that all sectors grew at the same rate between 2011 and 2013.

It is estimated that 29 per cent of London Luton Airport employees live in the borough of Luton (Figure 2.2). A further 31 per cent live in the nearby local authority areas of Central Bedfordshire, North Hertfordshire, Bedford and St Albans. In total, 77 per cent of employees live within the Three Counties sub-region, which comprises Bedfordshire, Buckinghamshire and Hertfordshire.

Figure 2.2: Estimated place of residence of London Luton Airport employees, 2013

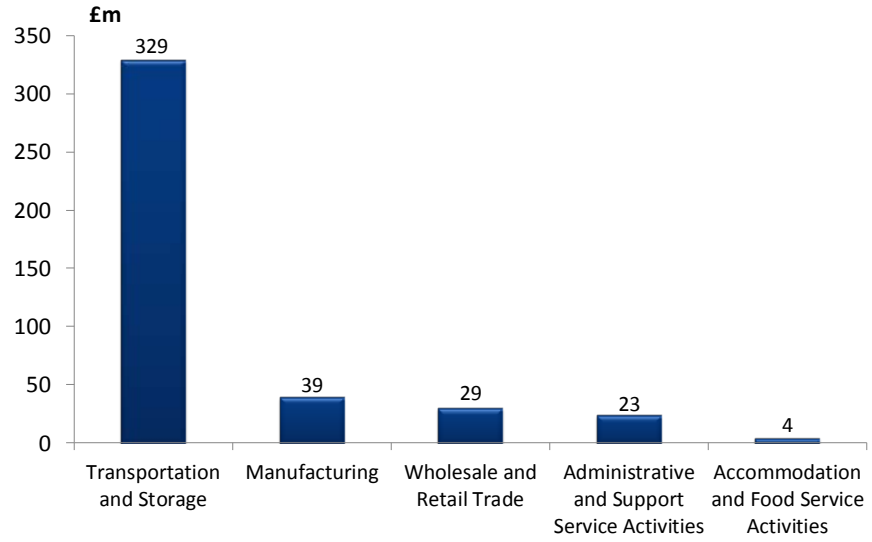


2.3 Direct contribution to GDP

The direct GDP impact of London Luton Airport comprises the total amount of income generated by the airport, either as wages for those employed at the airport, or as profits that accrue to firms at the airport. On this basis it is estimated that the direct GDP contribution of London Luton Airport in 2013 was £425 million. Just over three-quarters of this total came from the transport and storage sector (Figure 2.3). Further details of the methodology used to derive this estimate are set out at Appendix A.

The total direct GDP contribution of London Luton Airport in 2013 was £425 million

Figure 2.3: Direct GDP contribution of London Luton Airport by broad sector, 2013



Source: Oxford Economics

Box 2.2: Comparing the direct GDP contribution to the Halcrow estimates

The direct GDP contribution estimated for this study is not directly comparable to the "direct income injection" estimated in the 2012 Halcrow study. The Oxford Economics approach estimates the total amount of income (GDP) generated by the operation of the airport. In contrast, the Halcrow study focuses on the amount of income that flows from the airport to the local economy. The table below compares the components of the Halcrow and Oxford Economics estimates.

Table 2.1: Comparison between the Halcrow direct income injection and Oxford Economics direct contribution to GDP estimates

Halcrow direct income injection	Oxford Economics direct contribution to GDP
Wages and salaries of workers (excluding tax and NI)	Gross wages and salaries of workers
Direct profits accountable to local economy	All profits generated by firms at the airport are included
Direct business expenditure	Supply chain spending is accounted for within the estimates of indirect GDP impacts
Composite multiplier effect	Multiplier effects are accounted for within the estimates of indirect and induced GDP impacts

2.4 Direct contribution to gross wages

The gross wage bill of London Luton Airport workers was estimated by updating the previous results from the Halcrow study by growing the average wage per worker in line with wage growth from 2011 to 2013 for the Eastern region and then multiplying these wages by the new number of workers in each sector.[11] On this basis it is estimated that those employed at London Luton Airport received £356 million in gross wages in 2013.

It is estimated that the gross wage bill for London Luton Airport in 2013 was £356 million

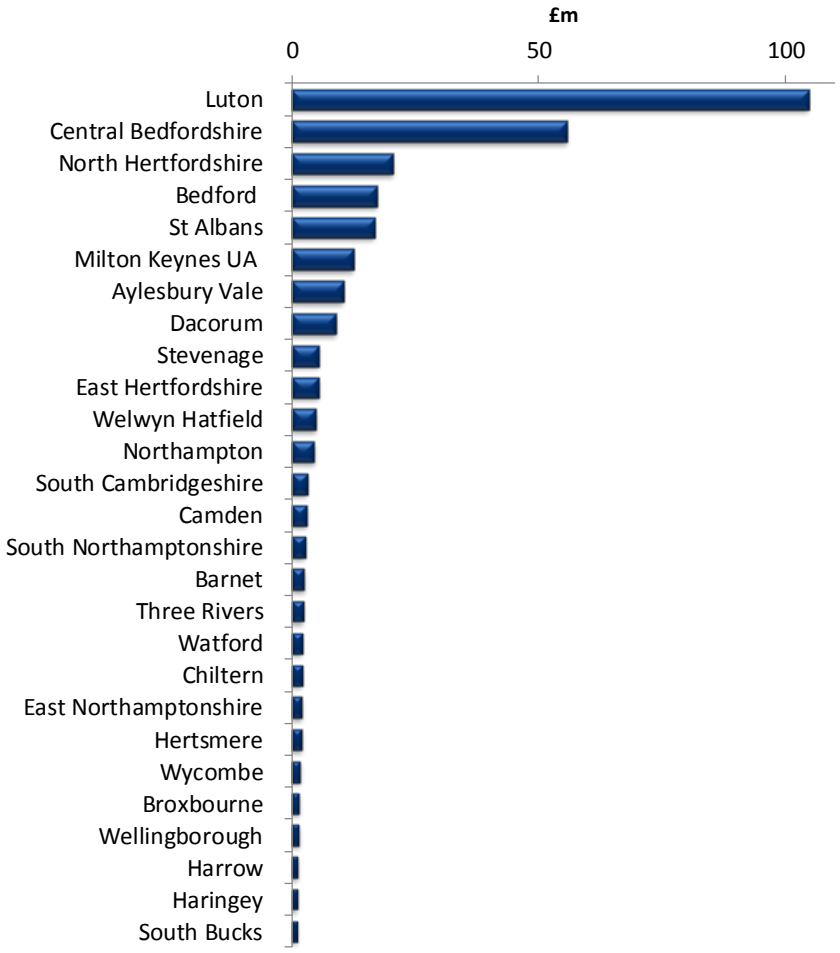
This suggests that the average gross wage at London Luton Airport is £38,000, compared to the national average of £27,000.

To robustly estimate the value of wages that accrue to workers residing in each of the surrounding local authority areas it would be necessary to gather information on average wage levels by district of residence for airport employees. However, information with this level of granularity was not available to the study team, and so it is not possible to assess any tendencies for higher or lower paid workers to live in particular areas.

[11] Wage growth data for the Eastern region was source from the ONS Annual Survey of Hours and Earnings.

Nonetheless, it is possible to obtain a broad indication of the value of wages that accrue to workers living in each local authority area by splitting the total wage bill using estimates for employees' place of residence. On this basis, employees who reside in Luton account for £105 million (or 29 per cent) of the gross wages supported by London Luton Airport. Central Bedfordshire residents account for a further 16 per cent, North Hertfordshire 6 per cent, and Bedford and St Albans account for 5 per cent each (Figure 2.4).

Figure 2.4: Indicative distribution of gross wages by employees' place of residence, 2013



Source: Oxford Economics

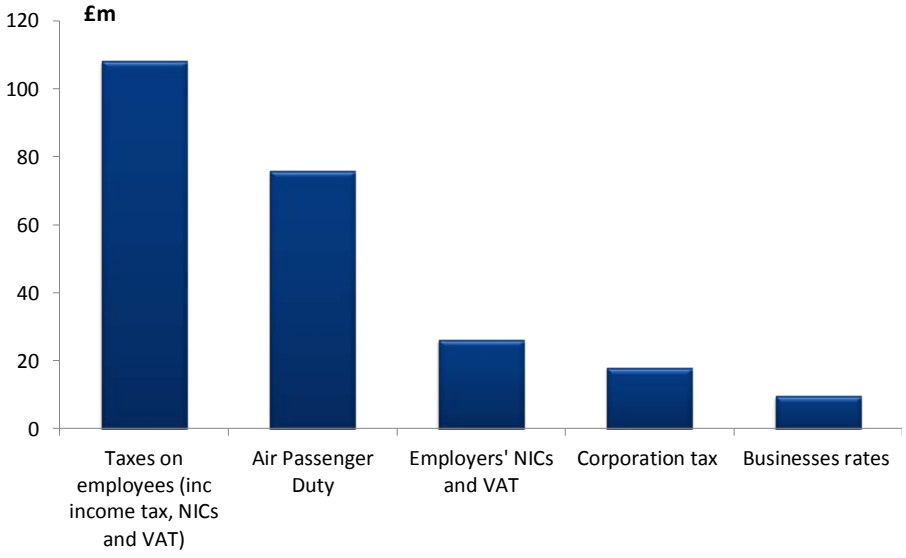
2.5 Direct contribution to tax revenue

London Luton Airport directly generated £237 million in tax revenue in 2013

This sub-section presents estimates of the value of tax revenues generated by businesses at London Luton Airport for the UK government in the form of employee and employer social security contributions; income tax levied on the earnings of the workforce; VAT paid by employees; employers' VAT and corporation tax; business rates; and Air Passenger Duty. Details of the techniques used to estimate the value of these revenues are described in Appendix A.

Overall, it is estimated that London Luton Airport directly generated £237 million in tax revenue in 2013. Taxes on employees account for £108 million, or 46 per cent, of this total. Air Passenger Duty accounts for £76 million, or just under one third.

Figure 2.5: Direct tax contribution of London Luton Airport, 2013



Source: Oxford Economics

3 Multiplier impacts and the total economic impact of London Luton Airport

Key points

UK impacts

- The indirect, or supply chain, contribution to UK GDP of London Luton Airport in 2013 was £338 million. This is estimated to have supported 7,700 jobs.
- The spending of London Luton Airport workers, and those in the airport's direct supply chain, is estimated to have supported a further £506 million contribution to UK GDP and 10,000 jobs.
- Adding these multiplier effects to the direct economic impact estimated in Section 2 suggests that the total UK economic impact of London Luton Airport in 2013 was a £1.3 billion contribution to GDP and 27,000 jobs.
- For every £1 London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. The airport therefore has a GDP multiplier of 3.
- For every direct job the airport creates another 1.9 are created elsewhere in the UK economy. This means the airport's employment multiplier is 2.9.

Sub-regional impacts

- Within the Three Counties area, which includes Bedfordshire, Buckinghamshire and Hertfordshire, London Luton Airport supported a £732 million contribution to GDP and more than 16,000 jobs, including multiplier impacts.

Local impacts

- London Luton Airport supported a £533 million contribution to GDP and 12,000 jobs within the Borough of Luton in 2013, either directly, or through the impact of supply chain spending or the spending of workers. This is equivalent to 12 per cent of the local economy in terms of GDP and 13 per cent in terms of jobs.

3.1 Indirect and induced multiplier impacts

3.1.1 Multiplier impacts on the UK economy

The indirect, or supply chain, impacts of London Luton Airport are estimated using 'input-output' models which map the inputs required by firms at the airport to produce a unit of output. To illustrate this concept consider the following simple example: to provide aviation services that sell for £5 million, an aviation firm may need to purchase fuel for £1 million, airport services for £1 million and

The supply chain multiplier impact of London Luton Airport in 2013 is estimated to have been £338 million. This is estimated to have supported 7,700 jobs

professional and technical services for £0.5 million. In this example the aviation firm has generated a £2.5 million gross value added contribution to GDP (the value of its output less the cost of inputs), and £2.5 million in turnover for other firms in the supply chain. Input-output tables then enable us to estimate the size of the GDP contribution associated with the £2.5 million of supply chain expenditure.

Based on this approach, it is estimated that the indirect GDP contribution of London Luton Airport in 2013 was £338 million.

Induced impacts result from the spending of workers employed at London Luton Airport and in the airport's direct supply chain. Such impacts are mainly felt in sectors serving households such as hotels, restaurants and shops. The induced impact is again estimated using the input-output model, which provides ratios to estimate the value of wages generated by a given level of economic activity. From there it is possible to estimate consumer expenditure, and the induced contribution to GDP associated with that expenditure. Following this approach, it is estimated that the total induced contribution to UK GDP of London Luton Airport was £506 million in 2013.

The 'induced' impact of wage-financed spending by those working at the airport or in its supply chain was £506 million in 2013

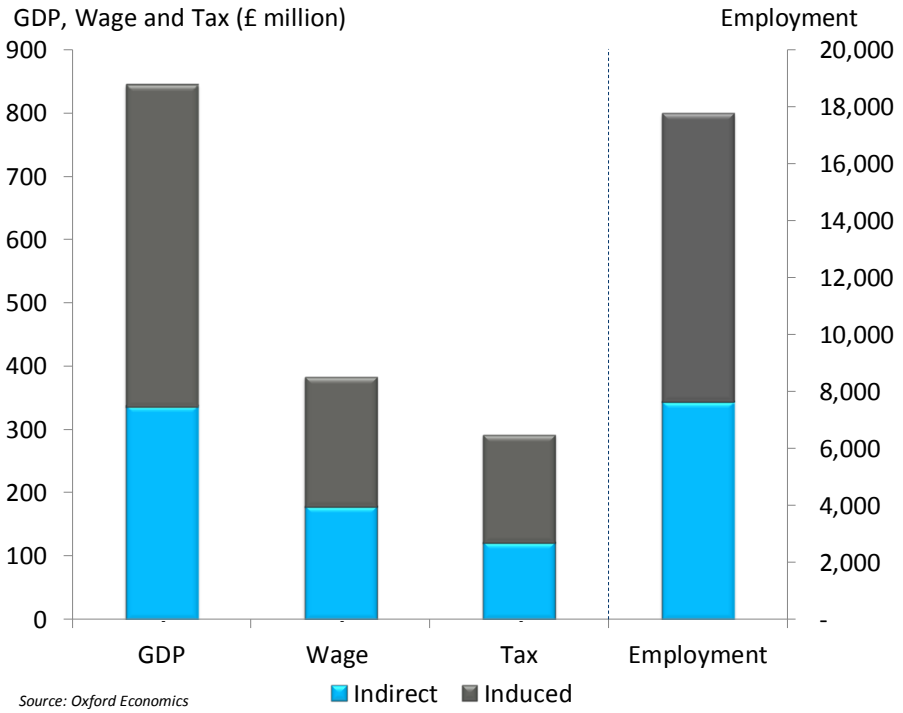
Applying productivity estimates to the indirect and induced GDP impacts enables the estimation of the number of jobs supported in the supply chain and in sectors where direct and indirect employees spend their wages. This suggests that London Luton Airport indirectly supported 7,700 jobs in 2013, while the spending of London Luton Airport workers and those in the supply chain supported a further 10,000 jobs.

These indirect and induced impacts are estimated to have supported gross wage payments of £181 million and £203 million, respectively, across the UK.

Finally, the indirect and induced activities generate further rounds of tax revenue for the UK government**.** The indirect and induced analysis has estimated revenues generated in the form of employee and employer social security contributions, income tax, employee VAT, and corporation tax. In 2013, the tax contributions from the indirect and induced impacts of London Luton Airport were £122 million and £169 million, respectively.

The indirect and induced impacts of London Luton Airport are summarised in Figure 3.1, below.

Figure 3.1: Indirect and induced impacts of London Luton Airport, 2013



Source: Oxford Economics

Box 3.1: Comparing the Oxford Economic approach to multiplier impacts to that used in the 2012 Halcrow study

The 2012 Halcrow study estimated the multiplier impacts of London Luton Airport using a single value of 1.33, taken from Department for Business Innovation and Skills (Oct 2009) *'Occasional Paper No 1 – Research to improve the assessment of additionality'*. That figure is primarily intended for use in the assessment physical infrastructure regeneration projects.

In contrast, the input-output modelling approach applied by Oxford Economics enables economic linkages to be traced between specific sectors of the economy and provides an analysis of multiplier effects that is tailored to reflect the specific circumstances of London Luton Airport and its supply chain. This approach also makes it possible to make a richer set of inferences about how multiplier impacts from the airport affect surrounding areas and sub-regions.

The Oxford Economics approach is based on the very latest 2010 ONS input-output tables, published in February 2014 (see Appendix A for more details).

3.1.2 Approach to estimating sub-regional and local multiplier impacts

The analysis above presented the indirect and induced impacts at the UK level. An important element of this study, though, is to consider the geographical distribution of these multiplier effects to understand how London Luton Airport affects levels of economic activity in surrounding sub-regions and local areas.

Information on the geographical distribution of supply chain expenditure has been gathered from major firms based at London Luton Airport. In total, this information covers around eight per cent of London Luton Airport's estimated supply chain purchases and for this portion of spending it is possible to develop a very accurate picture of the distribution of supply chain impacts. Oxford Economics has estimated the remaining 92 per cent of supply chain spending using inter-regional input-output models developed by Oxford Economics based on established academic techniques.[12] Further details of this approach are set out at Appendix A.

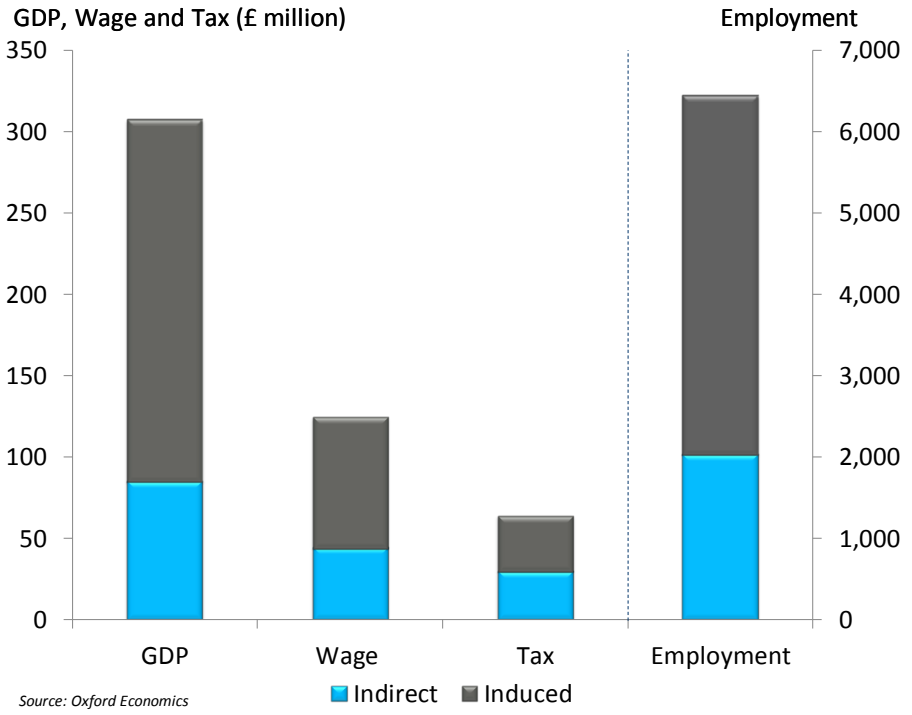
In the case of induced effects, no 'real' data are available to identify where London Luton Airport workers actually spend their wages. Nonetheless, it seems reasonable to assume that most spending is likely to take place close to workers' place of residence, and will therefore support GDP and employment in those areas. This is the starting point for our analysis of induced impacts, but in cases where this results in an unrealistically large injection to the local economy (given the economic structure and average spending per head in that local area), induced impacts are assumed to spill over into neighbouring areas. Again, further details of the methodology are presented in Appendix A.

[12] Flegg A. T. and Webber C. D. (1997) On the appropriate use of location quotients in generating regional input-output tables: reply, Reg. Studies 31, 795−805.

3.1.3 Sub-regional multiplier impacts

Across the Three Counties (which comprises Bedfordshire, Buckinghamshire and Hertfordshire) we estimate that the supply chain and induced wage spending impacts of London Luton Airport support a £308 million contribution to GDP and almost 6,000 jobs. Gross wage payments to workers supported by this indirect and induced activity are estimated to total £125 million, and £64 million of tax is generated for the UK Exchequer (Figure 3.2).

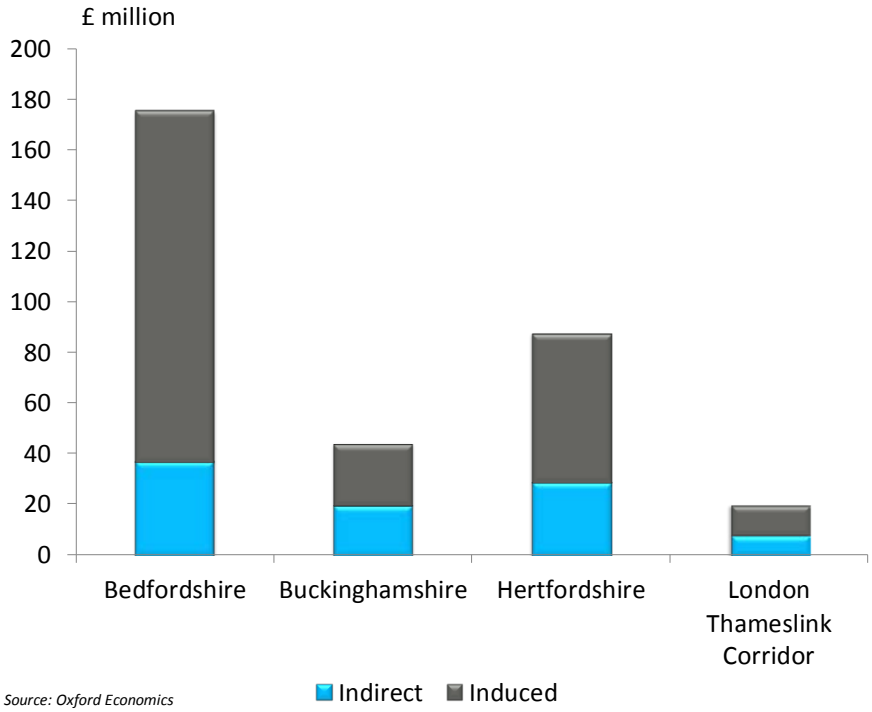
Figure 3.2: Indirect and induced impacts of London Luton Airport in the Three Counties sub-region



It is also possible to view these results for the individual counties within the Three Counties area, and for the London Thameslink Corridor (Figure 3.3, below). This reveals that the largest multiplier impacts occur within Bedfordshire, where the airport supports an indirect GDP contribution of £37 million and an induced GDP contribution of £138 million. The concentration of multiplier impacts within Bedfordshire reflects the strength of the airport's supply chain linkages with the immediately surrounding area, and the fact that 50 per cent of direct workers (and therefore much of their spending) reside in Bedfordshire.

In contrast, relatively fewer workers live in the boroughs of the London Thameslink corridor and so the induced GDP impact of London Luton Airport is smaller in that sub-region. When supply-chain impacts are also taken into account, it is estimated that London Luton Airport supports a £20 million contribution to GDP in the Thameslink Corridor.

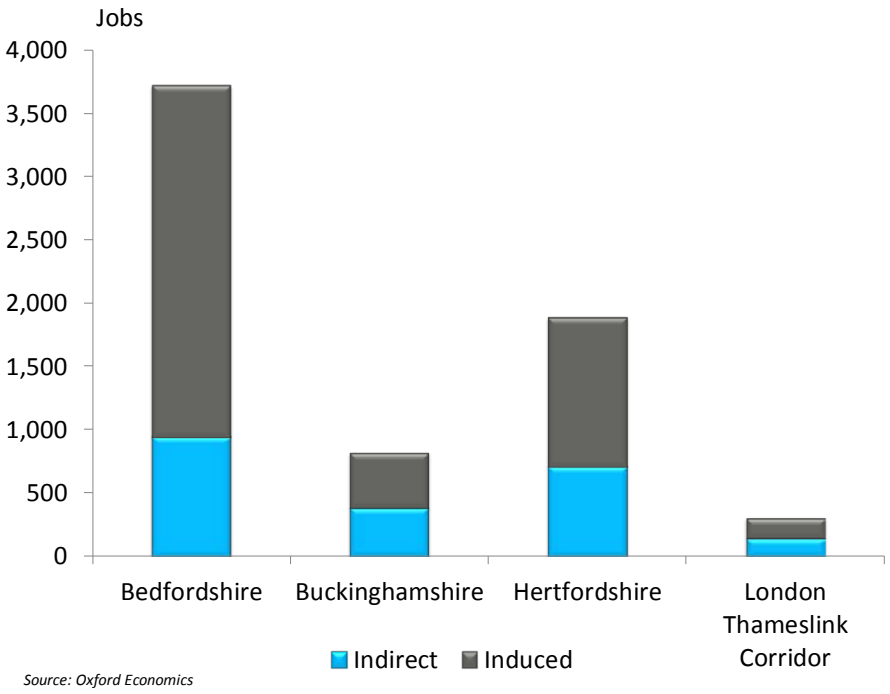
Figure 3.3: Indirect and induced GDP impact of London Luton Airport within surrounding counties and the Thameslink Corridor, 2013



Source: Oxford Economics

Using productivity data in conjunction with the GDP estimates above provides an estimate of the number of jobs supported by the multiplier impacts of London Luton Airport. This suggests that the indirect and induced impacts of London Luton Airport support around 3,700 jobs in Bedfordshire, 1,900 in Hertfordshire, 800 in Buckinghamshire, and 300 in the Thameslink Corridor (Figure 3.4).

Figure 3.4: Indirect and induced employment impacts of London Luton Airport within surrounding counties and the Thameslink Corridor, 2013

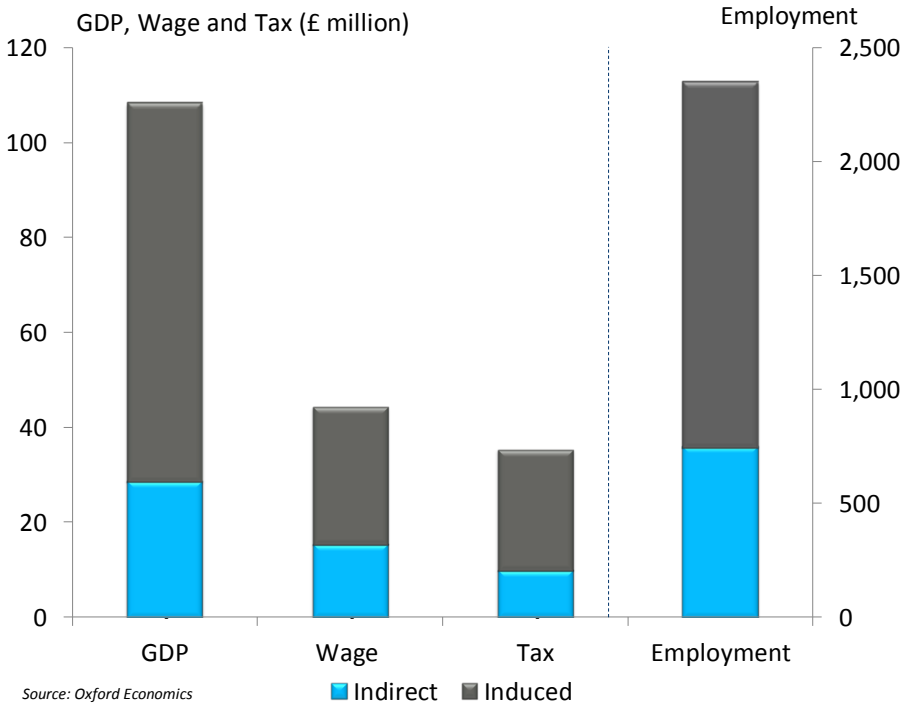


Source: Oxford Economics

3.1.4 Local multiplier impacts

At a local level, and consistent with the findings above for Bedfordshire, the greatest multiplier impacts are estimated to occur in the immediate vicinity of the airport. Our analysis suggests that the indirect and induced impact of London Luton Airport generated an £108 million contribution to the GDP of Luton Borough in 2013. This activity supported £44 million in gross wages, 2,300 jobs, and £35 million in taxes for the UK Exchequer.

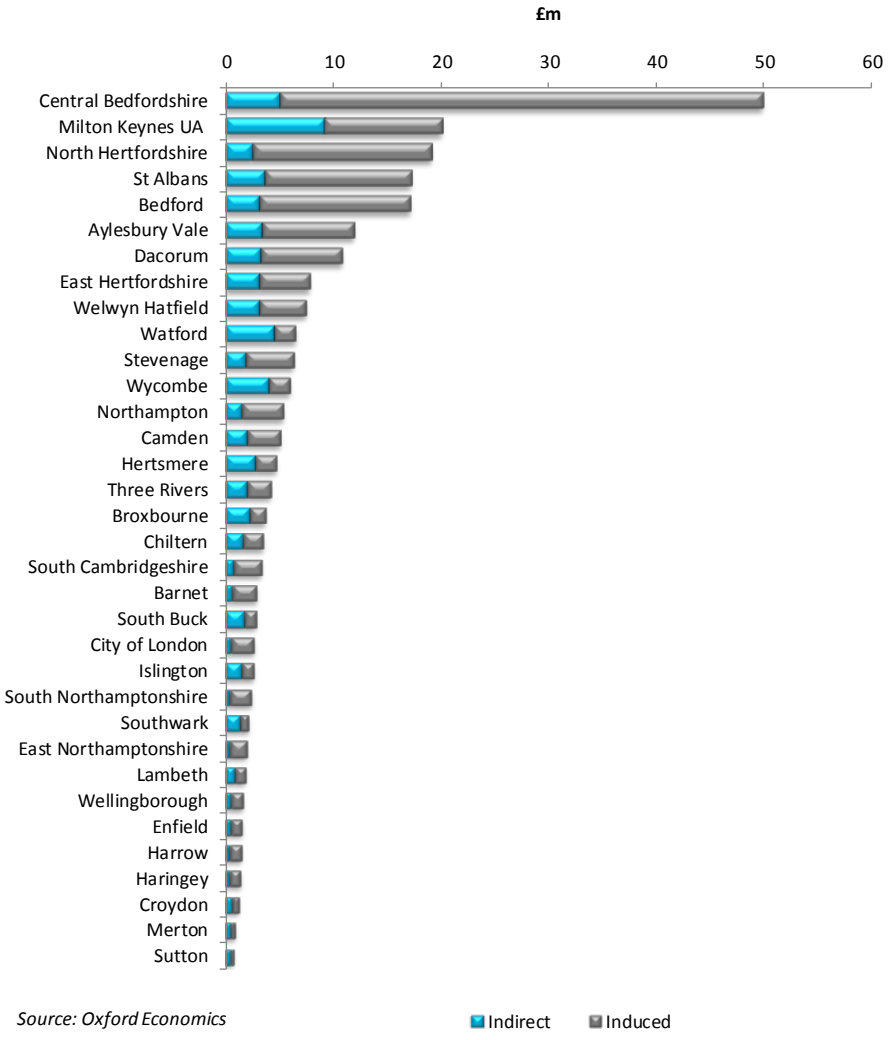
Figure 3.5: Indirect and induced impacts of London Luton Airport in Luton Borough, 2013



Source: Oxford Economics

Figure 3.6, below, extends the analysis to other local authority areas considered in the study. Of particular note is the large induced GDP impact in Central Bedfordshire, where 16 per cent of London Luton Airport workers are estimated to reside.

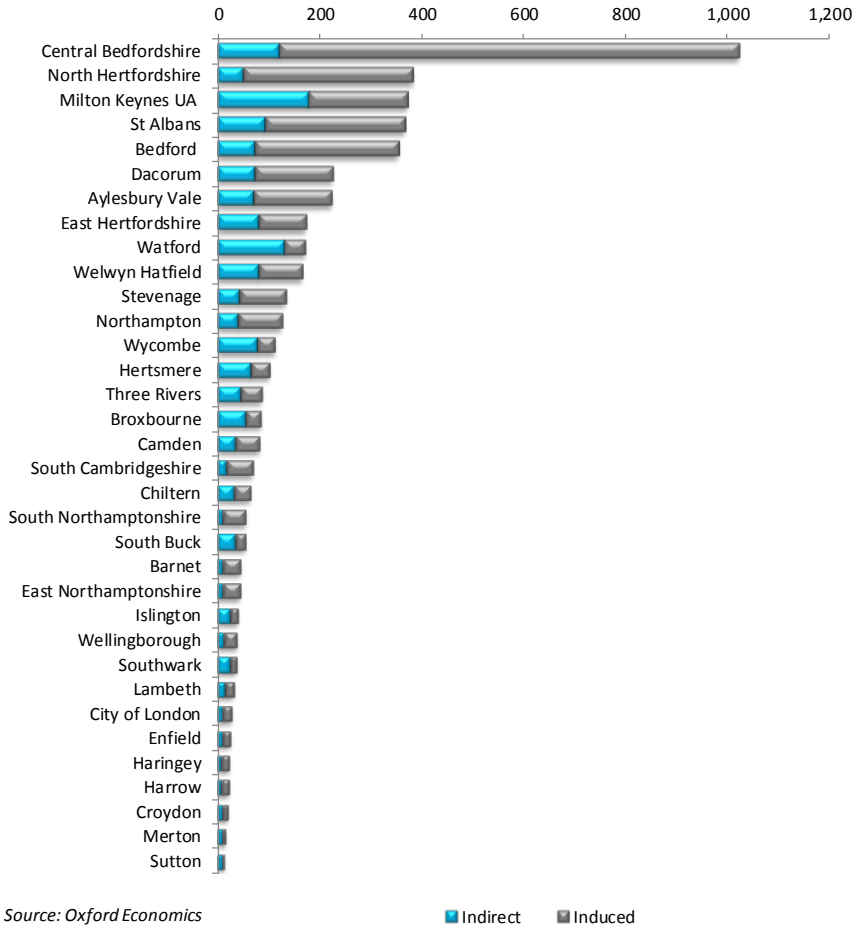
Figure 3.6: Indirect and induced GDP impacts of London Luton Airport by local authority area, 2013



Source: Oxford Economics

As with the sub-regional analysis, productivity data can be used to estimate the number of jobs supported by the airport's multiplier impacts in each local authority area. Once again, the largest impact outside of Luton Borough is estimated to occur in Central Bedfordshire, where just over 1,000 jobs are supported.

Figure 3.7: Indirect and induced employment impact of London Luton Airport by local authority area, 2013



Source: Oxford Economics

3.2 Total economic impact

3.2.5 UK total economic impact

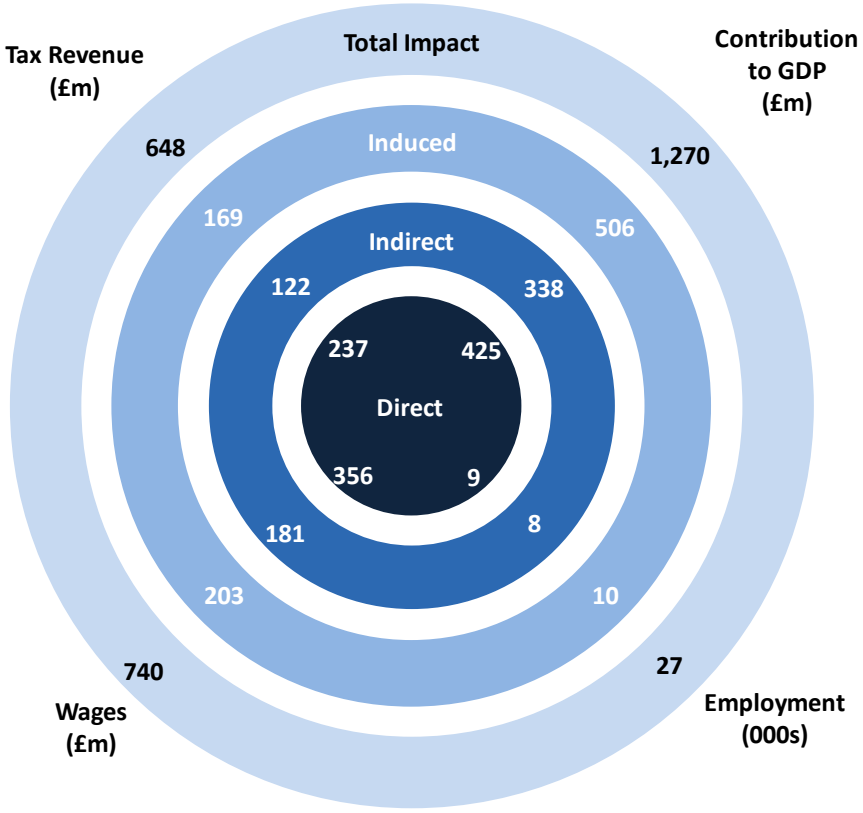
Adding the direct economic impact discussed in Section 2 to the multiplier effects above gives the total economic impact of London Luton Airport. On this basis the airport's total contribution to UK GDP is estimated to have been £1.3 billion in 2013. This means that for every £1 London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. The airport therefore has a GDP multiplier of 3.[13]

The total GDP contribution of London Luton Airport in 2013 is estimated to have been £1.3 billion

London Luton Airport is estimated to have supported a total of over 27,000 jobs in 2013, either directly through the airport's own activities, through its supply-chain, or through the induced expenditure of employees. For every direct job the airport creates another 1.9 are created elsewhere in the UK economy. This means the airport's employment multiplier is 2.9.

London Luton Airport is also estimated to support a total of £740 million in gross wage payments and £648 million tax revenue.

Figure 3.8: Total UK economic impact of London Luton Airport, 2013

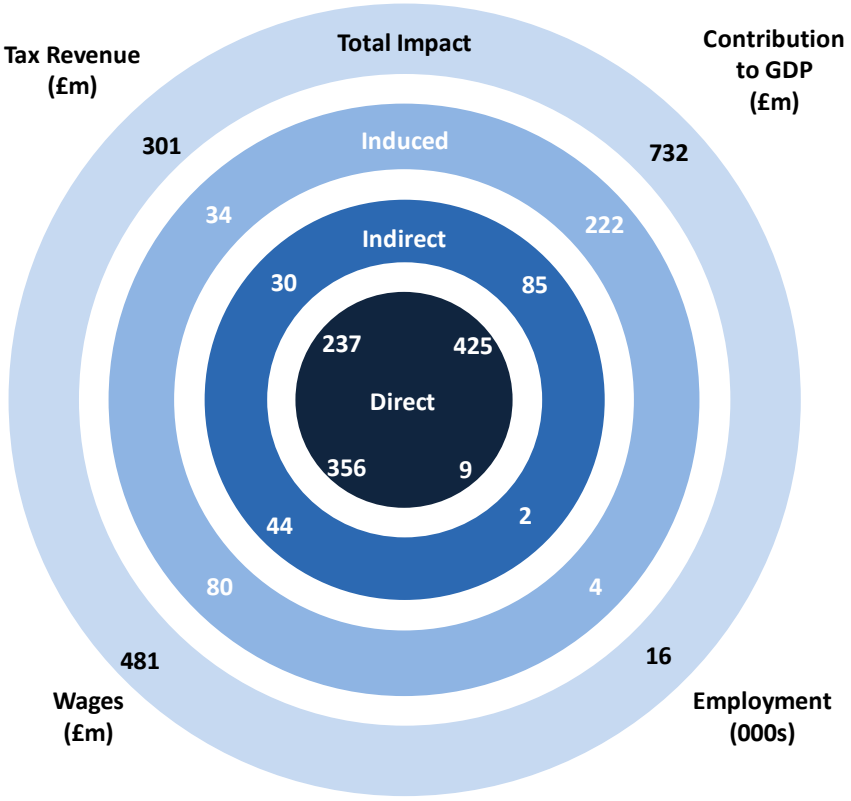


[13] The multiplier is calculated as: (Direct GDP + Indirect GDP + Induced GDP) / Direct GDP

3.2.6 Sub-regional total economic impact

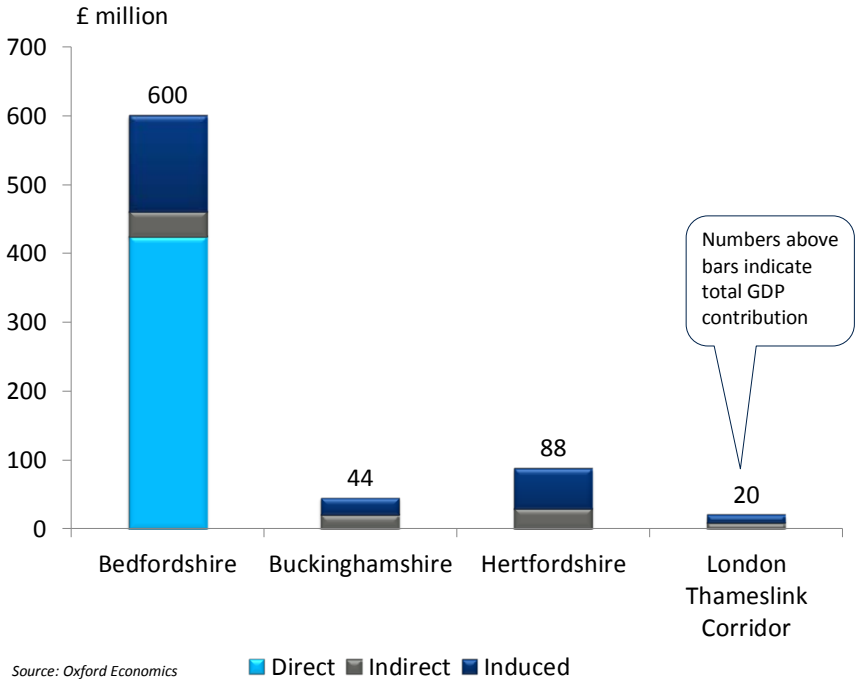
For the Three Counties sub-region the airport's activities supported a total GDP contribution of £732 million, 16,000 jobs, £481 million in gross wages and £301 million in tax revenue (Figure 3.9).

Figure 3.9: Total economic impact of London Luton Airport within the Three Counties sub-region, 2013



Within the Three Counties sub-region, by far the greatest impact of the airport accrues to Bedfordshire. This is because Bedfordshire receives the direct economic impact of having the airport located within its boundaries, as well as large multiplier effects from supply chain linkages between the airport and the immediately surrounding areas. It also benefits from the spending of the large number of airport workers that live and spend money in the county.

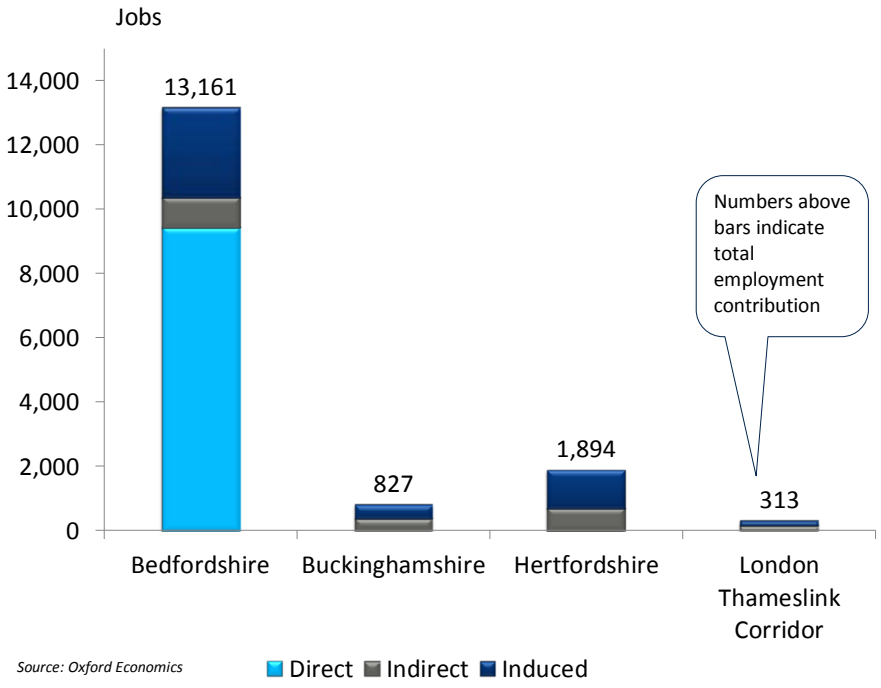
Figure 3.10: Total GDP contribution of London Luton Airport in the surrounding counties and the Thameslink Corridor, 2013



Source: Oxford Economics

Along similar lines, the total employment impact is also concentrated in Bedfordshire, where London Luton Airport supports a total of over 13,000 jobs, including the 9,400 jobs at the airport itself, and a further 3,700 jobs as a result of indirect and induced multiplier effects.

Figure 3.11: Total employment contribution of London Luton Airport in the surrounding counties and the Thameslink Corridor, 2013

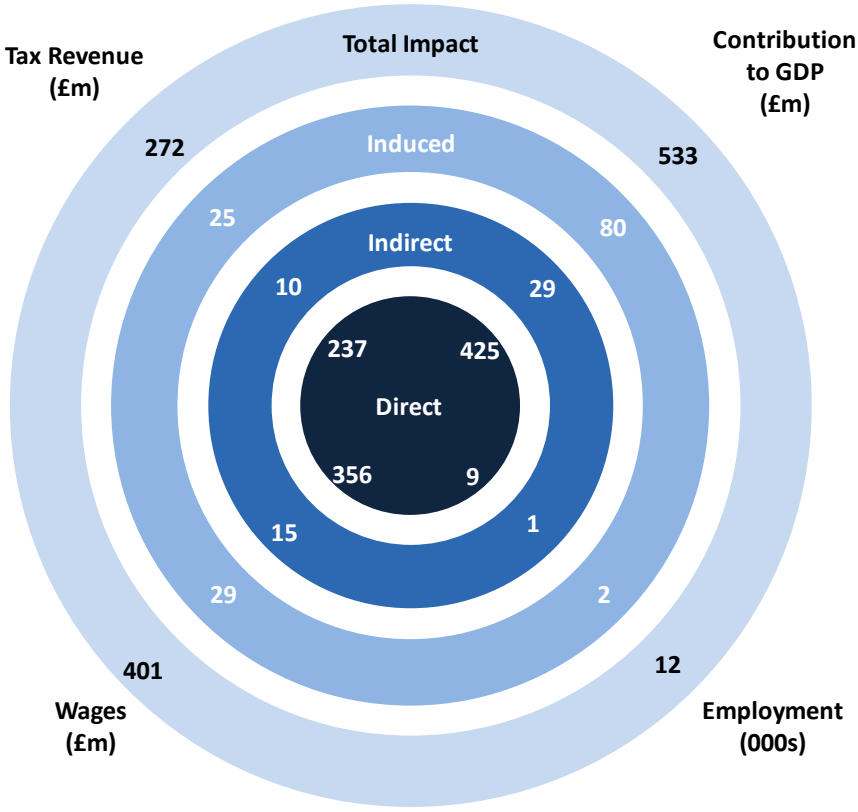


Source: Oxford Economics

3.2.7 The total economic impact of London Luton Airport at the local level

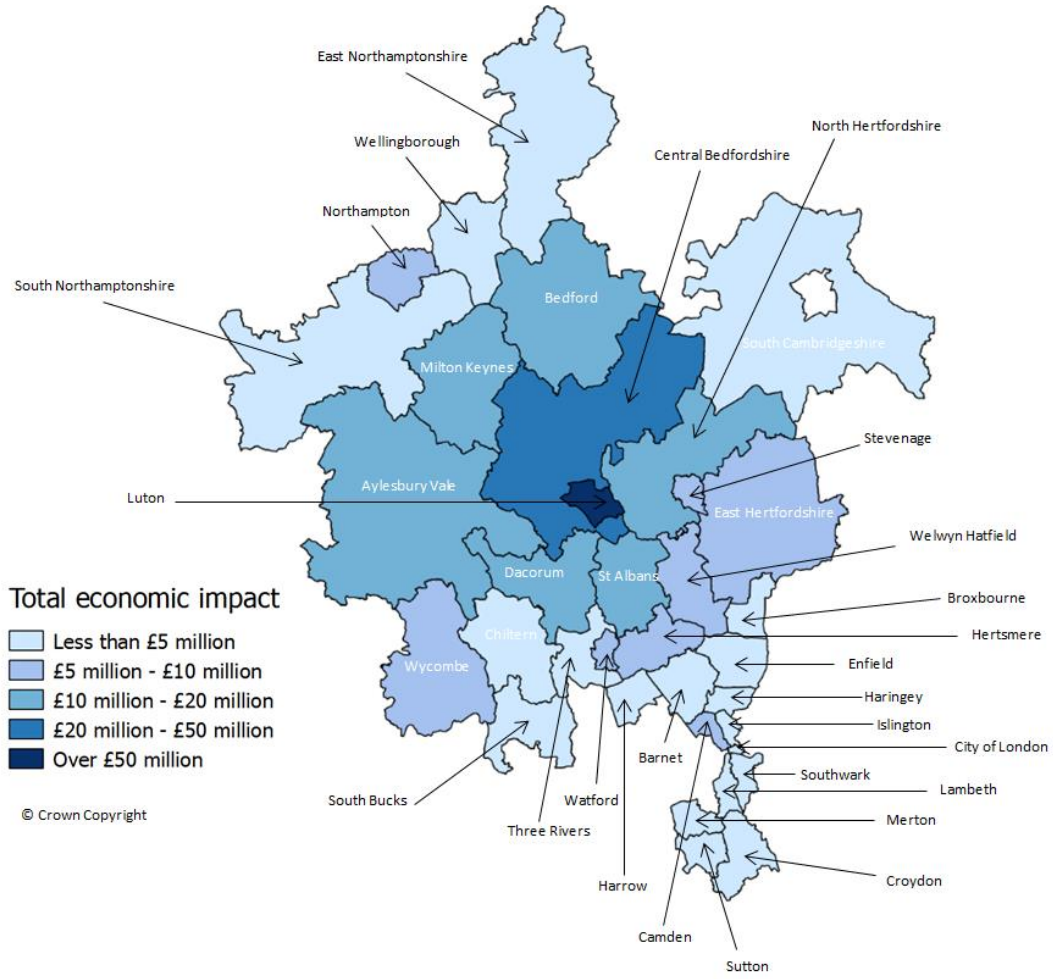
In 2013 the airport's activities supported a £533 million contribution to Luton Borough GDP, 12,000 local jobs, £401 million in gross wages and £272 million in tax revenue for the UK Exchequer.

Figure 3.12: Total economic impact of London Luton Airport in Luton borough, 2013



The total GDP impact of London Luton Airport across all of the local areas considered in the study is shown in Figure 3.13, below.

Figure 3.13: Total GDP impact by local authority area



4 The potential future economic impact of London Luton Airport under alternative scenarios

Key points

Direct impacts

- Under the baseline scenario, which assumes no significant infrastructure development, the airport's direct GDP contribution is projected to increase from £425 million in 2013 to £554 million in 2030. Productivity growth means that London Luton Airport is expected to directly employ 178 fewer workers in 2030 than in 2013 in this scenario.
- The development scenario assumes that development occurs to permit passenger numbers to increase to a maximum of 18 million passengers by 2020. Under this scenario the direct GDP contribution of the airport is projected to reach £781 million in 2030, which is £228 million higher than in the baseline scenario. The airport is projected to directly support the creation of a total of more than 3,600 jobs between 2013 and 2030 under this scenario.

Labour availability

- Across the UK as a whole, those working in job roles closely associated with airports tend to be better paid than workers in other occupations that require similar levels of skills.
- The 3,600 jobs that London Luton Airport is expected to create by 2030 under the development scenario is forecast to include 1,100 posts in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. Around 2,500 unskilled posts are expected to be created in roles such as customer advisors, baggage handlers and storage workers.

Total economic impact

- Under the baseline scenario, the total GDP contribution of London Luton Airport, including multiplier effects is projected to be £1.7 billion in 2030, compared to £2.3 billion under the development scenario.
- The total number of jobs supported by London Luton Airport and its multiplier effects in the baseline scenario is projected to decrease from 27,200 in 2013 to 26,700 in 2030 due to productivity growth. However, under the development scenario the total number of jobs supported is expected to grow to 37,700 in 2030.
- Within the Three Countries sub-region, the total GDP contribution of London Luton Airport is estimated to reach £1 billion in 2030 under the baseline scenario, or £1.4 billion under the development scenario. Under the development scenario employment increases to 22,600 in 2030, compared to 16,000 in the baseline scenario.

4.1 Introduction

This section considers the future economic contribution of London Luton Airport under two scenarios reflecting alternative levels of infrastructure development and, therefore, passenger growth. The passenger forecasts associated with each scenario have been provided by LLAOL and are shown in Figure 4.1. The two scenarios are described below.

Baseline scenario

There are no significant infrastructure developments. Passenger numbers continue to grow to 12.6 million passengers per annum (mppa) by 2017, at which point the airport will be operating at full capacity and cannot accommodate any further passenger growth. The airport will maintain 12.6 mmpa until 2030.

Development scenario

This scenario assumes that infrastructure developments outlined in London Luton Airport's 2012 Master Plan are implemented. The key components of the Master Plan proposals include:

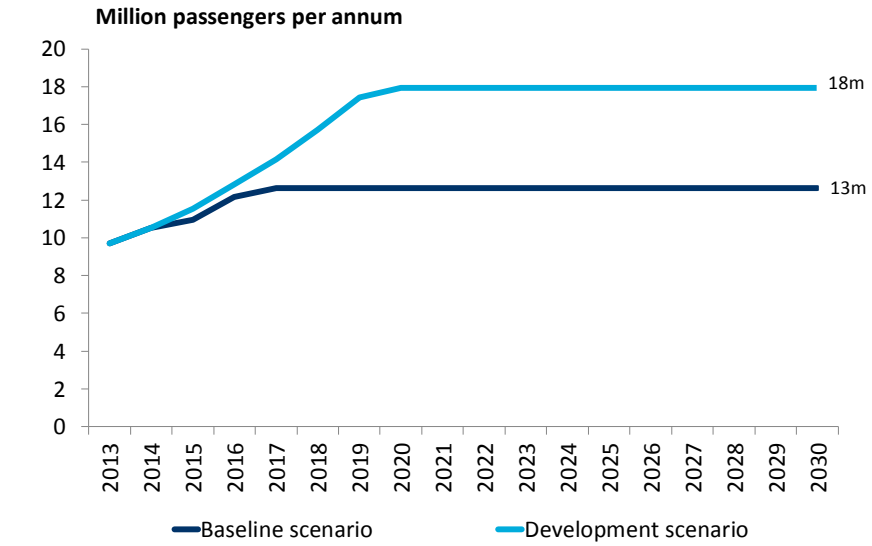
- Dualling of the road from the Holiday Inn roundabout to the Central Terminal Area
- Improvements to the public transport area adjacent to the terminal
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works
- Construction of a new pier
- Provision of a new taxiway parallel to Taxiway Delta
- Taxiway extensions and rationalisation of aircraft parking areas with new stands replacing and improving existing stands
- Construction of a multi-storey car park on part of the existing short-term car park (STCP), to provide additional parking capacity if passenger demand arises in the future.[14]

These improvements allow the airport to grow to 17.8 mppa by 2020, at which point it will have reached its new level of capacity.

[14] The master plan can be located here: http://www.london-luton.co.uk/en/content/8/1171/revised-masterplan.html

Projected passenger numbers under each scenario are shown in Figure 4.1, below.

Figure 4.1: Passenger forecasts under the two scenarios



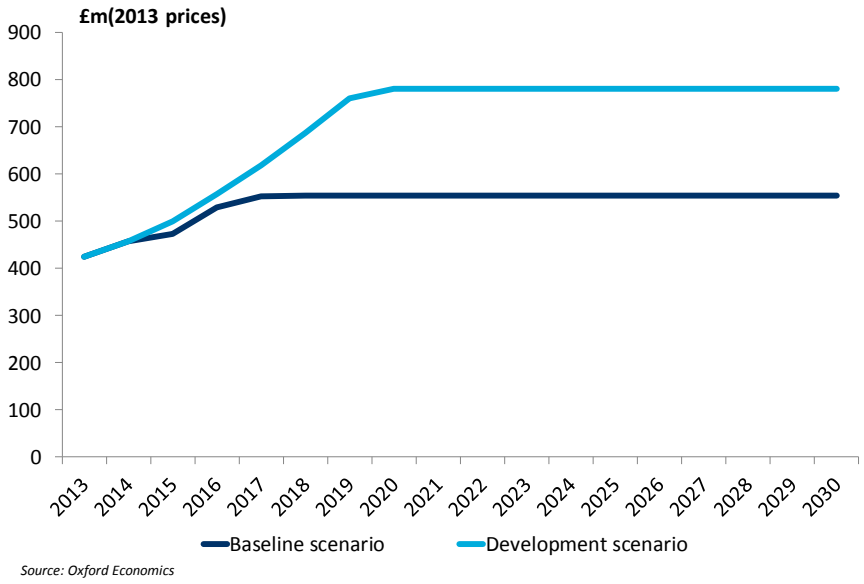
Source: LLAOL & Oxford Economics

4.2 The direct impact of London Luton Airport under alternative scenarios

The analysis assumes that the nominal GDP supported by the airport increases in line with passenger numbers and the consumer price index. So in real terms, the GDP growth rate of the airport reflects the growth rate of airport passengers.

Figure 4.2, below, compares the real (2013 prices) direct GDP contribution of London Luton Airport to 2030 under the two scenarios. Under the baseline scenario, the airport's direct GDP contribution increases from £425 million in 2013 to £554 million by 2030 - an increase of £129 million over the forecast period. Under the development scenario (18 mppa), stronger passenger growth means that the GDP contribution of the airport reaches £781 million in 2030. This is £228 million higher than under the baseline scenario.

Figure 4.2: Forecast direct Gross Value Added contribution to GDP of London Luton Airport, 2013 to 2030



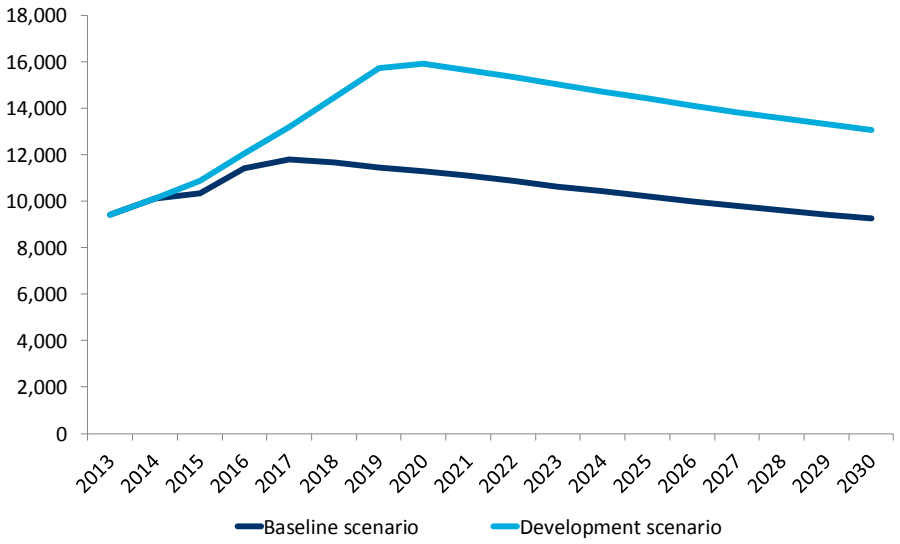
Source: Oxford Economics

The airport could generate up to 3,600 jobs between 2013 and 2030

As passenger numbers and the airport's GDP contribution increase, employment levels will also increase. Our analysis assumes that productivity in the aviation industry increases in future years so that, over time, the number of jobs created per additional mppa declines.

Under the baseline scenario, our calculations suggest that London Luton Airport will need 178 fewer jobs in 2030 than in 2013 due to improvements in labour productivity. In contrast, under the development scenario, London Luton Airport is projected to support the creation of more than 3,600 jobs between 2013 and 2030 since the airport's need for additional workers to service passenger growth far outweighs the impact of productivity growth.

Figure 4.3: Forecast direct employment at London Luton Airport, 2013 to 2030



Source: Oxford Economics

Box 4.1: Comparing the Oxford Economics employment forecast with the Halcrow study

Our analysis suggests that London Luton Airport could directly create 3,600 jobs between 2013 and 2030 under the development scenario. This result is lower than Halcrow finding that employment could increase by 5,100 between 2011 and 2028 under the development scenario.

The two results relate to slightly different time periods. Moreover, the Halcrow estimate relates to full time equivalent posts, whereas the Oxford Economics figure relates to total jobs (full time plus part time).

However, the main reason for the difference is a different assumption concerning future productivity growth. The Halcrow study assumes that productivity remains fixed once airport capacity has been reached, and notes that this is a "*conservative estimation as in practice some degree of productivity gains in airport employment is likely to continue despite traffic level reaching capacity".* In contrast, Oxford Economics assume that productivity in the aviation sector continues to increase in future years so that the number of jobs created per additional mppa declines.

While the Halcrow approach is conservative in terms of productivity, the Oxford Economics approach produces a more conservative estimate of employment growth (since stronger productivity growth means that fewer workers would be needed to deliver a given level of GDP growth).

The forecasts in this section relate to London Luton *Airport* and are therefore conceptually different to the forecasts of Luton *Borough* included in the East of England Forecasting Model used by SEMLEP and other stakeholders.[15] Nonetheless, comparing the projections for London Luton Airport with Oxford Economics' very latest Luton Borough projections[16] provides an indication of the extent to which the airport's share of the local economy might change under each scenario. The results from this exercise are shown in Table 4.1, below.

Table 4.1: The importance of London Luton Airport to the Luton Borough economy under alternative scenarios

Scenarios	London Luton Airport as % of Luton borough	
	GDP	Employment
Baseline	8%	9%
Development scenario	11%	12%

[1515] http://www.cambridgeshireinsight.org.uk/EEFM

[16] The very latest Local Model forecasts were used in this analysis instead of the forecasts from East of England Forecasting Model. The Local Model forecasts are effectively an updated version of the numbers in the East of England Forecasting Model, and incorporate the latest National Accounts data.

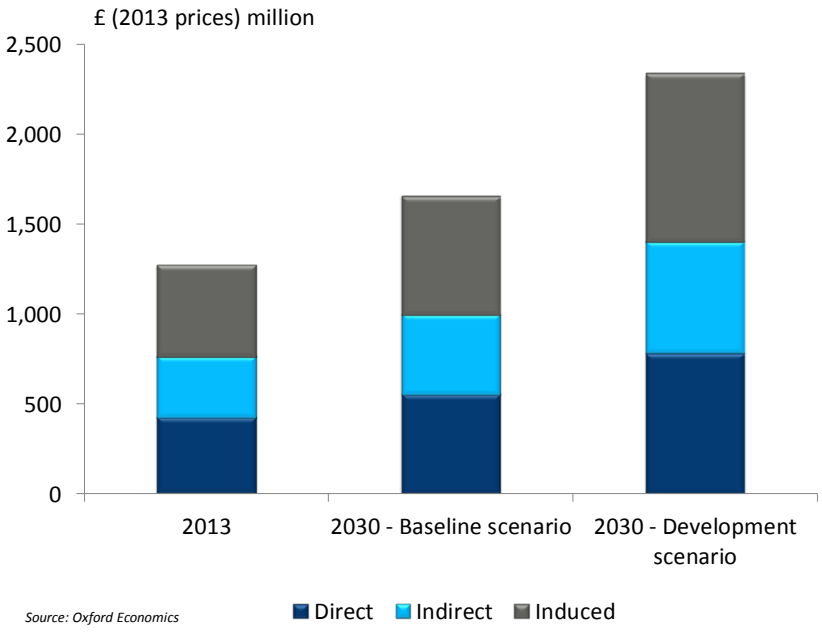
4.3 The total economic impact of London Luton Airport under alternative scenarios

This section presents estimates of the total economic impact, including multiplier effects, of London Luton Airport under the alternative scenarios.

4.3.1 The total UK economic impact

Under the baseline scenario, the total GDP contribution of London Luton Airport to the UK economy is estimated to reach £1.7 billion in 2030. This increases to £2.3 billion under the development scenario. In other words, the total GDP contribution of London Luton Airport could be 41 per cent greater if capacity is increased.

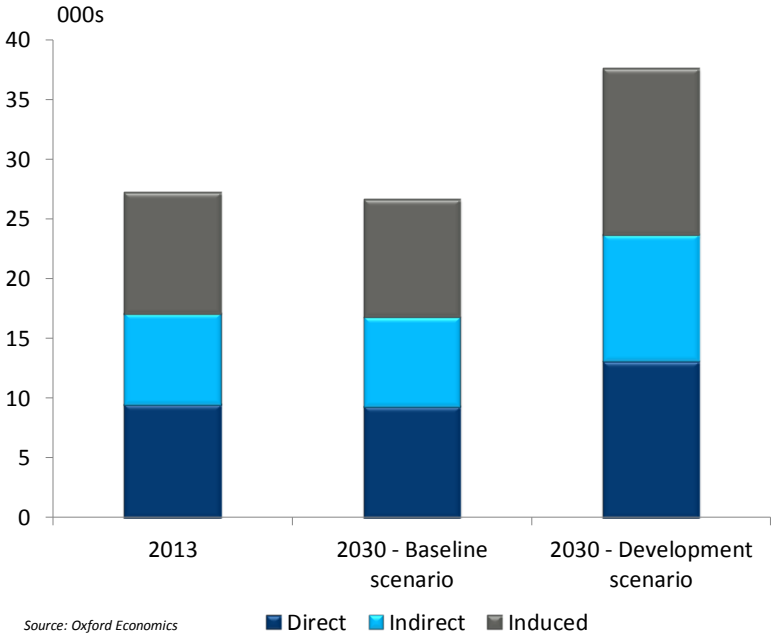
Figure 4.4: Forecast total GDP contribution of London Luton Airport to the UK economy, 2013 to 2030



Source: Oxford Economics

In the baseline scenario, the total number of UK jobs supported by London Luton Airport is projected to decrease from 27,200 in 2013 to 26,700 in 2030 due to productivity improvements across the economy. However, under the development scenario, the total number of jobs supported by London Luton Airport is projected to grow to 37,700 in 2030.

Figure 4.5: Forecast total UK employment contribution of London Luton Airport, 2013 to 2030

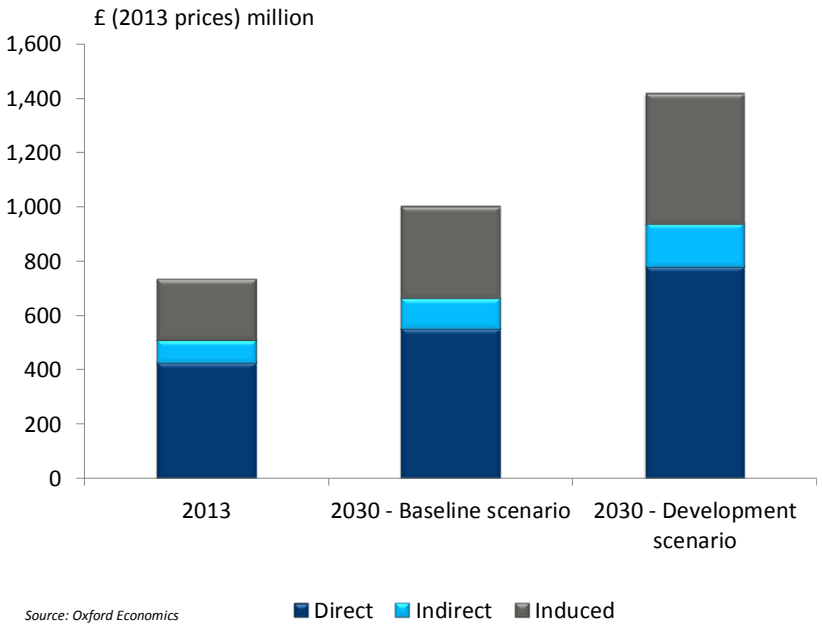


Source: Oxford Economics

4.3.2 Sub-regional total economic impact

Under the baseline scenario, the total GDP contribution of London Luton Airport to the Three Counties sub-regional economy is estimated to reach £1 billion in 2030. This increases to £1.4 billion under the development scenario.

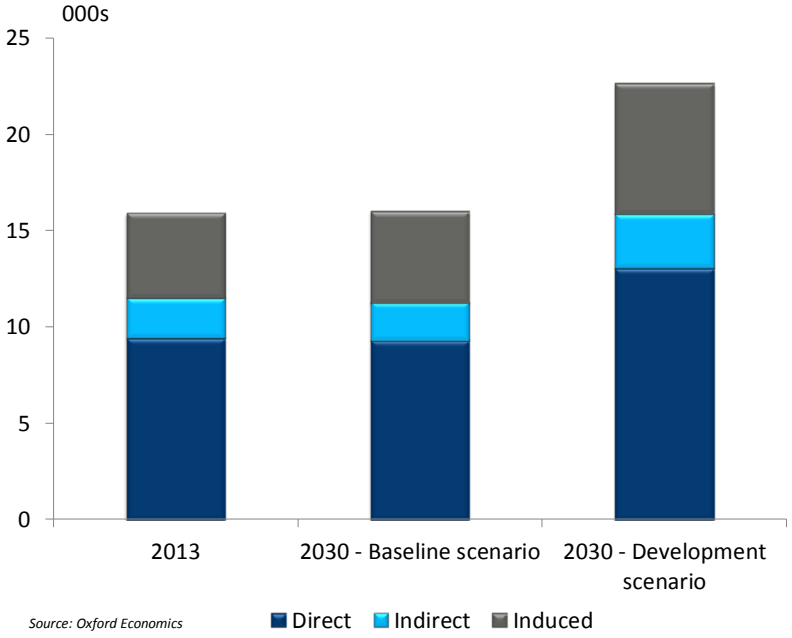
Figure 4.6: Forecast total GDP contribution of London Luton Airport to the Three Counties sub-regional economy, 2013 to 2030



Source: Oxford Economics

In contrast to the UK results, at the Three Counties level the total employment contribution of London Luton Airport is projected to increase very slightly from 15,900 in 2013 to 16,000 in 2030 in the baseline scenario. This reflects an increase in the induced contribution over this period as developments in the sub-regional economy lead to less 'leakage' of the wage spending impact to other parts of the UK. Under the development scenario employment is projected to increase much more markedly to 23,000 in 2030.

Figure 4.7: Forecast total Three Counties sub-regional employment contribution of London Luton Airport, 2013 to 2030



Source: Oxford Economics

4.4 Occupational analysis

4.4.1 Introduction to occupational analysis

The analysis above identified the number of workers the airport is likely to need under the baseline and development scenarios. This final sub-section considers the types of workers employed at the airport, and how these needs may change as the airport grows.

It is important to note at the outset that very little detail is available on the occupations and skills levels of workers employed at London Luton Airport. It is therefore necessary to use information from a number of official datasets to make inferences about the likely characteristics of the airport's workers. The analysis is split into two parts. The first part considers typical occupations of workers employed in airport-related sectors, and the wages of those workers. The second part of the analysis provides an indicative occupational breakdown for workers at London Luton Airport, and suggests how the numbers of workers in each occupational group may change as the airport expands.

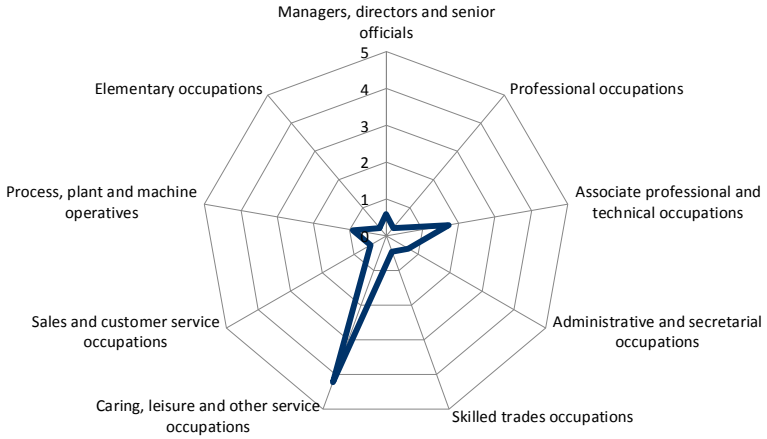
4.4.2 Typical occupations of airport workers in the UK

Using data from the 2011 Census, it is possible to identify the occupations of workers employed in certain sectors that are closely related to economic activity at airports. This is possible for two sectors: air transport and aerospace manufacturing, which together account for 76 per cent of jobs at London Luton Airport. For other sectors with a concentration of jobs at London Luton Airport, such as retail and hospitality published data do not permit aviation-related activity to be distinguished from broader, economy-wide trends. As such, these activities are not considered here.

Air transport (SIC category 51)

Across the UK as a whole, the 2011 Census suggests that 82,000 people are employed in the air transport sector. The same dataset provides information on the occupations of those employed in the air transport sector, denoted by the ONS Standard Occupational Classification. Figure 4.8 summarises the concentration of workers in each broad occupational group in the air transport sector compared to that for the economy as a whole (a value of 1 in the diagram indicates that the concentration of workers in a particular occupational group is in line with the average for all sectors).[17] This reveals that air transport has above-average shares of workers in higher-skill professional and technical roles and lower-skill roles in caring and leisure service occupations.

Figure 4.8: Occupational quotient of workers in the air transport sector relative to the economy as a whole



Note: 1=average for all sectors
Source: Census 2011

[17] Location Quotient = (Specific Occupation Employment Air Transport Sector)/(All Occupation Employment Air Transport Sector)/ (Specific Occupation Employment All Sectors/ All Occupation Employment All Sectors)/

Given the study's interest in understanding the economic impact of London Luton Airport, it is useful to consider the wage levels of workers in air transport-related occupations. To do this we focus on nine detailed occupations which together account for 70 per cent of all UK workers in the air transport sector. These are shown in Table 4.2, ranked from highest skilled to lowest skilled.

Table 4.2: Most common occupations for workers in the air transport sector[18]

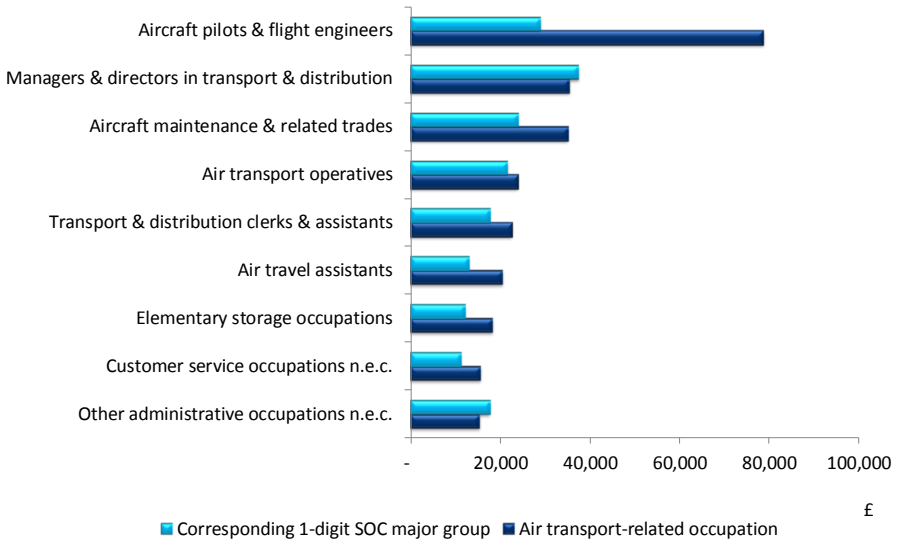
Occupation (SOC code shown in brackets)	Job roles included in occupation	Corresponding major occupational group	Number of workers in 2011
Aircraft pilots and flight engineers (3512)	Airline pilot, first officer (airlines), flight engineer, flying instructor and helicopter pilot	Associate professional and technical occupations	11,000
Managers and directors in transport and distribution (1161)	Fleet manager and transport manager	Managers, directors and senior officials	3,000
Aircraft maintenance and related trades (5235)	Aeronautical engineer, aircraft electrician aircraft engineer, aircraft fitter, aircraft mechanic and maintenance engineer (aircraft).	Skilled trades occupations	3,000
Air travel assistants (6214)	Air hostess, cabin crew, customer service agent (travel), flight attendant and passenger service agent	Caring, leisure and other service occupations	30,000
Air transport operatives (8233)	Aircraft dispatcher, baggage handler, cargo handler (airport), ramp agent and refueller (airport)	Process, plant and machine operatives	4,000
Transport and distribution clerks and assistants (4134)	Export clerk, logistics controller, shipping clerk, transport administrator, transport clerk and transport coordinator.	Administrative and secretarial occupations	2,000
Customer service occupations n.e.c (7219).	Customer adviser, customer service administrator, customer service adviser, customer service assistant and customer services representative.	Sales and customer service occupations	2,000
Other administrative occupations n.e.c. (4159)	Administrative assistant, clerical assistant, clerical officer, clerk and office administrator.	Administrative and secretarial occupations	1,000
Elementary storage occupations (9260)	Labourer (haulage contractor), warehouse assistant, warehouse operator, warehouse supervisor and warehouseman	Elementary occupations	1,000

Source: 2011 Census

[18] Job role descriptions included in the box above are based on ONS Standard Occupational Classification (SOC) Hierarchy, which can be found at the following link: http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dev3/ONS_SOC_hierarchy_view.html

The ONS Annual Survey of Hours and Earnings provides information on average wages in each of these occupations.[19] Figure 4.9 below compares these wage levels to those in the respective broader occupational group comprising all workers in roles that require similar levels of skills.

Figure 4.9: Gross median annual wage for full-time workers in air transport-related occupations and the corresponding 1-digit SOC major group, 2013



Taking a weighted average of the data above suggests that the average wage in the main air transport occupations in 2013 was just under £33,000. This compares to an average of £18,500 for workers in the broader groups that fulfil roles at similar skills levels.[20]

If we exclude wages for aircraft pilots and flight engineers from the analysis, the average wage for air transport occupations reduces to £18,000 and the average wage for workers in the broader groups reduces to £13,000.

From this we can conclude that workers in occupations closely associated with the air transport sector are substantially better paid than those in other roles that require similar skills levels.

Aerospace manufacturing (SIC category 30.3)

It is estimated that 15 per cent of employees at London Luton Airport are employed in the manufacturing sector, and it seems reasonable to assume that most manufacturing activity at the airport relates to aerospace. It is therefore

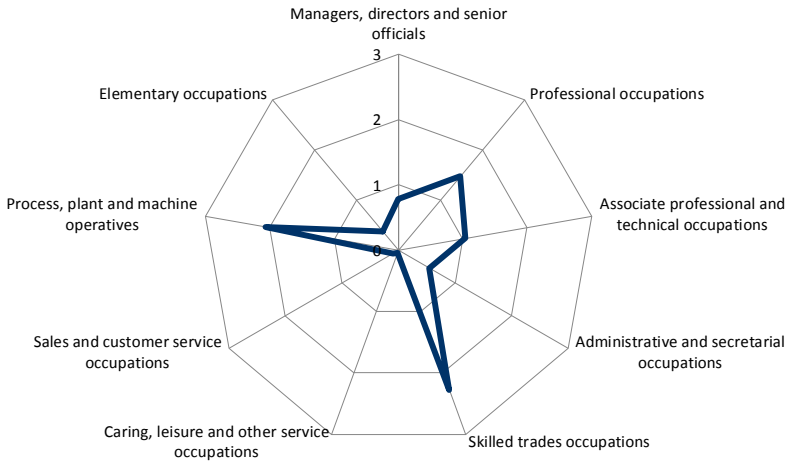
[19] The ASHE data relate to those working in these occupations across the economy as a whole, and not in the air transport sector specifically. Nonetheless, given that many of the roles identified are closely linked to air transport we believe this limitation in the data should not result in a significant bias in the results.

[20] Weights for both averages were based on the number of air transport workers in each group.

informative to consider the occupational breakdown and wage levels of workers in the aerospace manufacturing sector.

The 2011 Census suggests that 100,000 people are employed in aerospace manufacturing across the UK as a whole. Following the same approach as above, the concentration of workers in the sector within each broad occupational group is shown in Figure 4.10, below. This suggests that air manufacturing has above-average shares of workers in higher-skill professional roles, medium-skill skilled trade roles and lower-skill roles in process, plant and machine operations.

Figure 4.10: Occupational profile of workers in the aerospace manufacturing sector compared to the economy as a whole



Note: 1=average for all sectors
Source: Census 2011

Workers in aerospace manufacturing are distributed across a larger number of occupational groups than those in the air transport sector. The Census data suggest that it is necessary to look at 28 occupations to obtain coverage of 70 per cent of workers in the sector. As above, these are shown in Table 4.3, again ranked from highest skilled to lowest skilled.

Table 4.3: Most common occupations for workers in the aerospace manufacturing sector[21]

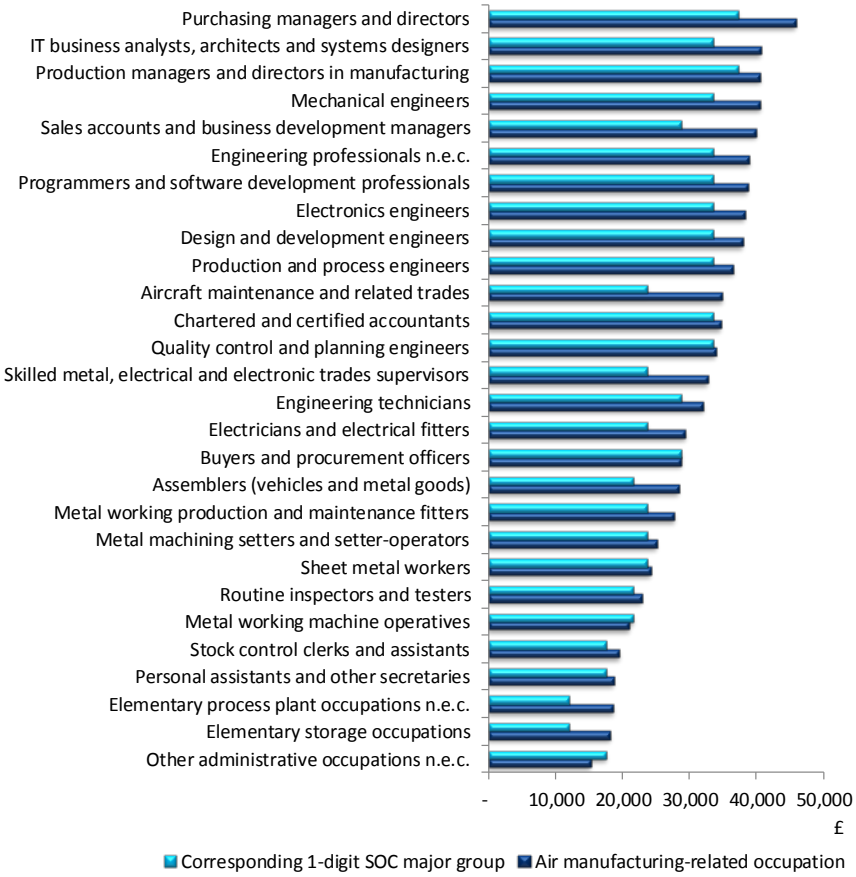
Occupation (SOC code shown in brackets)	Corresponding major occupational group	Number of workers in 2011
Mechanical engineers (2122)	Professional occupations	7,000
Engineering professionals n.e.c. (2129)	Professional occupations	4,000
Design and development engineers (2126)	Professional occupations	3,000
Quality control and planning engineers (2461)	Professional occupations	2,000
IT business analysts, architects and systems designers (2135)	Professional occupations	2,000
Programmers and software development professionals (2136)	Professional occupations	1,000
Electronics engineers (2124)	Professional occupations	1,000
Production and process engineers (2127)	Professional occupations	1,000
Chartered and certified accountants (2421)	Professional occupations	900
Engineering technicians (3113)	Associate professional and technical occupations	3,000
Production managers and directors in manufacturing (1121)	Managers, directors and senior officials	5,000
Purchasing managers and directors (1133)	Managers, directors and senior officials	900
Sales accounts and business development managers (3545)	Associate professional and technical occupations	1,000
Buyers and procurement officers (3541)	Associate professional and technical occupations	1,000
Aircraft maintenance and related trades (5235)	Skilled trades occupations	10,000
Metal working production and maintenance fitters (5223)	Skilled trades occupations	4,000
Metal machining setters and setter-operators (5221)	Skilled trades occupations	3,000
Skilled metal, electrical and electronic trades supervisors (5250)	Skilled trades occupations	2,000
Sheet metal workers (5213)	Skilled trades occupations	1,000
Electricians and electrical fitters (5241)	Skilled trades occupations	900
Metal working machine operatives (8125)	Process, plant and machine operatives	6,000
Routine inspectors and testers (8133)	Process, plant and machine operatives	3,000
Assemblers (vehicles and metal goods) (8132)	Process, plant and machine operatives	1,000
Other administrative occupations n.e.c. (4159)	Administrative and secretarial occupations	1,000
Personal assistants and other secretaries (4215)	Administrative and secretarial occupations	900
Stock control clerks and assistants (4133)	Administrative and secretarial occupations	900
Elementary storage occupations (9260)	Elementary occupations	1,000
Elementary process plant occupations n.e.c. (9139)	Elementary occupations	1,000

Source: 2011 Census

[21] Most common occupations equates to the occupations that comprise 70 per cent of the total workforce.

Figure 4.11 below compares wage levels for the occupations shown above to those in the corresponding broader occupational group.

Figure 4.11: Gross median annual wage for full-time workers in aerospace manufacturing-related occupations and the corresponding 1-digit SOC major group, 2013



Taking a weighted average of the data above suggests that the average wage in the aerospace manufacturing-related occupations in 2013 was just under £32,000. This compares to an average of £27,000 for workers in the broader groups comprising occupations with similar skills requirements.

Once again, this suggests that workers in occupations closely associated with the aerospace manufacturing sector are substantially better paid than those in other roles that require similar skills levels.

4.4.3 Indicative occupational breakdown of workers at London Luton Airport

By combining data on the sectoral structure of employment at London Luton Airport with data from the 2011 Census on the occupations of workers in the Luton 014 'Mid Layer Super Output Area' (which incorporates the airport site) it is possible to estimate the occupational structure of employment at London

Luton Airport.[22] Table 4.4 shows the estimated number of workers in each occupational group in 2013, and the projected number in 2030 under each scenario. The 2030 projections assumes that the occupational structure of employment at the airport remains unchanged as the airport expands. A more detailed breakdown of current occupations is set out at Annex D.

Table 4.4: Current and future employment by occupation at London Luton Airport

Occupation group	Examples of job roles included in occupation group	Estimated employment		
		2013	2030 (Baseline scenario)	2030 (Development scenario)
1 Managers, directors and senior officials	Managers and directors in transport, distribution and production	680	667	942
2 Professional occupations	Mechanical engineer and design and development engineers	701	688	971
3 Associate professional and technical occupations	Aircraft pilots and flight engineers	1,595	1,565	2,208
4 Administrative and secretarial occupations	Transport and distribution clerks and assistants	886	870	1,228
5 Skilled trades occupations	Aircraft maintenance, metal machining setters and setter-operators and hospitality workers	873	857	1,209
6 Caring, leisure and other service occupations	Air travel assistants and travel agents	2,116	2,076	2,930
7 Sales and customer service occupations	Customer service occupations	875	859	1,212
8 Process, plant and machine operatives	Routine inspectors and testers and machine operatives	850	834	1,177
9 Elementary occupations	Air transport operatives and storage workers	861	845	1,192

Source: Oxford Economics

[22] Middle Layer Super Output Areas are a geography for the collection and publication of small area statistics. They have a minimum size of 5,000 residents and 2,000 households with an average population size of 7,500. They fit within local authority boundaries. This definition was sourced from the ONS Neighbourhood Statistics: http://neighbourhood.statistics.gov.uk/HTMLDocs/nessgeography/superoutputareasexplained/output-areas-explained.htm

Comparing the projected number of workers under each scenario in 2030 to the current situation indicates the number of workers the airport could need to recruit in each occupational group over the next 15 years.

It is also informative to consider the future supply of labour in Luton Borough, to understand the extent to which workers in the immediate vicinity of the airport might be available to take up the jobs that would be created were the airport to expand. Oxford Economics' regional model estimates that 2,000 people of working age will be unemployed and looking for work in Luton Borough in 2030. The occupational split of these workers has been estimated using data for the current occupational structure of the Luton Borough population. This has been adjusted using national-level data to take into account that occupational structure of the unemployed is likely to vary to that for those in employment. Further details of the estimation methodology are presented in Annex D. As with the projections of the airport's recruitment needs, it is assumed that the occupational structure of the unemployed in 2030 is unchanged from today.

Table 4.5: London Luton Airport recruitment needs by scenario and potential supply of workers in Luton Borough

Occupation group	Examples of job roles included in occupation group	Additional workers needed by 2030		Estimated number of unemployed workers in Luton Borough, 2030
		Baseline scenario	Development scenario	
1 Managers, directors and senior officials	Managers and directors in transport, distribution and production	-13	262	56
2 Professional occupations	Mechanical engineer and design and development engineers	-13	270	123
3 Associate professional and technical occupations	Aircraft pilots and flight engineers	-30	614	137
4 Administrative and secretarial occupations	Transport and distribution clerks and assistants	-17	341	193
5 Skilled trades occupations	Aircraft maintenance, metal machining setters and setter-operators and hospitality workers	-16	336	200
6 Caring, leisure and other service occupations	Air travel assistants and travel agents	-40	814	183
7 Sales and customer service occupations	Customer service occupations	-16	337	263
8 Process, plant and machine operatives	Routine inspectors and testers and machine operatives	-16	327	241
9 Elementary occupations	Air transport operatives and storage workers	-16	331	686

Source: Oxford Economics

This analysis suggests that under the development scenario, London Luton Airport could need 1,145 workers in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. At the bottom of the table, 2,487 additional workers will be needed for unskilled roles such as customer advisors, baggage handler and storage workers.

Comparing these skills needs to the potential supply of unemployed workers in Luton Borough suggests that workers may be available in the immediate vicinity of the airport to fill the lowest skilled roles. For the remaining roles, the pool of unemployed could potentially support 48 per cent of the Airport's worker

requirements under the development scenario. The airport will need to look further afield to fill the remaining roles.

The analysis above is a purely numerical exercise. In reality, airport employers are unlikely to prioritise Luton residents when seeking to fill new positions. They will select the strongest candidates irrespective of where they reside. Nonetheless, it does illustrate the extent to which the airport's future demand for labour could, at least in theory, be met by workers from Luton Borough.

5 Catalytic Impacts

Key points

The catalytic impact of London Luton Airport can be thought of as the benefits the airport offers to those who use its services. Two types of catalytic impact for passengers are explored.

Value to passengers

- Luton is the closest airport for around 43 per cent, or 4.5 million, of the passengers who used it in 2014. For these passengers, flying from an alternative airport would add between 20 and 68 minutes in travel time, and associated travel costs, for each leg of their journey.
- Luton also offers among the cheapest available fares for the destinations it serves, with 75 percent of comparable fares cheaper than average among the seven major airports considered.
- Taking account of the value of passengers' time, the surface transport costs they face, and the competitive fares on offer it is estimated that London Luton Airport provided additional value for passengers approximately £120 million in 2014 alone. Last year 900,000 Luton passengers would not have flown from an alternative airport had Luton not been available.

London area airport capacity

- London Luton Airport, particularly after it expands capacity to accommodate 18 million passengers per annum, will play an increasingly important role in providing much needed capacity to the London airports system over the next 10 to 15 years.
- In 2011 Luton accounted for 7 per cent of passengers at London airports, but based on official Department for Transport forecasts it is expected to contribute 17 per cent of London passenger growth between 2011 and 2030.

5.1 Introduction

Over and above the direct, indirect and induced impacts reported in the sections above, London Luton Airport generates a number of wider 'catalytic' benefits. These can be thought of as the benefits the airport offers to those who use its services. The analysis in this section assesses the value of the airport's location and low cost flight options to passengers, before going on to consider the airport's role in complementing London's hub airports, Gatwick and Heathrow, and contributing transport capacity to the wider London airport system.

That is not to say that these are the only wider benefits generated by London Luton Airport. In particular, it contributes to the overall attractiveness of the surrounding region as a location for businesses to locate and invest. This is not formally analysed in this chapter of the report, but previous research has shown that the availability of international transport is one of the most important factors that firms consider when deciding where to locate.[23]

5.2 Quantifying the value of London Luton Airport to passengers

5.2.1 Travel cost savings

This part of the analysis provides an indicative quantification of the travel time and direct cost savings that passengers enjoy as a result of living close to London Luton Airport.

The analysis is based on 2013 Civil Aviation Authority data provided by LLAOL, with results scaled up to 2014 passenger totals. These data indicate the origin of Luton's UK passengers on the UK side of their journey by local authority. To estimate the potential travel time savings, it was necessary to assign each passenger to a more precise location within each local authority. As such, passengers were assigned to wards within each local authority based on the distribution of the population within that local authority. A second round of estimation was used to assign passengers to a specific postcode area within each ward, based on the main population centre within the ward.

The postcode level data were then used in conjunction with software developed by Oxford Economics to estimate travel times using Google maps. This enabled the estimation of each passenger's travel time to London Luton Airport, under the simplifying assumption that all passengers travel to the airport by car. The exercise was then repeated to estimate the travel time to each alternative international airport that a Luton passenger could have chosen.

[23] For example, the Cushman and Wakefield European Cities Monitor 2011 (http://www.cushmanwakefield.com/~/media/reports/uk/Brochures/European%20Cities%20Monitor%20October%202011.pdf) finds that the most important factors a company considers when deciding where to locate their business are easy access to markets and customers, followed by the availability of qualified staff, and telecommunications. Transport links with other cities and internationally was found to be the fourth most important factor, with 42 per cent of companies suggesting these were an absolutely essential consideration when deciding where to locate their business.

The analysis showed that for 43 per cent of Luton passengers – around 4.5 million passengers in 2014 - the airport was the closest option to their ultimate UK origin or destination. The majority of these passengers came from 13 local authorities: Aylesbury Vale, Bedford, Central Bedfordshire, Dacorum, East Northamptonshire, Hertsmere, Luton, Milton Keynes, North Hertfordshire, South Northamptonshire, St Albans, Three Rivers and Welwyn Hatfield. On average it took passengers 30 minutes to get to London Luton Airport from these locations, assuming no traffic delays.

The next stage of analysis considers how much longer would be involved in travelling to an alternative airport if London Luton Airport did not exist. Around 94 per cent of Luton's UK passengers come from the South East, Eastern, East Midlands, West Midlands and London regions. Comparator airports that offer similar flights to Luton were identified from within these regions. The comparator airports selected were: Heathrow, Gatwick, Stansted, Birmingham, East Midlands and London City.

In a best-case scenario, a passenger unable to travel from Luton could take a similar flight from the next closest airport to their place of residence. If this were the case for all passengers whose origin was in the local authority areas identified above, the average travel time to the airport would increase by 20 minutes, absent any delays. This extra travel time would be associated with higher immediate transport costs as well as time costs for millions of passengers each year in Luton's absence.

In reality, equivalent flights may not be available at the second closest airport and a passenger unable to use Luton may have to travel considerably further to take a flight from an alternative airport. In 2014 the closest alternative international airport, Heathrow, only served 57 per cent of seat-weighted destinations reachable from London Luton Airport.[24] In the extreme case, all passengers whose UK origin or destination was in the local authority areas identified above might have to travel to the furthest comparator airport. In many cases this would be Gatwick, which serves some 80 per cent of the seat-weighted destinations served by Luton, but which is also the furthest alternative airport for many Luton passengers. Where passengers might have to travel to their furthest alternative airport, the journey would take an average of 68 minutes longer. Again, traffic delays could add to that journey time significantly depending on the timing of the flight, making this a conservative estimate.

The analysis above therefore provides a range from 20 to 68 minutes for the additional travel time that would be required if those Luton passengers for whom the airport is closest were to have to use another airport. For people making a return journey these time and associated travel costs would, of course, be double.

[24] Estimated using SRS Analyser data on flight schedules from Luton and the other comparator airports. This figure assumes that there are no capacity constraints that might prevent passengers from flying from one of these alternative airports.

Table 6.1 provides details for each local authority for which Luton is the closest airport. It also compares the distance between the second closest and farthest away airports to give the range of possible increases in journey times.

Table 5.1: Time saving by origin, minutes

	Average time from London Luton Airport	Second closest airport	Average time from second closest airport	Time saved - low	Farthest away airport	Average time from farthest airport	Time saved - high
Central Bedfordshire	30	Heathrow	59	29	Gatwick	96	65
Luton	22	Heathrow	45	23	East Midlands	88	66
St Albans	20	Heathrow	39	19	East Midlands	98	79
Milton Keynes	36	Heathrow	65	30	Gatwick	101	65
North Hertfordshire	25	Stansted	45	19	East Midlands	99	73
Bedford	44	Stansted	67	22	Gatwick	101	57
Dacorum	29	Heathrow	35	6	East Midlands	99	70
Aylesbury Vale	46	Heathrow	55	9	East Midlands	96	50
Welwyn Hatfield	27	Stansted	43	17	East Midlands	108	82
Hertsmere	27	Heathrow	39	12	East Midlands	106	78
Three Rivers	27	Heathrow	30	3	East Midlands	105	79
South Northamptonshire	49	Birmingham	53	3	Gatwick	106	57
East Northamptonshire	63	Birmingham	70	7	Gatwick	129	66

5.2.2 Low-cost air travel

London Luton Airport's competitive fees and charges mean that customers benefit from lower cost flights than are available at other comparable airports

Luton's proximity for millions of people is not the only source of its value relative to alternative airports. This section assesses the extent to which passengers may enjoy lower fares for flights from Luton compared to other airports. The comparator airports are the same as those used in the previous section.

Comparing flight costs is a complex exercise, not least due to the yield management techniques employed by airlines. Prices for apparently similar flights can vary substantially for a wide range of reasons, such as time of day, date, and the number of passengers searching for or reserving seats on a particular flight. To compare flight costs between airports we undertook a structured search to identify flights that are as similar as possible to those offered by Luton. To be regarded as 'similar' for the purposes of this exercise, we selected flights that were identical in terms of the following criteria:

- Time of day: morning before 12:00, afternoon between 12:00 and 17:59, or evening from 18:00
- Departure date: three dates were chosen for the sample - 09/03/2015 (one week from the time of the analysis); 05/06/2015 (3 months away); and 08/08/2015 (a summer holiday travel day)
- Destination airport.

For each flight in the sample we compared the price of flying from Luton to the price of flying from all other airports offering the same flight. Flights were only

included if a minimum of three comparator airports offer a similar flight. Prices were obtained from the price comparison website *www.skycanner.net*.

Table 6.2 below presents a summary of the results. In total, a sample of 44 flights were compared. For 33 flights, London Luton Airport offered a below average price when compared to the other airports. For 21 of the flights Luton was one of the two cheapest providers and for nine flights Luton was the cheapest provider. This demonstrates the degree to which a further benefit for many Luton passengers is the low airfares on offer.

Table 5.2: Summary of airport price comparison

Luton is below average	Luton is below average and one of two cheapest providers	Luton is absolute cheapest in sample	Luton is above average	Luton is most expensive	Total examined
33	21	9	11	5	44

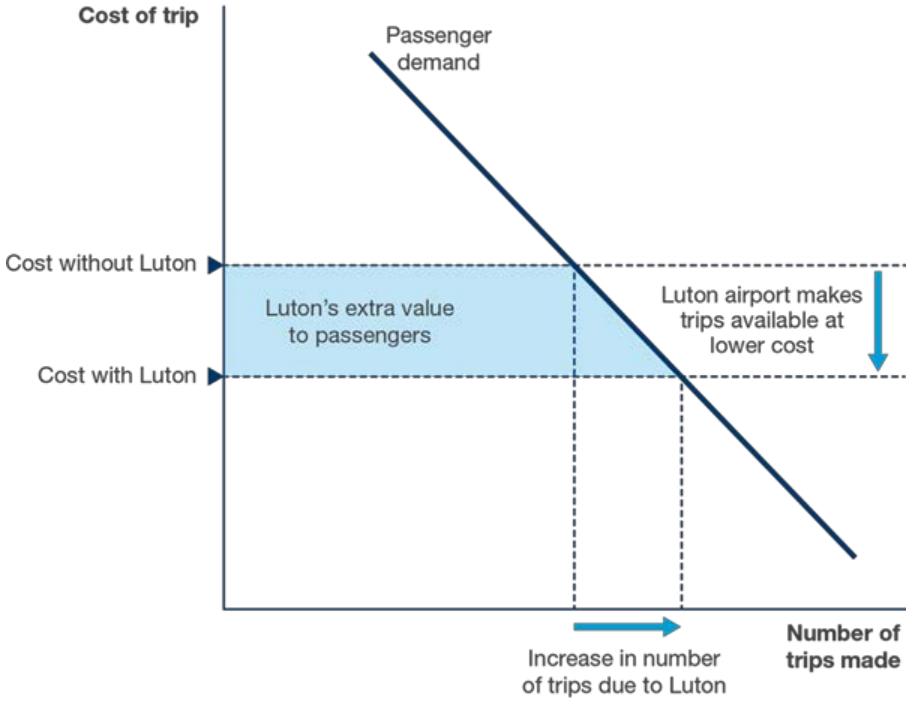
5.2.3 Valuing the benefits to passengers

The main value from an airport accrues to airline passengers. To make a journey, those using the airport self-evidently value making their trip at least as highly as the cost of their surface transport and airfare, and the time taken to reach their destinations. In most cases, of course, people would still make the trip if those costs were higher. Economists call the value received, over and above the costs associated with travel, the 'consumer surplus'.[25] Consumer surplus represents the maximum cost people would be willing to pay to make their journey less the actual cost they face.

[25] Source: IATA. OXFORD ECONOMICS, Economic Benefits from Air Transport in Mexico, 2007

The analysis in the previous two sub-sections suggests that, for millions of people each year, the value of consumer surplus that accrues to Luton passengers may be greater than if they instead had to use another airport, due to Luton's low fares and proximity to the origin or destination of many passengers. As Luton offers a cheaper option for millions of passengers, this boosts the number of people prepared to travel and benefits those who would have travelled anyway (see Figure 5.1)

Figure 5.1: Quantifying the extra value Luton provides for passengers



To explore this further, this sub-section builds on the analysis above to estimate how the value of consumer surplus enjoyed by Luton passengers might change if they instead had to use the next cheapest airport.

This analysis relies on another technical concept – the generalised cost of travel (GCT), which represents the overall cost of making a journey in terms of travel time and money. Direct travel costs take account of things like airfares and the full economic cost of private road transport. Time spent travelling is converted into monetary values based on accepted techniques for valuing people's time based on characteristics such as whether or not they are a business traveller.

For this study a GCT value is calculated for Luton passengers based on their origin and likely airfare. Equivalent values are then computed for those passengers in the hypothetical scenario where these Luton passengers instead use their next cheapest airport (a full description of the methodology is included at Annex F). [26] [27]

[26] Only those passengers for whom Luton is the closest airport were included in the analysis. The remaining passengers were excluded on the basis that they are using London Luton Airport for reason that does not relate to total cost.

The analysis suggests that the average GCT for Luton is £174 per single journey, compared to £194 at the next cheapest airport (the second cheapest airport is specific to each passenger). On this basis we estimate that, on average, a typical passenger of the 6.3 million in 2014 for whom Luton was the cheapest airport enjoyed a consumer surplus that was £19 greater than if Luton did not exist. For someone making a return journey the benefit would amount to some £37.

The benefits for passengers also extend to people who otherwise might not have travelled at all. For many passengers, the overall costs of the Luton option are sufficiently low to encourage them to make a trip which they otherwise would not have taken. To account for this effect, we draw on available evidence about how passengers respond which the cost of travel changes, to measure the responsiveness of the demand for flights to changes in the GTC. We assume an elasticity of -1.27, which means that a 1 per cent fall in the overall (time and fare) cost of travel causes a 1.27 per cent rise in passenger numbers.[28] On these assumptions we can estimate that 900,000 passengers for whom Luton was the closest airport would not have travelled in 2014 had Luton not existed. Adding these benefits, we estimate that the total consumer surplus, or additional benefit to passengers for whom Luton is the closest airport amounted to approximately £120 million in 2014 alone.[29]

27 In order to be conservative, only those passengers for whom Luton is the closest airport are considered in this analysis. While those coming from further afield presumably choose Luton for a good reason, it is harder to quantify the scale of their consumer surplus, hence we conservatively assume that these people are indifferent between travelling from Luton or another airport.

[28] The elasticity of -1.27 is for the generalised cost elasticity for intra-European flights of 500-1000 miles. Source: 'Fleet Level Assessments & System-Wide Environmental Impacts' presentation by the University of Cambridge, UCL, City University London and University of Toronto: http://old-www.arct.cam.ac.uk/Documents/AEvans_Lecture_UTIAS_March13.pdf

[29] In practice, this estimate is likely to be conservative both because it ignores the possibility that road traffic congestion may add to journey times, and because it conservatively assumes the benefits of London Luton Airport to passengers for whom it is not the closest are zero.

5.3 London area airport capacity

Luton Airport has a vital role to play in providing capacity for the London airport system over the next 10 to 15 years

Major airports around London are approaching capacity. If no action is taken to develop new infrastructure there is a risk that airport bottlenecks will constrain the UK's ability to handle increasing numbers of business passengers and tourists, and ultimately harm economic growth prospects.

To address this, the Airports Commission, chaired by Howard Davies, was set up in 2012 to examine options to develop the UK's aviation infrastructure, so that it maintains its status as Europe's key aviation hub. In December 2013 the Commission published a report outlining three shortlisted options to increase the UK's aviation capacity in the long-term. Each of these options would provide at least one net additional runway at Gatwick or Heathrow by 2030. Following a period of consultation, the Airports Commission is set to announce its recommended option in the summer of 2015.

Given the stated aim of developing the chosen option by 2030, it is important to consider how the UK's airport capacity needs will be met in the interim. To explore Luton's role in this, we examine the 2013 Department for Transport passenger forecasts.[30] These come in two variants:

i. *Unconstrained* forecasts, which provide estimates of the extent of passenger growth in the absence of airport capacity constraints

ii. *Constrained* forecasts which factor in the impact of airport capacity constraints.

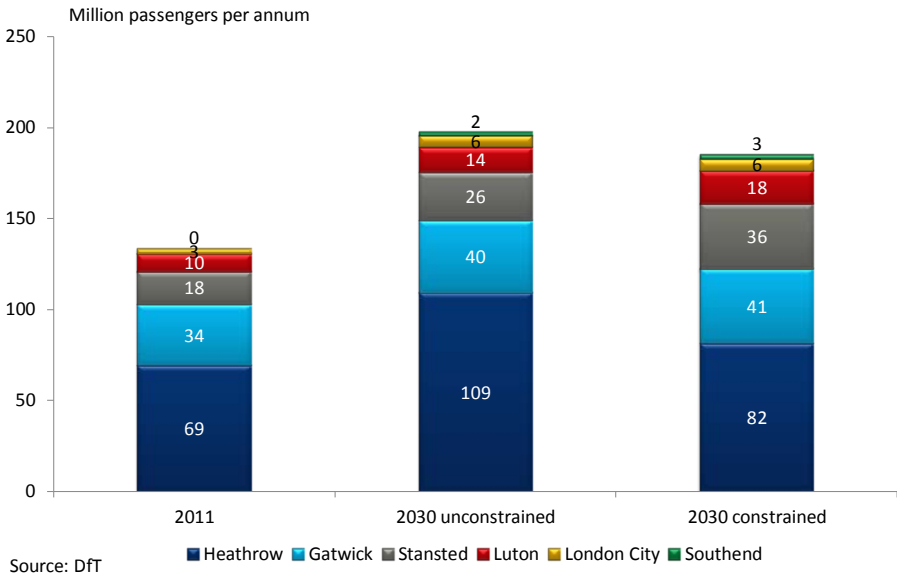
While the constrained forecasts assume that no new runways are built in the UK, they do allow for smaller-scale infrastructure enhancements. Of particular relevance to this study, it is assumed that *"Luton adds 35% to its runway capacity and 70% to its terminal capacity."*[31] This is broadly consistent with the development scenario in our study.

[30] https://www.gov.uk/government/publications/uk-aviation-forecasts-2013

[31] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223839/aviation-forecasts.pdf

Figure 5.2 shows that there were 134 million terminal passengers at London airports in 2011. Under the DfT's unconstrained forecast this would increase to 198 million by 2030. However, once airport capacity constraints are considered, this falls to 185 million 2030 as passengers either switch to airports away from London, or choose not to travel.

Figure 5.2: Constrained and unconstrained passenger forecasts for London airports

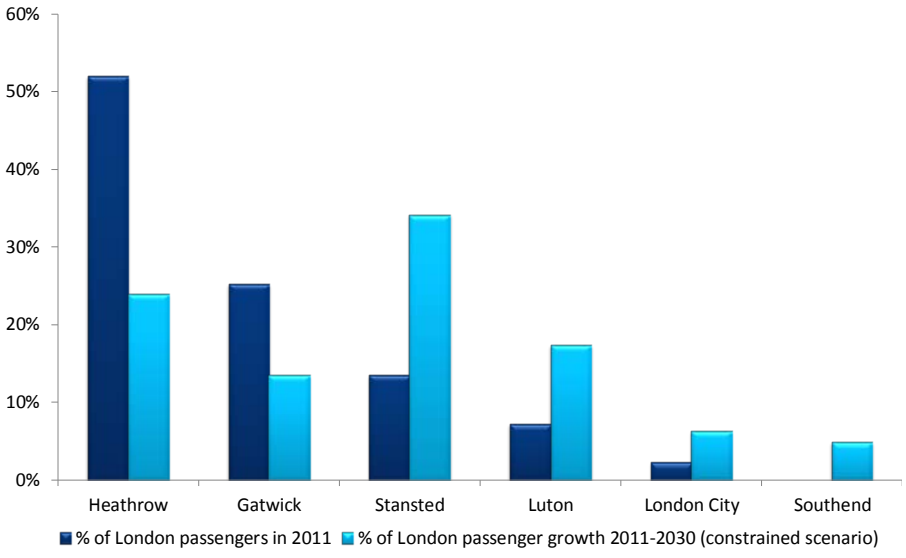


Source: DfT

Closer examination of the data for individual airports highlights the important role to be played by smaller airports in supporting passenger growth to 2030. In the unconstrained forecast, passenger numbers at Heathrow are forecast to increase from 69 million in 2011 to 109 million in 2030. However, Heathrow is nearing its operational capacity and the constrained forecast suggests it will only be able to accommodate 82 million passengers in 2030. As a result, passengers are displaced to other London airports, particularly Luton and Stansted, where there is proportionately greater scope for growth. In the case of Luton, there are 4 million more passengers in the constrained scenario than in the unconstrained scenario, indicating that the airport is well placed to provide capacity to service passengers unable to use Heathrow. This means that passenger numbers at Luton are projected to almost double to 18 million between 2011 and 2030 in the constrained scenario.

To consider the contribution of Luton to overall passenger growth in London further, Figure 5.3 compares each airport's share of passengers in 2011 to its contribution to London passenger growth between 2011 and 2030. This shows that while Luton accounted for just 7 per cent of London airport passengers in 2011, it is expected to accommodate 17 per cent of passenger growth between 2011 and 2030. Were this capacity not available at Luton, the London airports system would be even more constrained and, all else equal, passengers who wished to use a London airport would be likely to face higher fares.

Figure 5.3: Constrained and unconstrained passenger forecasts for London airports



Source: DfT, Oxford Economics

There is currently a large amount of uncertainty concerning what may happen beyond 2030. While the Airports Commission is set to make its *recommendation* in the summer of 2015, the *decision* on additional runway capacity will ultimately be taken by politicians and the timing of any such decision is unknown.

Nonetheless, the analysis in this chapter has highlighted that Luton has an important role to play in providing much-needed capacity for the wider London airports system. It has capacity to accommodate significant growth over the coming decade; provides convenient access to international flights for local residents; and it is able to offer flights at lower cost than many comparable airports.

Appendix A: Economic impact methodology

Direct employment contribution

The most detailed previous work to estimate the direct impact of London Luton Airport was undertaken for the 2012 Halcrow study. This presented a central employment estimate for 2011 based on data from the Business Register and Employment Survey and Experian.[32] More recent estimates of employment at London Luton Airport are presented in the 2013 London Luton Airport Annual Monitoring Report.[33]

Following discussion with stakeholders it was decided to estimate employment in 2013 by growing forward the Halcrow estimate using the growth rates reported in the Annual Monitoring Report. This approach ensures that the direct employment estimate presented in this study is broadly comparable with the Halcrow study, but also incorporates the latest evidence on how employment at the airport has changed since 2011.

Direct GDP contribution

This is comprised of the wages paid to those directly employed at the airport, plus profits generated by firms at London Luton Airport.

To calculate London Luton Airport's total wage contribution, the 2013 employment estimates were multiplied by average gross wage estimates for the relevant sectors. These average wages were based on estimates from the Halcrow report, adjusted to account for wage growth between 2011 and 2013.

To estimate profits for 2013 we uplifted average turnover per employee estimates from the Halcrow study using productivity growth rates[34] for the Eastern region, and then multiplied by total employment to obtain an estimate of turnover. We then applied Halcrow's turnover/profit ratio to arrive at a pre-tax profit estimate. Since we are considering the direct impact of London Luton Airport on the whole of the UK, and in contrast to the Halcrow approach, we did not make a further adjustment to only count profits attributable to the local economy.

Direct gross wage contribution

The gross wage bill of London Luton Airport workers was estimated by updating the previous results from the Halcrow study. While Halcrow reported net wages in their headline results, the detailed workings included average gross wage per worker estimates. Oxford Economics grew these estimates in line with wage growth from 2011 to 2013 for the Eastern region and then multiplied these wages by the new number of workers in each sector.

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[32] Further details of the methodology used to develop the employment estimate are presented in Chapter 6 of the Halcrow report: http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF

[33] http://www.london-luton.co.uk/en/content/8/243/annual-monitoring-report.html

[34] Productivity growth rates for individual sectors were used.

Direct tax contribution

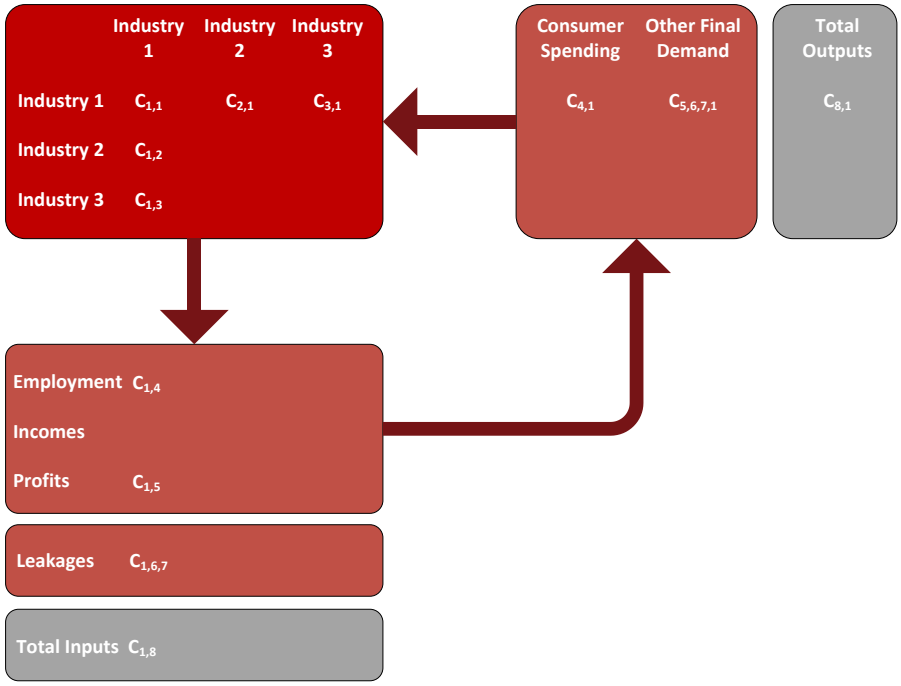
There are a number of large companies at London Luton Airport that operate from many sites across the UK, and sometimes internationally. In these cases the value of tax revenue attributable to London Luton Airport was estimated by updating the previous results from the Halcrow study by adjusting their assumptions on the various tax rates to reflect the latest data available. Specifically, Income tax and National Insurance Contributions were updated using the 2013 ONS 'The Effects of Taxes and Benefits on Household Income' release, located here: http://www.ons.gov.uk/ons/rel/household-income/the-effects-of-taxes-and-benefits-on-household-income/2012-13/index.html. APD was updated using information on APD rates and allowances for 2013 from HM Revenue an Customs, located here: https://www.gov.uk/government/publications/rates-and-allowances-excise-duty-air-passenger-duty/rates-and-allowances-excise-duty-air-passenger-duty

Overview of input-output modelling approach for the UK

Input-output tables are designed to give a snapshot of an economy at a particular time, showing the major spending flows. These include "final demand" (i.e. consumer spending, government spending and exports to the rest of the world); intermediate spending patterns (i.e. what each sector buys from every other sector – the supply chain); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits). Input-output tables are therefore particularly useful when estimating indirect and induced economic impacts.

The idea behind the input-output table is that the economy can be divided into a number of producing industries, and that the output of each industry is either used as an input into another industry, or in final consumption. For example, grain produced by the farm sector becomes an input into flour milling; flour produced by the milling sector becomes an input into the baking sector, and so on. In essence an input-output model is a table that shows who buys what from whom in the economy.

Figure AA.1: A simplified input-output model



Source: Oxford Economics

Reading across horizontally illustrates the distribution of each industry's output, split between intermediate demand from other industries (used as an input to production) and final demand (consumer spending, exports and other government consumption). Therefore, Industry 2 in Figure AA.1 purchases an amount, C2,1 from Industry 1 as an input to their production process. Thus, reading down vertically indicates what each industry purchases from other industries in the national economy by way of inputs which, when combined with imports from abroad (leakages), employment costs, operating surplus and any additional taxes or subsidies to production, give total inputs, which will equal total outputs. In the simple model illustrated in Figure AA.1, C8,1 will equal C1,8.

A primary application of domestic use input-output tables is to create multipliers that are used to illustrate how an increase in demand in one sector affects the whole economy:[35]

- **Type I multiplier** – estimates the impact on the whole economy of £1 spent in a given industry, through its supply chain.
- **Type II multiplier** – includes the Type I multiplier, but also includes the effect of spending by households as a results of the additional employment generated by the additional £1 spend. The multipliers reported in this report are Type II multipliers.

[35] In a domestic IO table intermediate demand has been adjusted to remove the effects of imports. Imports are itemised in a different part of the IO table.

To calculate the indirect and induced impacts for London Luton Airport, domestic-use input-output tables, available for the UK economy from the ONS, were used to build a bespoke input-output model. The ONS tables can be downloaded here: http://www.ons.gov.uk/ons/rel/input-output/input-output-analytical-tables/2010/index.html

Regional input-output modelling approach

The above approach is used to quantity the indirect and induced impacts at the UK level. An important element of this study, though, is to consider the geographical distribution of these multiplier effects to understand how London Luton Airport affects levels of economic activity in surrounding sub-regions and local areas.

Information on the geographical distribution of supply chain expenditure has been gathered from major firms based at London Luton Airport. In total, this information covers around 8 per cent of London Luton Airport's estimated supply chain purchases and for this portion of spending it is possible to develop a very accurate picture of the distribution of supply chain impacts. Oxford Economics has estimated the remaining 92 per cent of supply chain spending using inter-regional input-output models developed by Oxford Economics based on established academic techniques initially developed by Flegg and Webber.[36] This approach involves constructing regional input-output models by applying Location Quotients (LQs) and regional size adjustments to the standard UK input-output tables. Oxford Economics' regional model was used to provide data on LQ's and regional employment.

For this study, regional input-output tables were developed for Luton Borough , the Three County area and the regions surrounding Luton Borough (Eastern, South East, London and East Midlands).

Employment shares were used to divide the impact of the Three County area to the various local authorities within the area. The supply chain impact that remained (i.e. the four regions supply chain impact minus the Three Counties supply impact) was split out according the sectoral employment share amongst all the local authorities within that area.

In the case of induced effects, no 'real' data are available to identify where London Luton Airport workers actually spend their wages. Nonetheless, it seems reasonable to assume that most spending is likely to take place close to workers' place of residence, and will therefore support GDP and employment in those areas. This is the starting point for our analysis of induced impacts, but in cases where this results in an unrealistically large injection to the local economy (given the economic structure and average spending per head in that local area) induced impacts are assumed to spill over into neighbouring areas. The

[36] Flegg and Webber, (2000), 'Regional Size, Regional Specialization and the FLQ Formula'. Regional Studies, Vol. 34.6, pages 563–569.

spending adjustment and a quantum that is absorbed by neighbouring areas is calculated using regional IO tables.

Indirect and Induced GDP contribution

To calculate the indirect and induced gross value added contribution to GDP (i.e. GVA), the total expenditure effect (derived from the input-output models) is multiplied by industry sector-level GVA to gross output ratios, again calculated from the ONS input-output tables.

Indirect and Induced employment

To calculate the impact on employment, labour productivity in each industry sector in the supply chain is applied to the respective component of the GVA figures.

Appendix B: Economic impact results by geographical area

Table AB.1 Total GVA contribution to GDP impact of London Luton Airport, 2013

Total GVA contribution to GDP 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	425	338	506	1270
Three Counties sub-region	425	85	222	732
Bedfordshire	425	37	138	600
Buckinghamshire		20	25	44
Hertfordshire		29	59	88
London Thameslink Corridor		8	12	20
Luton	425	29	80	533
Central Bedfordshire		5	45	50
Bedford		3	14	17
Aylesbury Vale		3	9	12
Chiltern		2	2	4
Milton Keynes UA		9	11	20
South Buck		2	1	3
Wycombe		4	2	6
Broxbourne		2	2	4
Dacorum		3	8	11
East Hertfordshire		3	5	8
Hertsmere		3	2	5
North Hertfordshire		2	17	19
St Albans		4	14	17
Stevenage		2	4	6
Three Rivers		2	2	4
Watford		4	2	7
Welwyn Hatfield		3	4	7
Barnet		1	2	3
Camden		2	3	5
Islington		1	1	3
City of London		0	2	3
Southwark		1	1	2
Lambeth		1	1	2
Merton		1	0	1
Sutton		0	0	1
Croydon		1	1	1
South Cambridgeshire		1	3	3
Enfield		1	1	2
Haringey		0	1	1
Harrow		0	1	1
East Northamptonshire		0	2	2
Northampton		2	4	5
South Northamptonshire		0	2	2
Wellingborough		0	1	2

Table AB.2 Total employment impact of London Luton Airport, 2013

Employment 2013				
Locations	Direct	Indirect	Induced	Total
UK	9437	7682	10088	27207
Three Counties sub-region	9437	2038	4408	15883
Bedfordshire	9437	943	2781	13161
Buckinghamshire		386	441	827
Hertfordshire		708	1186	1894
London Thameslink Corridor		150	163	313
Luton	9437	751	1598	11786
Central Bedfordshire		120	901	1021
Bedford		73	282	354
Aylesbury Vale		69	154	224
Chiltern		31	33	64
Milton Keynes UA		176	197	372
South Buck		35	20	54
Wycombe		76	37	112
Broxbourne		56	30	86
Dacorum		73	152	225
East Hertfordshire		79	94	173
Hertsmere		63	38	102
North Hertfordshire		51	333	384
St Albans		91	276	367
Stevenage		42	91	133
Three Rivers		45	42	87
Watford		130	42	172
Welwyn Hatfield		78	87	166
Barnet		11	34	45
Camden		35	47	82
Islington		25	15	40
City of London		9	20	28
Southwark		25	12	37
Lambeth		16	16	31
Merton		10	6	16
Sutton		9	4	13
Croydon		11	9	20
South Cambridgeshire		18	52	69
Enfield		10	15	26
Haringey		8	15	23
Harrow		7	16	23
East Northamptonshire		9	35	44
Northampton		41	85	126
South Northamptonshire		10	45	55
Wellingborough		13	25	38

Table AB.3 Total wage impact of London Luton Airport, 2013

Wage 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	356	181	203	740
Three Counties sub-region	356	44	80	481
Luton	356	15	29	401

Table AB.4 Total tax impact of London Luton Airport, 2013

Tax 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	237	122	169	648
Three Counties sub-region	237	30	34	301
Luton	237	10	25	272

Appendix C: The total future economic contribution of London Luton Airport

Table AC.1 Forecast direct Gross Value Added contribution to GDP of London Luton Airport, 2013 to 2030

Direct GVA (£2013 prices)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline scenario	425	457	474	529	552	554	554	554	554	554	554	554	554	554	554	554	554	554
Development scenario	425	457	500	558	619	687	760	781	781	781	781	781	781	781	781	781	781	781

Table AC.2 Forecast direct employment at London Luton Airport, 2013 to 2030

Employment	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline scenario	9437	10113	10327	11420	11791	11659	11468	11282	11092	10869	10642	10433	10220	10009	9805	9614	9429	9259
Development scenario	9437	10113	10896	12044	13208	14460	15746	15924	15656	15342	15022	14726	14426	14128	13841	13570	13310	13070

Table AC.3 Forecast total GDP contribution of London Luton Airport to the UK economy, 2030

GVA (£2013 prices) 2030	Direct	Indirect	Induced	Total
Baseline scenario	554	441	660	1,654
Development scenario	781	622	931	2,335

Table AC.4 Forecast total UK employment contribution of London Luton Airport, 2030

Employment 2030	Direct	Indirect	Induced	Total
Baseline scenario	9,259	7,537	9,898	26,694
Development scenario	13,070	10,639	13,971	37,680

Table AC.5 Forecast total GDP contribution of London Luton Airport to the sub-regional economy, 2030

GVA (£2013 prices)		Direct	Indirect	Induced	Total
Three Counties sub region	2013	425	85	222	732
	Baseline Scenario 2030	554	111	339	1,004
	Development Scenario 2030	781	157	479	1,418
Bedfordshire	2013	425	37	138	600
	Baseline Scenario 2030	554	48	230	832
	Development Scenario 2030	781	68	325	1,175
Buckinghamshire	2013	0	20	25	44
	Baseline Scenario 2030	0	26	32	58
	Development Scenario 2030	0	37	45	82
Hertfordshire	2013	0	29	59	88
	Baseline Scenario 2030	0	37	77	114
	Development Scenario 2030	0	52	108	161

Table AC.6 Forecast total employment contribution of London Luton Airport to the sub-regional economy, 2030

Employment		Direct	Indirect	Induced	Total
Three Counties sub region	2013	9,437	2,038	4,408	15,883
	Baseline Scenario 2030	9,259	1,985	4,778	16,022
	Development Scenario 2030	13,070	2,801	6,745	22,616
Bedfordshire	2013	9,437	943	2,781	13,161
	Baseline Scenario 2030	9,259	931	3,015	13,205
	Development Scenario 2030	13,070	1,314	4,256	18,640
Buckinghamshire	2013	0	386	441	827
	Baseline Scenario 2030	0	380	478	858
	Development Scenario 2030	0	536	674	1,211
Hertfordshire	2013	0	708	1,186	1,894
	Baseline Scenario 2030	0	674	1,286	1,959
	Development Scenario 2030	0	951	1,815	2,765

Appendix D: Occupational analysis

Estimated split of London Luton Airport employees by sector and occupation

The estimated split of employment by sector comes from the 2012 Halcrow study. For each sector, the occupational breakdown has been estimated using data from the 2011 Census on the occupational structure of employment within the respective sector.

The specific steps involved include:

1) Estimate London Luton Airport employment by sector in 2013, drawing on the 2012 Halcrow study
2) Use the Luton 014 SOA (the Super Output Area where London Luton Airport is based) SIC-SOC matrix from the 2011 Census to estimate broad occupation breakdown by sector for the Airport
3) Split out broad occupational groups from step 2 using more detailed 3-digit SOC breakdown for the SOA from the 2011 Census.

Table AD.1 Indicative occupational (SOC 3) structure of London Luton Airport employment

Occupations	London Luton Airport estimated employment		
	2013	2030 (Baseline scenario)	2030 (Development scenario)
111 Chief Executives and Senior Officials	6	5	8
112 Production Managers and Directors	95	93	132
113 Functional Managers and Directors	133	130	184
115 Financial Institution Managers and Directors	7	7	9
116 Managers and Directors in Transport and Logistics	156	154	217
117 Senior Officers in Protective Services	11	10	15
118 Health and Social Services Managers and Directors	6	5	8
119 Managers and Directors in Retail and Wholesale	65	63	89
121 Managers and Proprietors in Agriculture Related Services	0	0	0
122 Managers and Proprietors in Hospitality and Leisure Services	97	96	135
124 Managers and Proprietors in Health and Care Services	4	4	6
125 Managers and Proprietors in Other Services	101	99	139
211 Natural and Social Science Professionals	6	6	8
212 Engineering Professionals	148	145	205
213 Information Technology and Telecommunications Professionals	174	171	241
214 Conservation and Environment Professionals	3	3	4
215 Research and Development Managers	6	6	8
221 Health Professionals	18	18	25
222 Therapy Professionals	3	3	4
223 Nursing and Midwifery Professionals	13	13	18
231 Teaching and Educational Professionals	37	37	52
241 Legal Professionals	16	15	22
242 Business, Research and Administrative Professionals	188	184	260
243 Architects, Town Planners and Surveyors	14	14	20
244 Welfare Professionals	5	5	7

245 Librarians and Related Professionals	6	6	8
246 Quality and Regulatory Professionals	44	43	61
247 Media Professionals	20	20	28
311 Science, Engineering and Production Technicians	136	134	188
312 Draughtspersons and Related Architectural Technicians	8	8	11
313 Information Technology Technicians	56	55	77
321 Health Associate Professionals	6	6	8
323 Welfare and Housing Associate Professionals	14	14	19
331 Protective Service Occupations	108	106	150
341 Artistic, Literary and Media Occupations	35	35	49
342 Design Occupations	21	20	29
344 Sports and Fitness Occupations	21	20	29
351 Transport Associate Professionals	641	629	888
352 Legal Associate Professionals	18	17	24
353 Business, Finance and Related Associate Professionals	118	115	163
354 Sales, Marketing and Related Associate Professionals	262	257	363
355 Conservation and Environmental associate professionals	1	1	1
356 Public Services and Other Associate Professionals	151	148	209
411 Administrative Occupations: Government and Related Organisations	33	32	46
412 Administrative Occupations: Finance	243	238	336
413 Administrative Occupations: Records	236	231	326
415 Other Administrative Occupations	212	208	293
416 Administrative Occupations: Office Managers and Supervisors	32	31	44
421 Secretarial and Related Occupations	132	130	183
511 Agricultural and Related Trades	14	14	20
521 Metal Forming, Welding and Related Trades	14	13	19
522 Metal Machining, Fitting and Instrument Making Trades	61	60	85
523 Vehicle Trades	402	395	557
524 Electrical and Electronic Trades	105	103	145
525 Skilled Metal, Electrical and Electronic Trades Supervisors	19	18	26
531 Construction and Building Trades	123	120	170
532 Building Finishing Trades	39	39	55
533 Construction and Building Trades Supervisors	6	6	8
541 Textiles and Garments Trades	14	13	19
542 Printing Trades	6	6	9
543 Food Preparation and Hospitality Trades	59	58	82
544 Other Skilled Trades	11	11	16
612 Childcare and Related Personal Services	108	106	149
613 Animal Care and Control Services	5	5	7
614 Caring Personal Services	84	82	116
621 Leisure and Travel Services	1828	1794	2532
622 Hairdressers and Related Services	45	44	62
623 Housekeeping and Related Services	24	23	33
624 Cleaning and Housekeeping Managers and Supervisors	23	22	31
711 Sales Assistants and Retail Cashiers	440	431	609
712 Sales Related Occupations	43	42	59
713 Sales Supervisors	49	48	68
721 Customer Service Occupations	297	291	411
722 Customer Service Managers and Supervisors	47	46	65

811 Process Operatives	53	52	73
812 Plant and Machine Operatives	77	76	107
813 Assemblers and Routine Operatives	134	132	186
814 Construction Operatives	32	32	45
821 Road Transport Drivers	209	206	290
822 Mobile Machine Drivers and Operatives	18	18	25
823 Other Drivers and Transport Operatives	326	320	451
911 Elementary Agricultural Occupations	3	3	4
912 Elementary Construction Occupations	13	12	17
913 Elementary Process Plant Occupations	43	42	60
921 Elementary Administration Occupations	39	38	54
923 Elementary Cleaning Occupations	176	172	243
924 Elementary Security Occupations	279	274	387
925 Elementary Sales Occupations	19	19	27
926 Elementary Storage Occupations	142	140	197
927 Other Elementary Services Occupations	147	144	203

Approach to estimating the occupational split of unemployed workers in Luton Borough

Oxford Economics' regional model was used to estimate the number of unemployed individuals in Luton Borough in 2030.

The occupational split of these workers was estimated using 2011 Census data for the occupational structure of the Luton Borough resident employment. However, the occupational structure of the unemployed is likely to differ from that of the employed. Annual Population Survey data was therefore used to estimate the proportional difference between the employed and the unemployed occupational structure at the UK level. This difference was then applied to the estimated occupational breakdown for Luton Borough unemployed.

Appendix E: Detailed results from analysis of flight prices

Table AE.1 Analysis of flights prices

Destination	Luton Price	Average lowest price amongst Airports compared	Luton price rank out of airports compared	Number of airports compared
Monday 09/03/2015				
Morning (00.00 - 11.59)				
Alicante	137	140	3	5
Amsterdam	67	89	3	6
Barcelona	112	124	3	6
Dublin	23	42	2	7
Edinburgh	38	53	3	7
Geneva	117	111	4	6
Glasgow	34	64	2	7
Malaga	213	179	5	6
Afternoon (12.00- 17.59)				
Amsterdam	63	79	2	7
Dublin	39	44	2	6
Murcia	178	181	3	5
Evening (18.00 - 23.59)				
Aberdeen	43	70	1	5
Amsterdam	51	67	1	5
Dublin	33	34	4	6
Edinburgh	33	39	3	7
Glasgow	34	44	2	7
Friday - 05/06/2015				
Morning (00.00 - 11.59)				
Alicante	141	139	4	5
Amsterdam	46	60	1	6
Barcelona	119	99	6	6
Dublin	46	55	2	7
Edinburgh	40	48	2	7
Geneva	35	55	1	4
Glasgow	35	42	2	6
Malaga	137	133	4	6
Afternoon (12.00- 17.59)				
Amsterdam	44	52	2	6
Dublin	65	54	7	7
Murcia	65	75	1	4
Evening (18.00 - 23.59)				
Aberdeen	37	49	1	5

Amsterdam	42	62	1	5
Dublin	55	50	5	7
Edinburgh	37	45	2	7
Glasgow	35	44	2	7
Saturday - 08/08/2015				
Morning (00.00 - 11.59)				
Alicante	193	166	5	5
Amsterdam	52	54	5	7
Barcelona	133	141	4	6
Dublin	28	35	3	7
Edinburgh	73	54	6	6
Geneva	74	72	3	4
Glasgow	40	53	3	6
Malaga	171	156	4	5
Afternoon (12.00- 17.59)				
Amsterdam	43	57	1	5
Dublin	33	36	4	5
Murcia	131	136	1	4
Evening (18.00 - 23.59)				
Dublin	24	34	2	5

Appendix F: Methodology to estimate gain in consumer surplus for Luton passengers

The overall approach was to estimate the generalised cost of travel from Luton and all comparator airports for each Luton passenger based on their ward of residence. The following comparator airports were used: Gatwick, Stansted, Birmingham, East Midlands (Other comparator airports were excluded from the analysis, as the analysis suggested that they were not the second cheapest to Luton for any passengers.)

The generalised cost of travel (GCT) was defined as follows:

Generalised cost of travel = Direct travel costs + Cost of time + Cost of air ticket

Where:

- Direct travel cost = Distance to each airport * 45p per mile (based on HMRC mileage rates, which were sourced here: www.gov.uk/government/publications/rates-and-allowances-travel-mileage-and-fuel-allowances/travel-mileage-and-fuel-rates-and-allowances#approved-mileage-rates-from-2011)
- Cost of time = Travel time to airport and average time of flight* £14 per hour (this value is a weighted average of business and leisure travellers values of time. The business value is based on the Airports Commission - Economy: Transport Economic Efficiency Impacts report: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/372769/AC07_bookmarked.pdf and the leisure value is based on the Airports Commission - Economy: Delay Impacts Assessment Methodology Paper https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/372606/AC08a_tagged.pdf)
- Cost of air ticket = Average fare of flights from each airport, based on the panel of comparable flights used in the fares analysis
- The average GCT for all Luton passengers was then calculated by adding the GCT for all passengers and dividing by the total number of passengers.
- The previous step was then repeated, but using the GCT to each passenger's second cheapest airport.

Sample size and scaling

This analysis was based on a sample of 5.1 million passengers. Aggregate results for the consumer surplus have been scaled to reflect London Luton Airport's total passenger numbers (10.5 million passengers) in 2014.

OXFORD
Abbey House, 121 St Aldates
Oxford, OX1 1HB, UK
Tel: +44 1865 268900

LONDON
Broadwall House, 21 Broadwall
London, SE1 9PL, UK
Tel: +44 207 803 1400

BELFAST
Lagan House, Sackville Street
Lisburn, BT27 4AB, UK
Tel: +44 28 9266 0669

NEW YORK
817 Broadway, 4th Floor
New York, NY 10003, USA
Tel: +1 646 786 1863

PHILADELPHIA
303 Lancaster Avenue, Suite 1b
Wayne PA 19087, USA
Tel: +1 610 995 9600

SINGAPORE
No.1 North Bridge Road
High Street Centre #22-07
Singapore 179094
Tel: +65 6338 1235

PARIS
9 rue Huysmans
75006 Paris, France
Tel: + 33 6 79 900 846

email: mailbox@oxfordeconomics.com

www.oxfordeconomics.com

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York Aviation

Manston Airport

Deadline 9: Supplementary Note in the Applicant's Summaries of Oral Evidence at ISH5 regarding Socio-Economics and CAH2 regarding Compulsory Acquisition

1. This note provides further comments on the Applicant's written summaries in relation to Socio-economics and Compulsory Acquisition, in particular responding to additional information provided by the Applicant at Deadline 8. We also cross refer as relevant to the ExA's Fourth Written Questions and address a few additional points contained therein. We cross refer as required to the previous evidence submitted on behalf of Stone Hill Park. As with our previous submissions, these remarks are without prejudice to our continued view that the 'forecasts' underpinning RSP's case for the development of a cargo airport at Manston are not robust and not capable of being realised.

Socio-Economics ISH5

Direct on-site employment

2. **Para. 2.7** again demonstrates that the Applicant's team does not understand how to estimate employment at airports. It remains our view that the employment density (direct jobs per WLU) at Prestwick is the most relevant comparator (see York Aviation February 2019 Report para. 3.54) or, if data from East Midlands is to be used then the non-aviation related jobs on Pegasus Business Park need to be excluded. Either way, the employment density used by Azimuth Associates to estimate direct on-site employment is too high and this impacts on the total employment estimates derived solely through multipliers from the direct employment estimate.

3. We note that the ExA (Question SE.4.1) has asked the Applicant for further information regarding the extent to which Pegasus Business Park was developed out in 2013. We can confirm that the estimate that we made of on-site employment for East Midlands in 2013 included non-airport related employment on Pegasus Business Park. This is made clear at page 5 of the *East Midlands Airport Sustainable Development Strategy Economics and Surface Access*, as relied on as a basis by Azimuth (Vol IV, para. 4.2.1) as made clear at para. 5 of our note of ISH5. This should have been taken into account by Dr Dixon in preparing her estimates rather than simply adopting the total East Midlands employment figures but was not. Indeed, the page referred to by Azimuth provides information about how much employment at East Midlands was cargo related and how much passenger related specifically, leaving 19% of the employment within the site as non-aviation related:

"In 2013, 6,730 employees were based on the Airport site, employed by 90 companies. Passenger related employment provides the largest proportion of airport jobs (45%), with Cargo at 36%.

4. These figures could have been applied by Dr Dixon to assess a specific employment density relevant to the passenger/cargo mix projected for Manston, albeit account would also need to have been taken of the extent to which DHL's employment serves surface access transport as well as simply air freight (see York Aviation February 2019 Report, para. 6.23). When all relevant factors are taken into account, the relevant employment density for Manston would be similar to that at Prestwick.

5. In relation to **Para. 2.8**, we advised Dr Dixon in Autumn 2017, appended to our Note of Oral Evidence given at ISH5, that use of our 2004 work for ACI EUROPE was not appropriate in 2017 as it was substantially out of date. We also made clear (at para. 8 of that Note) that the overall Europe-wide employment density was not necessarily valid for any particular airport as this would depend on its characteristics.

Indirect/Induced Employment

6. **Paras. 2.14-2.15 & 2.21** again serve to demonstrate that the Applicant does not understand the data upon which it relies for assessing the likely employment and economic effects of the proposed development. Dr Dixon clearly does not understand the application of multipliers to assess the indirect and induced effects of a development and how the size of the multiplier relates to the scale of the study area, reflecting how much of the supply chain for an airport is contained locally or spread more widely. At para 2.15, the Applicant cites the adoption of a multiplier of 1.8 indirect/induced jobs in addition to every direct job as valid for the local area.

7. In the case of the Oxford Economics work for London Luton Airport, the multiplier of 1.9 (not 1.8) for every on-site direct job is applicable at the UK level (see para. 19 of our Note on ISH5) and the relevant local area multipliers were materially lower (see para. 20 of our Note on ISH5).

8. In the case of London Stansted, also referred to by the Applicant, a multiplier of 1.8 times the number of direct jobs to estimate total employment impact is cited as applicable to the study area comprising 16 districts/boroughs in London and the East of England in the ES for its recently approved Planning Application[1]. It is clear from Table 11.8 of the ES that the Stansted multiplier has been applied as a multiple of direct jobs, i.e. the comparable multiplier to that applied by OE for Luton at the national level is 0.8 at the pan-regional level for estimating additional indirect/induced jobs, consistent with OE's sub-regional multiplier for Luton.

9. It is notable also that the recent PEIR for Heathrow Airport suggests a national level indirect/induced multiplier of 1.3, with the study area multiplier being 0.7 for a study area comprising the London Boroughs of Ealing, Hillingdon and Hounslow as well as districts in Buckinghamshire and Surrey.[2] It is important to note that there is a direct relationship between the scale of multiplier to be adopted and the scale of population and activity within the study area reflecting the likelihood of supply chain purchases being made within the area as well as secondary rounds of spending.

10. Hence, correctly understood, the examples of multipliers used at other airports would strongly suggest that the appropriate multiplier for the indirect and induced employment likely to arise in Thanet would be less than 0.8, consistent with our best estimate of 0.7 for Kent and the Thames Estuary and 0.4 as a maximum for Thanet.

11. It is clear that the Applicant, as advised by Dr Dixon, simply does not understand the evidence from other airports upon which it seeks to rely. Given the manifest errors in the assessment of the jobs and broader economic impact of the proposed development, the ExA can have no confidence in the socio-economic assessment. Clearly, if the number of jobs created is substantially lower, as would be the case if correctly assessed, then the benefits to Thanet and Kent would be materially less than set out in the ES.

12. **Paras. 2.18-2.19** address the potential employment due to MRO activities. It is important to recognise that these would not be additional to the on-site employment estimates as, for example at Prestwick, maintenance related employment is already included within the employment density stated. We have addressed the more realistic assessment of how many jobs might be associated with such activities on the scale proposed at paras. 11-14 of our Note on ISH5.

[1] Transforming London Stansted Airport, 35+ Planning Application, Environmental Statement, Section 11.
[2] Heathrow Airport Ltd, PEIR, Chapter 18, para 18.10.148.

Catalytic Impact

13. At **Para. 2.23**, the Applicant states that the catalytic employment estimates are assumed to be at the UK level but, as we pointed out in our November 2017 Report (para. 5.8), the ICAO estimate relates to the global catalytic effect of aviation and the 2015 Intervistas study referred to by the Applicant to the Europe-wide effects. Neither of these are relevant at the national level similarly to the importance of distinguishing the relevant study area and the extent to which purchases are local or even national. As pointed out in our reports and at the Hearing, consideration of the catalytic benefits of an airport are more usually examined by reference to the specific business that it seeks to serve and how this benefits passengers and businesses in the relevant study area. It is for this reason that crude multipliers are not normally applied, not least as direct employment at an airport provides no indication of the extent to which wider catalytic benefits would be generated, for example a busy airport serving primarily outbound leisure flights might well employ more staff than a small airport focussed entirely on core business links. Heathrow Airport's PEIR provides an example of how to consider the likelihood of catalytic effects arising. Furthermore, to the extent that direct employment has been overestimated, this would flow through to the catalytic employment estimates when a crude multiplier is adopted. The quantification of the catalytic impact of Manston has simply no validity at the national or any other level.

Displacement

14. The Applicant seeks to deny the relevance of any displacement effects at **Paras. 3.1-3.4**. Whilst this might be a reasonable approach if the impacts had only been assessed and scaled appropriately to a small local study area containing no other airport and few affected businesses, it is not correct given that the impacts have been assessed at least at a national scale. The Applicant continues to be in error when it says that displacement of activity at other airports or a switch from trucking to flown freight does not need to be accounted for.

15. We note that Heathrow correctly considered displacement effects in its recent PEIR.

Tourism

16. At **Paras 4.1-4.2**, the Applicant continues to assert large potential inbound tourism benefits by reference to Southend Airport. We have provided actual information in relation to Southend Airport at paras. 27-29 of our Note on ISH5, as noted in the ExA'.

Compulsory Acquisition CA2

Compelling Case

17. At **Paras. 5.2-5.3**, the Applicant simply reiterates the arguments previously made. We have addressed the weakness in these arguments, sufficient to negate the existence of a compelling case, in our February 2019 Report (paras. 2.2-2.21) and in our Note of Oral Evidence at CAH2, paras. 16-19).

18. It is significant that that since this Note was written, Heathrow Airport has confirmed its plans in relation to the development of its freight facilities in its recent Statutory Consultation documents. The *Preferred Master Plan* Report (Figures 5.2.11 and 5.2.12) illustrates clearly where additional cargo facilities are to be provided to accommodate the doubling of cargo throughput expected by Government as a consequence of the additional flights facilitated by the third runway. These do not, as claimed by the Applicant in various submissions, involve the closure and demolition of Terminal 4.

19. As we have noted in previous reports and submissions, the expected increase in cargo handling capability at Heathrow when coupled with expected uplifts in cargo capacity at East Midlands and other airports removes any shortfall in capacity for air cargo across the UK and removes that plank of the Applicant's compelling case argument completely. We have addressed the substantial overstatement of socio-economic benefits above.

Associated Development

20. We note that in the Heathrow Master Plan Report referred to above, that Heathrow has made clear that its definition of Airport Supporting Development (ASD) or Associated Development for the purpose of the NSIP is that which is essential to support the operation of the Airport and only that which requires to be located within the immediate vicinity of the Airport:

    The Preferred Masterplan only includes replacement and additional ASD that is essential for the successful operation of the airport, with regards to site suitability, planning considerations and other factors" (para. 4.9.13) (emphasis added)

21. Given that the NSIP at Heathrow relates to the provision of an additional runway as well as passenger terminal capacity, the inclusion of facilities relevant to passengers, freight and aircraft support (MRO) are relevant. Applying the same 'essential for the successful operation' test to the list of potential 'airport related' uses suggested by the Applicant for Manston or potentially allowed within the definition currently included within the Draft DCO would show that most of them would fail a test of being essential for the successful operation of the cargo terminal and associated infrastructure (see our Deadline 7 comments on the Applicant's responses to ExA's Second Questions).

22. Contrary to what is said by the Applicant at **Para. 6.6**, the appropriate test is not whether the proposed use *"requires a location at or in close proximity to an airport"* but whether the use is necessary or essential for the successful operation, in this case, of a cargo terminal and associated stands.

23. We notice that the ExA has recognised the potential inconsistencies in the definition of what is or is not part of the Principal Development and what is Associated Development in relation to its recent Question ND.4.3 & 4.4, DCO.4.2 & 4.3, particularly in relation to the definition of airport related development. This is an important issue which needs further clarification, particularly in the absence of any cogent explanation from the Applicant as to the justification for the overall scale of development proposed. As explained in our Note on CA2, this extends beyond the justification for any development on the Northern Grass to the justification for the overall scale of development, even if the Applicant's 'forecasts' were correct.

Business Model

24. Appended to the Applicant's Note on CAH2, are two documents responding to the ExA's request for an updated and more detailed business plan and business model. We provided, in our Note on CAH2, an explanation of the minimum level of information that a Business Plan for an Airport seeking funding or to demonstrate viability should contain. The information provided by the Applicant remains woefully deficient and certainly insufficient for any party to assess the plausibility of the revenue and cost estimates that underpin the claimed viability of the proposed development and operation of Manston as a cargo airport.

25. In its response, the Applicant has provided a brief note explaining the differences between how it intends to operate Manston compared to East Midlands Airport and a revised spreadsheet with limited further information in relation to revenues and costs. There is no meaningful explanation as to how the figures have been derived sufficient for their veracity to be tested. In any event, a spreadsheet is not a Business Plan. A Business Plan is a document that sets out clearly how a business is going to achieve its forecasts by reference to the revenues to be earned and the costs of doing so. As became evident at the Need and Operations Hearing (ISH2), the Applicant appears not to have made the linkage between the deliverability of the so-called 'forecasts', or rather a wish list of who might operate at Manston, and the costs to users of doing so based on the expected prices to be charged. The spreadsheet as presented cannot be considered a Business Plan in any normal sense of the term, nor are the assumptions underpinning the calculations clearly set out.

26. In terms of the comparison to East Midlands, we note that RSP intend for Manston to provide its own handling, except for the (e-commerce) integrator, and so would earn revenue from this source, which we understand is included in the aeronautical revenue estimates. Clearly there would be a cost attached to providing this handling service, which we assume is contained within the staff and other operating costs, albeit this is not clear from the level of detail provided. We have some doubts as to the profitability of operating such handling services in house as experience at most airports would suggest that handling activities are outsourced given the low revenues that can be earned relative to the staff and other costs involved. Insufficient detail has been provided to enable this to be ascertained for Manston. We note that the ExA has asked for further information in relation to benchmarked charges for cargo handling (Question ND.4.6). Without such information it is simply not possible to check the reasonableness of the assumed income from this source.

27. We note also the RSP intends to supply aviation fuel directly and the explanatory note to the spreadsheet suggests that the income is shown within aeronautical revenues net of the costs of buying the fuel, i.e. as a profit margin on sales. Firstly, we note that it tends only to be very small airports that operate on this basis. This is because major airlines tend to have global fuel supply contracts with the main oil companies at heavily discounted rates applicable at most airports from which they operate. An airport itself, operating on a stand alone basis, can seldom match the selling price of aviation fuel offered by the main suppliers. Thus, most of the UK's larger airports, including East Midlands, contract out the supply of aviation fuel taking only a small throughput levy typically included within commercial revenues to ensure that the cost of aviation fuel, which makes up a major part of an airline's costs, does not act as a deterrent to airlines operating to/from them.

28. Airlines tend to seek to minimise fuel purchases at airports where their contracted supplier is not able to provide the fuel. As an independent supplier of fuel, RSP would a) be purchasing fuel from the oil companies and, as a relatively small operation, not able to avail of discounts available on a high volume basis and b) their mark-up on the base price (profit margin) would of itself increase the sale price to the airline still further. The extent of fuel sales would, thus, in all likelihood be in an inverse relationship to the overall cost to the airline relative to buying fuel elsewhere. Insufficient information is provided to explain the assumptions that underpin this part of the aeronautical revenue estimate in terms of the expected selling price of fuel relative to other airports and the margin on sales assumed (% or fixed amount).

29. The note setting out the comparison to East Midlands asserts that, once these revenues have been separated out, the comparable aeronautical revenue per WLU is £3.18, which RSP compare to the average aviation revenue earned at EMA in 2017/8 of £2.75 per WLU. The spreadsheet shows that the Manston estimate of £3.18 per WLU is made up of an assumed aeronautical revenue per passenger of £0.50, which is consistent with our expectation of the level of aeronautical income per passenger that Manston might attain, albeit some marketing support payments might need to be made in the early years reducing the net income for a period, and an assumed freight related aeronautical income of £4.28 per WLU (42.83 per metric tonne) in Year 20. This is then weighted by the relative WLU's produce an estimated average aeronautical revenue per WLU.

30. First of all, it is relevant to consider what this tells us about comparability to the level of charges at EMA. Whilst the assumed aeronautical revenue per passenger at Manston is of the order that we would expect for a small airport trying to establish itself in the market, this does not mean that passenger related aeronautical revenues would necessarily be as low at an established airport such as East Midlands. Taking the closest example of a regional airport, with limited cargo activity, average aeronautical revenue per passenger at Leeds Bradford Airport was £2.51 in 2016/7 (the most recent year for which information is available[3]). It is notable that this is amongst the lowest average aeronautical revenues at airports covered in the report. Leeds Bradford has outsourced its handling and does not directly sell fuel. Taking this as a reasonable proxy for passenger related revenues at East Midlands would imply that East Midlands earns around £3.10 per WLU of freight based on the WLUs set out by the Applicant for East Midlands for the FY ending March 2018. Hence, direct aeronautical charges at Manston would be still be 40% higher than at East Midlands, still acting as a significant deterrent to attracting airlines to use it, leaving aside whether Manston is cost competitive in other aspects of the service it seeks to provide directly.

31. The other costs of using an airport are equally relevant to whether airlines will chose to operate, particularly fuel and handling costs as noted above. This is particularly relevant given that, based on the information provided by the Applicant, such charges are assumed to make up the vast majority of the aeronautical income that RSP expects to earn at Manston:

Aeronautical Income:		
Passenger Income:	*£3,407,000*	
Direct Aeronautical Income	*£703,877*	
Handling and Fuel Income	*£2,703,123*	*79% of pax related income*
Cargo Income:	*£50,966,000*	
Direct Aeronautical Income	*£14,594,665*	
Handling and Fuel Income	*£36,371,335*	*71% of cargo related income*

32. In overall terms, handling and fuel related income accounts for 72% of the claimed aeronautical revenue, yet the build up of this income is without any explanation as to the assumptions used. This is all the more extraordinary given that the e-commerce integrator, accounting for 50% of cargo traffic is not expected to purchase any handling services. Potentially each cargo aircraft departing Manston would be facing a fuel mark-up (additional cost) of c.£3,000-4,000, dependent on what is assumed for handling income.

33. Handling and fuel costs would be an important part of airlines' decision making as to whether they would be willing to operate yet no information is provided by the Applicant to justify such high levels of revenue being realistically attainable. Whilst we appreciate that the Azimuth Report provides a table of fuel storage required (Table 8), no information is provided as to how this has been calculated in terms the extent to which airlines would purchase fuel at Manston at the price proposed. These levels of income from handling charges and fuel margin seem extraordinarily high and likely to constitute another material factor as to why airlines would not choose to operate from Manston and would certainly influence the extent to which they were willing to purchase these services or goods from the airport operator when alternatives are available, handling freight off-site or purchasing fuel elsewhere, particularly given the propensity of freighter aircraft to multi-stop across Europe en-route to longer haul destinations.

[3] Leigh Fisher UK Airport Performance Indicators for 2016/7.

34. In terms of property income, which makes up over 35% of total income in Year 20 (over £32 million), SHP provide separate comments on the realism of this. Given that the clear intention of RSP is to operate its own cargo sheds, the scope for rental income would be limited by the extent to which legitimate airport related uses can be attracted and the level of rent they are likely to be willing to pay. Most essential airport operationally related activities are generally only low rental income generators. At the very least, further explanation is required of the build up of this large rental stream in order that the legitimacy of the proposed rental generating activities can be ascertained. By way of comparator, total other income (including property income) at East Midlands Airport in 2017/8 (Annual Report and Accounts attached at **Appendix A**) was only £5.34 million, including income earned from the large scale DHL cargo hub, UPS building and other cargo operations, as well as the Airport's share of rental income from Pegasus Business Park (developed in conjunction with Wilson Bowden). In the circumstances where Manston intends to own and operate its own cargo facilities, the estimated property income at six times that earned at East Midlands is not credible given that the projected cargo throughput in Year 20 is of a similar order to that at East Midlands currently.

35. We are not able to comment further in relation to passenger related commercial revenues or operating costs pending provision of further information by the Applicant.

36. Overall, the information currently provided is inadequate to enable the realism of the overall Business Case for the proposed development to be understood and the likelihood of viability being obtained even over the longer term to be assessed. We remain of the view as set out in Section 7 of our February 2019 Report that the development of Manston is highly unlikely to be financially viable and that the claimed revenues would not be achievable even if it were to achieve its forecasts, which we do not consider credible for the reasons set out in our Reports.

Supplementary Points in Relation to ExA's 4th Questions

37. We set out here a few additional points of information that the ExA may find helpful in relation to its 4th Questions

DCO.4.22	We recognise the ExA's concern that vehicles being used by passengers to access the Airport result in congestion on the highway network during the morning peak period, particularly if there is concern that the impacts have not been properly assessed in the TA. These concerns would equally apply in the afternoon traffic peak, particularly in relation to aircraft arriving between 15.00 and 17.00 and departing between 17.00 and 19.00 as implied by the ExA's Question Tr.4.6. In our experience, this is often the more critical interaction between the highway network and the timing of flights. However, the key issue is the extent to which any restrictions would impact on the ability of airlines to operate flights at the times required to optimise the utilisation of their aircraft and meet passenger demand. Significantly, given Ryanair is indicated as the operator of the majority of flights, it is informative to consider their operating pattern across UK airports. We have extracted the timetable of all of Ryanair's UK flights for the week beginning 24th June 2019 (**Appendix B**). This shows that across the UK as a whole, 6% of all departing flights were between 09.00 and 12.00. More importantly, for smaller airports of a similar scale (up to 85 flights per week), 19% of all departures were between 09.00 and 12.00. Imposing a restriction during this period would have a significant impact on the ability of the airline to schedule its operations efficiently. Furthermore, any constraints on operations in this period would increase the likelihood of the airline needing to schedule arrivals later than 23.00 in order to attain full utilisation of the aircraft over the day. Restrictions on operations in the late afternoon period could be even more impactful on the overall operation, certainly pushing more movements into requiring night period slots, which would simply not be available at Manston. We have also looked at the timetable of KLM operations at UK airports (**Appendix C**). Again, at smaller airports with a similar frequency to that projected for Manston, there is

	heavy reliance on morning departures between 09.00 and 12.00. Some 29% of departures are during this period. This is because the flights are optimally timed so as to allow passengers arriving on early morning long haul flights at Amsterdam to connect into the UK and for passengers to reach Amsterdam in time for afternoon long haul departures. If the airline could not achieve such flight connections, it is unlikely to operate from Manston. Overall, the imposition of yet further restrictions on the timing of flight operations, which we understand are required to ensure that the impact of airport operations on the highway network are managed, would, when coupled with the proposed ban on scheduled night operations, severely limit an airline's ability to optimise its schedule and make efficient use of its aircraft. Such restrictions would make it very unlikely that passenger airlines would be willing to operate at Manston, other than a small number of niche operations for which the flight timings are not material. However, we understand the importance of restricting the impact of the Airport's operation on the highway network, particularly where inadequate mitigation has been proposed.
ND.4.2	The key point is that for dedicated freighter services to be viable, they need to operate at high load factors. Hence, the importance of consolidating operations where high volumes of import and export freight can be concentrated. This is why there is a 'golden triangle' of airports with high air freight volumes in northern Europe reflecting a concentration of population and industry generating demand for air freight. The same logic applies within the UK in relation to concentration at East Midlands. It is a gross over-simplification to suggest that freight destined for the UK could be flown to Manston instead as the local area would not generate sufficient freight demand for such a service to be viable.
ND.4.5	See comments above on the comparability of the proposed charges with East Midlands. We agree with the ExA that, at least in the early years, Manston would need to incentivise airlines to use it and would need to rebate charges substantially until its place in the market is established.
ND.4.21	What the Securitas information (if correct) does not state is the nature of this trucked cargo. To the extent that this is trucking under bond with airline flight numbers, such cargo is more likely related to availing of bellyhold capacity, including goods being trucked into the UK to avail of bellyhold capacity at Heathrow. Other trucking is likely to relate to conventional integrator operations linked to the established integrator hubs in Europe. The overall tonnage being trucked between the UK and Europe does not provide any indication of how likely it is or not that Manston could attract any share of it sufficient to justify a number of dedicated freighter operations at Heathrow.
ND.4.25	See comments at para. 17 above.
ND.4.28	Stansted Airport helpfully provides confirmation of the number of cargo stands that it has at https://www.magairports.com/our-expertise/cargo-services/london-stansted-cargo/. This accords with the information previously submitted by ourselves: Stansted's dedicated cargo stands can simultaneously accommodate 4 x A380, 3 x B747-8F, 1 x B747-400F and 1 X B767-300. In relation to freight at Stansted currently, we can confirm that we have checked with the CAA and the Airport and there has been an omission in the freight statistics submitted to the CAA regarding bellyhold freight being carried by Emirates. This will be rectified in CAA statistics from July onwards.
SE.4.3/SE.4.4	We have addressed these points above.

28th June 2019

Appendix 09a

York Aviation (DL9 Appendix)
East Midlands Airport Annual Report
Year Ended 31 March 2018

Appendix A

East Midlands International Airport Limited

Annual report and financial statements

Registered number 02078271

Year ended 31 March 2018



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Strategic report

The directors present their strategic report for the Company for the year ended 31 March 2018.

Principal activity
The principal activity of the Company during the year was the operation and management of East Midlands International Airport. The Company's revenues were derived primarily from aircraft and passenger handling charges, together with income from aviation, commercial, car park and retail activities.

The Company is a wholly owned subsidiary of East Midlands Airport Nottingham Derby Leicester Limited, which itself is a wholly owned subsidiary of Manchester Airports Holdings Limited. Manchester Airports Holdings Limited and its subsidiaries (including the Company) are referred to below as 'the Group'.

Business review and future outlook
The results for the year are set out on page 7. During the year the Company made a profit before tax of £31,230,000 (2017: £11,194,000). At the year end the Company had net assets of £94,056,000 (2017: £222,638,000).

The Company intends to continue the development of East Midlands International Airport as a world class airport to meet the requirements of users and for the benefit of the economy in the East Midlands region.

In preparing the financial statements for the year ended 31 March 2018 the previously reported figures for aviation and car parking income have been restated to bring their treatment in line with the presentation in the consolidated financial statements of the ultimate parent company Manchester Airports Holdings Limited. Aviation income has been restated to present certain rebates and discounts as a reduction of revenue rather than a cost of sale, and car parking income has been restated to present car park booking commissions paid to third parties as a cost of sale rather than a reduction of revenue. These adjustments have no effect on either the profit for the year or net assets.

Manchester Airports Group ('MAG'), the group of companies whose ultimate parent company is Manchester Airports Holdings Limited, and of which the Company is a member, has continued to work with industry partners to help shape the UK Government's approach to Brexit. MAG is confident that the UK Government and the EU recognise the need to provide continuity for aviation and the importance of a transitional period after the UK leaves the EU in March 2019. In particular, MAG welcomes the commitment from both sides to putting in place a framework to enable air services to be maintained post Brexit. Maintaining the current liberal regime in the long term, alongside other agreements with other countries, must be a priority of the Government, to help ensure that the recent successful growth of aviation continues into the future.

MAG's resilient foundations, healthy financial position and the fundamental strengths of MAG's airports, will ensure that the Company is well placed to respond to any challenges that may be felt by the UK economy in the future, and the directors continue to take a positive long-term view of the Company's prospects.

Principal risks and uncertainties
The key risks faced by the Company are aligned with those of Manchester Airports Holdings Limited. For more details of these risks and how they are managed please refer to the strategic report in the annual report and accounts for Manchester Airports Holdings Limited. The directors have not identified any other significant risks for the Company.

Key performance indicators ('KPIs')
The key performance indicators for the Company are aligned with those of Manchester Airports Holdings Limited. For more details of these KPIs please refer to the strategic report in the annual report and accounts for Manchester Airports Holdings Limited. The directors do not use any additional KPIs for this Company.

By order of the Board

[redacted]

N Thompson
Director

24 December 2018

Directors' report

The directors present their directors' report and audited financial statements for the Company for the year ended 31 March 2018.

Directors
The directors who held office during the year and up to the date of signing the financial statements were as follows:

A Cliffe (resigned 12 April 2018)
C Cornish
K Smart (appointed 12 April 2018)
K O'Toole
N Thompson

Employees
The Company's employment policies are regularly reviewed and updated by the Board.

The Company is committed to providing equality of opportunity to all employees and potential employees. The Company gives full and careful consideration to applications for employment from all people regardless of their gender, ethnic origin, nationality, sexuality, age, disability or religious beliefs, bearing in mind the respective aptitudes and abilities of the applicant concerned. This also applies to training and promotion within the Company.

In the event of members of staff becoming disabled every effort is made to ensure that their employment with the Company continues and the appropriate training is arranged. It is the policy of the Company that the training, career development and promotion of a disabled person should, as far as possible, be identical to that of a person who does not suffer from a disability.

Diversity
The Company provides services for a changing and diverse society and the board of directors considers that to provide the best services for our customers it is essential that the Company embraces diversity in the workforce. Accordingly, the Company has a programme of activity that aims to ensure that these objectives are achieved.

Consultation and communication
Consultation with employees or their representatives has continued at all levels, with the aim of ensuring that views are taken into account when decisions are made that are likely to affect their interests, and that all employees are aware of the financial and economic performance of their business units and of the Company as a whole. At regular intervals all employees are invited to take part in a Company wide survey of employee views. Employees receive a written summary of the results of the survey and are given the opportunity to discuss these with their respective management teams.

The Company is constantly looking for ways to ensure that employees are able to participate and engage in the business. As part of the Trade Union recognition arrangements, various employee forums exist for each business area. In addition, business briefings are cascaded throughout the organisation to communicate key business and operational issues.

Financial risk management
The Company's activities expose it to a variety of financial risks. The Company's funding, liquidity and exposure to interest rate risks are managed by the Group's treasury function.

Treasury operations are conducted within a framework of policies, which are approved and subsequently monitored by the Board. These include guidelines on funding, interest rate risk management and counterparty risk management.

For more details of the management of these risks please refer to page 40 of the annual report and accounts for Manchester Airports Holdings Limited. The directors have not identified any additional risks specific to this Company.

Directors' report *(continued)*

Going concern
The Company is able to rely on the Group of which it is a member for financial support. Manchester Airports Holdings Limited, the Company's ultimate parent undertaking, has confirmed that it will continue to provide financial and other support to the Company, for at least the next twelve months from the date of approval of the financial statements, to the extent necessary to enable the Company to continue to trade, and in particular will not seek repayment of the amounts currently made available.

It should be recognised that any consideration of the foreseeable future involves making a judgement, at a particular point in time, about future events, which are inherently uncertain. Nevertheless, at the time of preparation of these accounts and after making appropriate enquiries, the directors have a reasonable expectation that the Group has adequate resources to continue operating for the foreseeable future. For this reason the directors continue to adopt the going concern basis in preparing these accounts. For further details see note 1.

Dividends
A dividend of £160,545,000 (2017: £nil) was declared and paid in the year.

Disclosure of information to auditor
The directors who held office at the date of approval of this directors' report confirm that, so far as they are each aware, there is no relevant audit information of which the Company's auditor is unaware; and each director has taken all the steps that they ought to have taken as a director to make themselves aware of any relevant audit information, and to establish that the Company's auditor is aware of that information.

Independent auditor
Written resolutions relating to the reappointment of KPMG LLP as auditor, and to the authority of the directors to fix the auditor's remuneration, are to be put before the Company's voting shareholders for execution in the short term (and in the case of the former resolution, within the relevant period prescribed by statute).

By order of the Board

[redacted]

N Thompson
Director
24 December 2018

Olympic House
Manchester Airport
Manchester
M90 1QX

Statement of directors' responsibilities relating to the strategic report, the directors' report and the financial statements

The directors are responsible for preparing the strategic report, the directors' report and the financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare financial statements for each financial year. Under that law they have elected to prepare the financial statements in accordance with UK accounting standards and applicable law (UK Generally Accepted Accounting Practice), including FRS 102 *The Financial Reporting Standard applicable in the UK and Republic of Ireland.*

Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing these financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- assess the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the company and to prevent and detect fraud and other irregularities.



KPMG LLP
1 St Peter's Square
Manchester
M2 3AE
United Kingdom

Independent auditor's report to the members of East Midlands International Airport Limited

Opinion

We have audited the financial statements of East Midlands International Airport Limited ("the company") for the year ended 31 March 2018, which comprise the income statement and other comprehensive income, statement of financial position and statement of changes in equity, and related notes, including the accounting policies in note 1.

In our opinion the financial statements:

- give a true and fair view of the state of the company's affairs as at 31 March 2018 and of its profit for the year then ended;
- have been properly prepared in accordance with UK accounting standards, including FRS 102 *The Financial Reporting Standard applicable in the UK and Republic of Ireland*; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ('ISAs (UK)') and applicable law. Our responsibilities are described below. We have fulfilled our ethical responsibilities under, and are independent of the company in accordance with, UK ethical requirements including the FRC Ethical Standard. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion.

Going concern

We are required to report to you if we have concluded that the use of the going concern basis of accounting is inappropriate or there is an undisclosed material uncertainty that may cast significant doubt over the use of that basis for a period of at least twelve months from the date of approval of the financial statements. We have nothing to report in these respects.

Strategic report and directors' report

The directors are responsible for the strategic report and the directors' report. Our opinion on the financial statements does not cover those reports and we do not express an audit opinion thereon.

Our responsibility is to read the strategic report and the directors' report and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work:

- we have not identified material misstatements in the strategic report and the directors' report;
- in our opinion the information given in those reports for the financial year is consistent with the financial statements; and
- in our opinion those reports have been prepared in accordance with the Companies Act 2006.

Independent auditor's report to the members of East Midlands International Airport Limited *(continued)*

Matters on which we are required to report by exception

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in these respects.

Directors' responsibilities

As explained more fully in their statement set out on page 4, the directors are responsible for: the preparation of the financial statements and for being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at www.frc.org.uk/auditorresponsibilities.

The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members, as a body, for our audit work, for this report, or for the opinions we have formed.



Nicola Quayle (Senior Statutory Auditor)
for and on behalf of KPMG LLP, Statutory Auditor
Chartered Accountants
1 St Peter's Square
Manchester
M2 3AE

24 December 2018

Income statement

for the year ended 31 March 2018

	Note	2018 £000	2017 £000 Restated*
Revenue	2	**61,048**	50,751
Operating costs		**(54,121)**	(41,528)
Operating profit		**6,927**	9,223
Profit on disposal of fixed assets	3	**-**	4,202
Profit on disposal of investment properties	9	**4,769**	-
Revaluation of investment properties	9	**(2,771)**	(246)
Interest payable and similar charges	6	**(2,185)**	(1,985)
Dividends receivable		**24,490**	-
Profit before taxation	3	**31,230**	11,194
Tax on profit	7	**(2,791)**	(877)
Profit for the financial year		**28,439**	10,317

The results presented above are all derived from the Company's continuing operations.

The notes on pages 11 to 31 form an integral part of these financial statements.

*See note 1 for details of the restatement.

Other comprehensive income

for the year ended 31 March 2018

	2018 £000	2017 £000
Profit for the year	**28,439**	10,317
Other comprehensive income		
Remeasurement of the net defined benefit liability	**4,500**	(10,400)
Income tax on other comprehensive (expense)/income	**(765)**	1,836
Effect of change in rate of corporation tax on deferred tax	-	(118)
Other comprehensive income for the year, net of income tax	**3,735**	(8,682)
Total comprehensive income for the year	**32,174**	1,635

The notes on pages 11 to 31 form an integral part of these financial statements.

Statement of financial position

at 31 March 2018

	Note	2018 £000	2018 £000	2017 £000	2017 £000
Non-current assets					
Tangible assets	*8*		**216,943**		217,255
Investment properties	*9*		**4,901**		12,004
Deferred tax assets	*14*		**3,310**		3,956
			225,154		233,215
Current assets					
Inventories	*10*	**187**		187	
Trade and other receivables	*12*	**119,179**		76,749	
Cash at bank and in hand		**1,827**		938	
		121,193		77,874	
Current liabilities					
Trade and other payables	*13*	**(209,886)**		(42,354)	
Net current liabilities			**(88,693)**		35,520
Total assets less current liabilities			**136,461**		268,735
Provisions for liabilities					
Deferred tax	*14*		**(23,605)**		(23,497)
Pension liabilities	*19*		**(18,800)**		(22,600)
			(42,405)		(46,097)
Net assets			**94,056**		222,638
Capital and reserves					
Share capital	*15*		**17,614**		17,614
Revaluation reserve	*16*		**-**		68,969
Retained earnings	*16*		**76,442**		136,055
Shareholders' funds			**94,056**		222,638

The notes on pages 11 to 31 form an integral part of these financial statements.

These financial statements of East Midland International Airport Limited, registered number, 02078271 were approved by the board of directors on 24 December 2018 and were signed on its behalf by:

[redacted]

N Thompson
Director

Statement of changes in equity

For the year ended 31 March 2018

	Share capital	Revaluation reserve	Retained earnings	Total equity
	£000	£000	£000	£000
Balance at 1 April 2017	**17,614**	**68,969**	**136,055**	**222,638**
Total comprehensive income for the year				
Profit for the year	-	-	28,439	28,439
Other comprehensive income (see note 16)	-	2,922	601	3,523
Total comprehensive income for the year	-	2,922	29,040	31,962
Transactions with owners recorded directly in equity				
Transfer of revaluation reserves to retained earnings	-	(71,892)	71,892	-
Dividends paid	-	-	(160,545)	(160,545)
Balance at 31 March 2018	**17,614**	**-**	**76,442**	**94,056**

	Share capital	Revaluation reserve	Retained earnings	Total equity
	£000	£000	£000	£000
Balance at 1 April 2016	17,614	70,265	133,123	221,002
Total comprehensive income for the year				
Profit for the year	-	-	10,317	10,317
Other comprehensive income (see note 16)	-	(1,296)	(7,385)	(8,681)
Total comprehensive income for the year	-	(1,296)	2,932	1,636
Balance at 31 March 2017	**17,614**	**68,969**	**136,055**	**222,638**

The notes on pages 11 to 31 form an integral part of these financial statements.

Notes

(forming part of the financial statements)

1 Accounting policies

East Midlands International Airport Limited (the 'Company') is a company limited by shares and incorporated and domiciled in the UK.

The Company is exempt by virtue of section 400 of the Companies Act 2006 from the requirement to prepare group financial statements. These financial statements present information about the Company as an individual undertaking and not about its group.

These financial statements were prepared in accordance with Financial Reporting Standard 102 *The Financial Reporting Standard* applicable in the UK and Republic of Ireland (*'FRS 102'*) as issued in August 2014. The amendments issued in July 2015 have been applied. The presentation currency of these financial statements is sterling. All amounts in the financial statements have been rounded to the nearest £1,000.

The Company's ultimate parent undertaking, Manchester Airports Holdings Limited, includes the Company in its consolidated financial statements. The consolidated financial statements of Manchester Airports Holdings Limited are prepared in accordance with International Financial Reporting Standards as adopted by the EU, are available to the public and may be obtained from Olympic House, Manchester Airport, M90 1QX.

In these financial statements, the Company is considered to be a qualifying entity (for the purposes of this FRS) and has applied the exemptions available under FRS 102 relating to the following disclosures:

- Reconciliation of the number of shares outstanding from the beginning to end of the year;
- Cash Flow Statement and related notes; and
- Key Management Personnel compensation.

The Company has taken advantage of section 33.1A of FRS 102 and not disclosed transactions with fellow Group companies.

As the consolidated financial statements of Manchester Airports Holdings Limited include the equivalent disclosures, the Company has also taken the exemptions under FRS 102 available relating to the following disclosures:

- The disclosures required by FRS 102.11 *Basic Financial Instruments* and FRS 102.12 *Other Financial Instrument Issues* relating to financial instruments not falling within the fair value accounting rules of Paragraph 36(4) of Schedule 1.

The Company proposes to continue to adopt the reduced disclosure framework of FRS 102 in its next financial statements.

The accounting policies set out over the page have, unless otherwise stated, been applied consistently to all years presented in these financial statements.

1.1 Measurement convention

The financial statements are prepared on the historical cost basis with the exception of certain assets and liabilities, namely investment properties and defined benefit scheme assets and liabilities, which are stated at their fair value at each statement of financial position date.

1.2 Going concern

The financial statements have been prepared on the going concern basis, which the directors believe to be appropriate for the following reasons.

The Company is able to rely on the Group of which it is a member for financial support. Manchester Airports Holdings Limited, the Company's ultimate parent undertaking, has confirmed that it will continue to provide financial and other support to the Company, for at least the next twelve months from the date of approval of the financial statements, to the extent necessary to enable the Company to continue to trade, and in particular will not seek repayment of the amounts currently made available.

Notes *(continued)*

1 Accounting policies *(continued)*

The Group has considerable financial resources, as well as long-term contracts with a number of customers and suppliers across different geographic areas and industries. As a consequence, the directors of the Group believe that the Group is well placed to manage its business risks successfully despite the current uncertain economic outlook.

The Group's forecasts and projections, taking account of reasonably possible changes in trading performance, show that the Group should be able to operate within the level of its current facilities.

After considering all this available information, the directors of the Group have a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future.

As with any company placing reliance on other group entities for financial support, the directors of the Company acknowledge that there can be no certainty that this financial and other support will continue, although at the date of approval of these financial statements, they have no reason to believe that it will not do so. On the basis of the above, the directors of the Company consider it appropriate to prepare the financial statements on a going concern basis.

1.3 Restatement

	2017	Reclassification	2017 Restated
Revenue	£000	£000	£000
Aviation	20,115	(4,254)	15,861
Retail concessions	11,128		11,128
Car parking	16,303	2,340	18,643
Other	5,119		5,119
	52,665	(1,914)	50,751
Operating costs	(43,442)	1,914	(41,528)
Operating profit	9,223		9,223
Profit before taxation	11,194		11,194
Profit for the financial year	11,194		11,194

In preparing the financial statements for the year ended 31 March 2018 the previously reported figures for aviation and car parking income have been restated to appropriately present certain rebates and discounts as a reduction of revenue rather than a cost of sale, and car parking income has been restated to appropriately present car park booking commissions paid to third parties as a cost of sale rather than a reduction of revenue. These adjustments have no effect on either the profit for the year or net assets.

1.4 Foreign currency

The Company financial statements are presented in pound sterling and rounded to thousands. The Company's functional and presentation currency is the pound sterling.

Foreign currency transactions are translated into the functional currency using the spot exchange rates at the dates of the transactions. At each year end foreign currency monetary items are translated using the closing rate. Foreign exchange gains and losses resulting from the settlement of transactions, and from the translation at year end exchange rates of monetary assets and liabilities denominated in foreign currencies, are recognised in the income statement within operating costs.

Notes *(continued)*

1 Accounting policies *(continued)*

1.5 Classification of financial instruments issued by the Company

In accordance with FRS 102.22, financial instruments issued by the Company are treated as equity only to the extent that they meet the following two conditions:

(a) they include no contractual obligations upon the Company to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Company; and

(b) where the instrument will or may be settled in the Company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the Company's own equity instruments or is a derivative that will be settled by the Company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the Company's own shares, the amounts presented in these financial statements for called up share capital and share premium exclude amounts in relation to those shares.

1.6 Basic financial instruments

Trade and other receivables/payables

Trade and other receivables are recognised initially at transaction price less attributable transaction costs. Trade and other payables are recognised initially at transaction price plus attributable transaction costs. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses in the case of trade receivables. If the arrangement constitutes a financing transaction, for example if payment is deferred beyond normal business terms, then it is measured at the present value of future payments discounted at a market rate of instrument for a similar debt instrument.

Investments in subsidiaries

Investments in subsidiaries are carried at cost less impairment, with changes recognised in other comprehensive income. Impairments are recognised in the income statement.

1.7 Revenue

Revenue, which excludes value added tax, represents amounts received and receivable by the Company for services provided in the normal course of business, rent receivable and income from commercial concessions.

The Company recognises revenue when (a) the significant risks and rewards of ownership have been transferred to the buyer; (b) the Company retains no continuing involvement or control over the services; (c) the amount of revenue can be measured reliably; (d) it is probable that future economic benefits will flow to the entity and (e) when the specific criteria relating to each of the Company's sales channels have been met, as described below.

The following revenue recognition criteria apply to the Company's main income streams:

- Various passenger charges for handling and security based upon the number of departing passengers, are recognised at point of departure;
- Aircraft departure and arrival charges levied according to weight and time of departure/arrival, are recognised at point of departure;
- Aircraft parking charges based upon a combination of weight and time parked, are recognised at the point of departure;
- Car parking income is recognised at the point of exit for turn-up short and long stay parking. Contract parking and pre-book parking is recognised over the year to which it relates on a straight-line basis;
- Concession income from retail and commercial concessionaries is recognised in the year to which it relates on an accruals basis;
- Rental income arising from operating leases on investment properties is accounted for on a straight-line basis over the lease term; and
- Development profits are recognised upon legal completion of contracts.

Notes *(continued)*

1 Accounting policies *(continued)*

1.8 Tangible fixed assets

Tangible fixed assets constitute the Company's operational asset base including terminal, airfield, car parking, land, plant, and owner-occupied property assets. Investment properties held to earn rentals or for capital growth are accounted for separately. Fixed assets are stated at cost or deemed cost less accumulated depreciation. Cost includes directly attributable own labour.

Tangible fixed assets are stated at cost less accumulated depreciation and accumulated impairment losses. Certain items of tangible fixed assets that had been revalued to fair value prior to the date of transition to FRS 102, are measured on the basis of deemed cost, being the revalued amount at the date of that revaluation.

Where parts of an item of tangible fixed assets have different useful lives, they are accounted for as separate items of tangible fixed assets, for example land is treated separately from buildings.

The Company assesses at each reporting date whether tangible fixed assets are impaired.

Depreciation is charged to the income statement on a straight-line basis over the estimated useful lives of each part of an item of tangible fixed assets. No depreciation is provided on freehold land. Assets in the course of construction are stated at cost. These assets are not depreciated until they are available for use.

The estimated useful lives are as follows:

Freehold and long leasehold property	-	10 - 50 years
Runways, taxiways and aprons	-	10 - 75 years
Main services	-	7 - 50 years
Plant and machinery	-	5 - 25 years
Motor vehicles	-	3 - 7 years
Fixtures, fittings, tools and equipment	-	5 - 10 years

Depreciation methods, useful lives and residual values are reviewed if there is an indication of a significant change since last annual reporting date in the pattern by which the Company expects to consume an asset's future economic benefits.

Subsequent costs, including major inspections, are included in an asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that economic benefits associated with the item will flow to the Company and the cost can be measured reliably. The carrying amount of any replaced component is derecognised. Major components are treated as a separate asset where they have significantly different patterns of consumption of economic benefits and are depreciated separately over their useful lives.

Repairs, maintenance and minor inspection costs are expensed as incurred.

Tangible assets are derecognised on disposal or when no future economic benefits are expected. On disposal, the difference between the net disposal proceeds and the carrying amount is recognised in the income statement and included in operating costs.

1.9 Investment property

Investment properties are properties that are held either to earn rental income or for capital appreciation or for both. Investment properties are recognised initially at cost.

Subsequent to initial recognition:

i. investment properties whose fair value can be measured reliably without undue cost or effort are held at fair value. Any gains or losses arising from changes in the fair value are recognised in the income statement in the year that they arise; and

ii. no depreciation is provided relating to investment properties applying the fair value model.

Notes *(continued)*

1 Accounting policies *(continued)*

All investment properties are valued by an independent property valuer as at the statement of financial position date. These valuations were prepared in accordance with the appraisal and valuation manual issued by the Royal Institution of Chartered Surveyors.

1.10 Inventories

Inventories are stated at the lower of cost and estimated selling price less costs to complete and sell.

Cost is determined on the first-in, first-out (FIFO) method. Cost includes the purchase price, including taxes, duties, transport and handling, directly attributable to bringing the inventory to its present location and condition.

At the end of each reporting year inventories are assessed for impairment. If an item of inventory is impaired, the identified inventory is reduced to its selling price less costs to complete and sell and an impairment charge is recognised in the income statement. Where a reversal of the impairment is required the impairment charge is reversed, up to the original impairment loss, and is recognised as a credit in the income statement.

1.11 Impairment excluding stocks, investment properties and deferred tax assets

Financial assets (including trade and other receivables)

A financial asset not carried at fair value through the income statement is assessed at each reporting date to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that a loss event has occurred after the initial recognition of the asset, and that the loss event had a negative effect on the estimated future cash flows of that asset that can be estimated reliably.

An impairment loss relating to a financial asset measured at amortised cost is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. For financial instruments measured at cost less impairment, an impairment is calculated as the difference between its carrying amount and the best estimate of the amount that the Company would receive for the asset if it were to be sold at the reporting date. Interest on the impaired asset continues to be recognised through the unwinding of the discount. Impairment losses are recognised in the income statement. When a subsequent event causes the amount of impairment loss to decrease, the decrease in impairment loss is reversed through the income statement.

Non-financial assets

The carrying amounts of the Company's non-financial assets, other than investment property and deferred tax assets, are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or groups of assets (the 'cash-generating unit').

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its estimated recoverable amount. Impairment losses are recognised in the income statement.

Impairment losses recognised relating to cash generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units, and then to reduce the carrying amounts of the other assets in the unit (group of units) on a *pro rata* basis.

An impairment loss is reversed only if the reasons for the impairment have ceased to apply. Impairment losses recognised in prior years are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

Notes *(continued)*

1 Accounting policies *(continued)*

1.12 Employee benefits

The Company provides a range of benefits to employees, including annual bonus arrangements, paid holiday arrangements, and defined benefit and defined contribution pension plans.

Short term benefits

Short term benefits, including holiday pay and other similar non-monetary benefits, are recognised as an expense in the year in which the service is received.

Defined contribution plans and other long term employee benefits

The Company operates a defined contribution pension scheme for all qualifying employees. A defined contribution plan is a post-employment benefit plan under which the Company pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the income statement in the years during which services are rendered by employees. Amounts not paid are shown in accruals in the statement of financial position. The assets of the plan are held separately from the Company in independently administered funds.

Defined benefit plans

The Company participates in a defined benefit pension scheme. A defined benefit plan defines the pension benefit that the employee will receive on retirement, usually dependent upon several factors including age, length of service and remuneration. A defined benefit plan is a post-employment benefit plan other than a defined contribution plan.

The liability recognised in the statement of financial position relating to the defined benefit plan is the present value of the defined benefit obligation at the reporting date less the fair value of the plan assets at the reporting date.

The defined benefit obligation is calculated using the projected unit credit method. Annually the Company engages independent actuaries to calculate the obligation. The present value is determined by discounting the estimated future payments using market yields on high quality corporate bonds that are denominated in sterling and that have terms approximating the estimated year of the future payments ('discount rate').

The fair value of plan assets is measured in accordance with the FRS 102 fair value hierarchy and in accordance with the Company's policy for similarly held assets. This includes the use of appropriate valuation techniques.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to other comprehensive income. These amounts together with the return on plan assets, less amounts included in net interest, are disclosed as 'Remeasurement of net defined benefit liability'.

The cost of the defined benefit plan, recognised in the income statement as employee costs, except where included in the cost of an asset, comprises:

(a) the increase in pension benefit liability arising from employee service during the year; and
(b) the cost of plan introductions, benefit changes, curtailments and settlements.

The net interest cost is calculated by applying the discount rate to the net balance of the defined benefit obligation and the fair value of plan assets. This cost is recognised in the income statement as 'interest costs'.

Annual bonus plan

The Company operates a number of annual bonus plans for employees. An expense is recognised in the income statement when the Company has a legal or constructive obligation to make payments under the plans as a result of past events and a reliable estimate of the obligation can be made.

Notes *(continued)*

1 Accounting policies *(continued)*

1.13 Expenses

Operating leases

Payments (excluding costs for services and insurance) made under operating leases are recognised in the income statement on a straight-line basis over the term of the lease unless the payments to the lessor are structured to increase in line with expected general inflation, in which case the payments related to the structured increases are recognised as incurred.

Lease incentives received are recognised in the income statement over the term of the lease as an integral part of the total lease expense.

Interest receivable and interest payable

Interest payable and similar charges include interest payable and finance charges. Interest income and interest payable are recognised in the income statement as they accrue, using the effective interest method.

1.14 Significant items

Significant items are material items of income and expense that, because of the unusual nature or frequency of the events giving rise to them, merit separate presentation to allow an understanding of the Company's underlying financial performance.

Such items include impairment of assets, major reorganisation of businesses and integration costs associated with significant acquisitions.

1.15 Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the income statement except to the extent that it relates to items recognised directly in equity or other comprehensive income, in which case it is recognised directly in equity or other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the statement of financial position date, and any adjustment to tax payable relating to previous years.

Deferred tax is provided on timing differences that arise from the inclusion of income and expenses in tax assessments in years different from those in which they are recognised in the financial statements. The following timing differences are not provided for: differences between accumulated depreciation and tax allowances for the cost of a fixed asset if and when all conditions for retaining the tax allowances have been met; and differences relating to investments in subsidiaries, to the extent that it is not probable that they will reverse in the foreseeable future and the reporting entity is able to control the reversal of the timing difference. Deferred tax is not recognised on permanent differences arising because certain types of income or expense are non-taxable, or are disallowable for tax, or because certain tax charges or allowances are greater or smaller than the corresponding income or expense.

Deferred tax is measured at the tax rate that is expected to apply to the reversal of the related difference, using tax rates enacted or substantively enacted at the statement of financial position date. For investment property that is measured at fair value, deferred tax is provided at the rates and allowances applicable to the sale of the property. Deferred tax balances are not discounted.

Unrelieved tax losses and other deferred tax assets are recognised only to the extent that is it probable that they will be recovered against the reversal of deferred tax liabilities or other future taxable profits.

1.16 Critical accounting estimates and judgements

In applying the Company's accounting policies, the Company has made estimates and judgements, concerning the future. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results may, however, differ from the estimates calculated, and management believe that the following are the more significant judgements impacting these financial statements.

Notes *(continued)*

1 Accounting policies *(continued)*

Investment properties
Investment properties were valued at fair value at 31 March 2018 by Deloitte LLP. The valuations were prepared in accordance with IFRS and the appraisal and valuation manual issued by the Royal Institution of Chartered Surveyors. Valuations were carried out having regard to comparable market evidence of transaction prices for similar properties, land valuations and discounted cash flow methods.

Pensions
Certain assumptions have been adopted for factors that determine the valuation of the Company's liability for pension obligations at year end and future returns on pension scheme assets and charges to the income statement. The factors have been determined in consultation with the Company's independent actuary taking into account market and economic conditions.

Changes in assumptions can vary from year to year as a result of changing conditions and other determinants which may cause increases or decreases in the valuation of the Company's liability for pension obligations. The objective of setting pension scheme assumptions for future years is to reflect the expected actual outcomes. The impact of the change in assumptions on the valuation of the net financial position for pension schemes is reflected in the statement of changes in equity. Further details are available in note 19.

Notes *(continued)*

2 Analysis of revenue

	2018 £000	2017 £000 Restated*
By activity		
Aviation	**23,201**	15,861
Car parking	**20,762**	18,643
Retail concessions	**11,655**	11,128
Other	**5,430**	5,119
	61,048	50,751

*See note 1 for details of the restatement.

All of the Company's revenue arises in the United Kingdom and details of the revenue generated by each of the Company's key activities are disclosed above.

3 Notes to the income statement

	2018 £000	2017 £000
Profit before taxation is stated after charging/(crediting)		
Depreciation of tangible fixed assets	**11,572**	9,045
Hire of plant and machinery - operating leases	**6**	68
Profit on disposal of fixed assets	**-**	(4,202)

Auditor's remuneration
Amounts receivable by the Company's auditor and the auditor's associates relating to services to the Company have been borne by the Company's ultimate parent, Manchester Airports Holdings Limited. The directors believe that the proportion of the consolidated fee applicable to the Company is £20,000 (2017: £17,000).

4 Remuneration of directors

C Cornish, K O'Toole and N Thompson were directors of Manchester Airports Holdings Limited during the year, and their aggregate remuneration is disclosed in that company's financial statements. The directors believe that the total directors' remuneration applicable to the Company based on services provided is £800,000 (2017: £786,834). A Cliffe's aggregate emoluments as highest paid director of East Midlands Airport Limited is £500,556 (2017: £434,952).

Notes *(continued)*

5 Staff numbers and costs

The average number of persons employed by the Company (including directors) during the year, analysed by category, was as follows:

	Number of employees	
	2018	2017
Operational	**619**	532
Management and administrative	**10**	10
	629	542

The aggregate payroll costs of these persons were as follows:

	2018	2017
	£000	£000
Wages and salaries	**17,171**	13,941
Social security costs	**1,547**	1,402
Other pension costs	**1,795**	1,014
	20,513	16,357

6 Interest payable and similar charges

	2018	2017
	£000	£000
Interest payable on preference shares (see note 13)	**1,585**	1,585
Interest expense on net defined benefit liabilities (see note 19)	**600**	400
	2,185	1,985

Of the above amount £1,585,000 (2017: £1,585,000) was payable to Group undertakings.

Notes *(continued)*

7 Taxation

Total tax expense/(income) recognised in the income statement

	2018 £000	2018 £000	2017 £000	2017 £000
UK corporation tax				
Current tax on income for the year	**2,425**		2,140	
Adjustments relating to prior years	**377**		235	
Total current tax		**2,802**		2,375
Deferred tax				
Origination/reversal of timing differences	**234**		(50)	
Adjustment relating to prior years	**(245)**		(70)	
Effect of change in rate of corporation tax	**-**		(1,378)	
Total deferred tax		**(11)**		(1,498)
Tax on profit		**2,791**		877

Total tax expense/(income) included in other comprehensive income

	2018 £000	2017 £000
Deferred tax		
Origination/reversal of timing differences	**765**	(1,836)
Effect of change in rate of corporation tax	**-**	118
Total tax income included in other comprehensive income	**765**	(1,718)

Total tax expense/(income) recognised in the income statement, other comprehensive income and equity

	2018 Current tax £000	2018 Deferred tax £000	2018 Total tax £000	2017 Current tax £000	2017 Deferred tax £000	2017 Total tax £000
Recognised in the income statement	**2,802**	**(11)**	**2,828**	2,375	(1,498)	877
Recognised in other comprehensive income	**-**	**765**	**765**	-	(1,718)	(1,718)
Total tax	**2,802**	**754**	**3,556**	2,375	(3,216)	(841)

Notes *(continued)*

7 Taxation *(continued)*

Reconciliation of effective tax rate

	2018 £000	2017 £000
Current tax reconciliation		
Profit for the year	**28,439**	10,317
Total tax expense	**2,791**	877
Profit before tax	**31,230**	11,194
Profit before tax multiplied by the standard rate of corporation tax of 19% (2017: 20%)	**5,934**	2,239
Effects of:		
Expenses not deductible for tax purposes	**1,495**	(599)
Income exempt from tax	**(4,653)**	-
Adjustments to tax charge to prior years	**377**	235
Adjustments to deferred tax charge to prior years	**(245)**	(70)
Lower than standard rate used for deferred tax temporary differences	**(117)**	450
Change in rate of corporation tax	**-**	(1,378)
Total tax expense included in the income statement	**2,791**	877

Factors that may affect future current and total tax charges

The Finance Bill 2016 was substantively enacted on 6 September 2016 and included a reduction in the rate of corporation tax to 17% from 1 April 2020.

Deferred tax balances at 31 March 2018 have therefore been calculated at 17%, unless they are expected to unwind earlier than 1 April 2020, in which case the deferred tax balances have been calculated at the prevailing rate at the time the unwind is expected.

Notes *(continued)*

8 Tangible fixed assets

	Freehold land and property £000	Long leasehold property £000	Airport infrastructure £000	Plant, fixtures and equipment £000	Assets in the course of construction £000	Total £000
Cost						
At beginning of year	32,531	104,581	212,411	51,077	11,539	412,139
Additions	-	-	-	-	11,450	11,450
Reclassification	-	417	5,813	6,838	(13,068)	-
Disposals	-	(810)	(204)	(4,937)	-	(5,951)
At end of year	32,531	104,188	218,020	52,978	9,921	417,638
Depreciation						
At beginning of year	-	64,991	82,862	47,031	-	194,884
Charge for year	-	2,064	5,021	4,487	-	11,572
Disposals	-	(810)	(14)	(4,937)	-	(5,761)
At end of year	-	66,245	87,869	46,581	-	200,695
Net book value						
At 31 March 2018	**32,531**	**37,943**	**130,151**	**6,397**	**9,921**	**216,943**
At 31 March 2017	32,531	39,590	129,549	4,046	11,539	217,255

The carrying amount of land not depreciated as at 31 March 2018 is £32,531,000 (2017: £32,531,000).

9 Investment properties

	Investment properties £000
Balance at 1 April 2017	12,004
Reclassification from operational assets	(56)
Disposals	(4,276)
Revaluations	(2,771)
Net book value	
At 31 March 2018	**4,901**
Historical cost net book value	3,070

The fair value of the Company's commercial investment property at 31 March 2018 has been arrived at on the basis of a valuation carried out at that date by Deloitte LLP. The valuers are independent and are not connected with the Company. The valuation, which conforms to International Valuation Standards, was arrived at by reference to market evidence of transaction prices for similar properties, land valuations and discounted cash flow methods.

The existing use value of land and buildings includes notional directly attributable acquisition costs. The open market value of land and buildings is determined before the deduction of expected selling costs.

Any gain or loss arising from a change in fair value is recognised in the income statement. Rental income from investment property is accounted for as described in the revenue accounting policy on page 13.

Notes *(continued)*

10 Inventories

	2018	2017
	£000	£000
Raw materials and consumables	187	187
	187	187

11 Fixed asset investments

	res in subsidiary undertakings
	£
Cost and net book value	
At 31 March 2018 and 31 March 2017	4

At 31 March 2018 the Company held investments in the following subsidiary undertakings:

Subsidiary undertakings	Country of incorporation	Principal activity	Class and percentage of shares held
East Midlands Airport Property Investments (Hotels) Limited	England and Wales	Investment property company	100% ordinary
East Midlands Airport Property Investments (Industrial) Limited	England and Wales	Investment property company	100% ordinary
East Midlands Airport Property Investments (Offices) Limited	England and Wales	Investment property company	100% ordinary
East Midlands Airport Core Property Investments Limited	England and Wales	Investment property company	100% ordinary

The registered office address for all of the above entities is Olympic House, Manchester Airport, Manchester, M90 1QX.

Notes *(continued)*

12 Trade and other receivables

	2018 £000	2017 £000
Trade receivables	7,425	4,473
Amounts owed by group undertakings	104,506	65,415
Other receivables	109	1,034
Prepayments and accrued income	7,139	5,827
	119,179	76,749

Amounts owed by group undertakings are unsecured, interest free and are repayable on demand, and as at 31 March 2018 include dividends receivable of £24,490,000 (2017: £nil).

13 Trade and other payables

	2018 £000	2017 £000
Trade payables	5,125	2,163
Amounts owed to group undertakings	166,728	-
Taxation and social security	5,329	6,835
Other payables	2,048	1,045
Accruals and deferred income	13,042	14,697
Preference shares classified as liabilities	17,614	17,614
	209,886	42,354

Amounts owed to group undertakings are unsecured, interest free and are repayable on demand, and as at 31 March 2018 include dividends payable of £160,545,000 (2017: £nil).

The 9% cumulative redeemable preference shares have no fixed redemption date. They are to be repaid, fully or in part, after either the Company or a shareholder has given one month's notice. No premium is payable on redemption. The preference shares have no voting rights attached.

Notes *(continued)*

14 Deferred tax assets and liabilities

	Differences between accumulated depreciation and capital allowances	Short term timing differences	Deferred tax on investment properties	Deferred tax asset on pension liability	Net tax assets/ (liabilities)
	£000	£000	£000	£000	£000
At 1 April 2017	(1,837)	114	(21,660)	3,842	(19,541)
(Charge)/credit to income	389	-	(497)	119	11
Credit to equity	-	-	-	(765)	(765)
At 31 March 2018	**(1,448)**	**114**	**(22,157)**	**3,196**	**(20,295)**

	Differences between accumulated depreciation and capital allowances	Short term timing differences	Deferred tax on investment properties	Deferred tax asset on pension liability	Net tax assets/ (liabilities)
	£000	£000	£000	£000	£000
At 1 April 2016	(1,503)	121	(23,499)	2,124	(22,757)
(Charge)/credit to income	(334)	(7)	1,839	-	1,498
(Charge)/credit to equity	-	-	-	1,718	1,718
At 31 March 2017	(1,837)	114	(21,660)	3,842	(19,541)

	2018 £000	2017 £000
Deferred tax assets	**3,310**	3,956
Deferred tax liabilities	**(23,605)**	(23,497)
	(20,295)	(19,541)

15 Called up share capital

	2018 £000	2017 £000
Issued, called up and fully paid		
17,614,008 Ordinary shares of £1 each	**17,614**	17,614
	17,614	17,614

Notes *(continued)*

16 Reserves

2018	Revaluation Reserve	Retained earnings
	£000	£000
At beginning of year	68,969	136,055
Profit for the year	-	31,616
Movement in operational assets fair values	2,676	(2,676)
Movement in investment property fair values	(2,771)	(246)
Remeasurement of the net defined benefit liability	-	3,735
Transfer of revaluation reserves to retained earnings	(68,875)	68,875
Dividends paid	-	(160,545)
At end of year	**-**	**76,442**

2017	Revaluation Reserve	Retained earnings
	£000	£000
At beginning of year	70,265	133,123
Profit for the year	-	10,317
Movement in investment property fair values	(246)	246
Deferred tax arising on movement in investment property fair values	42	(42)
Remeasurement of the net defined benefit liability	-	(8,564)
Effect of change in rate of corporation tax	1,306	(1,423)
Depreciation transfer to the income statement	(2,398)	2,398
At end of year	**68,969**	**136,055**

17 Commitments

Capital commitments at the end of the financial year, for which no provision has been made, are as follows:

	2018	2017
	£000	£000
Contracted	**3,449**	127

Notes *(continued)*

18 Operating leases

At 31 March 2018 the Company has commitments under non-cancellable operating leases which expire as follows:

	2018 Other £000	2017 Other £000
Operating leases which expire:		
Within one year	**59**	68
In the second to fifth years inclusive	**63**	125
After five years	**-**	-
	122	193

Leases as a lessor

The investment properties are let under operating leases. The future minimum lease payments receivable under non-cancellable leases are as follows:

	2018 £000	2017 £000
Operating leases which expire:		
Within one year	**165**	737
In the second to fifth years inclusive	**398**	2,662
After five years	**6,068**	33,149
	6,631	36,548

Notes *(continued)*

19 Pension schemes

Defined contribution pension scheme

The Company operates a defined contribution pension scheme. The pension cost charge for the year represents contributions payable by the Company to the scheme and amounted to £389,000 (2017: £304,000).

As at 31 March 2018 there were £nil (2017: £nil) contributions due relating to the year then ended that had not been paid over to the scheme.

Defined benefit scheme

An actuarial valuation of the East Midlands International Airport Limited scheme, using the projected unit basis, was carried out at 6 April 2017 by PricewaterhouseCoopers, independent consulting actuaries. The information disclosed below is relating to the whole of the plans for which the Company is either the sponsoring employer or has been allocated a share of cost under an agreed Group policy throughout the years shown.

	2018	2017
	£000	£000
Present value of funded defined benefit obligations	**(80,100)**	(82,500)
Fair value of plan assets	**61,300**	59,900
Deficit	**(18,800)**	(22,600)

Movements in present value of defined benefit obligation

	2018	2017
	£000	£000
At 1 April	**(82,500)**	(64,700)
Current service cost	**(1,100)**	(800)
Interest cost	**(2,200)**	(2,300)
Actuarial (losses)/gains	**3,900**	(15,900)
Contributions by members	**(300)**	(300)
Net benefits paid out	**2,100**	1,500
At 31 March	**(80,100)**	(82,500)

Notes *(continued)*

19 Pension schemes *(continued)*

Movements in fair value of plan assets

	2018 £000	2017 £000
At 1 April	59,900	52,900
Expected return on plan assets	1,600	1,900
Actuarial gains/(losses)	600	5,500
Contributions by employer	1,200	1,200
Contributions by members	300	300
Benefits paid	(2,100)	(1,500)
Administration expenses	(200)	(400)
At 31 March	61,300	59,900

Expense recognised in the income statement

	2018 £000	2017 £000
Current service cost	1,100	800
Administration expenses	200	400
Interest on net defined benefit liability	600	400
Total	1,900	1,600

The expense is recognised in the following line items in the income statement:

	2018 £000	2017 £000
Operating costs	1,300	1,200
Interest payable and similar charges	600	400
	1,900	1,600

The total amount recognised in other comprehensive income relating to actuarial gains on remeasurement is £4,500,000 (2017: loss of £10,400,000).

The fair values of the plan assets are as follows:

	2018 Fair value £000	2017 Fair value £000
Equities	36,700	35,600
Corporate bonds	15,300	15,300
Property	6,500	6,100
Other	2,800	2,900
	61,300	59,900

Notes *(continued)*

19 Pension schemes *(continued)*

Principal actuarial assumptions (expressed as weighted averages) at the year end were as follows:

	2018	2017
	%	%
Discount rate	**2.60**	2.65
Future salary increases	**2.00**	2.00
Inflation assumption	**2.15**	2.35

The mortality assumptions are based on the S1NXA standard mortality tables allowing for medium cohort 1% minimum mortality improvements. The assumptions are equivalent to expecting a 65-year old to live for a number of years as follows:

- Current pensioner aged 65: 22.7 years (male), 25.1 years (female)
- Future retiree upon reaching 65: 23.7 years (male), 26.3 years (female)

Experience adjustments

	2018	2017
	£000	£000
Experience adjustments on scheme liabilities	**300**	400
Experience adjustments on scheme assets	**600**	5,500

The Company expects to contribute approximately £1.2m (2017: £1.2m) to its defined benefit plans in the next financial year.

20 Contingent liabilities

Under the Common Terms Agreement signed on 14 February 2014, the Company and a number of its fellow subsidiaries have entered into a security agreement with the Group's bondholders and bankers. The bonds and bank loans are secured by a fixed and floating charge over substantially all of the Group's assets. The total amount outstanding under this agreement at 31 March 2018 is £1,095.3m (2017: £937.1m).

21 Ultimate parent company and parent undertaking of larger group of which the Company is a member

The Company is a subsidiary undertaking of East Midlands Airport Nottingham Derby Leicester Limited. The smallest Group in which the results of the Company are consolidated is that headed by Manchester Airport Group Investments Limited. The Company's ultimate parent is Manchester Airports Holdings Limited. The consolidated financial statements of Manchester Airports Holdings Limited Group are available to the public and may be obtained from the Company Secretary at Olympic House, Manchester Airport, Manchester M90 1QX, or via the website at www.magairports.com.

Appendix 09b

York Aviation (DL9 Appendix B)
Ryanair UK Flights WB 24th June 2019

Appendix B Ryanair UK flights w/b 24th June 2019

Carrier Code	Flight No	Dep Airport Name	Arr Airport Name	Local Days Of Op	Local Dep Time	Local Arr Time	General Aircraft Name	Frequency
FR	1005	London Stansted Apt	Bucharest Henri Coanda Apt	7	0835	1345	Boeing 737 Passenger	1
FR	1005	London Stansted Apt	Bucharest Henri Coanda Apt	123456	0840	1350	Boeing 737 Passenger	6
FR	1006	Bucharest Henri Coanda Apt	London Stansted Apt	3	0650	0815	Boeing 737 Passenger	1
FR	1006	Bucharest Henri Coanda Apt	London Stansted Apt	12 4567	0645	0810	Boeing 737 Passenger	6
FR	1007	London Stansted Apt	Bucharest Henri Coanda Apt	6	1935	0045	Boeing 737 Passenger	1
FR	1007	London Stansted Apt	Bucharest Henri Coanda Apt	2	1845	2355	Boeing 737 Passenger	1
FR	1007	London Stansted Apt	Bucharest Henri Coanda Apt	1 345 7	1800	2310	Boeing 737 Passenger	5
FR	1008	Bucharest Henri Coanda Apt	London Stansted Apt	6	1740	1910	Boeing 737 Passenger	1
FR	1008	Bucharest Henri Coanda Apt	London Stansted Apt	3	1600	1730	Boeing 737 Passenger	1
FR	1008	Bucharest Henri Coanda Apt	London Stansted Apt	2	1650	1820	Boeing 737 Passenger	1
FR	1008	Bucharest Henri Coanda Apt	London Stansted Apt	1 45 7	1605	1735	Boeing 737 Passenger	4
FR	1013	London Stansted Apt	Prague Ruzyne	1234567	0800	1055	Boeing 737 Passenger	7
FR	1014	Prague Ruzyne	London Stansted Apt	1234567	0635	0735	Boeing 737 Passenger	7
FR	1017	Edinburgh	Budapest	5	1850	2250	Boeing 737 Passenger	1
FR	1017	Edinburgh	Budapest	3	1935	2335	Boeing 737 Passenger	1
FR	1017	Edinburgh	Budapest	1	1515	1915	Boeing 737 Passenger	1
FR	1018	Budapest	Edinburgh	5	1625	1825	Boeing 737 Passenger	1
FR	1018	Budapest	Edinburgh	3	1710	1910	Boeing 737 Passenger	1
FR	1018	Budapest	Edinburgh	1	1250	1450	Boeing 737 Passenger	1
FR	102	Shannon	London Stansted Apt	1234567	0705	0835	Boeing 737 Passenger	7
FR	1021	London Stansted Apt	Nowy Dwor Mazowiecki	7	0835	1150	Boeing 737 Passenger	1
FR	1021	London Stansted Apt	Nowy Dwor Mazowiecki	4 6	0855	1210	Boeing 737 Passenger	2
FR	1021	London Stansted Apt	Nowy Dwor Mazowiecki	3	0930	1245	Boeing 737 Passenger	1
FR	1021	London Stansted Apt	Nowy Dwor Mazowiecki	2 5	0850	1205	Boeing 737 Passenger	2
FR	1021	London Stansted Apt	Nowy Dwor Mazowiecki	1	0700	1015	Boeing 737 Passenger	1
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	7	1215	1345	Boeing 737 Passenger	1
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	6	0700	0830	Boeing 737 Passenger	1
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	4	1235	1405	Boeing 737 Passenger	1
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	3	0735	0905	Boeing 737 Passenger	1
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	2 5	0655	0825	Boeing 737 Passenger	2
FR	1022	Nowy Dwor Mazowiecki	London Stansted Apt	1	1040	1210	Boeing 737 Passenger	1
FR	103	London Stansted Apt	Shannon	1234567	0905	1030	Boeing 737 Passenger	7
FR	1047	Karlsruhe/Baden-Baden Baden Airpar	Edinburgh	5	1805	1910	Boeing 737 Passenger	1
FR	1047	Karlsruhe/Baden-Baden Baden Airpar	Edinburgh	1	1025	1130	Boeing 737 Passenger	1
FR	1048	Edinburgh	Karlsruhe/Baden-Baden Baden Airpar	5	1440	1740	Boeing 737 Passenger	1
FR	1048	Edinburgh	Karlsruhe/Baden-Baden Baden Airpar	1	0700	1000	Boeing 737 Passenger	1
FR	1049	Edinburgh	Katowice	7	1755	2130	Boeing 737 Passenger	1
FR	1049	Edinburgh	Katowice	5	1815	2150	Boeing 737 Passenger	1
FR	1050	Katowice	Edinburgh	7	2155	2340	Boeing 737 Passenger	1
FR	1050	Katowice	Edinburgh	5	2215	2359	Boeing 737 Passenger	1
FR	1051	Edinburgh	Nantes Atlantique Airport	5	1345	1635	Boeing 737 Passenger	1
FR	1051	Edinburgh	Nantes Atlantique Airport	3	0705	0955	Boeing 737 Passenger	1
FR	1051	Edinburgh	Nantes Atlantique Airport	1	1155	1445	Boeing 737 Passenger	1
FR	1052	Nantes Atlantique Airport	Edinburgh	5	1700	1750	Boeing 737 Passenger	1
FR	1052	Nantes Atlantique Airport	Edinburgh	3	1020	1110	Boeing 737 Passenger	1
FR	1052	Nantes Atlantique Airport	Edinburgh	1	1510	1600	Boeing 737 Passenger	1
FR	1053	Prague Ruzyne	Edinburgh	4 7	1755	1910	Boeing 737 Passenger	2
FR	1053	Prague Ruzyne	Edinburgh	2	1950	2105	Boeing 737 Passenger	1
FR	1054	Edinburgh	Prague Ruzyne	4 7	1410	1730	Boeing 737 Passenger	2
FR	1054	Edinburgh	Prague Ruzyne	2	1605	1925	Boeing 737 Passenger	1
FR	1064	Edinburgh	Toulouse	7	1150	1510	Boeing 737 Passenger	1
FR	1064	Edinburgh	Toulouse	3	1830	2150	Boeing 737 Passenger	1
FR	1065	Toulouse	Edinburgh	7	1535	1655	Boeing 737 Passenger	1
FR	1065	Toulouse	Edinburgh	3	2215	2335	Boeing 737 Passenger	1
FR	1068	Edinburgh	Venice Treviso/Sant'Angelo Apt	5	0655	1030	Boeing 737 Passenger	1
FR	1068	Edinburgh	Venice Treviso/Sant'Angelo Apt	3	1750	2125	Boeing 737 Passenger	1
FR	1068	Edinburgh	Venice Treviso/Sant'Angelo Apt	1	1440	1815	Boeing 737 Passenger	1
FR	1069	Venice Treviso/Sant'Angelo Apt	Edinburgh	5	1055	1240	Boeing 737 Passenger	1
FR	1069	Venice Treviso/Sant'Angelo Apt	Edinburgh	3	2150	2335	Boeing 737 Passenger	1
FR	1069	Venice Treviso/Sant'Angelo Apt	Edinburgh	1	1840	2025	Boeing 737 Passenger	1
FR	1070	Valencia Airport	Edinburgh	6	2140	2345	Boeing 737 Passenger	1
FR	1070	Valencia Airport	Edinburgh	4	1910	2115	Boeing 737 Passenger	1
FR	1070	Valencia Airport	Edinburgh	2	1250	1455	Boeing 737 Passenger	1
FR	1071	Edinburgh	Valencia Airport	6	1715	2110	Boeing 737 Passenger	1
FR	1071	Edinburgh	Valencia Airport	4	1445	1840	Boeing 737 Passenger	1
FR	1071	Edinburgh	Valencia Airport	2	0825	1220	Boeing 737 Passenger	1
FR	1073	Nottingham East Midlands Airport	Reus	5	0810	1125	Boeing 737 Passenger	1

FR	1073	Nottingham East Midlands Airport	Reus	1	1805	2120	Boeing 737 Passenger	1
FR	1074	Reus	Nottingham East Midlands Airport	5	1150	1305	Boeing 737 Passenger	1
FR	1074	Reus	Nottingham East Midlands Airport	1	2145	2300	Boeing 737 Passenger	1
FR	1077	Hamburg Airport	Edinburgh	7	1730	1820	Boeing 737 Passenger	1
FR	1077	Hamburg Airport	Edinburgh	6	0625	0715	Boeing 737 Passenger	1
FR	1077	Hamburg Airport	Edinburgh	4	0620	0710	Boeing 737 Passenger	1
FR	1077	Hamburg Airport	Edinburgh	2	0610	0700	Boeing 737 Passenger	1
FR	1078	Edinburgh	Hamburg Airport	7	1410	1655	Boeing 737 Passenger	1
FR	1078	Edinburgh	Hamburg Airport	6	0740	1025	Boeing 737 Passenger	1
FR	1078	Edinburgh	Hamburg Airport	4	0735	1020	Boeing 737 Passenger	1
FR	1078	Edinburgh	Hamburg Airport	2	0725	1010	Boeing 737 Passenger	1
FR	108	Shannon	London Stansted Apt	67	2140	2310	Boeing 737 Passenger	2
FR	108	Shannon	London Stansted Apt	1 45	2120	2250	Boeing 737 Passenger	3
FR	1080	London Stansted Apt	Lisbon	6	1505	1755	Boeing 737 Passenger	1
FR	1080	London Stansted Apt	Lisbon	4	0950	1240	Boeing 737 Passenger	1
FR	1080	London Stansted Apt	Lisbon	23 5 7	1510	1800	Boeing 737 Passenger	4
FR	1080	London Stansted Apt	Lisbon	1	1010	1300	Boeing 737 Passenger	1
FR	1081	Lisbon	London Stansted Apt	4	1305	1555	Boeing 737 Passenger	1
FR	1081	Lisbon	London Stansted Apt	23 567	1825	2115	Boeing 737 Passenger	5
FR	1081	Lisbon	London Stansted Apt	1	1335	1625	Boeing 737 Passenger	1
FR	109	London Stansted Apt	Shannon	67	1950	2115	Boeing 737 Passenger	2
FR	109	London Stansted Apt	Shannon	1 45	1930	2055	Boeing 737 Passenger	3
FR	11	London Stansted Apt	Athens (GR)	1 3 5 7	1820	2359	Boeing 737 Passenger	4
FR	1108	Eindhoven Airport	Edinburgh	7	1045	1125	Boeing 737 Passenger	1
FR	1108	Eindhoven Airport	Edinburgh	5	2030	2110	Boeing 737 Passenger	1
FR	1108	Eindhoven Airport	Edinburgh	1	1400	1440	Boeing 737 Passenger	1
FR	1109	Edinburgh	Eindhoven Airport	7	0740	1020	Boeing 737 Passenger	1
FR	1109	Edinburgh	Eindhoven Airport	5	1345	1625	Boeing 737 Passenger	1
FR	1109	Edinburgh	Eindhoven Airport	1	0715	0955	Boeing 737 Passenger	1
FR	1117	Krakow John Paul II - Balice	Belfast International Apt	7	0655	0850	Boeing 737 Passenger	1
FR	1117	Krakow John Paul II - Balice	Belfast International Apt	4	0620	0815	Boeing 737 Passenger	1
FR	1117	Krakow John Paul II - Balice	Belfast International Apt	2	0650	0845	Boeing 737 Passenger	1
FR	1118	Belfast International Apt	Krakow John Paul II - Balice	7	0915	1310	Boeing 737 Passenger	1
FR	1118	Belfast International Apt	Krakow John Paul II - Balice	4	0840	1235	Boeing 737 Passenger	1
FR	1118	Belfast International Apt	Krakow John Paul II - Balice	2	0910	1305	Boeing 737 Passenger	1
FR	1119	Edinburgh	Carcassonne	6	0735	1105	Boeing 737 Passenger	1
FR	1119	Edinburgh	Carcassonne	2	1145	1515	Boeing 737 Passenger	1
FR	112	Dublin (IE)	London Gatwick Apt	1234567	0735	0910	Boeing 737 Passenger	7
FR	1120	Carcassonne	Edinburgh	6	1130	1255	Boeing 737 Passenger	1
FR	1120	Carcassonne	Edinburgh	2	1540	1705	Boeing 737 Passenger	1
FR	1121	Birmingham Airport	Tenerife Sur Apt	7	0635	1110	Boeing 737 Passenger	1
FR	1121	Birmingham Airport	Tenerife Sur Apt	5	0635	1105	Boeing 737 Passenger	1
FR	1121	Birmingham Airport	Tenerife Sur Apt	2 4	0555	1030	Boeing 737 Passenger	2
FR	1122	Tenerife Sur Apt	Birmingham Airport	7	1145	1605	Boeing 737 Passenger	1
FR	1122	Tenerife Sur Apt	Birmingham Airport	5	1140	1600	Boeing 737 Passenger	1
FR	1122	Tenerife Sur Apt	Birmingham Airport	2 4	1105	1525	Boeing 737 Passenger	2
FR	1128	Birmingham Airport	Gran Canaria	5	1815	2250	Boeing 737 Passenger	1
FR	1128	Birmingham Airport	Gran Canaria	1	1905	2340	Boeing 737 Passenger	1
FR	1129	Gran Canaria	Birmingham Airport	5	1330	1750	Boeing 737 Passenger	1
FR	1129	Gran Canaria	Birmingham Airport	1	1420	1840	Boeing 737 Passenger	1
FR	113	London Gatwick Apt	Dublin (IE)	1234567	0940	1100	Boeing 737 Passenger	6
FR	1130	Nottingham East Midlands Airport	Girona Costa Brava Apt	3 7	1950	2300	Boeing 737 Passenger	2
FR	1131	Girona Costa Brava Apt	Nottingham East Midlands Airport	3 7	1815	1925	Boeing 737 Passenger	2
FR	114	Dublin (IE)	London Gatwick Apt	5	1110	1245	Boeing 737 Passenger	1
FR	114	Dublin (IE)	London Gatwick Apt	1234 67	1105	1240	Boeing 737 Passenger	6
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	7	0900	1015	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	6	1045	1200	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	5	1210	1325	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	4	1335	1450	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	3	1005	1120	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	2	1105	1220	Boeing 737 Passenger	1
FR	1144	Berlin Schoenefeld Apt	Manchester (GB)	1	1040	1155	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	7	1040	1335	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	6	1225	1520	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	5	1350	1645	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	4	1515	1810	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	3	1145	1440	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	2	1245	1540	Boeing 737 Passenger	1
FR	1145	Manchester (GB)	Berlin Schoenefeld Apt	1	1220	1515	Boeing 737 Passenger	1
FR	115	London Gatwick Apt	Dublin (IE)	5	1315	1440	Boeing 737 Passenger	1

FR	115	London Gatwick Apt	Dublin (IE)	1234 67	1310	1435	Boeing 737 Passenger	5
FR	1158	Wroclaw	Edinburgh	4	0635	0800	Boeing 737 Passenger	1
FR	1158	Wroclaw	Edinburgh	2	1110	1235	Boeing 737 Passenger	1
FR	1159	Edinburgh	Wroclaw	4	0825	1140	Boeing 737 Passenger	1
FR	1159	Edinburgh	Wroclaw	2	0730	1045	Boeing 737 Passenger	1
FR	116	Dublin (IE)	London Gatwick Apt	1234567	1535	1710	Boeing 737 Passenger	7
FR	1163	Belfast International Apt	London Stansted Apt	5	1325	1445	Boeing 737 Passenger	1
FR	1164	London Stansted Apt	Belfast International Apt	5	1130	1300	Boeing 737 Passenger	1
FR	1165	Belfast International Apt	London Stansted Apt	7	2205	2325	Boeing 737 Passenger	1
FR	1166	London Stansted Apt	Belfast International Apt	7	2010	2140	Boeing 737 Passenger	1
FR	117	London Gatwick Apt	Dublin (IE)	1234567	1735	1855	Boeing 737 Passenger	6
FR	1174	Porto	Manchester (GB)	6	1225	1455	Boeing 737 Passenger	1
FR	1174	Porto	Manchester (GB)	4	1335	1605	Boeing 737 Passenger	1
FR	1174	Porto	Manchester (GB)	2	1905	2135	Boeing 737 Passenger	1
FR	1175	Manchester (GB)	Porto	6	0930	1200	Boeing 737 Passenger	1
FR	1175	Manchester (GB)	Porto	4	1040	1310	Boeing 737 Passenger	1
FR	1175	Manchester (GB)	Porto	2	1610	1840	Boeing 737 Passenger	1
FR	118	Dublin (IE)	London Gatwick Apt	234 67	1920	2055	Boeing 737 Passenger	5
FR	118	Dublin (IE)	London Gatwick Apt	1 5	1920	2050	Boeing 737 Passenger	2
FR	1182	Shannon	London Gatwick Apt	7	1820	1955	Boeing 737 Passenger	1
FR	1182	Shannon	London Gatwick Apt	5	1825	2000	Boeing 737 Passenger	1
FR	1182	Shannon	London Gatwick Apt	3	1805	1940	Boeing 737 Passenger	1
FR	1182	Shannon	London Gatwick Apt	12 4 6	1755	1930	Boeing 737 Passenger	4
FR	1183	London Gatwick Apt	Shannon	7	2020	2145	Boeing 737 Passenger	1
FR	1183	London Gatwick Apt	Shannon	5	2025	2150	Boeing 737 Passenger	1
FR	1183	London Gatwick Apt	Shannon	34	2010	2135	Boeing 737 Passenger	2
FR	1183	London Gatwick Apt	Shannon	12 6	1955	2120	Boeing 737 Passenger	3
FR	1184	Nottingham East Midlands Airport	Sevilla Airport	6	0625	1010	Boeing 737 Passenger	1
FR	1184	Nottingham East Midlands Airport	Sevilla Airport	2	0610	0955	Boeing 737 Passenger	1
FR	1185	Sevilla Airport	Nottingham East Midlands Airport	6	1045	1230	Boeing 737 Passenger	1
FR	1185	Sevilla Airport	Nottingham East Midlands Airport	2	1030	1215	Boeing 737 Passenger	1
FR	119	London Gatwick Apt	Dublin (IE)	1234567	2135	2255	Boeing 737 Passenger	6
FR	1194	London Stansted Apt	Bologna Guglielmo Marconi	7	1940	2245	Boeing 737 Passenger	1
FR	1194	London Stansted Apt	Bologna Guglielmo Marconi	6	2030	2335	Boeing 737 Passenger	1
FR	1194	London Stansted Apt	Bologna Guglielmo Marconi	3	1855	2200	Boeing 737 Passenger	1
FR	1194	London Stansted Apt	Bologna Guglielmo Marconi	2	1835	2140	Boeing 737 Passenger	1
FR	1194	London Stansted Apt	Bologna Guglielmo Marconi	1 45	1745	2050	Boeing 737 Passenger	3
FR	1195	Bologna Guglielmo Marconi	London Stansted Apt	7	1750	1915	Boeing 737 Passenger	1
FR	1195	Bologna Guglielmo Marconi	London Stansted Apt	6	1840	2005	Boeing 737 Passenger	1
FR	1195	Bologna Guglielmo Marconi	London Stansted Apt	3	2225	2350	Boeing 737 Passenger	1
FR	1195	Bologna Guglielmo Marconi	London Stansted Apt	2	2205	2330	Boeing 737 Passenger	1
FR	1195	Bologna Guglielmo Marconi	London Stansted Apt	1 45	2115	2240	Boeing 737 Passenger	3
FR	12	Athens (GR)	London Stansted Apt	1 3 5 7	1605	1755	Boeing 737 Passenger	4
FR	120	Dublin (IE)	London Gatwick Apt	23456	0630	0810	Boeing 737 Passenger	5
FR	120	Dublin (IE)	London Gatwick Apt	1 7	0630	0805	Boeing 737 Passenger	2
FR	1202	London Stansted Apt	Palma de Mallorca	7	0850	1215	Boeing 737 Passenger	1
FR	1202	London Stansted Apt	Palma de Mallorca	56	0745	1110	Boeing 737 Passenger	2
FR	1202	London Stansted Apt	Palma de Mallorca	4	0655	1020	Boeing 737 Passenger	1
FR	1202	London Stansted Apt	Palma de Mallorca	3	0900	1230	Boeing 737 Passenger	1
FR	1202	London Stansted Apt	Palma de Mallorca	2	0740	1105	Boeing 737 Passenger	1
FR	1202	London Stansted Apt	Palma de Mallorca	1	0730	1055	Boeing 737 Passenger	1
FR	1203	Palma de Mallorca	London Stansted Apt	7	1250	1425	Boeing 737 Passenger	1
FR	1203	Palma de Mallorca	London Stansted Apt	56	1145	1320	Boeing 737 Passenger	2
FR	1203	Palma de Mallorca	London Stansted Apt	4	1055	1230	Boeing 737 Passenger	1
FR	1203	Palma de Mallorca	London Stansted Apt	3	1305	1440	Boeing 737 Passenger	1
FR	1203	Palma de Mallorca	London Stansted Apt	2	1140	1315	Boeing 737 Passenger	1
FR	1203	Palma de Mallorca	London Stansted Apt	1	1130	1305	Boeing 737 Passenger	1
FR	121	London Gatwick Apt	Dublin (IE)	1234567	0850	1010	Boeing 737 Passenger	7
FR	1212	Birmingham Airport	Bydgoszcz	6	0600	0915	Boeing 737 Passenger	1
FR	1212	Birmingham Airport	Bydgoszcz	4	0620	0935	Boeing 737 Passenger	1
FR	1212	Birmingham Airport	Bydgoszcz	2	1335	1650	Boeing 737 Passenger	1
FR	1213	Bydgoszcz	Birmingham Airport	6	0940	1100	Boeing 737 Passenger	1
FR	1213	Bydgoszcz	Birmingham Airport	4	1000	1120	Boeing 737 Passenger	1
FR	1213	Bydgoszcz	Birmingham Airport	2	1715	1835	Boeing 737 Passenger	1
FR	122	Dublin (IE)	London Gatwick Apt	7	1255	1430	Boeing 737 Passenger	1
FR	122	Dublin (IE)	London Gatwick Apt	3	1335	1510	Boeing 737 Passenger	1
FR	122	Dublin (IE)	London Gatwick Apt	12 45	1250	1425	Boeing 737 Passenger	4
FR	1227	Manchester (GB)	Reus	7	1725	2050	Boeing 737 Passenger	1
FR	1227	Manchester (GB)	Reus	3	1640	2005	Boeing 737 Passenger	1
FR	1228	Reus	Manchester (GB)	7	2125	2255	Boeing 737 Passenger	1

FR	1228	Reus	Manchester (GB)	3	2040	2210	Boeing 737 Passenger	1
FR	123	London Gatwick Apt	Dublin (IE)	7	1455	1615	Boeing 737 Passenger	1
FR	123	London Gatwick Apt	Dublin (IE)	3	1535	1655	Boeing 737 Passenger	1
FR	123	London Gatwick Apt	Dublin (IE)	12 45	1450	1610	Boeing 737 Passenger	3
FR	124	London Stansted Apt	Ancona	7	0620	0945	Boeing 737 Passenger	1
FR	124	London Stansted Apt	Ancona	23456	0625	0950	Boeing 737 Passenger	5
FR	124	London Stansted Apt	Ancona	1	0600	0925	Boeing 737 Passenger	1
FR	1248	Tenerife Sur Apt	Manchester (GB)	6	1255	1725	Boeing 737 Passenger	1
FR	1248	Tenerife Sur Apt	Manchester (GB)	3	1240	1710	Boeing 737 Passenger	1
FR	1249	Manchester (GB)	Tenerife Sur Apt	6	0745	1220	Boeing 737 Passenger	1
FR	1249	Manchester (GB)	Tenerife Sur Apt	3	1735	2210	Boeing 737 Passenger	1
FR	125	Ancona	London Stansted Apt	7	1010	1135	Boeing 737 Passenger	1
FR	125	Ancona	London Stansted Apt	23456	1015	1140	Boeing 737 Passenger	5
FR	125	Ancona	London Stansted Apt	1	0950	1115	Boeing 737 Passenger	1
FR	1251	London Stansted Apt	Aalborg Airport	7	0755	1030	Boeing 737 Passenger	1
FR	1251	London Stansted Apt	Aalborg Airport	6	0815	1050	Boeing 737 Passenger	1
FR	1251	London Stansted Apt	Aalborg Airport	4	1235	1510	Boeing 737 Passenger	1
FR	1251	London Stansted Apt	Aalborg Airport	2	0715	0950	Boeing 737 Passenger	1
FR	1252	Aalborg Airport	London Stansted Apt	7	1055	1140	Boeing 737 Passenger	1
FR	1252	Aalborg Airport	London Stansted Apt	6	1115	1200	Boeing 737 Passenger	1
FR	1252	Aalborg Airport	London Stansted Apt	4	1535	1620	Boeing 737 Passenger	1
FR	1252	Aalborg Airport	London Stansted Apt	2	1015	1100	Boeing 737 Passenger	1
FR	1253	Birmingham Airport	Katowice	5	0750	1110	Boeing 737 Passenger	1
FR	1253	Birmingham Airport	Katowice	1	1510	1830	Boeing 737 Passenger	1
FR	1254	Katowice	Birmingham Airport	5	1135	1310	Boeing 737 Passenger	1
FR	1254	Katowice	Birmingham Airport	1	1855	2030	Boeing 737 Passenger	1
FR	1263	Manchester (GB)	Ibiza	5	1535	1925	Boeing 737 Passenger	1
FR	1263	Manchester (GB)	Ibiza	1	1520	1910	Boeing 737 Passenger	1
FR	1264	Ibiza	Manchester (GB)	5	2000	2145	Boeing 737 Passenger	1
FR	1264	Ibiza	Manchester (GB)	1	1945	2130	Boeing 737 Passenger	1
FR	1265	Agadir	Manchester (GB)	6	1205	1600	Boeing 737 Passenger	1
FR	1265	Agadir	Manchester (GB)	2	2010	0005	Boeing 737 Passenger	1
FR	1266	Manchester (GB)	Agadir	6	0750	1140	Boeing 737 Passenger	1
FR	1266	Manchester (GB)	Agadir	2	1555	1945	Boeing 737 Passenger	1
FR	1277	Belfast International Apt	Wroclaw	1 5	0905	1245	Boeing 737 Passenger	2
FR	1278	Wroclaw	Belfast International Apt	1 5	0705	0840	Boeing 737 Passenger	2
FR	1279	Manchester (GB)	Venice Treviso/Sant'Angelo Apt	6	1700	2025	Boeing 737 Passenger	1
FR	1279	Manchester (GB)	Venice Treviso/Sant'Angelo Apt	4	1255	1620	Boeing 737 Passenger	1
FR	1279	Manchester (GB)	Venice Treviso/Sant'Angelo Apt	2	0930	1255	Boeing 737 Passenger	1
FR	1280	Venice Treviso/Sant'Angelo Apt	Manchester (GB)	6	2050	2215	Boeing 737 Passenger	1
FR	1280	Venice Treviso/Sant'Angelo Apt	Manchester (GB)	4	1645	1810	Boeing 737 Passenger	1
FR	1280	Venice Treviso/Sant'Angelo Apt	Manchester (GB)	2	1320	1445	Boeing 737 Passenger	1
FR	1286	Marseille Provence Apt	Edinburgh	1 5	0925	1055	Boeing 737 Passenger	2
FR	1287	Edinburgh	Marseille Provence Apt	1 5	1120	1455	Boeing 737 Passenger	2
FR	1307	Belfast International Apt	Alicante Airport	6	1645	2040	Boeing 737 Passenger	1
FR	1307	Belfast International Apt	Alicante Airport	2	1015	1410	Boeing 737 Passenger	1
FR	1307	Belfast International Apt	Alicante Airport	1 3 5	1640	2035	Boeing 737 Passenger	3
FR	1308	Alicante Airport	Belfast International Apt	6	1420	1620	Boeing 737 Passenger	1
FR	1308	Alicante Airport	Belfast International Apt	2	0750	0950	Boeing 737 Passenger	1
FR	1308	Alicante Airport	Belfast International Apt	1 3 5	2110	2310	Boeing 737 Passenger	3
FR	1314	Malaga Airport	Belfast International Apt	7	2115	2325	Boeing 737 Passenger	1
FR	1314	Malaga Airport	Belfast International Apt	2 4	2120	2330	Boeing 737 Passenger	2
FR	1314	Malaga Airport	Belfast International Apt	1	0755	1005	Boeing 737 Passenger	1
FR	1315	Belfast International Apt	Malaga Airport	4	1645	2045	Boeing 737 Passenger	1
FR	1315	Belfast International Apt	Malaga Airport	2 7	1635	2035	Boeing 737 Passenger	2
FR	1315	Belfast International Apt	Malaga Airport	1	1030	1430	Boeing 737 Passenger	1
FR	1318	Naples Capodichino Apt	Nottingham East Midlands Airport	6	2135	2330	Boeing 737 Passenger	1
FR	1318	Naples Capodichino Apt	Nottingham East Midlands Airport	2	1940	2135	Boeing 737 Passenger	1
FR	1319	Nottingham East Midlands Airport	Naples Capodichino Apt	6	1720	2100	Boeing 737 Passenger	1
FR	1319	Nottingham East Midlands Airport	Naples Capodichino Apt	2	1515	1855	Boeing 737 Passenger	1
FR	1364	London Stansted Apt	Rabat	2 4 6	1645	1955	Boeing 737 Passenger	3
FR	1365	Rabat	London Stansted Apt	2 4 6	2020	2330	Boeing 737 Passenger	3
FR	1372	London Stansted Apt	Biarritz	7	1845	2145	Boeing 737 Passenger	1
FR	1372	London Stansted Apt	Biarritz	3	1805	2105	Boeing 737 Passenger	1
FR	1373	Biarritz	London Stansted Apt	7	2210	2305	Boeing 737 Passenger	1
FR	1373	Biarritz	London Stansted Apt	3	2130	2225	Boeing 737 Passenger	1
FR	1374	London Stansted Apt	Prague Ruzyne	7	1205	1500	Boeing 737 Passenger	1
FR	1374	London Stansted Apt	Prague Ruzyne	6	1300	1555	Boeing 737 Passenger	1
FR	1374	London Stansted Apt	Prague Ruzyne	4	1350	1645	Boeing 737 Passenger	1
FR	1374	London Stansted Apt	Prague Ruzyne	3 5	1715	2010	Boeing 737 Passenger	2

FR	1374	London Stansted Apt	Prague Ruzyne	2	1810	2105	Boeing 737 Passenger	1
FR	1374	London Stansted Apt	Prague Ruzyne	1	1410	1705	Boeing 737 Passenger	1
FR	1375	Prague Ruzyne	London Stansted Apt	7	1525	1620	Boeing 737 Passenger	1
FR	1375	Prague Ruzyne	London Stansted Apt	6	1620	1710	Boeing 737 Passenger	1
FR	1375	Prague Ruzyne	London Stansted Apt	4	1710	1810	Boeing 737 Passenger	1
FR	1375	Prague Ruzyne	London Stansted Apt	3 5	2035	2135	Boeing 737 Passenger	2
FR	1375	Prague Ruzyne	London Stansted Apt	2	2140	2240	Boeing 737 Passenger	1
FR	1375	Prague Ruzyne	London Stansted Apt	1	1730	1820	Boeing 737 Passenger	1
FR	1377	Belfast International Apt	Milan Bergamo/orio al Serio Apt	3 6	0630	0955	Boeing 737 Passenger	2
FR	1378	Milan Bergamo/orio al Serio Apt	Belfast International Apt	3 6	1020	1155	Boeing 737 Passenger	2
FR	1392	London Stansted Apt	Oslo Gardermoen Airport	6	0915	1210	Boeing 737 Passenger	1
FR	1392	London Stansted Apt	Oslo Gardermoen Airport	12345 7	0940	1235	Boeing 737 Passenger	6
FR	1393	Oslo Gardermoen Airport	London Stansted Apt	6	0745	0850	Boeing 737 Passenger	1
FR	1393	Oslo Gardermoen Airport	London Stansted Apt	2345 7	0810	0915	Boeing 737 Passenger	5
FR	1393	Oslo Gardermoen Airport	London Stansted Apt	1	0815	0915	Boeing 737 Passenger	1
FR	1394	London Stansted Apt	Oslo Gardermoen Airport	7	1755	2100	Boeing 737 Passenger	1
FR	1394	London Stansted Apt	Oslo Gardermoen Airport	6	1915	2220	Boeing 737 Passenger	1
FR	1394	London Stansted Apt	Oslo Gardermoen Airport	12345	1905	2210	Boeing 737 Passenger	5
FR	1395	Oslo Gardermoen Airport	London Stansted Apt	7	2130	2235	Boeing 737 Passenger	1
FR	1395	Oslo Gardermoen Airport	London Stansted Apt	6	2245	2350	Boeing 737 Passenger	1
FR	1395	Oslo Gardermoen Airport	London Stansted Apt	12345	2235	2340	Boeing 737 Passenger	5
FR	1396	London Stansted Apt	Oslo Gardermoen Airport	7	1140	1445	Boeing 737 Passenger	1
FR	1396	London Stansted Apt	Oslo Gardermoen Airport	6	1200	1505	Boeing 737 Passenger	1
FR	1396	London Stansted Apt	Oslo Gardermoen Airport	345	1155	1500	Boeing 737 Passenger	3
FR	1396	London Stansted Apt	Oslo Gardermoen Airport	2	1300	1605	Boeing 737 Passenger	1
FR	1397	Oslo Gardermoen Airport	London Stansted Apt	7	1510	1615	Boeing 737 Passenger	1
FR	1397	Oslo Gardermoen Airport	London Stansted Apt	6	1530	1635	Boeing 737 Passenger	1
FR	1397	Oslo Gardermoen Airport	London Stansted Apt	345	1525	1630	Boeing 737 Passenger	3
FR	1397	Oslo Gardermoen Airport	London Stansted Apt	2	1635	1740	Boeing 737 Passenger	1
FR	14	Athens (GR)	London Stansted Apt	7	0645	0835	Boeing 737 Passenger	1
FR	14	Athens (GR)	London Stansted Apt	6	0655	0845	Boeing 737 Passenger	1
FR	14	Athens (GR)	London Stansted Apt	5	1450	1640	Boeing 737 Passenger	1
FR	14	Athens (GR)	London Stansted Apt	4	0630	0820	Boeing 737 Passenger	1
FR	14	Athens (GR)	London Stansted Apt	123	0700	0850	Boeing 737 Passenger	3
FR	142	Dublin (IE)	London Gatwick Apt	3	1650	1820	Boeing 737 Passenger	1
FR	142	Dublin (IE)	London Gatwick Apt	12 4567	1645	1820	Boeing 737 Passenger	6
FR	143	London Gatwick Apt	Dublin (IE)	234567	1900	2030	Boeing 737 Passenger	6
FR	1432	Milan Malpensa Apt	Liverpool	4	1210	1320	Boeing 737 Passenger	1
FR	1432	Milan Malpensa Apt	Liverpool	2 6	1225	1335	Boeing 737 Passenger	2
FR	1433	Liverpool	Milan Malpensa Apt	4	1345	1655	Boeing 737 Passenger	1
FR	1433	Liverpool	Milan Malpensa Apt	2 6	1400	1710	Boeing 737 Passenger	2
FR	144	Berlin Schoenefeld Apt	London Stansted Apt	1234567	0630	0725	Boeing 737 Passenger	7
FR	1442	Dublin (IE)	Liverpool	7	1825	1920	Boeing 737 Passenger	1
FR	1442	Dublin (IE)	Liverpool	12345	1450	1545	Boeing 737 Passenger	5
FR	1443	Liverpool	Dublin (IE)	7	2015	2110	Boeing 737 Passenger	1
FR	1443	Liverpool	Dublin (IE)	12345	1330	1425	Boeing 737 Passenger	5
FR	1448	Birmingham Airport	Lanzarote	5	1205	1615	Boeing 737 Passenger	1
FR	1448	Birmingham Airport	Lanzarote	3	1200	1610	Boeing 737 Passenger	1
FR	1448	Birmingham Airport	Lanzarote	1	0900	1310	Boeing 737 Passenger	1
FR	1449	Lanzarote	Birmingham Airport	3 5	0725	1135	Boeing 737 Passenger	2
FR	1449	Lanzarote	Birmingham Airport	1	1345	1755	Boeing 737 Passenger	1
FR	145	London Stansted Apt	Berlin Schoenefeld Apt	1234567	0750	1040	Boeing 737 Passenger	7
FR	146	Berlin Schoenefeld Apt	London Stansted Apt	5	1830	1915	Boeing 737 Passenger	1
FR	146	Berlin Schoenefeld Apt	London Stansted Apt	3	1950	2035	Boeing 737 Passenger	1
FR	146	Berlin Schoenefeld Apt	London Stansted Apt	12 4 7	1800	1855	Boeing 737 Passenger	4
FR	1465	Birmingham Airport	Krakow John Paul II - Balice	7	0735	1100	Boeing 737 Passenger	1
FR	1465	Birmingham Airport	Krakow John Paul II - Balice	3	0555	0920	Boeing 737 Passenger	1
FR	1465	Birmingham Airport	Krakow John Paul II - Balice	1	2010	2335	Boeing 737 Passenger	1
FR	1466	Krakow John Paul II - Balice	Birmingham Airport	7	1125	1300	Boeing 737 Passenger	1
FR	1466	Krakow John Paul II - Balice	Birmingham Airport	3	0945	1120	Boeing 737 Passenger	1
FR	1466	Krakow John Paul II - Balice	Birmingham Airport	1	1810	1945	Boeing 737 Passenger	1
FR	147	London Stansted Apt	Berlin Schoenefeld Apt	5	1940	2230	Boeing 737 Passenger	1
FR	147	London Stansted Apt	Berlin Schoenefeld Apt	3	2100	2350	Boeing 737 Passenger	1
FR	147	London Stansted Apt	Berlin Schoenefeld Apt	12 4 7	1920	2210	Boeing 737 Passenger	4
FR	1477	Belfast International Apt	Berlin Schoenefeld Apt	4 7	0655	1015	Boeing 737 Passenger	2
FR	1478	Berlin Schoenefeld Apt	Belfast International Apt	4 7	1040	1200	Boeing 737 Passenger	2
FR	15	London Stansted Apt	Athens (GR)	7	0900	1440	Boeing 737 Passenger	1
FR	15	London Stansted Apt	Athens (GR)	6	0920	1500	Boeing 737 Passenger	1
FR	15	London Stansted Apt	Athens (GR)	45	0845	1425	Boeing 737 Passenger	2
FR	15	London Stansted Apt	Athens (GR)	123	0915	1455	Boeing 737 Passenger	3

FR	1503	Leeds Bradford	Gdansk Lech Walesa	6	1855	2215	Boeing 737 Passenger	1
FR	1503	Leeds Bradford	Gdansk Lech Walesa	4	1105	1425	Boeing 737 Passenger	1
FR	1503	Leeds Bradford	Gdansk Lech Walesa	3	1725	2045	Boeing 737 Passenger	1
FR	1503	Leeds Bradford	Gdansk Lech Walesa	2	1345	1705	Boeing 737 Passenger	1
FR	1504	Gdansk Lech Walesa	Leeds Bradford	6	1710	1830	Boeing 737 Passenger	1
FR	1504	Gdansk Lech Walesa	Leeds Bradford	4	1450	1610	Boeing 737 Passenger	1
FR	1504	Gdansk Lech Walesa	Leeds Bradford	3	2110	2230	Boeing 737 Passenger	1
FR	1504	Gdansk Lech Walesa	Leeds Bradford	2	1200	1320	Boeing 737 Passenger	1
FR	1517	Hamburg Airport	London Stansted Apt	6	0650	0725	Boeing 737 Passenger	1
FR	1517	Hamburg Airport	London Stansted Apt	4	0635	0710	Boeing 737 Passenger	1
FR	1517	Hamburg Airport	London Stansted Apt	23 5 7	0640	0715	Boeing 737 Passenger	4
FR	1517	Hamburg Airport	London Stansted Apt	1	0605	0640	Boeing 737 Passenger	1
FR	1518	London Stansted Apt	Hamburg Airport	7	0745	1015	Boeing 737 Passenger	1
FR	1518	London Stansted Apt	Hamburg Airport	4	0735	1005	Boeing 737 Passenger	1
FR	1518	London Stansted Apt	Hamburg Airport	23 56	0750	1020	Boeing 737 Passenger	4
FR	1518	London Stansted Apt	Hamburg Airport	1	0705	0935	Boeing 737 Passenger	1
FR	1519	Hamburg Airport	London Stansted Apt	5	1820	1855	Boeing 737 Passenger	1
FR	1519	Hamburg Airport	London Stansted Apt	4 6	1800	1835	Boeing 737 Passenger	2
FR	1519	Hamburg Airport	London Stansted Apt	3 7	1845	1920	Boeing 737 Passenger	2
FR	1519	Hamburg Airport	London Stansted Apt	1	1855	1930	Boeing 737 Passenger	1
FR	152	Dublin (IE)	Leeds Bradford	2 456	0755	0900	Boeing 737 Passenger	4
FR	152	Dublin (IE)	Leeds Bradford	1 3 7	0800	0905	Boeing 737 Passenger	3
FR	1520	London Stansted Apt	Hamburg Airport	7	1945	2215	Boeing 737 Passenger	1
FR	1520	London Stansted Apt	Hamburg Airport	5	1920	2150	Boeing 737 Passenger	1
FR	1520	London Stansted Apt	Hamburg Airport	4 6	1900	2130	Boeing 737 Passenger	2
FR	1520	London Stansted Apt	Hamburg Airport	3	2000	2230	Boeing 737 Passenger	1
FR	1520	London Stansted Apt	Hamburg Airport	1	1955	2225	Boeing 737 Passenger	1
FR	1522	Aberdeen (GB)	Malta	7	1845	2345	Boeing 737 Passenger	1
FR	1522	Aberdeen (GB)	Malta	3	1835	2325	Boeing 737 Passenger	1
FR	1523	Malta	Aberdeen (GB)	7	1510	1820	Boeing 737 Passenger	1
FR	1523	Malta	Aberdeen (GB)	3	1510	1810	Boeing 737 Passenger	1
FR	153	Leeds Bradford	Dublin (IE)	2 456	0630	0730	Boeing 737 Passenger	4
FR	153	Leeds Bradford	Dublin (IE)	1 3 7	0635	0735	Boeing 737 Passenger	3
FR	1546	Frankfurt International Apt	London Stansted Apt	45	1825	1900	Boeing 737 Passenger	2
FR	1546	Frankfurt International Apt	London Stansted Apt	3 67	1815	1850	Boeing 737 Passenger	3
FR	1546	Frankfurt International Apt	London Stansted Apt	2	1835	1910	Boeing 737 Passenger	1
FR	1546	Frankfurt International Apt	London Stansted Apt	1	1810	1845	Boeing 737 Passenger	1
FR	1547	London Stansted Apt	Frankfurt International Apt	7	1930	2205	Boeing 737 Passenger	1
FR	1547	London Stansted Apt	Frankfurt International Apt	45	1925	2200	Boeing 737 Passenger	2
FR	1547	London Stansted Apt	Frankfurt International Apt	3 6	1915	2150	Boeing 737 Passenger	2
FR	1547	London Stansted Apt	Frankfurt International Apt	2	1935	2210	Boeing 737 Passenger	1
FR	1547	London Stansted Apt	Frankfurt International Apt	1	1910	2145	Boeing 737 Passenger	1
FR	1556	Dublin (IE)	Manchester (GB)	6	2130	2235	Boeing 737 Passenger	1
FR	1556	Dublin (IE)	Manchester (GB)	12345 7	1905	2010	Boeing 737 Passenger	6
FR	1557	Manchester (GB)	Dublin (IE)	6	2000	2105	Boeing 737 Passenger	1
FR	1557	Manchester (GB)	Dublin (IE)	12345 7	1735	1840	Boeing 737 Passenger	6
FR	156	Dublin (IE)	Leeds Bradford	7	2135	2240	Boeing 737 Passenger	1
FR	156	Dublin (IE)	Leeds Bradford	6	2130	2235	Boeing 737 Passenger	1
FR	156	Dublin (IE)	Leeds Bradford	5	1550	1655	Boeing 737 Passenger	1
FR	156	Dublin (IE)	Leeds Bradford	234	1535	1640	Boeing 737 Passenger	3
FR	156	Dublin (IE)	Leeds Bradford	1	1605	1710	Boeing 737 Passenger	1
FR	1562	Birmingham Airport	Verona Villafranca Airport	5	0625	0940	Boeing 737 Passenger	1
FR	1562	Birmingham Airport	Verona Villafranca Airport	1	1140	1450	Boeing 737 Passenger	1
FR	1563	Verona Villafranca Airport	Birmingham Airport	5	1005	1120	Boeing 737 Passenger	1
FR	1563	Verona Villafranca Airport	Birmingham Airport	1	1515	1635	Boeing 737 Passenger	1
FR	157	Leeds Bradford	Dublin (IE)	7	2010	2110	Boeing 737 Passenger	1
FR	157	Leeds Bradford	Dublin (IE)	6	2005	2105	Boeing 737 Passenger	1
FR	157	Leeds Bradford	Dublin (IE)	5	1720	1820	Boeing 737 Passenger	1
FR	157	Leeds Bradford	Dublin (IE)	234	1710	1810	Boeing 737 Passenger	3
FR	157	Leeds Bradford	Dublin (IE)	1	1735	1835	Boeing 737 Passenger	1
FR	1584	Leeds Bradford	Fuerteventura	1 5	0625	1045	Boeing 737 Passenger	2
FR	1585	Fuerteventura	Leeds Bradford	1 5	1120	1530	Boeing 737 Passenger	2
FR	1590	Cologne/Bonn Apt	Bristol	5	1735	1815	Boeing 737 Passenger	1
FR	1590	Cologne/Bonn Apt	Bristol	1 3 7	1510	1550	Boeing 737 Passenger	3
FR	1591	Bristol	Cologne/Bonn Apt	5	1840	2115	Boeing 737 Passenger	1
FR	1591	Bristol	Cologne/Bonn Apt	1 3 7	1210	1445	Boeing 737 Passenger	3
FR	1592	Cologne/Bonn Apt	Manchester (GB)	7	0630	0710	Boeing 737 Passenger	1
FR	1592	Cologne/Bonn Apt	Manchester (GB)	4	0745	0825	Boeing 737 Passenger	1
FR	1592	Cologne/Bonn Apt	Manchester (GB)	1 3 56	0755	0835	Boeing 737 Passenger	4
FR	1593	Manchester (GB)	Cologne/Bonn Apt	7	0735	1010	Boeing 737 Passenger	1

FR	1593	Manchester (GB)	Cologne/Bonn Apt	4	0850	1125	Boeing 737 Passenger	1
FR	1593	Manchester (GB)	Cologne/Bonn Apt	1 3 56	0900	1135	Boeing 737 Passenger	4
FR	1612	Nottingham East Midlands Airport	Carcassonne	5	1155	1450	Boeing 737 Passenger	1
FR	1612	Nottingham East Midlands Airport	Carcassonne	1	1130	1425	Boeing 737 Passenger	1
FR	1613	Carcassonne	Nottingham East Midlands Airport	5	1515	1610	Boeing 737 Passenger	1
FR	1613	Carcassonne	Nottingham East Midlands Airport	1	1450	1545	Boeing 737 Passenger	1
FR	1624	Nottingham East Midlands Airport	Lodz Wladyslaw Reymont	2 6	1835	2150	Boeing 737 Passenger	2
FR	1625	Lodz Wladyslaw Reymont	Nottingham East Midlands Airport	2 6	2215	2335	Boeing 737 Passenger	2
FR	1632	Nottingham East Midlands Airport	Limoges	6	1355	1640	Boeing 737 Passenger	1
FR	1632	Nottingham East Midlands Airport	Limoges	4	1345	1630	Boeing 737 Passenger	1
FR	1632	Nottingham East Midlands Airport	Limoges	2	1325	1610	Boeing 737 Passenger	1
FR	1633	Limoges	Nottingham East Midlands Airport	6	1705	1745	Boeing 737 Passenger	1
FR	1633	Limoges	Nottingham East Midlands Airport	4	1655	1735	Boeing 737 Passenger	1
FR	1633	Limoges	Nottingham East Midlands Airport	2	1635	1715	Boeing 737 Passenger	1
FR	1638	Nottingham East Midlands Airport	Berlin Schoenefeld Apt	1 5	0640	0935	Boeing 737 Passenger	2
FR	1639	Berlin Schoenefeld Apt	Nottingham East Midlands Airport	5	1005	1110	Boeing 737 Passenger	1
FR	1639	Berlin Schoenefeld Apt	Nottingham East Midlands Airport	1	1000	1105	Boeing 737 Passenger	1
FR	1640	London Luton Apt	Bydgoszcz	5	1810	2120	Boeing 737 Passenger	1
FR	1640	London Luton Apt	Bydgoszcz	3 7	1750	2100	Boeing 737 Passenger	2
FR	1641	Bydgoszcz	London Luton Apt	5	2145	2255	Boeing 737 Passenger	1
FR	1641	Bydgoszcz	London Luton Apt	3 7	2125	2235	Boeing 737 Passenger	2
FR	1642	London Stansted Apt	Lviv	1 5 7	0645	1125	Boeing 737 Passenger	3
FR	1643	Lviv	London Stansted Apt	1 5 7	1150	1240	Boeing 737 Passenger	3
FR	1646	Nottingham East Midlands Airport	Wroclaw	3 7	1905	2225	Boeing 737 Passenger	2
FR	1646	Nottingham East Midlands Airport	Wroclaw	1 5	0630	0950	Boeing 737 Passenger	2
FR	1647	Wroclaw	Nottingham East Midlands Airport	5	1015	1130	Boeing 737 Passenger	1
FR	1647	Wroclaw	Nottingham East Midlands Airport	3 7	2250	0005	Boeing 737 Passenger	2
FR	1647	Wroclaw	Nottingham East Midlands Airport	1	1020	1135	Boeing 737 Passenger	1
FR	1652	Nottingham East Midlands Airport	Dinard/St-Malo	6	1400	1615	Boeing 737 Passenger	1
FR	1652	Nottingham East Midlands Airport	Dinard/St-Malo	2	1225	1440	Boeing 737 Passenger	1
FR	1653	Dinard/St-Malo	Nottingham East Midlands Airport	6	1640	1655	Boeing 737 Passenger	1
FR	1653	Dinard/St-Malo	Nottingham East Midlands Airport	2	1505	1520	Boeing 737 Passenger	1
FR	1662	Bologna Guglielmo Marconi	London Stansted Apt	5	1200	1305	Boeing 737 Passenger	1
FR	1662	Bologna Guglielmo Marconi	London Stansted Apt	1	1225	1330	Boeing 737 Passenger	1
FR	1663	London Stansted Apt	Bologna Guglielmo Marconi	5	1330	1650	Boeing 737 Passenger	1
FR	1663	London Stansted Apt	Bologna Guglielmo Marconi	1	1355	1715	Boeing 737 Passenger	1
FR	1664	Nottingham East Midlands Airport	Riga	5	1055	1540	Boeing 737 Passenger	1
FR	1664	Nottingham East Midlands Airport	Riga	3	1720	2205	Boeing 737 Passenger	1
FR	1664	Nottingham East Midlands Airport	Riga	1	0950	1435	Boeing 737 Passenger	1
FR	1665	Riga	Nottingham East Midlands Airport	5	1605	1700	Boeing 737 Passenger	1
FR	1665	Riga	Nottingham East Midlands Airport	3	2230	2325	Boeing 737 Passenger	1
FR	1665	Riga	Nottingham East Midlands Airport	1	1500	1555	Boeing 737 Passenger	1
FR	168	London Stansted Apt	Trieste	6	1345	1655	Boeing 737 Passenger	1
FR	168	London Stansted Apt	Trieste	4	1320	1630	Boeing 737 Passenger	1
FR	168	London Stansted Apt	Trieste	2	1350	1700	Boeing 737 Passenger	1
FR	168	London Stansted Apt	Trieste	1	0915	1225	Boeing 737 Passenger	1
FR	1682	Nottingham East Midlands Airport	Bergerac	3 7	0700	0945	Boeing 737 Passenger	2
FR	1683	Bergerac	Nottingham East Midlands Airport	3 7	1010	1055	Boeing 737 Passenger	2
FR	1686	Frankfurt International Apt	London Stansted Apt	7	0700	0735	Boeing 737 Passenger	1
FR	1686	Frankfurt International Apt	London Stansted Apt	6	0640	0715	Boeing 737 Passenger	1
FR	1686	Frankfurt International Apt	London Stansted Apt	345	0705	0740	Boeing 737 Passenger	3
FR	1686	Frankfurt International Apt	London Stansted Apt	12	0630	0705	Boeing 737 Passenger	2
FR	1687	London Stansted Apt	Frankfurt International Apt	7	0800	1035	Boeing 737 Passenger	1
FR	1687	London Stansted Apt	Frankfurt International Apt	6	0740	1015	Boeing 737 Passenger	1
FR	1687	London Stansted Apt	Frankfurt International Apt	345	0805	1040	Boeing 737 Passenger	3
FR	1687	London Stansted Apt	Frankfurt International Apt	12	0730	1005	Boeing 737 Passenger	2
FR	169	Trieste	London Stansted Apt	6	1720	1835	Boeing 737 Passenger	1
FR	169	Trieste	London Stansted Apt	4	1655	1810	Boeing 737 Passenger	1
FR	169	Trieste	London Stansted Apt	2	1725	1840	Boeing 737 Passenger	1
FR	169	Trieste	London Stansted Apt	1	1250	1405	Boeing 737 Passenger	1
FR	1702	Nottingham East Midlands Airport	Milan Bergamo/orio al Serio Apt	4	1800	2110	Boeing 737 Passenger	1
FR	1702	Nottingham East Midlands Airport	Milan Bergamo/orio al Serio Apt	2 6	1325	1635	Boeing 737 Passenger	2
FR	1703	Milan Bergamo/orio al Serio Apt	Nottingham East Midlands Airport	4	2135	2245	Boeing 737 Passenger	1
FR	1703	Milan Bergamo/orio al Serio Apt	Nottingham East Midlands Airport	2 6	1700	1810	Boeing 737 Passenger	2
FR	1707	Pisa	Nottingham East Midlands Airport	3 7	1505	1625	Boeing 737 Passenger	2
FR	1708	Nottingham East Midlands Airport	Pisa	3 7	1120	1440	Boeing 737 Passenger	2
FR	1717	Malta	Belfast International Apt	6	0615	0925	Boeing 737 Passenger	1
FR	1717	Malta	Belfast International Apt	2	1520	1820	Boeing 737 Passenger	1
FR	1718	Belfast International Apt	Malta	6	0950	1445	Boeing 737 Passenger	1
FR	1718	Belfast International Apt	Malta	2	1845	2330	Boeing 737 Passenger	1

FR	172	Dublin (IE)	Newcastle	7	0735	0845	Boeing 737 Passenger	1
FR	172	Dublin (IE)	Newcastle	123456	0945	1055	Boeing 737 Passenger	6
FR	1724	Nottingham East Midlands Airport	Krakow John Paul II - Balice	5	0910	1240	Boeing 737 Passenger	1
FR	1724	Nottingham East Midlands Airport	Krakow John Paul II - Balice	3	0850	1220	Boeing 737 Passenger	1
FR	1724	Nottingham East Midlands Airport	Krakow John Paul II - Balice	1	1725	2055	Boeing 737 Passenger	1
FR	1725	Krakow John Paul II - Balice	Nottingham East Midlands Airport	5	0710	0845	Boeing 737 Passenger	1
FR	1725	Krakow John Paul II - Balice	Nottingham East Midlands Airport	3	0650	0825	Boeing 737 Passenger	1
FR	1725	Krakow John Paul II - Balice	Nottingham East Midlands Airport	1	2130	2305	Boeing 737 Passenger	1
FR	173	Newcastle	Dublin (IE)	7	0910	1020	Boeing 737 Passenger	1
FR	173	Newcastle	Dublin (IE)	123456	1120	1230	Boeing 737 Passenger	6
FR	174	Dublin (IE)	Newcastle	7	2005	2115	Boeing 737 Passenger	1
FR	174	Dublin (IE)	Newcastle	5	1935	2045	Boeing 737 Passenger	1
FR	174	Dublin (IE)	Newcastle	1 4	2055	2205	Boeing 737 Passenger	2
FR	1742	Nottingham East Midlands Airport	Knock	7	1305	1420	Boeing 737 Passenger	1
FR	1742	Nottingham East Midlands Airport	Knock	5	1220	1335	Boeing 737 Passenger	1
FR	1742	Nottingham East Midlands Airport	Knock	4	1255	1410	Boeing 737 Passenger	1
FR	1742	Nottingham East Midlands Airport	Knock	3	1335	1450	Boeing 737 Passenger	1
FR	1742	Nottingham East Midlands Airport	Knock	1	1320	1435	Boeing 737 Passenger	1
FR	1743	Knock	Nottingham East Midlands Airport	7	1445	1600	Boeing 737 Passenger	1
FR	1743	Knock	Nottingham East Midlands Airport	5	1400	1515	Boeing 737 Passenger	1
FR	1743	Knock	Nottingham East Midlands Airport	4	1435	1550	Boeing 737 Passenger	1
FR	1743	Knock	Nottingham East Midlands Airport	3	1515	1630	Boeing 737 Passenger	1
FR	1743	Knock	Nottingham East Midlands Airport	1	1500	1615	Boeing 737 Passenger	1
FR	175	Newcastle	Dublin (IE)	7	2140	2250	Boeing 737 Passenger	1
FR	175	Newcastle	Dublin (IE)	5	2110	2220	Boeing 737 Passenger	1
FR	175	Newcastle	Dublin (IE)	1 4	2230	2340	Boeing 737 Passenger	2
FR	1756	Nottingham East Midlands Airport	Valencia Airport	6	1640	2010	Boeing 737 Passenger	1
FR	1756	Nottingham East Midlands Airport	Valencia Airport	2 4	1500	1830	Boeing 737 Passenger	2
FR	1756	Nottingham East Midlands Airport	Valencia Airport	1	1600	1930	Boeing 737 Passenger	1
FR	1757	Valencia Airport	Nottingham East Midlands Airport	6	1440	1615	Boeing 737 Passenger	1
FR	1757	Valencia Airport	Nottingham East Midlands Airport	2 4	1900	2035	Boeing 737 Passenger	2
FR	1757	Valencia Airport	Nottingham East Midlands Airport	1	2000	2135	Boeing 737 Passenger	1
FR	1766	Nottingham East Midlands Airport	Faro	6	1520	1815	Boeing 737 Passenger	1
FR	1766	Nottingham East Midlands Airport	Faro	3	1015	1310	Boeing 737 Passenger	1
FR	1766	Nottingham East Midlands Airport	Faro	12 45 7	1550	1845	Boeing 737 Passenger	5
FR	1767	Faro	Nottingham East Midlands Airport	6	1840	2130	Boeing 737 Passenger	1
FR	1767	Faro	Nottingham East Midlands Airport	3	1335	1625	Boeing 737 Passenger	1
FR	1767	Faro	Nottingham East Midlands Airport	12 45 7	1910	2200	Boeing 737 Passenger	5
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	7	1950	2235	Boeing 737 Passenger	1
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	6	1410	1655	Boeing 737 Passenger	1
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	5	1645	1930	Boeing 737 Passenger	1
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	4	1935	2220	Boeing 737 Passenger	1
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	3	1550	1835	Boeing 737 Passenger	1
FR	1782	London Stansted Apt	Bordeaux Merignac Apt	1	1030	1315	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	7	1840	1925	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	6	1305	1345	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	5	1535	1620	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	4	1825	1910	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	3	1440	1525	Boeing 737 Passenger	1
FR	1783	Bordeaux Merignac Apt	London Stansted Apt	1	0920	1005	Boeing 737 Passenger	1
FR	1788	London Stansted Apt	Dortmund	7	1315	1535	Boeing 737 Passenger	1
FR	1788	London Stansted Apt	Dortmund	123456	1300	1520	Boeing 737 Passenger	6
FR	1789	Dortmund	London Stansted Apt	7	1600	1620	Boeing 737 Passenger	1
FR	1789	Dortmund	London Stansted Apt	123456	1545	1605	Boeing 737 Passenger	6
FR	1802	London Stansted Apt	Kerkyra	7	1650	2205	Boeing 737 Passenger	1
FR	1802	London Stansted Apt	Kerkyra	4	1500	2015	Boeing 737 Passenger	1
FR	1802	London Stansted Apt	Kerkyra	3	1420	1935	Boeing 737 Passenger	1
FR	1803	Kerkyra	London Stansted Apt	7	2230	2345	Boeing 737 Passenger	1
FR	1803	Kerkyra	London Stansted Apt	4	2040	2155	Boeing 737 Passenger	1
FR	1803	Kerkyra	London Stansted Apt	3	2000	2115	Boeing 737 Passenger	1
FR	1832	London Stansted Apt	Naples Capodichino Apt	5	0645	1030	Boeing 737 Passenger	1
FR	1832	London Stansted Apt	Naples Capodichino Apt	3	0630	1015	Boeing 737 Passenger	1
FR	1832	London Stansted Apt	Naples Capodichino Apt	2 4 67	0700	1045	Boeing 737 Passenger	4
FR	1832	London Stansted Apt	Naples Capodichino Apt	1	1755	2140	Boeing 737 Passenger	1
FR	1833	Naples Capodichino Apt	London Stansted Apt	4 6	1120	1320	Boeing 737 Passenger	2
FR	1833	Naples Capodichino Apt	London Stansted Apt	3 5	1055	1255	Boeing 737 Passenger	2
FR	1833	Naples Capodichino Apt	London Stansted Apt	2 7	1110	1310	Boeing 737 Passenger	2
FR	1833	Naples Capodichino Apt	London Stansted Apt	1	2205	0005	Boeing 737 Passenger	1
FR	1834	London Stansted Apt	Clermont-Ferrand	1 5	1340	1625	Boeing 737 Passenger	2
FR	1835	Clermont-Ferrand	London Stansted Apt	1 5	1650	1730	Boeing 737 Passenger	2

FR	1836	London Stansted Apt	Plovdiv	3	1530	2040	Boeing 737 Passenger	1
FR	1836	London Stansted Apt	Plovdiv	1 5	1525	2035	Boeing 737 Passenger	2
FR	1837	Plovdiv	London Stansted Apt	3	2105	2230	Boeing 737 Passenger	1
FR	1837	Plovdiv	London Stansted Apt	1 5	2100	2225	Boeing 737 Passenger	2
FR	1874	London Stansted Apt	Nice	7	1910	2210	Boeing 737 Passenger	1
FR	1874	London Stansted Apt	Nice	4 6	1800	2100	Boeing 737 Passenger	2
FR	1874	London Stansted Apt	Nice	3	1820	2120	Boeing 737 Passenger	1
FR	1874	London Stansted Apt	Nice	2	1400	1700	Boeing 737 Passenger	1
FR	1874	London Stansted Apt	Nice	1 5	1920	2220	Boeing 737 Passenger	2
FR	1875	Nice	London Stansted Apt	7	2245	2345	Boeing 737 Passenger	1
FR	1875	Nice	London Stansted Apt	4 6	2135	2235	Boeing 737 Passenger	2
FR	1875	Nice	London Stansted Apt	3	2155	2255	Boeing 737 Passenger	1
FR	1875	Nice	London Stansted Apt	2	1735	1835	Boeing 737 Passenger	1
FR	1875	Nice	London Stansted Apt	1 5	2255	2355	Boeing 737 Passenger	2
FR	1882	London Stansted Apt	Lisbon	7	1630	1920	Boeing 737 Passenger	1
FR	1882	London Stansted Apt	Lisbon	12345	1740	2030	Boeing 737 Passenger	5
FR	1883	Lisbon	London Stansted Apt	7	1945	2235	Boeing 737 Passenger	1
FR	1883	Lisbon	London Stansted Apt	12345	2055	2345	Boeing 737 Passenger	5
FR	1884	London Stansted Apt	Lisbon	5	0915	1205	Boeing 737 Passenger	1
FR	1884	London Stansted Apt	Lisbon	2	0950	1240	Boeing 737 Passenger	1
FR	1884	London Stansted Apt	Lisbon	1 34 67	0945	1235	Boeing 737 Passenger	5
FR	1885	Lisbon	London Stansted Apt	5	0600	0850	Boeing 737 Passenger	1
FR	1885	Lisbon	London Stansted Apt	1234 67	0630	0920	Boeing 737 Passenger	6
FR	1886	London Stansted Apt	Lisbon	5	1135	1425	Boeing 737 Passenger	1
FR	1886	London Stansted Apt	Lisbon	1234 67	1155	1445	Boeing 737 Passenger	6
FR	1887	Lisbon	London Stansted Apt	5	1450	1740	Boeing 737 Passenger	1
FR	1887	Lisbon	London Stansted Apt	1234 67	1510	1800	Boeing 737 Passenger	6
FR	1905	London Stansted Apt	Bari	6	1655	2035	Boeing 737 Passenger	1
FR	1905	London Stansted Apt	Bari	2345 7	1740	2120	Boeing 737 Passenger	5
FR	1905	London Stansted Apt	Bari	1	0700	1040	Boeing 737 Passenger	1
FR	1906	Bari	London Stansted Apt	6	2100	2255	Boeing 737 Passenger	1
FR	1906	Bari	London Stansted Apt	5	2150	2345	Boeing 737 Passenger	1
FR	1906	Bari	London Stansted Apt	234 7	2145	2340	Boeing 737 Passenger	4
FR	1906	Bari	London Stansted Apt	1	1105	1300	Boeing 737 Passenger	1
FR	1924	Nottingham East Midlands Airport	Corvera	7	0635	1020	Boeing 737 Passenger	1
FR	1924	Nottingham East Midlands Airport	Corvera	5	0610	0955	Boeing 737 Passenger	1
FR	1924	Nottingham East Midlands Airport	Corvera	3	0600	0945	Boeing 737 Passenger	1
FR	1924	Nottingham East Midlands Airport	Corvera	2 4 6	0700	1045	Boeing 737 Passenger	3
FR	1924	Nottingham East Midlands Airport	Corvera	1	0645	1030	Boeing 737 Passenger	1
FR	1925	Corvera	Nottingham East Midlands Airport	7	1055	1240	Boeing 737 Passenger	1
FR	1925	Corvera	Nottingham East Midlands Airport	5	1050	1235	Boeing 737 Passenger	1
FR	1925	Corvera	Nottingham East Midlands Airport	3	1020	1205	Boeing 737 Passenger	1
FR	1925	Corvera	Nottingham East Midlands Airport	2 4 6	1120	1305	Boeing 737 Passenger	3
FR	1925	Corvera	Nottingham East Midlands Airport	1	1105	1250	Boeing 737 Passenger	1
FR	194	London Stansted Apt	Bologna Guglielmo Marconi	45	0830	1135	Boeing 737 Passenger	2
FR	194	London Stansted Apt	Bologna Guglielmo Marconi	123 67	0845	1150	Boeing 737 Passenger	5
FR	195	Bologna Guglielmo Marconi	London Stansted Apt	1234567	0645	0805	Boeing 737 Passenger	7
FR	1956	Nottingham East Midlands Airport	Faro	7	0600	0855	Boeing 737 Passenger	1
FR	1956	Nottingham East Midlands Airport	Faro	1 3456	0700	0955	Boeing 737 Passenger	5
FR	1957	Faro	Nottingham East Midlands Airport	7	0920	1210	Boeing 737 Passenger	1
FR	1957	Faro	Nottingham East Midlands Airport	1 3456	1020	1310	Boeing 737 Passenger	5
FR	1998	Birmingham Airport	Perpignan	6	1125	1425	Boeing 737 Passenger	1
FR	1998	Birmingham Airport	Perpignan	2	1510	1810	Boeing 737 Passenger	1
FR	1999	Perpignan	Birmingham Airport	6	1450	1600	Boeing 737 Passenger	1
FR	1999	Perpignan	Birmingham Airport	2	1835	1945	Boeing 737 Passenger	1
FR	2013	London Stansted Apt	Prague Ruzyne	3	1305	1600	Boeing 737 Passenger	1
FR	2013	London Stansted Apt	Prague Ruzyne	2 7	1805	2100	Boeing 737 Passenger	2
FR	2013	London Stansted Apt	Prague Ruzyne	1 5	2050	2345	Boeing 737 Passenger	2
FR	2014	Prague Ruzyne	London Stansted Apt	7	1635	1735	Boeing 737 Passenger	1
FR	2014	Prague Ruzyne	London Stansted Apt	3	1140	1240	Boeing 737 Passenger	1
FR	2014	Prague Ruzyne	London Stansted Apt	2	1640	1740	Boeing 737 Passenger	1
FR	2014	Prague Ruzyne	London Stansted Apt	1 5	1925	2025	Boeing 737 Passenger	2
FR	202	Dublin (IE)	London Stansted Apt	1234567	0625	0750	Boeing 737 Passenger	7
FR	203	London Stansted Apt	Dublin (IE)	123456	0630	0755	Boeing 737 Passenger	6
FR	2047	Lanzarote	Leeds Bradford	6	1420	1830	Boeing 737 Passenger	1
FR	2047	Lanzarote	Leeds Bradford	4	1510	1920	Boeing 737 Passenger	1
FR	2047	Lanzarote	Leeds Bradford	2	1500	1910	Boeing 737 Passenger	1
FR	2048	Leeds Bradford	Lanzarote	6	1855	2315	Boeing 737 Passenger	1
FR	2048	Leeds Bradford	Lanzarote	4	1945	0005	Boeing 737 Passenger	1
FR	2048	Leeds Bradford	Lanzarote	2	1935	2355	Boeing 737 Passenger	1

FR	205	London Stansted Apt	Dublin (IE)	1234567	0815	0940	Boeing 737 Passenger	7
FR	206	Dublin (IE)	London Stansted Apt	123456	0820	0940	Boeing 737 Passenger	6
FR	2060	Birmingham Airport	Palma de Mallorca	7	1815	2140	Boeing 737 Passenger	1
FR	2060	Birmingham Airport	Palma de Mallorca	4	1355	1720	Boeing 737 Passenger	1
FR	2060	Birmingham Airport	Palma de Mallorca	3	0850	1215	Boeing 737 Passenger	1
FR	2060	Birmingham Airport	Palma de Mallorca	2	1035	1400	Boeing 737 Passenger	1
FR	2075	Nottingham East Midlands Airport	Menorca	1 5	1800	2130	Boeing 737 Passenger	2
FR	2076	Menorca	Nottingham East Midlands Airport	1 5	2205	2340	Boeing 737 Passenger	2
FR	2082	Madrid Adolfo Suarez-Barajas Apt	Birmingham Airport	5	1445	1615	Boeing 737 Passenger	1
FR	2082	Madrid Adolfo Suarez-Barajas Apt	Birmingham Airport	1 3 7	1305	1435	Boeing 737 Passenger	3
FR	2083	Birmingham Airport	Madrid Adolfo Suarez-Barajas Apt	5	1655	2025	Boeing 737 Passenger	1
FR	2083	Birmingham Airport	Madrid Adolfo Suarez-Barajas Apt	1 3 7	1500	1830	Boeing 737 Passenger	3
FR	2090	Palma de Mallorca	Birmingham Airport	7	1610	1745	Boeing 737 Passenger	1
FR	2090	Palma de Mallorca	Birmingham Airport	4	1135	1310	Boeing 737 Passenger	1
FR	2090	Palma de Mallorca	Birmingham Airport	3	0645	0820	Boeing 737 Passenger	1
FR	2090	Palma de Mallorca	Birmingham Airport	2	0810	0945	Boeing 737 Passenger	1
FR	2107	Manchester (GB)	Kerkyra	4 7	1510	2030	Boeing 737 Passenger	2
FR	2108	Kerkyra	Manchester (GB)	7	2105	2235	Boeing 737 Passenger	1
FR	2108	Kerkyra	Manchester (GB)	4	2055	2225	Boeing 737 Passenger	1
FR	211	Dublin (IE)	London Stansted Apt	1234567	1630	1750	Boeing 737 Passenger	7
FR	212	London Stansted Apt	Dublin (IE)	1234567	1830	1955	Boeing 737 Passenger	7
FR	2131	Manchester (GB)	Lanzarote	7	0640	1100	Boeing 737 Passenger	1
FR	2131	Manchester (GB)	Lanzarote	5	0645	1105	Boeing 737 Passenger	1
FR	2131	Manchester (GB)	Lanzarote	3	0745	1205	Boeing 737 Passenger	1
FR	2131	Manchester (GB)	Lanzarote	12 4	0555	1015	Boeing 737 Passenger	3
FR	2132	Lanzarote	Manchester (GB)	7	1135	1545	Boeing 737 Passenger	1
FR	2132	Lanzarote	Manchester (GB)	5	1140	1550	Boeing 737 Passenger	1
FR	2132	Lanzarote	Manchester (GB)	3	1240	1650	Boeing 737 Passenger	1
FR	2132	Lanzarote	Manchester (GB)	12 4	1050	1500	Boeing 737 Passenger	3
FR	2134	London Stansted Apt	Rzeszow	7	0655	1020	Boeing 737 Passenger	1
FR	2134	London Stansted Apt	Rzeszow	3	1150	1515	Boeing 737 Passenger	1
FR	2135	Rzeszow	London Stansted Apt	7	1045	1220	Boeing 737 Passenger	1
FR	2135	Rzeszow	London Stansted Apt	3	1540	1715	Boeing 737 Passenger	1
FR	2136	London Stansted Apt	Rzeszow	7	1800	2125	Boeing 737 Passenger	1
FR	2136	London Stansted Apt	Rzeszow	5	1655	2020	Boeing 737 Passenger	1
FR	2136	London Stansted Apt	Rzeszow	4	0655	1020	Boeing 737 Passenger	1
FR	2136	London Stansted Apt	Rzeszow	3	0720	1045	Boeing 737 Passenger	1
FR	2136	London Stansted Apt	Rzeszow	2 6	1145	1510	Boeing 737 Passenger	2
FR	2136	London Stansted Apt	Rzeszow	1	1810	2135	Boeing 737 Passenger	1
FR	2137	Rzeszow	London Stansted Apt	7	2155	2330	Boeing 737 Passenger	1
FR	2137	Rzeszow	London Stansted Apt	5	2045	2220	Boeing 737 Passenger	1
FR	2137	Rzeszow	London Stansted Apt	4	1045	1220	Boeing 737 Passenger	1
FR	2137	Rzeszow	London Stansted Apt	3	1110	1245	Boeing 737 Passenger	1
FR	2137	Rzeszow	London Stansted Apt	2 6	1535	1710	Boeing 737 Passenger	2
FR	2137	Rzeszow	London Stansted Apt	1	2200	2335	Boeing 737 Passenger	1
FR	2141	Manchester (GB)	Krakow John Paul II - Balice	6	0555	0935	Boeing 737 Passenger	1
FR	2141	Manchester (GB)	Krakow John Paul II - Balice	3	1905	2245	Boeing 737 Passenger	1
FR	2141	Manchester (GB)	Krakow John Paul II - Balice	1 5	1050	1430	Boeing 737 Passenger	2
FR	2142	Krakow John Paul II - Balice	Manchester (GB)	6	1000	1145	Boeing 737 Passenger	1
FR	2142	Krakow John Paul II - Balice	Manchester (GB)	3	2310	0055	Boeing 737 Passenger	1
FR	2142	Krakow John Paul II - Balice	Manchester (GB)	1 5	1455	1640	Boeing 737 Passenger	2
FR	2144	London Luton Apt	Kaunas	1234 67	0855	1335	Boeing 737 Passenger	6
FR	2145	Kaunas	London Luton Apt	1234 67	0730	0815	Boeing 737 Passenger	6
FR	2150	Alicante Airport	Birmingham Airport	7	1610	1750	Boeing 737 Passenger	1
FR	2150	Alicante Airport	Birmingham Airport	6	1600	1740	Boeing 737 Passenger	1
FR	2150	Alicante Airport	Birmingham Airport	5	0645	0825	Boeing 737 Passenger	1
FR	2150	Alicante Airport	Birmingham Airport	4	1505	1645	Boeing 737 Passenger	1
FR	2150	Alicante Airport	Birmingham Airport	2	1230	1410	Boeing 737 Passenger	1
FR	2150	Alicante Airport	Birmingham Airport	1	0900	1040	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	7	1815	2155	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	6	1805	2145	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	5	0850	1230	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	4	1710	2050	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	2	0815	1155	Boeing 737 Passenger	1
FR	2151	Birmingham Airport	Alicante Airport	1	1105	1445	Boeing 737 Passenger	1
FR	2152	Birmingham Airport	Alicante Airport	6	0745	1125	Boeing 737 Passenger	1
FR	2152	Birmingham Airport	Alicante Airport	345 7	1405	1745	Boeing 737 Passenger	4
FR	2152	Birmingham Airport	Alicante Airport	2	1745	2125	Boeing 737 Passenger	1
FR	2152	Birmingham Airport	Alicante Airport	1	1750	2130	Boeing 737 Passenger	1
FR	2153	Alicante Airport	Birmingham Airport	6	1200	1340	Boeing 737 Passenger	1

FR	2153	Alicante Airport	Birmingham Airport	345 7	1820	2000	Boeing 737 Passenger	4
FR	2153	Alicante Airport	Birmingham Airport	2	1540	1720	Boeing 737 Passenger	1
FR	2153	Alicante Airport	Birmingham Airport	1	1545	1725	Boeing 737 Passenger	1
FR	2154	Birmingham Airport	Corvera	6	1705	2050	Boeing 737 Passenger	1
FR	2154	Birmingham Airport	Corvera	2 4	0610	0955	Boeing 737 Passenger	2
FR	2154	Birmingham Airport	Corvera	1	1700	2045	Boeing 737 Passenger	1
FR	2155	Corvera	Birmingham Airport	6	2125	2310	Boeing 737 Passenger	1
FR	2155	Corvera	Birmingham Airport	2 4	1030	1215	Boeing 737 Passenger	2
FR	2155	Corvera	Birmingham Airport	1	2120	2305	Boeing 737 Passenger	1
FR	2156	Birmingham Airport	Malaga Airport	7	0800	1155	Boeing 737 Passenger	1
FR	2156	Birmingham Airport	Malaga Airport	6	1405	1800	Boeing 737 Passenger	1
FR	2156	Birmingham Airport	Malaga Airport	5	1210	1605	Boeing 737 Passenger	1
FR	2156	Birmingham Airport	Malaga Airport	34	1220	1615	Boeing 737 Passenger	2
FR	2156	Birmingham Airport	Malaga Airport	2	1940	2335	Boeing 737 Passenger	1
FR	2156	Birmingham Airport	Malaga Airport	1	1950	2345	Boeing 737 Passenger	1
FR	2157	Malaga Airport	Birmingham Airport	7	1230	1420	Boeing 737 Passenger	1
FR	2157	Malaga Airport	Birmingham Airport	6	1835	2030	Boeing 737 Passenger	1
FR	2157	Malaga Airport	Birmingham Airport	5	1640	1835	Boeing 737 Passenger	1
FR	2157	Malaga Airport	Birmingham Airport	34	1650	1845	Boeing 737 Passenger	2
FR	2157	Malaga Airport	Birmingham Airport	2	1720	1915	Boeing 737 Passenger	1
FR	2157	Malaga Airport	Birmingham Airport	1	1725	1920	Boeing 737 Passenger	1
FR	2162	Birmingham Airport	Palma de Mallorca	7	1700	2025	Boeing 737 Passenger	1
FR	2162	Birmingham Airport	Palma de Mallorca	6	1655	2020	Boeing 737 Passenger	1
FR	2162	Birmingham Airport	Palma de Mallorca	3	1735	2100	Boeing 737 Passenger	1
FR	2162	Birmingham Airport	Palma de Mallorca	12 45	2025	2350	Boeing 737 Passenger	4
FR	2163	Palma de Mallorca	Birmingham Airport	7	1500	1635	Boeing 737 Passenger	1
FR	2163	Palma de Mallorca	Birmingham Airport	6	1425	1600	Boeing 737 Passenger	1
FR	2163	Palma de Mallorca	Birmingham Airport	3	2140	2315	Boeing 737 Passenger	1
FR	2163	Palma de Mallorca	Birmingham Airport	12 45	1820	1955	Boeing 737 Passenger	4
FR	2182	London Southend Apt	Venice Marco Polo Apt	7	1800	2100	Boeing 737 Passenger	1
FR	2182	London Southend Apt	Venice Marco Polo Apt	4	1125	1425	Boeing 737 Passenger	1
FR	2182	London Southend Apt	Venice Marco Polo Apt	3	0745	1045	Boeing 737 Passenger	1
FR	2182	London Southend Apt	Venice Marco Polo Apt	1	1705	2005	Boeing 737 Passenger	1
FR	2183	Venice Marco Polo Apt	London Southend Apt	7	2155	2255	Boeing 737 Passenger	1
FR	2183	Venice Marco Polo Apt	London Southend Apt	4	1500	1600	Boeing 737 Passenger	1
FR	2183	Venice Marco Polo Apt	London Southend Apt	3	1110	1210	Boeing 737 Passenger	1
FR	2183	Venice Marco Polo Apt	London Southend Apt	1	2030	2130	Boeing 737 Passenger	1
FR	2184	London Southend Apt	Alicante Airport	6	1305	1630	Boeing 737 Passenger	1
FR	2184	London Southend Apt	Alicante Airport	5	0640	1005	Boeing 737 Passenger	1
FR	2184	London Southend Apt	Alicante Airport	23 7	0645	1010	Boeing 737 Passenger	3
FR	2185	Alicante Airport	London Southend Apt	6	1705	1830	Boeing 737 Passenger	1
FR	2185	Alicante Airport	London Southend Apt	5	1040	1205	Boeing 737 Passenger	1
FR	2185	Alicante Airport	London Southend Apt	23 7	1045	1210	Boeing 737 Passenger	3
FR	2186	London Southend Apt	Dublin (IE)	6	2005	2120	Boeing 737 Passenger	1
FR	2186	London Southend Apt	Dublin (IE)	3	0710	0825	Boeing 737 Passenger	1
FR	2186	London Southend Apt	Dublin (IE)	2 7	0655	0810	Boeing 737 Passenger	2
FR	2186	London Southend Apt	Dublin (IE)	1 45	0715	0830	Boeing 737 Passenger	3
FR	2187	Dublin (IE)	London Southend Apt	6	2145	2255	Boeing 737 Passenger	1
FR	2187	Dublin (IE)	London Southend Apt	2 7	0835	0945	Boeing 737 Passenger	2
FR	2187	Dublin (IE)	London Southend Apt	1 345	0855	1005	Boeing 737 Passenger	4
FR	2188	London Southend Apt	Milan Bergamo/orio al Serio Apt	7	1930	2215	Boeing 737 Passenger	1
FR	2188	London Southend Apt	Milan Bergamo/orio al Serio Apt	5	1735	2020	Boeing 737 Passenger	1
FR	2188	London Southend Apt	Milan Bergamo/orio al Serio Apt	3	1745	2030	Boeing 737 Passenger	1
FR	2188	London Southend Apt	Milan Bergamo/orio al Serio Apt	1	0815	1100	Boeing 737 Passenger	1
FR	2189	Milan Bergamo/orio al Serio Apt	London Southend Apt	7	2245	2330	Boeing 737 Passenger	1
FR	2189	Milan Bergamo/orio al Serio Apt	London Southend Apt	5	2045	2130	Boeing 737 Passenger	1
FR	2189	Milan Bergamo/orio al Serio Apt	London Southend Apt	3	2055	2140	Boeing 737 Passenger	1
FR	2189	Milan Bergamo/orio al Serio Apt	London Southend Apt	1	1125	1210	Boeing 737 Passenger	1
FR	2190	London Southend Apt	Malaga Airport	6	1310	1645	Boeing 737 Passenger	1
FR	2190	London Southend Apt	Malaga Airport	1 3 5 7	1300	1645	Boeing 737 Passenger	4
FR	2191	Malaga Airport	London Southend Apt	6	1730	1915	Boeing 737 Passenger	1
FR	2191	Malaga Airport	London Southend Apt	1 3 5 7	1720	1905	Boeing 737 Passenger	4
FR	2203	Leeds Bradford	Nowy Dwor Mazowiecki	4 7	0845	1210	Boeing 737 Passenger	2
FR	2204	Nowy Dwor Mazowiecki	Leeds Bradford	4 7	0645	0820	Boeing 737 Passenger	2
FR	221	Nottingham East Midlands Airport	Budapest	5	1325	1700	Boeing 737 Passenger	1
FR	221	Nottingham East Midlands Airport	Budapest	3	1715	2050	Boeing 737 Passenger	1
FR	221	Nottingham East Midlands Airport	Budapest	1	0840	1215	Boeing 737 Passenger	1
FR	222	Budapest	Nottingham East Midlands Airport	5	1725	1905	Boeing 737 Passenger	1
FR	222	Budapest	Nottingham East Midlands Airport	3	2115	2255	Boeing 737 Passenger	1
FR	222	Budapest	Nottingham East Midlands Airport	1	0635	0815	Boeing 737 Passenger	1

FR	2224	Tallinn	London Stansted Apt	7	1100	1155	Boeing 737 Passenger	1
FR	2224	Tallinn	London Stansted Apt	5	1150	1245	Boeing 737 Passenger	1
FR	2224	Tallinn	London Stansted Apt	3	1120	1215	Boeing 737 Passenger	1
FR	2224	Tallinn	London Stansted Apt	1	1155	1250	Boeing 737 Passenger	1
FR	2225	London Stansted Apt	Tallinn	5	0645	1125	Boeing 737 Passenger	1
FR	2225	London Stansted Apt	Tallinn	3 7	0555	1035	Boeing 737 Passenger	2
FR	2225	London Stansted Apt	Tallinn	1	0650	1130	Boeing 737 Passenger	1
FR	2241	Bologna Guglielmo Marconi	Manchester (GB)	7	1530	1700	Boeing 737 Passenger	1
FR	2241	Bologna Guglielmo Marconi	Manchester (GB)	5	1325	1455	Boeing 737 Passenger	1
FR	2241	Bologna Guglielmo Marconi	Manchester (GB)	3	1440	1615	Boeing 737 Passenger	1
FR	2241	Bologna Guglielmo Marconi	Manchester (GB)	1	1210	1340	Boeing 737 Passenger	1
FR	2242	Manchester (GB)	Bologna Guglielmo Marconi	7	1140	1505	Boeing 737 Passenger	1
FR	2242	Manchester (GB)	Bologna Guglielmo Marconi	5	0935	1300	Boeing 737 Passenger	1
FR	2242	Manchester (GB)	Bologna Guglielmo Marconi	3	1050	1415	Boeing 737 Passenger	1
FR	2242	Manchester (GB)	Bologna Guglielmo Marconi	1	0820	1145	Boeing 737 Passenger	1
FR	2244	London Stansted Apt	Vilnius	7	1810	2250	Boeing 737 Passenger	1
FR	2244	London Stansted Apt	Vilnius	3	1620	2100	Boeing 737 Passenger	1
FR	2244	London Stansted Apt	Vilnius	2 456	1905	2345	Boeing 737 Passenger	4
FR	2244	London Stansted Apt	Vilnius	1	1910	2350	Boeing 737 Passenger	1
FR	2245	Vilnius	London Stansted Apt	7	2315	2359	Boeing 737 Passenger	1
FR	2245	Vilnius	London Stansted Apt	5	1740	1825	Boeing 737 Passenger	1
FR	2245	Vilnius	London Stansted Apt	3	2125	2210	Boeing 737 Passenger	1
FR	2245	Vilnius	London Stansted Apt	2 4 6	1755	1840	Boeing 737 Passenger	3
FR	2245	Vilnius	London Stansted Apt	1	1800	1845	Boeing 737 Passenger	1
FR	225	London Stansted Apt	Dublin (IE)	1234567	1340	1505	Boeing 737 Passenger	7
FR	2252	Manchester (GB)	Lisbon	1 345 7	2055	2345	Boeing 737 Passenger	5
FR	2253	Lisbon	Manchester (GB)	1 345 7	1740	2030	Boeing 737 Passenger	5
FR	2266	Birmingham Airport	Malaga Airport	3 5 7	1655	2050	Boeing 737 Passenger	3
FR	2266	Birmingham Airport	Malaga Airport	2 4	1010	1405	Boeing 737 Passenger	2
FR	2266	Birmingham Airport	Malaga Airport	1	0800	1155	Boeing 737 Passenger	1
FR	2267	Malaga Airport	Birmingham Airport	3 5 7	2125	2320	Boeing 737 Passenger	3
FR	2267	Malaga Airport	Birmingham Airport	2 4	0750	0945	Boeing 737 Passenger	2
FR	2267	Malaga Airport	Birmingham Airport	1	1230	1425	Boeing 737 Passenger	1
FR	2268	Bournemouth	Dublin (IE)	7	2020	2130	Boeing 737 Passenger	1
FR	2268	Bournemouth	Dublin (IE)	6	1300	1410	Boeing 737 Passenger	1
FR	2268	Bournemouth	Dublin (IE)	4	1605	1715	Boeing 737 Passenger	1
FR	2268	Bournemouth	Dublin (IE)	2	1345	1455	Boeing 737 Passenger	1
FR	2269	Dublin (IE)	Bournemouth	7	2155	2305	Boeing 737 Passenger	1
FR	2269	Dublin (IE)	Bournemouth	6	1125	1235	Boeing 737 Passenger	1
FR	2269	Dublin (IE)	Bournemouth	4	1430	1540	Boeing 737 Passenger	1
FR	2269	Dublin (IE)	Bournemouth	2	1210	1320	Boeing 737 Passenger	1
FR	2272	Dublin (IE)	London Stansted Apt	1 34567	1155	1315	Boeing 737 Passenger	6
FR	228	London Stansted Apt	Szczytno	4 6	1335	1700	Boeing 737 Passenger	2
FR	228	London Stansted Apt	Szczytno	2	1655	2020	Boeing 737 Passenger	1
FR	2281	London Stansted Apt	Nowy Dwor Mazowiecki	6	1225	1540	Boeing 737 Passenger	1
FR	2281	London Stansted Apt	Nowy Dwor Mazowiecki	5	1255	1610	Boeing 737 Passenger	1
FR	2281	London Stansted Apt	Nowy Dwor Mazowiecki	3	1140	1455	Boeing 737 Passenger	1
FR	2281	London Stansted Apt	Nowy Dwor Mazowiecki	2 4 7	1200	1515	Boeing 737 Passenger	3
FR	2281	London Stansted Apt	Nowy Dwor Mazowiecki	1	1155	1510	Boeing 737 Passenger	1
FR	2282	Nowy Dwor Mazowiecki	London Stansted Apt	6	1605	1735	Boeing 737 Passenger	1
FR	2282	Nowy Dwor Mazowiecki	London Stansted Apt	5	1100	1230	Boeing 737 Passenger	1
FR	2282	Nowy Dwor Mazowiecki	London Stansted Apt	3	1525	1655	Boeing 737 Passenger	1
FR	2282	Nowy Dwor Mazowiecki	London Stansted Apt	2 4 7	1540	1710	Boeing 737 Passenger	3
FR	2282	Nowy Dwor Mazowiecki	London Stansted Apt	1	1535	1705	Boeing 737 Passenger	1
FR	2283	London Stansted Apt	Nowy Dwor Mazowiecki	7	1740	2055	Boeing 737 Passenger	1
FR	2283	London Stansted Apt	Nowy Dwor Mazowiecki	3	1755	2110	Boeing 737 Passenger	1
FR	2283	London Stansted Apt	Nowy Dwor Mazowiecki	3 6	1810	2125	Boeing 737 Passenger	1
FR	2283	London Stansted Apt	Nowy Dwor Mazowiecki	2 45	1800	2115	Boeing 737 Passenger	3
FR	2283	London Stansted Apt	Nowy Dwor Mazowiecki	1	1850	2205	Boeing 737 Passenger	1
FR	2284	Nowy Dwor Mazowiecki	London Stansted Apt	7	2120	2250	Boeing 737 Passenger	1
FR	2284	Nowy Dwor Mazowiecki	London Stansted Apt	3	2135	2305	Boeing 737 Passenger	1
FR	2284	Nowy Dwor Mazowiecki	London Stansted Apt	3 6	2150	2320	Boeing 737 Passenger	1
FR	2284	Nowy Dwor Mazowiecki	London Stansted Apt	2 45	2140	2310	Boeing 737 Passenger	3
FR	2284	Nowy Dwor Mazowiecki	London Stansted Apt	1	2230	2359	Boeing 737 Passenger	1
FR	229	Szczytno	London Stansted Apt	4 6	1725	1850	Boeing 737 Passenger	2
FR	229	Szczytno	London Stansted Apt	2	2045	2210	Boeing 737 Passenger	1
FR	2291	Alicante Airport	Bristol	4	1515	1650	Boeing 737 Passenger	1
FR	2292	Bristol	Alicante Airport	4	1715	2045	Boeing 737 Passenger	1
FR	2295	London Stansted Apt	Duesseldorf Weeze Airport	5	1420	1630	Boeing 737 Passenger	1
FR	2295	London Stansted Apt	Duesseldorf Weeze Airport	3	1455	1705	Boeing 737 Passenger	1

FR	2295	London Stansted Apt	Duesseldorf Weeze Airport	1	1905	2115	Boeing 737 Passenger	1
FR	2296	Duesseldorf Weeze Airport	London Stansted Apt	5	1655	1705	Boeing 737 Passenger	1
FR	2296	Duesseldorf Weeze Airport	London Stansted Apt	3	1730	1740	Boeing 737 Passenger	1
FR	2296	Duesseldorf Weeze Airport	London Stansted Apt	1	2140	2150	Boeing 737 Passenger	1
FR	231	Alghero	London Stansted Apt	6	2155	2330	Boeing 737 Passenger	1
FR	231	Alghero	London Stansted Apt	4	1055	1230	Boeing 737 Passenger	1
FR	231	Alghero	London Stansted Apt	2	1650	1825	Boeing 737 Passenger	1
FR	2314	London Stansted Apt	Bratislava	4	0815	1130	Boeing 737 Passenger	1
FR	2314	London Stansted Apt	Bratislava	23 567	0830	1145	Boeing 737 Passenger	5
FR	2315	Bratislava	London Stansted Apt	4	1155	1315	Boeing 737 Passenger	1
FR	2315	Bratislava	London Stansted Apt	23 567	0630	0750	Boeing 737 Passenger	5
FR	2318	London Stansted Apt	Bratislava	3 5 7	1950	2305	Boeing 737 Passenger	3
FR	2319	Bratislava	London Stansted Apt	3 5 7	1800	1920	Boeing 737 Passenger	3
FR	232	London Stansted Apt	Alghero	6	1800	2130	Boeing 737 Passenger	1
FR	232	London Stansted Apt	Alghero	4	0700	1030	Boeing 737 Passenger	1
FR	232	London Stansted Apt	Alghero	2	1255	1625	Boeing 737 Passenger	1
FR	2320	Edinburgh	Billund	7	1510	1745	Boeing 737 Passenger	1
FR	2320	Edinburgh	Billund	4	1515	1750	Boeing 737 Passenger	1
FR	2321	Billund	Edinburgh	7	1810	1845	Boeing 737 Passenger	1
FR	2321	Billund	Edinburgh	4	1815	1850	Boeing 737 Passenger	1
FR	2322	Leeds Bradford	Corvera	5	1650	2050	Boeing 737 Passenger	1
FR	2322	Leeds Bradford	Corvera	1	1620	2020	Boeing 737 Passenger	1
FR	2323	Corvera	Leeds Bradford	5	2130	2325	Boeing 737 Passenger	1
FR	2323	Corvera	Leeds Bradford	1	2055	2250	Boeing 737 Passenger	1
FR	2324	Girona Costa Brava Apt	Leeds Bradford	5	0640	0800	Boeing 737 Passenger	1
FR	2324	Girona Costa Brava Apt	Leeds Bradford	1	1745	1905	Boeing 737 Passenger	1
FR	2325	Leeds Bradford	Girona Costa Brava Apt	5	0825	1145	Boeing 737 Passenger	1
FR	2325	Leeds Bradford	Girona Costa Brava Apt	1	1930	2250	Boeing 737 Passenger	1
FR	2326	Leeds Bradford	Palma de Mallorca	5	0925	1305	Boeing 737 Passenger	1
FR	2326	Leeds Bradford	Palma de Mallorca	1234 67	0930	1310	Boeing 737 Passenger	6
FR	2327	Palma de Mallorca	Leeds Bradford	5	1340	1530	Boeing 737 Passenger	1
FR	2327	Palma de Mallorca	Leeds Bradford	1234 67	1345	1535	Boeing 737 Passenger	6
FR	2328	Leeds Bradford	Limoges	7	1535	1830	Boeing 737 Passenger	1
FR	2328	Leeds Bradford	Limoges	4	0620	0915	Boeing 737 Passenger	1
FR	2329	Limoges	Leeds Bradford	7	1855	1945	Boeing 737 Passenger	1
FR	2329	Limoges	Leeds Bradford	4	0940	1030	Boeing 737 Passenger	1
FR	2332	Leeds Bradford	Krakow John Paul II - Balice	7	2025	2355	Boeing 737 Passenger	1
FR	2332	Leeds Bradford	Krakow John Paul II - Balice	6	1635	2005	Boeing 737 Passenger	1
FR	2332	Leeds Bradford	Krakow John Paul II - Balice	4	0645	1015	Boeing 737 Passenger	1
FR	2332	Leeds Bradford	Krakow John Paul II - Balice	2	1545	1915	Boeing 737 Passenger	1
FR	2333	Krakow John Paul II - Balice	Leeds Bradford	7	1825	2000	Boeing 737 Passenger	1
FR	2333	Krakow John Paul II - Balice	Leeds Bradford	6	2030	2205	Boeing 737 Passenger	1
FR	2333	Krakow John Paul II - Balice	Leeds Bradford	4	1040	1215	Boeing 737 Passenger	1
FR	2333	Krakow John Paul II - Balice	Leeds Bradford	2	1940	2115	Boeing 737 Passenger	1
FR	2336	London Stansted Apt	Poznan Lawica Apt	3	0555	0900	Boeing 737 Passenger	1
FR	2336	London Stansted Apt	Poznan Lawica Apt	2 7	0705	1010	Boeing 737 Passenger	2
FR	2336	London Stansted Apt	Poznan Lawica Apt	1 456	1120	1425	Boeing 737 Passenger	4
FR	2337	Poznan Lawica Apt	London Stansted Apt	3	0925	1030	Boeing 737 Passenger	1
FR	2337	Poznan Lawica Apt	London Stansted Apt	2 7	1035	1140	Boeing 737 Passenger	2
FR	2337	Poznan Lawica Apt	London Stansted Apt	1 456	1450	1555	Boeing 737 Passenger	4
FR	2341	Faro	Newcastle	1 3 5 7	1535	1845	Boeing 737 Passenger	4
FR	2342	Newcastle	Faro	1 3 5 7	1910	2220	Boeing 737 Passenger	4
FR	2344	Girona Costa Brava Apt	Newcastle	6	1800	1930	Boeing 737 Passenger	1
FR	2344	Girona Costa Brava Apt	Newcastle	2	1715	1845	Boeing 737 Passenger	1
FR	2345	Newcastle	Girona Costa Brava Apt	6	1955	2325	Boeing 737 Passenger	1
FR	2345	Newcastle	Girona Costa Brava Apt	2	1910	2240	Boeing 737 Passenger	1
FR	2346	Palma de Mallorca	Newcastle	7	1700	1850	Boeing 737 Passenger	1
FR	2346	Palma de Mallorca	Newcastle	6	0745	0935	Boeing 737 Passenger	1
FR	2346	Palma de Mallorca	Newcastle	5	0615	0805	Boeing 737 Passenger	1
FR	2346	Palma de Mallorca	Newcastle	234	0630	0820	Boeing 737 Passenger	3
FR	2346	Palma de Mallorca	Newcastle	1	0635	0825	Boeing 737 Passenger	1
FR	2347	Newcastle	Palma de Mallorca	7	1925	2310	Boeing 737 Passenger	1
FR	2347	Newcastle	Palma de Mallorca	6	1000	1350	Boeing 737 Passenger	1
FR	2347	Newcastle	Palma de Mallorca	5	0830	1215	Boeing 737 Passenger	1
FR	2347	Newcastle	Palma de Mallorca	2 4	0845	1235	Boeing 737 Passenger	2
FR	2347	Newcastle	Palma de Mallorca	1 3	0850	1235	Boeing 737 Passenger	2
FR	2352	London Stansted Apt	Cologne/Bonn Apt	5	1420	1645	Boeing 737 Passenger	1
FR	2352	London Stansted Apt	Cologne/Bonn Apt	2 4	1505	1730	Boeing 737 Passenger	2
FR	2352	London Stansted Apt	Cologne/Bonn Apt	1 3	1210	1435	Boeing 737 Passenger	2
FR	2353	Cologne/Bonn Apt	London Stansted Apt	5	1710	1735	Boeing 737 Passenger	1

FR	2353	Cologne/Bonn Apt	London Stansted Apt	2 4	1755	1820	Boeing 737 Passenger	2
FR	2353	Cologne/Bonn Apt	London Stansted Apt	1 3	1500	1525	Boeing 737 Passenger	2
FR	2354	Edinburgh	Luxembourg	5	0925	1215	Boeing 737 Passenger	1
FR	2354	Edinburgh	Luxembourg	3	1350	1640	Boeing 737 Passenger	1
FR	2354	Edinburgh	Luxembourg	1	1710	2000	Boeing 737 Passenger	1
FR	2355	Luxembourg	Edinburgh	5	1250	1340	Boeing 737 Passenger	1
FR	2355	Luxembourg	Edinburgh	3	1715	1805	Boeing 737 Passenger	1
FR	2355	Luxembourg	Edinburgh	1	2035	2125	Boeing 737 Passenger	1
FR	2368	London Stansted Apt	Ostrava	6	1325	1640	Boeing 737 Passenger	1
FR	2368	London Stansted Apt	Ostrava	4	1725	2040	Boeing 737 Passenger	1
FR	2368	London Stansted Apt	Ostrava	2	1350	1705	Boeing 737 Passenger	1
FR	2369	Ostrava	London Stansted Apt	6	1710	1825	Boeing 737 Passenger	1
FR	2369	Ostrava	London Stansted Apt	4	2105	2220	Boeing 737 Passenger	1
FR	2369	Ostrava	London Stansted Apt	2	1730	1845	Boeing 737 Passenger	1
FR	2371	London Stansted Apt	Dublin (IE)	1 34567	1005	1130	Boeing 737 Passenger	6
FR	2372	London Stansted Apt	Gdansk Lech Walesa	7	2005	2315	Boeing 737 Passenger	1
FR	2372	London Stansted Apt	Gdansk Lech Walesa	6	0840	1150	Boeing 737 Passenger	1
FR	2372	London Stansted Apt	Gdansk Lech Walesa	2	2000	2310	Boeing 737 Passenger	1
FR	2372	London Stansted Apt	Gdansk Lech Walesa	1 345	1850	2200	Boeing 737 Passenger	4
FR	2373	Gdansk Lech Walesa	London Stansted Apt	7	1815	1930	Boeing 737 Passenger	1
FR	2373	Gdansk Lech Walesa	London Stansted Apt	6	0700	0815	Boeing 737 Passenger	1
FR	2373	Gdansk Lech Walesa	London Stansted Apt	2	1800	1915	Boeing 737 Passenger	1
FR	2373	Gdansk Lech Walesa	London Stansted Apt	1 345	2225	2340	Boeing 737 Passenger	4
FR	2374	London Stansted Apt	Gdansk Lech Walesa	5	0935	1245	Boeing 737 Passenger	1
FR	2374	London Stansted Apt	Gdansk Lech Walesa	34	1110	1420	Boeing 737 Passenger	2
FR	2374	London Stansted Apt	Gdansk Lech Walesa	2	0945	1255	Boeing 737 Passenger	1
FR	2374	London Stansted Apt	Gdansk Lech Walesa	1	0845	1155	Boeing 737 Passenger	1
FR	2375	Gdansk Lech Walesa	London Stansted Apt	5	0755	0910	Boeing 737 Passenger	1
FR	2375	Gdansk Lech Walesa	London Stansted Apt	34	0930	1045	Boeing 737 Passenger	2
FR	2375	Gdansk Lech Walesa	London Stansted Apt	2	0800	0915	Boeing 737 Passenger	1
FR	2375	Gdansk Lech Walesa	London Stansted Apt	1	0705	0820	Boeing 737 Passenger	1
FR	2376	Edinburgh	Berlin Schoenefeld Apt	7	1245	1550	Boeing 737 Passenger	1
FR	2376	Edinburgh	Berlin Schoenefeld Apt	5	0600	0905	Boeing 737 Passenger	1
FR	2376	Edinburgh	Berlin Schoenefeld Apt	34	0630	0935	Boeing 737 Passenger	2
FR	2376	Edinburgh	Berlin Schoenefeld Apt	2	0645	0950	Boeing 737 Passenger	1
FR	2376	Edinburgh	Berlin Schoenefeld Apt	1	1145	1450	Boeing 737 Passenger	1
FR	2377	Berlin Schoenefeld Apt	Edinburgh	7	1105	1210	Boeing 737 Passenger	1
FR	2377	Berlin Schoenefeld Apt	Edinburgh	345	1000	1105	Boeing 737 Passenger	3
FR	2377	Berlin Schoenefeld Apt	Edinburgh	2	1015	1120	Boeing 737 Passenger	1
FR	2377	Berlin Schoenefeld Apt	Edinburgh	1	1515	1620	Boeing 737 Passenger	1
FR	2404	London Stansted Apt	Memmingen	6	1215	1500	Boeing 737 Passenger	1
FR	2404	London Stansted Apt	Memmingen	4	1305	1550	Boeing 737 Passenger	1
FR	2404	London Stansted Apt	Memmingen	23 7	1205	1450	Boeing 737 Passenger	3
FR	2405	Memmingen	London Stansted Apt	6	1525	1605	Boeing 737 Passenger	1
FR	2405	Memmingen	London Stansted Apt	4	1200	1240	Boeing 737 Passenger	1
FR	2405	Memmingen	London Stansted Apt	23 7	1515	1555	Boeing 737 Passenger	3
FR	2411	Nottingham East Midlands Airport	Malta	5	1630	2055	Boeing 737 Passenger	1
FR	2411	Nottingham East Midlands Airport	Malta	3	0620	1045	Boeing 737 Passenger	1
FR	2411	Nottingham East Midlands Airport	Malta	1	1600	2035	Boeing 737 Passenger	1
FR	2418	Frankfurt International Apt	Manchester (GB)	12345	1425	1520	Boeing 737 Passenger	5
FR	2419	Manchester (GB)	Frankfurt International Apt	12345	1545	1835	Boeing 737 Passenger	5
FR	2432	London Stansted Apt	Krakow John Paul II - Balice	7	0850	1215	Boeing 737 Passenger	1
FR	2432	London Stansted Apt	Krakow John Paul II - Balice	5	0715	1040	Boeing 737 Passenger	1
FR	2432	London Stansted Apt	Krakow John Paul II - Balice	2	0855	1220	Boeing 737 Passenger	1
FR	2432	London Stansted Apt	Krakow John Paul II - Balice	1 34 6	0900	1225	Boeing 737 Passenger	4
FR	2433	Krakow John Paul II - Balice	London Stansted Apt	5	1105	1240	Boeing 737 Passenger	1
FR	2433	Krakow John Paul II - Balice	London Stansted Apt	3	0700	0835	Boeing 737 Passenger	1
FR	2433	Krakow John Paul II - Balice	London Stansted Apt	2	0655	0830	Boeing 737 Passenger	1
FR	2433	Krakow John Paul II - Balice	London Stansted Apt	1 4 67	0645	0820	Boeing 737 Passenger	4
FR	2434	London Stansted Apt	Krakow John Paul II - Balice	5	1315	1640	Boeing 737 Passenger	1
FR	2434	London Stansted Apt	Krakow John Paul II - Balice	4	1245	1610	Boeing 737 Passenger	1
FR	2434	London Stansted Apt	Krakow John Paul II - Balice	2	1650	2015	Boeing 737 Passenger	1
FR	2434	London Stansted Apt	Krakow John Paul II - Balice	1 67	1300	1625	Boeing 737 Passenger	3
FR	2435	Krakow John Paul II - Balice	London Stansted Apt	5	1705	1840	Boeing 737 Passenger	1
FR	2435	Krakow John Paul II - Balice	London Stansted Apt	4	1040	1215	Boeing 737 Passenger	1
FR	2435	Krakow John Paul II - Balice	London Stansted Apt	2	1450	1625	Boeing 737 Passenger	1
FR	2435	Krakow John Paul II - Balice	London Stansted Apt	1 67	1650	1825	Boeing 737 Passenger	3
FR	2436	London Stansted Apt	Krakow John Paul II - Balice	6	1835	2200	Boeing 737 Passenger	1
FR	2436	London Stansted Apt	Krakow John Paul II - Balice	4	1830	2155	Boeing 737 Passenger	1
FR	2436	London Stansted Apt	Krakow John Paul II - Balice	3	1740	2105	Boeing 737 Passenger	1

FR	2436	London Stansted Apt	Krakow John Paul II - Balice	2	1700	2025	Boeing 737 Passenger	1
FR	2436	London Stansted Apt	Krakow John Paul II - Balice	1 5 7	1800	2125	Boeing 737 Passenger	3
FR	2437	Krakow John Paul II - Balice	London Stansted Apt	6	2225	2359	Boeing 737 Passenger	1
FR	2437	Krakow John Paul II - Balice	London Stansted Apt	4	2220	2355	Boeing 737 Passenger	1
FR	2437	Krakow John Paul II - Balice	London Stansted Apt	3	2130	2305	Boeing 737 Passenger	1
FR	2437	Krakow John Paul II - Balice	London Stansted Apt	2	2050	2225	Boeing 737 Passenger	1
FR	2437	Krakow John Paul II - Balice	London Stansted Apt	1 5 7	2150	2325	Boeing 737 Passenger	3
FR	2446	Leeds Bradford	Malaga Airport	7	1650	2035	Boeing 737 Passenger	1
FR	2446	Leeds Bradford	Malaga Airport	4	1630	2015	Boeing 737 Passenger	1
FR	2446	Leeds Bradford	Malaga Airport	3	1705	2100	Boeing 737 Passenger	1
FR	2446	Leeds Bradford	Malaga Airport	2 56	1655	2050	Boeing 737 Passenger	3
FR	2446	Leeds Bradford	Malaga Airport	1	1905	2300	Boeing 737 Passenger	1
FR	2447	Malaga Airport	Leeds Bradford	7	2110	2310	Boeing 737 Passenger	1
FR	2447	Malaga Airport	Leeds Bradford	4	2050	2250	Boeing 737 Passenger	1
FR	2447	Malaga Airport	Leeds Bradford	3	2135	2335	Boeing 737 Passenger	1
FR	2447	Malaga Airport	Leeds Bradford	2 56	2125	2325	Boeing 737 Passenger	3
FR	2447	Malaga Airport	Leeds Bradford	1	1640	1840	Boeing 737 Passenger	1
FR	2448	Leeds Bradford	Malta	1 5	0945	1420	Boeing 737 Passenger	2
FR	2449	Malta	Leeds Bradford	1 5	0645	0920	Boeing 737 Passenger	2
FR	2453	Edinburgh	Bologna Guglielmo Marconi	5	0655	1040	Boeing 737 Passenger	1
FR	2453	Edinburgh	Bologna Guglielmo Marconi	1	2020	0005	Boeing 737 Passenger	1
FR	2454	Bologna Guglielmo Marconi	Edinburgh	5	1105	1255	Boeing 737 Passenger	1
FR	2454	Bologna Guglielmo Marconi	Edinburgh	1	1805	1955	Boeing 737 Passenger	1
FR	2462	London Stansted Apt	Bydgoszcz	1234567	0645	0955	Boeing 737 Passenger	7
FR	2463	Bydgoszcz	London Stansted Apt	1234567	1020	1130	Boeing 737 Passenger	7
FR	2466	London Stansted Apt	Szczecin	7	1920	2215	Boeing 737 Passenger	1
FR	2466	London Stansted Apt	Szczecin	5	1810	2105	Boeing 737 Passenger	1
FR	2466	London Stansted Apt	Szczecin	34 6	1900	2155	Boeing 737 Passenger	3
FR	2466	London Stansted Apt	Szczecin	2	1850	2145	Boeing 737 Passenger	1
FR	2466	London Stansted Apt	Szczecin	1	1840	2135	Boeing 737 Passenger	1
FR	2467	Szczecin	London Stansted Apt	7	2240	2335	Boeing 737 Passenger	1
FR	2467	Szczecin	London Stansted Apt	5	2130	2225	Boeing 737 Passenger	1
FR	2467	Szczecin	London Stansted Apt	2	2210	2305	Boeing 737 Passenger	1
FR	2467	Szczecin	London Stansted Apt	1 34 6	2220	2315	Boeing 737 Passenger	4
FR	2468	London Stansted Apt	Lodz Wladyslaw Reymont	7	1325	1640	Boeing 737 Passenger	1
FR	2468	London Stansted Apt	Lodz Wladyslaw Reymont	3	0705	1020	Boeing 737 Passenger	1
FR	2468	London Stansted Apt	Lodz Wladyslaw Reymont	12 56	1155	1510	Boeing 737 Passenger	4
FR	2469	Lodz Wladyslaw Reymont	London Stansted Apt	7	1705	1825	Boeing 737 Passenger	1
FR	2469	Lodz Wladyslaw Reymont	London Stansted Apt	3	1045	1205	Boeing 737 Passenger	1
FR	2469	Lodz Wladyslaw Reymont	London Stansted Apt	12 56	1535	1655	Boeing 737 Passenger	4
FR	2472	Malta	Nottingham East Midlands Airport	5	2120	2345	Boeing 737 Passenger	1
FR	2472	Malta	Nottingham East Midlands Airport	3	1110	1335	Boeing 737 Passenger	1
FR	2472	Malta	Nottingham East Midlands Airport	1	2100	2335	Boeing 737 Passenger	1
FR	2476	Leeds Bradford	Chania	2 6	0700	1300	Boeing 737 Passenger	2
FR	2477	Chania	Leeds Bradford	2 6	1325	1540	Boeing 737 Passenger	2
FR	2480	Malaga Airport	Leeds Bradford	2	1115	1315	Boeing 737 Passenger	1
FR	2482	Leeds Bradford	Riga	7	0640	1120	Boeing 737 Passenger	1
FR	2482	Leeds Bradford	Riga	3	1610	2050	Boeing 737 Passenger	1
FR	2483	Riga	Leeds Bradford	7	1145	1245	Boeing 737 Passenger	1
FR	2483	Riga	Leeds Bradford	3	2115	2215	Boeing 737 Passenger	1
FR	2486	Leeds Bradford	Ibiza	7	1405	1755	Boeing 737 Passenger	1
FR	2486	Leeds Bradford	Ibiza	4	1335	1725	Boeing 737 Passenger	1
FR	2487	Ibiza	Leeds Bradford	7	1840	2025	Boeing 737 Passenger	1
FR	2487	Ibiza	Leeds Bradford	4	2155	2340	Boeing 737 Passenger	1
FR	2492	Leeds Bradford	Tenerife Sur Apt	6	1905	2340	Boeing 737 Passenger	1
FR	2492	Leeds Bradford	Tenerife Sur Apt	1 3	0625	1100	Boeing 737 Passenger	2
FR	2493	Tenerife Sur Apt	Leeds Bradford	6	1405	1840	Boeing 737 Passenger	1
FR	2493	Tenerife Sur Apt	Leeds Bradford	1 3	1135	1610	Boeing 737 Passenger	2
FR	2496	Leeds Bradford	Kerkyra	3	0745	1305	Boeing 737 Passenger	1
FR	2497	Kerkyra	Leeds Bradford	3	1330	1505	Boeing 737 Passenger	1
FR	2498	London Stansted Apt	Bratislava	4	1915	2230	Boeing 737 Passenger	1
FR	2498	London Stansted Apt	Bratislava	1	1645	2000	Boeing 737 Passenger	1
FR	2499	Bratislava	London Stansted Apt	4	2255	0020	Boeing 737 Passenger	1
FR	2499	Bratislava	London Stansted Apt	1	2030	2150	Boeing 737 Passenger	1
FR	2501	Leeds Bradford	Pisa	5	1505	1835	Boeing 737 Passenger	1
FR	2501	Leeds Bradford	Pisa	1	1855	2225	Boeing 737 Passenger	1
FR	2502	Pisa	Leeds Bradford	5	1310	1440	Boeing 737 Passenger	1
FR	2502	Pisa	Leeds Bradford	1	1700	1830	Boeing 737 Passenger	1
FR	2503	Leeds Bradford	Faro	6	0615	0915	Boeing 737 Passenger	1
FR	2503	Leeds Bradford	Faro	5	1820	2120	Boeing 737 Passenger	1

FR	2503	Leeds Bradford	Faro	34 7	1950	2250	Boeing 737 Passenger	3
FR	2503	Leeds Bradford	Faro	1	1125	1425	Boeing 737 Passenger	1
FR	2504	Faro	Leeds Bradford	6	0940	1235	Boeing 737 Passenger	1
FR	2504	Faro	Leeds Bradford	5	1500	1755	Boeing 737 Passenger	1
FR	2504	Faro	Leeds Bradford	34 7	1630	1925	Boeing 737 Passenger	3
FR	2504	Faro	Leeds Bradford	1	0805	1100	Boeing 737 Passenger	1
FR	2521	Alicante Airport	Glasgow International Airport	7	1700	1905	Boeing 737 Passenger	1
FR	2521	Alicante Airport	Glasgow International Airport	4	1435	1640	Boeing 737 Passenger	1
FR	2521	Alicante Airport	Glasgow International Airport	2	1500	1705	Boeing 737 Passenger	1
FR	2522	Glasgow International Airport	Alicante Airport	7	1930	2335	Boeing 737 Passenger	1
FR	2522	Glasgow International Airport	Alicante Airport	4	1705	2110	Boeing 737 Passenger	1
FR	2522	Glasgow International Airport	Alicante Airport	2	1730	2135	Boeing 737 Passenger	1
FR	2535	Gran Canaria	Leeds Bradford	7	1405	1825	Boeing 737 Passenger	1
FR	2535	Gran Canaria	Leeds Bradford	4	1345	1805	Boeing 737 Passenger	1
FR	2536	Leeds Bradford	Gran Canaria	7	1850	2320	Boeing 737 Passenger	1
FR	2536	Leeds Bradford	Gran Canaria	4	1830	2300	Boeing 737 Passenger	1
FR	2545	Tenerife Sur Apt	Newcastle	5	1330	1800	Boeing 737 Passenger	1
FR	2545	Tenerife Sur Apt	Newcastle	1	1400	1840	Boeing 737 Passenger	1
FR	2546	Newcastle	Tenerife Sur Apt	5	1825	2310	Boeing 737 Passenger	1
FR	2546	Newcastle	Tenerife Sur Apt	1	1905	2359	Boeing 737 Passenger	1
FR	2558	Brussels S. Charleroi Airport	Glasgow International Airport	2 6	1040	1120	Boeing 737 Passenger	2
FR	2559	Glasgow International Airport	Brussels S. Charleroi Airport	2 6	1145	1425	Boeing 737 Passenger	2
FR	2561	Tenerife Sur Apt	Belfast International Apt	7	1240	1700	Boeing 737 Passenger	1
FR	2561	Tenerife Sur Apt	Belfast International Apt	4	1400	1820	Boeing 737 Passenger	1
FR	2562	Belfast International Apt	Tenerife Sur Apt	7	1725	2155	Boeing 737 Passenger	1
FR	2562	Belfast International Apt	Tenerife Sur Apt	4	1900	2330	Boeing 737 Passenger	1
FR	2595	Lanzarote	Belfast International Apt	1 5	1135	1550	Boeing 737 Passenger	2
FR	2596	Belfast International Apt	Lanzarote	1 5	0645	1100	Boeing 737 Passenger	2
FR	2603	Valencia Airport	Manchester (GB)	5	2015	2155	Boeing 737 Passenger	1
FR	2603	Valencia Airport	Manchester (GB)	1 3	1435	1615	Boeing 737 Passenger	2
FR	2604	Manchester (GB)	Valencia Airport	5	1610	1940	Boeing 737 Passenger	1
FR	2604	Manchester (GB)	Valencia Airport	1 3	1640	2010	Boeing 737 Passenger	2
FR	2608	Malaga Airport	Glasgow International Airport	7	1325	1540	Boeing 737 Passenger	1
FR	2608	Malaga Airport	Glasgow International Airport	4 6	1535	1750	Boeing 737 Passenger	2
FR	2608	Malaga Airport	Glasgow International Airport	2	1515	1730	Boeing 737 Passenger	1
FR	2609	Glasgow International Airport	Malaga Airport	7	1605	2020	Boeing 737 Passenger	1
FR	2609	Glasgow International Airport	Malaga Airport	4 6	1815	2230	Boeing 737 Passenger	2
FR	2609	Glasgow International Airport	Malaga Airport	2	1755	2210	Boeing 737 Passenger	1
FR	2612	London Stansted Apt	Santander	7	1905	2205	Boeing 737 Passenger	1
FR	2612	London Stansted Apt	Santander	4	1835	2135	Boeing 737 Passenger	1
FR	2612	London Stansted Apt	Santander	2 5	1845	2145	Boeing 737 Passenger	2
FR	2612	London Stansted Apt	Santander	1	1315	1615	Boeing 737 Passenger	1
FR	2613	Santander	London Stansted Apt	7	2230	2325	Boeing 737 Passenger	1
FR	2613	Santander	London Stansted Apt	4	2200	2255	Boeing 737 Passenger	1
FR	2613	Santander	London Stansted Apt	2 5	2210	2305	Boeing 737 Passenger	2
FR	2613	Santander	London Stansted Apt	1	1640	1735	Boeing 737 Passenger	1
FR	2626	Manchester (GB)	Ibiza	7	2030	0020	Boeing 737 Passenger	1
FR	2626	Manchester (GB)	Ibiza	6	1005	1355	Boeing 737 Passenger	1
FR	2626	Manchester (GB)	Ibiza	5	1950	2340	Boeing 737 Passenger	1
FR	2626	Manchester (GB)	Ibiza	3	2010	2355	Boeing 737 Passenger	1
FR	2626	Manchester (GB)	Ibiza	12 4	0650	1040	Boeing 737 Passenger	3
FR	2627	Ibiza	Manchester (GB)	7	1830	2005	Boeing 737 Passenger	1
FR	2627	Ibiza	Manchester (GB)	6	1430	1615	Boeing 737 Passenger	1
FR	2627	Ibiza	Manchester (GB)	5	1740	1925	Boeing 737 Passenger	1
FR	2627	Ibiza	Manchester (GB)	3	1755	1945	Boeing 737 Passenger	1
FR	2627	Ibiza	Manchester (GB)	12 4	1115	1300	Boeing 737 Passenger	3
FR	2630	Ponta Delgada	London Stansted Apt	6	1150	1645	Boeing 737 Passenger	1
FR	2631	London Stansted Apt	Ponta Delgada	6	0830	1125	Boeing 737 Passenger	1
FR	2634	London Stansted Apt	Zaragoza Airport	6	0650	1005	Boeing 737 Passenger	1
FR	2634	London Stansted Apt	Zaragoza Airport	4	1400	1715	Boeing 737 Passenger	1
FR	2634	London Stansted Apt	Zaragoza Airport	23 7	1325	1640	Boeing 737 Passenger	3
FR	2635	Zaragoza Airport	London Stansted Apt	6	1035	1150	Boeing 737 Passenger	1
FR	2635	Zaragoza Airport	London Stansted Apt	4	1740	1855	Boeing 737 Passenger	1
FR	2635	Zaragoza Airport	London Stansted Apt	23 7	1705	1820	Boeing 737 Passenger	3
FR	2642	London Stansted Apt	Riga	7	0620	1100	Boeing 737 Passenger	1
FR	2642	London Stansted Apt	Riga	5	0610	1050	Boeing 737 Passenger	1
FR	2642	London Stansted Apt	Riga	4	0635	1115	Boeing 737 Passenger	1
FR	2642	London Stansted Apt	Riga	3 6	0645	1125	Boeing 737 Passenger	2
FR	2642	London Stansted Apt	Riga	12	0625	1105	Boeing 737 Passenger	2
FR	2643	Riga	London Stansted Apt	7	1125	1210	Boeing 737 Passenger	1

FR	2643	Riga	London Stansted Apt	5	1115	1200	Boeing 737 Passenger	1
FR	2643	Riga	London Stansted Apt	4	1140	1225	Boeing 737 Passenger	1
FR	2643	Riga	London Stansted Apt	3 6	1150	1235	Boeing 737 Passenger	2
FR	2643	Riga	London Stansted Apt	12	1130	1215	Boeing 737 Passenger	2
FR	2644	London Stansted Apt	Riga	5	1640	2110	Boeing 737 Passenger	1
FR	2644	London Stansted Apt	Riga	234 67	1700	2130	Boeing 737 Passenger	5
FR	2644	London Stansted Apt	Riga	1	1755	2225	Boeing 737 Passenger	1
FR	2645	Riga	London Stansted Apt	5	2140	2225	Boeing 737 Passenger	1
FR	2645	Riga	London Stansted Apt	234 67	2155	2240	Boeing 737 Passenger	5
FR	2645	Riga	London Stansted Apt	1	2250	2335	Boeing 737 Passenger	1
FR	2665	Nowy Dwor Mazowiecki	Manchester (GB)	5	2250	0035	Boeing 737 Passenger	1
FR	2665	Nowy Dwor Mazowiecki	Manchester (GB)	3	1100	1245	Boeing 737 Passenger	1
FR	2665	Nowy Dwor Mazowiecki	Manchester (GB)	1	2130	2315	Boeing 737 Passenger	1
FR	2666	Manchester (GB)	Nowy Dwor Mazowiecki	5	1850	2215	Boeing 737 Passenger	1
FR	2666	Manchester (GB)	Nowy Dwor Mazowiecki	3	1310	1635	Boeing 737 Passenger	1
FR	2666	Manchester (GB)	Nowy Dwor Mazowiecki	1	1735	2100	Boeing 737 Passenger	1
FR	2669	London Stansted Apt	Nowy Dwor Mazowiecki	5	1945	2300	Boeing 737 Passenger	1
FR	2669	London Stansted Apt	Nowy Dwor Mazowiecki	3 7	1435	1750	Boeing 737 Passenger	2
FR	2669	London Stansted Apt	Nowy Dwor Mazowiecki	1	1420	1735	Boeing 737 Passenger	1
FR	2670	Nowy Dwor Mazowiecki	London Stansted Apt	5	1750	1920	Boeing 737 Passenger	1
FR	2670	Nowy Dwor Mazowiecki	London Stansted Apt	3 7	1815	1945	Boeing 737 Passenger	2
FR	2670	Nowy Dwor Mazowiecki	London Stansted Apt	1	1800	1930	Boeing 737 Passenger	1
FR	2672	London Stansted Apt	Rome Ciampino Apt	1234567	0625	0955	Boeing 737 Passenger	7
FR	2673	Rome Ciampino Apt	London Stansted Apt	1234567	1020	1205	Boeing 737 Passenger	7
FR	2674	Edinburgh	Copenhagen Kastrup Apt	1 3 5 7	1845	2135	Boeing 737 Passenger	4
FR	2675	Copenhagen Kastrup Apt	Edinburgh	1 3 5 7	2200	2250	Boeing 737 Passenger	4
FR	2687	London Stansted Apt	Cagliari	6	0720	1055	Boeing 737 Passenger	1
FR	2687	London Stansted Apt	Cagliari	4	0635	1010	Boeing 737 Passenger	1
FR	2687	London Stansted Apt	Cagliari	2	0610	0945	Boeing 737 Passenger	1
FR	2688	Cagliari	London Stansted Apt	6	1120	1255	Boeing 737 Passenger	1
FR	2688	Cagliari	London Stansted Apt	4	1035	1210	Boeing 737 Passenger	1
FR	2688	Cagliari	London Stansted Apt	2	1010	1145	Boeing 737 Passenger	1
FR	2690	London Southend Apt	Faro	6	1725	2010	Boeing 737 Passenger	1
FR	2690	London Southend Apt	Faro	34	1705	1950	Boeing 737 Passenger	2
FR	2690	London Southend Apt	Faro	1 5	1610	1855	Boeing 737 Passenger	2
FR	2691	Faro	London Southend Apt	6	2035	2315	Boeing 737 Passenger	1
FR	2691	Faro	London Southend Apt	34	2015	2255	Boeing 737 Passenger	2
FR	2691	Faro	London Southend Apt	1 5	1920	2200	Boeing 737 Passenger	2
FR	2698	London Southend Apt	Cluj-Napoca	6	0630	1110	Boeing 737 Passenger	1
FR	2698	London Southend Apt	Cluj-Napoca	4	0700	1140	Boeing 737 Passenger	1
FR	2698	London Southend Apt	Cluj-Napoca	2	1650	2130	Boeing 737 Passenger	1
FR	2699	Cluj-Napoca	London Southend Apt	6	1140	1220	Boeing 737 Passenger	1
FR	2699	Cluj-Napoca	London Southend Apt	4	1210	1250	Boeing 737 Passenger	1
FR	2699	Cluj-Napoca	London Southend Apt	2	2200	2240	Boeing 737 Passenger	1
FR	2700	London Southend Apt	Copenhagen Kastrup Apt	6	1920	2210	Boeing 737 Passenger	1
FR	2700	London Southend Apt	Copenhagen Kastrup Apt	4	1735	2025	Boeing 737 Passenger	1
FR	2700	London Southend Apt	Copenhagen Kastrup Apt	2	1750	2040	Boeing 737 Passenger	1
FR	2701	Copenhagen Kastrup Apt	London Southend Apt	6	2235	2325	Boeing 737 Passenger	1
FR	2701	Copenhagen Kastrup Apt	London Southend Apt	4	2050	2140	Boeing 737 Passenger	1
FR	2701	Copenhagen Kastrup Apt	London Southend Apt	2	2105	2155	Boeing 737 Passenger	1
FR	2709	London Southend Apt	Kerkyra	7	0740	1240	Boeing 737 Passenger	1
FR	2709	London Southend Apt	Kerkyra	2	1325	1825	Boeing 737 Passenger	1
FR	271	London Stansted Apt	Dublin (IE)	1234567	2205	2330	Boeing 737 Passenger	7
FR	2710	Kerkyra	London Southend Apt	7	1305	1400	Boeing 737 Passenger	1
FR	2710	Kerkyra	London Southend Apt	2	1850	1950	Boeing 737 Passenger	1
FR	2711	Birmingham Airport	Ibiza	7	0720	1100	Boeing 737 Passenger	1
FR	2711	Birmingham Airport	Ibiza	4	1450	1830	Boeing 737 Passenger	1
FR	2712	Ibiza	Birmingham Airport	7	1135	1315	Boeing 737 Passenger	1
FR	2712	Ibiza	Birmingham Airport	4	1905	2045	Boeing 737 Passenger	1
FR	2714	Alicante Airport	London Gatwick Apt	5	1520	1700	Boeing 737 Passenger	1
FR	2714	Alicante Airport	London Gatwick Apt	4	0825	1005	Boeing 737 Passenger	1
FR	2714	Alicante Airport	London Gatwick Apt	2 6	0810	0950	Boeing 737 Passenger	2
FR	2714	Alicante Airport	London Gatwick Apt	1 3	1530	1710	Boeing 737 Passenger	2
FR	2715	London Gatwick Apt	Alicante Airport	6	1015	1345	Boeing 737 Passenger	1
FR	2715	London Gatwick Apt	Alicante Airport	4	1100	1430	Boeing 737 Passenger	1
FR	2715	London Gatwick Apt	Alicante Airport	3 5	1735	2105	Boeing 737 Passenger	2
FR	2715	London Gatwick Apt	Alicante Airport	2	1025	1355	Boeing 737 Passenger	1
FR	2715	London Gatwick Apt	Alicante Airport	1	1740	2110	Boeing 737 Passenger	1
FR	2716	London Southend Apt	Bilbao	7	1455	1735	Boeing 737 Passenger	1
FR	2716	London Southend Apt	Bilbao	4	0630	0910	Boeing 737 Passenger	1

FR	2716	London Southend Apt	Bilbao	3	1300	1540	Boeing 737 Passenger	1
FR	2716	London Southend Apt	Bilbao	2	1305	1545	Boeing 737 Passenger	1
FR	2717	Bilbao	London Southend Apt	7	1805	1845	Boeing 737 Passenger	1
FR	2717	Bilbao	London Southend Apt	4	0945	1025	Boeing 737 Passenger	1
FR	2717	Bilbao	London Southend Apt	3	1615	1655	Boeing 737 Passenger	1
FR	2717	Bilbao	London Southend Apt	2	1620	1700	Boeing 737 Passenger	1
FR	2718	London Southend Apt	Kosice	6	0630	1010	Boeing 737 Passenger	1
FR	2718	London Southend Apt	Kosice	4	1340	1720	Boeing 737 Passenger	1
FR	2718	London Southend Apt	Kosice	2	0650	1030	Boeing 737 Passenger	1
FR	2719	Kosice	London Southend Apt	6	1035	1215	Boeing 737 Passenger	1
FR	2719	Kosice	London Southend Apt	4	1745	1925	Boeing 737 Passenger	1
FR	2719	Kosice	London Southend Apt	2	1055	1235	Boeing 737 Passenger	1
FR	272	Dublin (IE)	London Stansted Apt	1234567	2020	2140	Boeing 737 Passenger	7
FR	2720	London Southend Apt	Dublin (IE)	6	0630	0745	Boeing 737 Passenger	1
FR	2720	London Southend Apt	Dublin (IE)	4	2015	2130	Boeing 737 Passenger	1
FR	2720	London Southend Apt	Dublin (IE)	2	2040	2155	Boeing 737 Passenger	1
FR	2720	London Southend Apt	Dublin (IE)	1 3 5 7	1955	2110	Boeing 737 Passenger	4
FR	2721	Dublin (IE)	London Southend Apt	6	0810	0920	Boeing 737 Passenger	1
FR	2721	Dublin (IE)	London Southend Apt	4	2155	2305	Boeing 737 Passenger	1
FR	2721	Dublin (IE)	London Southend Apt	2	2220	2330	Boeing 737 Passenger	1
FR	2721	Dublin (IE)	London Southend Apt	1 3 5 7	2135	2245	Boeing 737 Passenger	4
FR	2746	London Stansted Apt	Kaunas	3 56	1815	2250	Boeing 737 Passenger	3
FR	2746	London Stansted Apt	Kaunas	2	0700	1135	Boeing 737 Passenger	1
FR	2747	Kaunas	London Stansted Apt	3 56	1710	1750	Boeing 737 Passenger	3
FR	2747	Kaunas	London Stansted Apt	2	1200	1240	Boeing 737 Passenger	1
FR	2752	Pisa	Edinburgh	6	0705	0850	Boeing 737 Passenger	1
FR	2752	Pisa	Edinburgh	4	1800	1945	Boeing 737 Passenger	1
FR	2752	Pisa	Edinburgh	2	1925	2110	Boeing 737 Passenger	1
FR	2753	Edinburgh	Pisa	6	0915	1300	Boeing 737 Passenger	1
FR	2753	Edinburgh	Pisa	4	2010	2355	Boeing 737 Passenger	1
FR	2753	Edinburgh	Pisa	2	1515	1900	Boeing 737 Passenger	1
FR	2772	London Stansted Apt	Fes	3 7	1045	1400	Boeing 737 Passenger	2
FR	2773	Fes	London Stansted Apt	3 7	0705	1020	Boeing 737 Passenger	2
FR	2781	Leeds Bradford	Malaga Airport	2	0645	1040	Boeing 737 Passenger	1
FR	2786	London Stansted Apt	Rodez	7	1125	1405	Boeing 737 Passenger	1
FR	2786	London Stansted Apt	Rodez	4	1420	1700	Boeing 737 Passenger	1
FR	2787	Rodez	London Stansted Apt	7	1430	1510	Boeing 737 Passenger	1
FR	2787	Rodez	London Stansted Apt	4	1725	1805	Boeing 737 Passenger	1
FR	2800	Manchester (GB)	Billund	5	1300	1555	Boeing 737 Passenger	1
FR	2800	Manchester (GB)	Billund	2 6	1335	1630	Boeing 737 Passenger	2
FR	2800	Manchester (GB)	Billund	1	0930	1225	Boeing 737 Passenger	1
FR	2801	Billund	Manchester (GB)	5	1620	1710	Boeing 737 Passenger	1
FR	2801	Billund	Manchester (GB)	2 6	1655	1745	Boeing 737 Passenger	2
FR	2801	Billund	Manchester (GB)	1	1250	1340	Boeing 737 Passenger	1
FR	2803	London Southend Apt	Palma de Mallorca	34	1105	1420	Boeing 737 Passenger	2
FR	2803	London Southend Apt	Palma de Mallorca	2 7	1045	1400	Boeing 737 Passenger	2
FR	2803	London Southend Apt	Palma de Mallorca	1 56	1050	1405	Boeing 737 Passenger	3
FR	2804	Palma de Mallorca	London Southend Apt	2 7	1440	1600	Boeing 737 Passenger	2
FR	2804	Palma de Mallorca	London Southend Apt	1 3456	1455	1615	Boeing 737 Passenger	5
FR	281	London Stansted Apt	Toulouse	7	1850	2150	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	6	1815	2115	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	5	1820	2120	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	4	1810	2110	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	3	1805	2105	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	2	1935	2235	Boeing 737 Passenger	1
FR	281	London Stansted Apt	Toulouse	1	1830	2130	Boeing 737 Passenger	1
FR	2813	Cologne/Bonn Apt	London Stansted Apt	123456	0645	0710	Boeing 737 Passenger	6
FR	2814	London Stansted Apt	Cologne/Bonn Apt	6	0735	1000	Boeing 737 Passenger	1
FR	2814	London Stansted Apt	Cologne/Bonn Apt	3	0745	1010	Boeing 737 Passenger	1
FR	2814	London Stansted Apt	Cologne/Bonn Apt	12 45	0740	1005	Boeing 737 Passenger	4
FR	2815	Cologne/Bonn Apt	London Stansted Apt	4	2210	2230	Boeing 737 Passenger	1
FR	2815	Cologne/Bonn Apt	London Stansted Apt	123 5 7	2155	2215	Boeing 737 Passenger	5
FR	2816	London Stansted Apt	Cologne/Bonn Apt	4	1920	2145	Boeing 737 Passenger	1
FR	2816	London Stansted Apt	Cologne/Bonn Apt	123 5 7	1905	2130	Boeing 737 Passenger	5
FR	282	Toulouse	London Stansted Apt	7	2215	2310	Boeing 737 Passenger	1
FR	282	Toulouse	London Stansted Apt	6	2140	2235	Boeing 737 Passenger	1
FR	282	Toulouse	London Stansted Apt	5	2145	2240	Boeing 737 Passenger	1
FR	282	Toulouse	London Stansted Apt	4	2135	2230	Boeing 737 Passenger	1
FR	282	Toulouse	London Stansted Apt	3	2130	2225	Boeing 737 Passenger	1
FR	282	Toulouse	London Stansted Apt	2	2300	2355	Boeing 737 Passenger	1

FR	282	Toulouse	London Stansted Apt	1	2155	2250	Boeing 737 Passenger	1
FR	2821	Manchester (GB)	Chania	6	0710	1315	Boeing 737 Passenger	1
FR	2821	Manchester (GB)	Chania	4	0810	1415	Boeing 737 Passenger	1
FR	2821	Manchester (GB)	Chania	2	1355	2000	Boeing 737 Passenger	1
FR	2822	Chania	Manchester (GB)	6	1405	1630	Boeing 737 Passenger	1
FR	2822	Chania	Manchester (GB)	4	1445	1710	Boeing 737 Passenger	1
FR	2822	Chania	Manchester (GB)	2	2025	2250	Boeing 737 Passenger	1
FR	2830	London Southend Apt	Reus	1 5	1055	1355	Boeing 737 Passenger	2
FR	2831	Reus	London Southend Apt	1 5	1420	1520	Boeing 737 Passenger	2
FR	2840	London Southend Apt	Brest (FR)	1 5	0705	0920	Boeing 737 Passenger	2
FR	2841	Brest (FR)	London Southend Apt	1 5	0945	1000	Boeing 737 Passenger	2
FR	286	London Stansted Apt	Klaipeda/Palanga	2 6	0610	1025	Boeing 737 Passenger	2
FR	2860	London Stansted Apt	Luxembourg	7	1425	1640	Boeing 737 Passenger	1
FR	2860	London Stansted Apt	Luxembourg	56	1900	2115	Boeing 737 Passenger	2
FR	2860	London Stansted Apt	Luxembourg	1234	1855	2110	Boeing 737 Passenger	4
FR	2861	Luxembourg	London Stansted Apt	7	1715	1730	Boeing 737 Passenger	1
FR	2861	Luxembourg	London Stansted Apt	56	2150	2205	Boeing 737 Passenger	2
FR	2861	Luxembourg	London Stansted Apt	1234	2145	2200	Boeing 737 Passenger	4
FR	287	Klaipeda/Palanga	London Stansted Apt	2 6	1050	1120	Boeing 737 Passenger	2
FR	288	Dublin (IE)	London Stansted Apt	3	1830	1950	Boeing 737 Passenger	1
FR	288	Dublin (IE)	London Stansted Apt	12 4567	1855	2015	Boeing 737 Passenger	6
FR	2885	Kaunas	Edinburgh	6	2225	2315	Boeing 737 Passenger	1
FR	2885	Kaunas	Edinburgh	2	1315	1405	Boeing 737 Passenger	1
FR	2886	Edinburgh	Kaunas	6	1715	2200	Boeing 737 Passenger	1
FR	2886	Edinburgh	Kaunas	2	0805	1250	Boeing 737 Passenger	1
FR	2911	Birmingham Airport	Faro	6	1935	2230	Boeing 737 Passenger	1
FR	2911	Birmingham Airport	Faro	4	1640	1935	Boeing 737 Passenger	1
FR	2912	Faro	Birmingham Airport	6	1620	1910	Boeing 737 Passenger	1
FR	2912	Faro	Birmingham Airport	4	2000	2250	Boeing 737 Passenger	1
FR	293	London Stansted Apt	Dublin (IE)	12345 7	2010	2130	Boeing 737 Passenger	6
FR	294	Dublin (IE)	London Stansted Apt	1234567	1530	1650	Boeing 737 Passenger	7
FR	295	London Stansted Apt	Toulouse	5	0635	0935	Boeing 737 Passenger	1
FR	295	London Stansted Apt	Toulouse	1234 67	0715	1015	Boeing 737 Passenger	6
FR	2953	Newquay	Alicante Airport	7	2005	2320	Boeing 737 Passenger	1
FR	2953	Newquay	Alicante Airport	3	0905	1220	Boeing 737 Passenger	1
FR	2954	Alicante Airport	Newquay	7	1810	1940	Boeing 737 Passenger	1
FR	2954	Alicante Airport	Newquay	3	0710	0840	Boeing 737 Passenger	1
FR	296	Toulouse	London Stansted Apt	5	1000	1055	Boeing 737 Passenger	1
FR	296	Toulouse	London Stansted Apt	1234 67	1040	1135	Boeing 737 Passenger	6
FR	297	London Stansted Apt	Dublin (IE)	3	1640	1805	Boeing 737 Passenger	1
FR	297	London Stansted Apt	Dublin (IE)	12 4567	1705	1830	Boeing 737 Passenger	6
FR	298	Dublin (IE)	London Stansted Apt	12345 7	2155	2315	Boeing 737 Passenger	6
FR	2981	Bristol	Bologna Guglielmo Marconi	7	0705	1015	Boeing 737 Passenger	1
FR	2981	Bristol	Bologna Guglielmo Marconi	3	0645	0955	Boeing 737 Passenger	1
FR	2982	Bologna Guglielmo Marconi	Bristol	7	1040	1200	Boeing 737 Passenger	1
FR	2982	Bologna Guglielmo Marconi	Bristol	3	1020	1140	Boeing 737 Passenger	1
FR	3002	London Stansted Apt	Rome Ciampino Apt	3	0840	1210	Boeing 737 Passenger	1
FR	3002	London Stansted Apt	Rome Ciampino Apt	12 4567	0845	1215	Boeing 737 Passenger	6
FR	3003	Rome Ciampino Apt	London Stansted Apt	23	1710	1855	Boeing 737 Passenger	2
FR	3003	Rome Ciampino Apt	London Stansted Apt	1 4567	1715	1900	Boeing 737 Passenger	5
FR	3004	London Stansted Apt	Rome Ciampino Apt	23	1920	2250	Boeing 737 Passenger	2
FR	3004	London Stansted Apt	Rome Ciampino Apt	1 4567	1925	2255	Boeing 737 Passenger	5
FR	3005	Rome Ciampino Apt	London Stansted Apt	234567	0630	0815	Boeing 737 Passenger	6
FR	3005	Rome Ciampino Apt	London Stansted Apt	1	0625	0810	Boeing 737 Passenger	1
FR	3014	London Stansted Apt	Rome Ciampino Apt	1234567	1610	1940	Boeing 737 Passenger	7
FR	3015	Rome Ciampino Apt	London Stansted Apt	1234567	1400	1545	Boeing 737 Passenger	7
FR	3026	Gdansk Lech Walesa	Belfast International Apt	3 6	0635	0815	Boeing 737 Passenger	2
FR	3027	Belfast International Apt	Gdansk Lech Walesa	3 6	0845	1230	Boeing 737 Passenger	2
FR	3028	Liverpool	Marrakech	5	0625	1015	Boeing 737 Passenger	1
FR	3028	Liverpool	Marrakech	1	0625	1005	Boeing 737 Passenger	1
FR	3029	Marrakech	Liverpool	5	1040	1430	Boeing 737 Passenger	1
FR	3029	Marrakech	Liverpool	1	1030	1410	Boeing 737 Passenger	1
FR	3033	London Stansted Apt	Agadir	6	1555	1945	Boeing 737 Passenger	1
FR	3033	London Stansted Apt	Agadir	2	1610	2000	Boeing 737 Passenger	1
FR	3034	Agadir	London Stansted Apt	6	2010	2359	Boeing 737 Passenger	1
FR	3034	Agadir	London Stansted Apt	2	2025	0015	Boeing 737 Passenger	1
FR	304	London Stansted Apt	Salzburg W A Mozart	3	0715	1010	Boeing 737 Passenger	1
FR	304	London Stansted Apt	Salzburg W A Mozart	1 567	0725	1020	Boeing 737 Passenger	4
FR	305	Salzburg W A Mozart	London Stansted Apt	3	1035	1135	Boeing 737 Passenger	1
FR	305	Salzburg W A Mozart	London Stansted Apt	1 567	1045	1145	Boeing 737 Passenger	4

FR	3071	London Stansted Apt	Comiso	5	1620	2035	Boeing 737 Passenger	1
FR	3071	London Stansted Apt	Comiso	1	0715	1130	Boeing 737 Passenger	1
FR	3072	London Stansted Apt	Rome Ciampino Apt	3	1310	1640	Boeing 737 Passenger	1
FR	3072	London Stansted Apt	Rome Ciampino Apt	12 4567	1325	1655	Boeing 737 Passenger	6
FR	3073	Rome Ciampino Apt	London Stansted Apt	3	1100	1245	Boeing 737 Passenger	1
FR	3073	Rome Ciampino Apt	London Stansted Apt	12 4567	1115	1300	Boeing 737 Passenger	6
FR	3074	Comiso	London Stansted Apt	5	2100	2320	Boeing 737 Passenger	1
FR	3074	Comiso	London Stansted Apt	1	1155	1415	Boeing 737 Passenger	1
FR	3086	Manchester (GB)	Bordeaux Merignac Apt	7	2035	2325	Boeing 737 Passenger	1
FR	3086	Manchester (GB)	Bordeaux Merignac Apt	3	0915	1205	Boeing 737 Passenger	1
FR	3087	Bordeaux Merignac Apt	Manchester (GB)	7	2350	0040	Boeing 737 Passenger	1
FR	3087	Bordeaux Merignac Apt	Manchester (GB)	3	0800	0850	Boeing 737 Passenger	1
FR	3088	Manchester (GB)	Goteborg Landvetter Apt	7	1125	1420	Boeing 737 Passenger	1
FR	3088	Manchester (GB)	Goteborg Landvetter Apt	3	0935	1230	Boeing 737 Passenger	1
FR	3089	Goteborg Landvetter Apt	Manchester (GB)	7	1005	1100	Boeing 737 Passenger	1
FR	3089	Goteborg Landvetter Apt	Manchester (GB)	3	1255	1350	Boeing 737 Passenger	1
FR	3118	Manchester (GB)	Marseille Provence Apt	2 6	1050	1400	Boeing 737 Passenger	2
FR	3119	Marseille Provence Apt	Manchester (GB)	2 6	1425	1535	Boeing 737 Passenger	2
FR	3126	Manchester (GB)	Marrakech	7	1935	2315	Boeing 737 Passenger	1
FR	3126	Manchester (GB)	Marrakech	4	0610	1000	Boeing 737 Passenger	1
FR	3127	Marrakech	Manchester (GB)	7	1530	1910	Boeing 737 Passenger	1
FR	3127	Marrakech	Manchester (GB)	4	1025	1415	Boeing 737 Passenger	1
FR	3128	Manchester (GB)	Thessaloniki	7	0640	1215	Boeing 737 Passenger	1
FR	3128	Manchester (GB)	Thessaloniki	3	1000	1535	Boeing 737 Passenger	1
FR	3129	Thessaloniki	Manchester (GB)	7	1240	1415	Boeing 737 Passenger	1
FR	3129	Thessaloniki	Manchester (GB)	3	1600	1735	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	7	1750	0030	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	6	1855	0125	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	5	1750	0020	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	4	1710	2350	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	3	1700	2330	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	2	0555	1225	Boeing 737 Passenger	1
FR	3131	London Stansted Apt	Paphos	1	1555	2225	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	7	1415	1725	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	6	1530	1830	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	5	1425	1725	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	4	1335	1645	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	3	1335	1635	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	2	1250	1550	Boeing 737 Passenger	1
FR	3132	Paphos	London Stansted Apt	1	1230	1530	Boeing 737 Passenger	1
FR	3152	Nottingham East Midlands Airport	Tenerife Sur Apt	7	1415	1850	Boeing 737 Passenger	1
FR	3152	Nottingham East Midlands Airport	Tenerife Sur Apt	6	1400	1835	Boeing 737 Passenger	1
FR	3152	Nottingham East Midlands Airport	Tenerife Sur Apt	2345	1355	1830	Boeing 737 Passenger	4
FR	3152	Nottingham East Midlands Airport	Tenerife Sur Apt	1	1405	1840	Boeing 737 Passenger	1
FR	3153	Tenerife Sur Apt	Nottingham East Midlands Airport	7	1925	2340	Boeing 737 Passenger	1
FR	3153	Tenerife Sur Apt	Nottingham East Midlands Airport	6	1910	2325	Boeing 737 Passenger	1
FR	3153	Tenerife Sur Apt	Nottingham East Midlands Airport	2345	1905	2320	Boeing 737 Passenger	4
FR	3153	Tenerife Sur Apt	Nottingham East Midlands Airport	1	1915	2330	Boeing 737 Passenger	1
FR	3162	Nottingham East Midlands Airport	Gran Canaria	6	2010	0035	Boeing 737 Passenger	1
FR	3162	Nottingham East Midlands Airport	Gran Canaria	3	1850	2325	Boeing 737 Passenger	1
FR	3163	Gran Canaria	Nottingham East Midlands Airport	6	1525	1945	Boeing 737 Passenger	1
FR	3163	Gran Canaria	Nottingham East Midlands Airport	3	1355	1825	Boeing 737 Passenger	1
FR	3168	Liverpool	Paphos	7	1415	2120	Boeing 737 Passenger	1
FR	3168	Liverpool	Paphos	3	0600	1255	Boeing 737 Passenger	1
FR	3169	Paphos	Liverpool	7	2145	0050	Boeing 737 Passenger	1
FR	3169	Paphos	Liverpool	3	1320	1615	Boeing 737 Passenger	1
FR	3170	Edinburgh	Riga	4	1740	2225	Boeing 737 Passenger	1
FR	3171	Riga	Edinburgh	4	2250	2335	Boeing 737 Passenger	1
FR	3172	Nottingham East Midlands Airport	Lanzarote	67	0705	1120	Boeing 737 Passenger	2
FR	3172	Nottingham East Midlands Airport	Lanzarote	2 4	0700	1120	Boeing 737 Passenger	2
FR	3173	Lanzarote	Nottingham East Midlands Airport	2 4 67	1155	1605	Boeing 737 Passenger	4
FR	3178	Edinburgh	Memmingen	6	1040	1355	Boeing 737 Passenger	1
FR	3178	Edinburgh	Memmingen	2	1335	1650	Boeing 737 Passenger	1
FR	3179	Memmingen	Edinburgh	6	1420	1535	Boeing 737 Passenger	1
FR	3179	Memmingen	Edinburgh	2	1715	1830	Boeing 737 Passenger	1
FR	3180	Edinburgh	Stockholm Skavsta Airport	4	0700	1010	Boeing 737 Passenger	1
FR	3180	Edinburgh	Stockholm Skavsta Airport	1	0635	0945	Boeing 737 Passenger	1
FR	3181	Stockholm Skavsta Airport	Edinburgh	4	1035	1145	Boeing 737 Passenger	1
FR	3181	Stockholm Skavsta Airport	Edinburgh	1	1010	1120	Boeing 737 Passenger	1
FR	3182	Edinburgh	Derry	6	0620	0715	Boeing 737 Passenger	1

FR	3182	Edinburgh	Derry	5	0645	0740	Boeing 737 Passenger	1
FR	3182	Edinburgh	Derry	2 4 7	1915	2010	Boeing 737 Passenger	3
FR	3183	Derry	Edinburgh	6	0740	0835	Boeing 737 Passenger	1
FR	3183	Derry	Edinburgh	5	0805	0900	Boeing 737 Passenger	1
FR	3183	Derry	Edinburgh	2 4 7	2035	2130	Boeing 737 Passenger	3
FR	3186	Madrid Adolfo Suarez-Barajas Apt	Manchester (GB)	7	0700	0840	Boeing 737 Passenger	1
FR	3186	Madrid Adolfo Suarez-Barajas Apt	Manchester (GB)	3	0655	0840	Boeing 737 Passenger	1
FR	3186	Madrid Adolfo Suarez-Barajas Apt	Manchester (GB)	2 6	0805	0945	Boeing 737 Passenger	2
FR	3186	Madrid Adolfo Suarez-Barajas Apt	Manchester (GB)	1 45	0810	0950	Boeing 737 Passenger	3
FR	3187	Manchester (GB)	Madrid Adolfo Suarez-Barajas Apt	3 7	0905	1240	Boeing 737 Passenger	2
FR	3187	Manchester (GB)	Madrid Adolfo Suarez-Barajas Apt	2 6	1010	1345	Boeing 737 Passenger	2
FR	3187	Manchester (GB)	Madrid Adolfo Suarez-Barajas Apt	1 45	1015	1350	Boeing 737 Passenger	3
FR	3188	London Stansted Apt	Rijeka	5	0905	1220	Boeing 737 Passenger	1
FR	3188	London Stansted Apt	Rijeka	1	0855	1210	Boeing 737 Passenger	1
FR	3189	Rijeka	London Stansted Apt	5	1245	1400	Boeing 737 Passenger	1
FR	3189	Rijeka	London Stansted Apt	1	1235	1350	Boeing 737 Passenger	1
FR	32	London Stansted Apt	Oslo Sandefjord-Torp Arpt	5 7	1140	1435	Boeing 737 Passenger	2
FR	32	London Stansted Apt	Oslo Sandefjord-Torp Arpt	3	1635	1930	Boeing 737 Passenger	1
FR	32	London Stansted Apt	Oslo Sandefjord-Torp Arpt	1	1340	1635	Boeing 737 Passenger	1
FR	3202	Manchester (GB)	Rzeszow	7	0555	0940	Boeing 737 Passenger	1
FR	3202	Manchester (GB)	Rzeszow	3	0830	1215	Boeing 737 Passenger	1
FR	3203	Rzeszow	Manchester (GB)	7	1005	1155	Boeing 737 Passenger	1
FR	3203	Rzeszow	Manchester (GB)	3	1240	1430	Boeing 737 Passenger	1
FR	3204	Manchester (GB)	Rome Ciampino Apt	6	0610	0955	Boeing 737 Passenger	1
FR	3204	Manchester (GB)	Rome Ciampino Apt	2345 7	0715	1100	Boeing 737 Passenger	5
FR	3204	Manchester (GB)	Rome Ciampino Apt	1	0930	1315	Boeing 737 Passenger	1
FR	3205	Rome Ciampino Apt	Manchester (GB)	6	1020	1215	Boeing 737 Passenger	1
FR	3205	Rome Ciampino Apt	Manchester (GB)	2345 7	1125	1320	Boeing 737 Passenger	5
FR	3205	Rome Ciampino Apt	Manchester (GB)	1	0655	0850	Boeing 737 Passenger	1
FR	3206	Manchester (GB)	Rome Ciampino Apt	3 5 7	1745	2130	Boeing 737 Passenger	3
FR	3207	Rome Ciampino Apt	Manchester (GB)	3 5 7	2155	2350	Boeing 737 Passenger	3
FR	3208	Manchester (GB)	Malaga Airport	1234567	1955	2355	Boeing 737 Passenger	7
FR	3209	Malaga Airport	Manchester (GB)	1234567	1725	1930	Boeing 737 Passenger	7
FR	3212	Manchester (GB)	Girona Costa Brava Apt	2 4 6	0835	1150	Boeing 737 Passenger	3
FR	3213	Girona Costa Brava Apt	Manchester (GB)	2 4 6	0640	0810	Boeing 737 Passenger	3
FR	3216	Manchester (GB)	Milan Bergamo/orio al Serio Apt	7	0830	1145	Boeing 737 Passenger	1
FR	3216	Manchester (GB)	Milan Bergamo/orio al Serio Apt	4	0825	1140	Boeing 737 Passenger	1
FR	3217	Milan Bergamo/orio al Serio Apt	Manchester (GB)	7	1215	1330	Boeing 737 Passenger	1
FR	3217	Milan Bergamo/orio al Serio Apt	Manchester (GB)	4	1205	1325	Boeing 737 Passenger	1
FR	3218	Manchester (GB)	Milan Bergamo/orio al Serio Apt	6	1830	2145	Boeing 737 Passenger	1
FR	3218	Manchester (GB)	Milan Bergamo/orio al Serio Apt	45 7	1305	1620	Boeing 737 Passenger	3
FR	3218	Manchester (GB)	Milan Bergamo/orio al Serio Apt	3	1625	1940	Boeing 737 Passenger	1
FR	3218	Manchester (GB)	Milan Bergamo/orio al Serio Apt	2	0745	1100	Boeing 737 Passenger	1
FR	3218	Manchester (GB)	Milan Bergamo/orio al Serio Apt	1	1900	2215	Boeing 737 Passenger	1
FR	3219	Milan Bergamo/orio al Serio Apt	Manchester (GB)	6	2210	2325	Boeing 737 Passenger	1
FR	3219	Milan Bergamo/orio al Serio Apt	Manchester (GB)	45 7	1645	1805	Boeing 737 Passenger	3
FR	3219	Milan Bergamo/orio al Serio Apt	Manchester (GB)	3	2005	2125	Boeing 737 Passenger	1
FR	3219	Milan Bergamo/orio al Serio Apt	Manchester (GB)	2	1125	1245	Boeing 737 Passenger	1
FR	3219	Milan Bergamo/orio al Serio Apt	Manchester (GB)	1	2240	2359	Boeing 737 Passenger	1
FR	3222	Manchester (GB)	Brussels S. Charleroi Airport	12345 7	1830	2055	Boeing 737 Passenger	6
FR	3223	Brussels S. Charleroi Airport	Manchester (GB)	12345 7	2120	2145	Boeing 737 Passenger	6
FR	3226	Manchester (GB)	Oslo Sandefjord-Torp Arpt	5	0830	1125	Boeing 737 Passenger	1
FR	3226	Manchester (GB)	Oslo Sandefjord-Torp Arpt	4	1835	2130	Boeing 737 Passenger	1
FR	3226	Manchester (GB)	Oslo Sandefjord-Torp Arpt	1	1345	1640	Boeing 737 Passenger	1
FR	3227	Oslo Sandefjord-Torp Arpt	Manchester (GB)	5	1150	1300	Boeing 737 Passenger	1
FR	3227	Oslo Sandefjord-Torp Arpt	Manchester (GB)	4	2155	2305	Boeing 737 Passenger	1
FR	3227	Oslo Sandefjord-Torp Arpt	Manchester (GB)	1	1705	1805	Boeing 737 Passenger	1
FR	3232	Manchester (GB)	Malaga Airport	6	1010	1410	Boeing 737 Passenger	1
FR	3232	Manchester (GB)	Malaga Airport	4	1000	1400	Boeing 737 Passenger	1
FR	3232	Manchester (GB)	Malaga Airport	3 5 7	1015	1415	Boeing 737 Passenger	3
FR	3232	Manchester (GB)	Malaga Airport	2	1535	1935	Boeing 737 Passenger	1
FR	3232	Manchester (GB)	Malaga Airport	1	0915	1315	Boeing 737 Passenger	1
FR	3233	Malaga Airport	Manchester (GB)	56	0740	0945	Boeing 737 Passenger	2
FR	3233	Malaga Airport	Manchester (GB)	4	0730	0935	Boeing 737 Passenger	1
FR	3233	Malaga Airport	Manchester (GB)	3 7	0745	0950	Boeing 737 Passenger	2
FR	3233	Malaga Airport	Manchester (GB)	2	2010	2215	Boeing 737 Passenger	1
FR	3233	Malaga Airport	Manchester (GB)	1	1350	1555	Boeing 737 Passenger	1
FR	3234	Manchester (GB)	Eindhoven Airport	7	0730	0945	Boeing 737 Passenger	1
FR	3234	Manchester (GB)	Eindhoven Airport	4	1415	1630	Boeing 737 Passenger	1
FR	3234	Manchester (GB)	Eindhoven Airport	1 5	1350	1605	Boeing 737 Passenger	2

FR	3235	Eindhoven Airport	Manchester (GB)	7	1010	1025	Boeing 737 Passenger	1
FR	3235	Eindhoven Airport	Manchester (GB)	4	1655	1710	Boeing 737 Passenger	1
FR	3235	Eindhoven Airport	Manchester (GB)	1 5	1630	1645	Boeing 737 Passenger	2
FR	3238	Manchester (GB)	Brussels S. Charleroi Airport	6	0715	0940	Boeing 737 Passenger	1
FR	3238	Manchester (GB)	Brussels S. Charleroi Airport	12345	0750	1015	Boeing 737 Passenger	5
FR	3239	Brussels S. Charleroi Airport	Manchester (GB)	6	1005	1030	Boeing 737 Passenger	1
FR	3239	Brussels S. Charleroi Airport	Manchester (GB)	12345	0700	0725	Boeing 737 Passenger	5
FR	3242	Manchester (GB)	Beziers	4	1100	1410	Boeing 737 Passenger	1
FR	3242	Manchester (GB)	Beziers	2 6	1320	1630	Boeing 737 Passenger	2
FR	3243	Beziers	Manchester (GB)	4	1435	1545	Boeing 737 Passenger	1
FR	3243	Beziers	Manchester (GB)	2 6	1655	1805	Boeing 737 Passenger	2
FR	3256	London Luton Apt	Nimes Garons Airport	2 4 6	0635	0930	Boeing 737 Passenger	3
FR	3257	Nimes Garons Airport	London Luton Apt	2 4 6	0955	1050	Boeing 737 Passenger	3
FR	33	Oslo Sandefjord-Torp Arpt	London Stansted Apt	5 7	1500	1600	Boeing 737 Passenger	2
FR	33	Oslo Sandefjord-Torp Arpt	London Stansted Apt	3	1955	2055	Boeing 737 Passenger	1
FR	33	Oslo Sandefjord-Torp Arpt	London Stansted Apt	1	1715	1815	Boeing 737 Passenger	1
FR	331	London Luton Apt	Dublin (IE)	1234567	0630	0750	Boeing 737 Passenger	7
FR	332	Dublin (IE)	London Luton Apt	1234567	0815	0930	Boeing 737 Passenger	7
FR	337	Dublin (IE)	London Luton Apt	123 567	1600	1715	Boeing 737 Passenger	6
FR	338	London Luton Apt	Dublin (IE)	1234567	1415	1535	Boeing 737 Passenger	7
FR	3385	Bristol	Limoges	1 5	1400	1635	Boeing 737 Passenger	2
FR	3386	Limoges	Bristol	1 5	1700	1740	Boeing 737 Passenger	2
FR	339	London Luton Apt	Dublin (IE)	5	1635	1755	Boeing 737 Passenger	1
FR	339	London Luton Apt	Dublin (IE)	1	1750	1910	Boeing 737 Passenger	1
FR	34	Manchester (GB)	Bratislava	7	1840	2210	Boeing 737 Passenger	1
FR	34	Manchester (GB)	Bratislava	5	2035	0005	Boeing 737 Passenger	1
FR	34	Manchester (GB)	Bratislava	3	1405	1735	Boeing 737 Passenger	1
FR	340	Dublin (IE)	London Luton Apt	5	1820	1935	Boeing 737 Passenger	1
FR	340	Dublin (IE)	London Luton Apt	1	1935	2050	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	7	1640	1955	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	6	1625	1940	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	5	1610	1925	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	4	1605	1920	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	3	1730	2045	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	2	1530	1845	Boeing 737 Passenger	1
FR	3406	London Luton Apt	Bologna Guglielmo Marconi	1	1705	2020	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	7	1455	1615	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	6	1440	1600	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	5	1425	1545	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	4	1415	1535	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	3	1545	1705	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	2	1345	1505	Boeing 737 Passenger	1
FR	3407	Bologna Guglielmo Marconi	London Luton Apt	1	1520	1640	Boeing 737 Passenger	1
FR	341	London Luton Apt	Dublin (IE)	1234567	2005	2125	Boeing 737 Passenger	7
FR	342	Dublin (IE)	London Luton Apt	123 567	2200	2315	Boeing 737 Passenger	6
FR	3441	Manchester (GB)	Palma de Mallorca	7	0755	1135	Boeing 737 Passenger	1
FR	3441	Manchester (GB)	Palma de Mallorca	6	0655	1035	Boeing 737 Passenger	1
FR	3441	Manchester (GB)	Palma de Mallorca	345	0620	1000	Boeing 737 Passenger	3
FR	3441	Manchester (GB)	Palma de Mallorca	2	0900	1240	Boeing 737 Passenger	1
FR	3441	Manchester (GB)	Palma de Mallorca	1	0715	1055	Boeing 737 Passenger	1
FR	3442	Palma de Mallorca	Manchester (GB)	7	1210	1350	Boeing 737 Passenger	1
FR	3442	Palma de Mallorca	Manchester (GB)	6	1110	1250	Boeing 737 Passenger	1
FR	3442	Palma de Mallorca	Manchester (GB)	345	1035	1215	Boeing 737 Passenger	3
FR	3442	Palma de Mallorca	Manchester (GB)	2	1315	1455	Boeing 737 Passenger	1
FR	3442	Palma de Mallorca	Manchester (GB)	1	1130	1310	Boeing 737 Passenger	1
FR	3445	Manchester (GB)	Palma de Mallorca	234 67	1715	2055	Boeing 737 Passenger	5
FR	3445	Manchester (GB)	Palma de Mallorca	1 5	1710	2050	Boeing 737 Passenger	2
FR	3446	Palma de Mallorca	Manchester (GB)	234567	2130	2310	Boeing 737 Passenger	6
FR	3446	Palma de Mallorca	Manchester (GB)	1	2125	2305	Boeing 737 Passenger	1
FR	3452	London Luton Apt	Corvera	6	1545	1930	Boeing 737 Passenger	1
FR	3452	London Luton Apt	Corvera	345 7	1740	2125	Boeing 737 Passenger	4
FR	3452	London Luton Apt	Corvera	2	1655	2040	Boeing 737 Passenger	1
FR	3452	London Luton Apt	Corvera	1	1735	2120	Boeing 737 Passenger	1
FR	3453	Corvera	London Luton Apt	6	2005	2150	Boeing 737 Passenger	1
FR	3453	Corvera	London Luton Apt	345 7	2200	2345	Boeing 737 Passenger	4
FR	3453	Corvera	London Luton Apt	2	2120	2300	Boeing 737 Passenger	1
FR	3453	Corvera	London Luton Apt	1	2155	2340	Boeing 737 Passenger	1
FR	3456	London Luton Apt	Beziers	5	0630	0925	Boeing 737 Passenger	1
FR	3456	London Luton Apt	Beziers	1 3	0625	0920	Boeing 737 Passenger	2
FR	3457	Beziers	London Luton Apt	5	0950	1050	Boeing 737 Passenger	1

FR	3457	Beziers	London Luton Apt	1 3	0945	1045	Boeing 737 Passenger	2
FR	3466	London Luton Apt	Vilnius	4	1750	2230	Boeing 737 Passenger	1
FR	3466	London Luton Apt	Vilnius	3	0715	1155	Boeing 737 Passenger	1
FR	3466	London Luton Apt	Vilnius	2 6	1735	2215	Boeing 737 Passenger	2
FR	3466	London Luton Apt	Vilnius	1	1725	2205	Boeing 737 Passenger	1
FR	3467	Vilnius	London Luton Apt	4	2255	2345	Boeing 737 Passenger	1
FR	3467	Vilnius	London Luton Apt	3	1220	1310	Boeing 737 Passenger	1
FR	3467	Vilnius	London Luton Apt	2 6	2240	2330	Boeing 737 Passenger	2
FR	3467	Vilnius	London Luton Apt	1	2235	2325	Boeing 737 Passenger	1
FR	3472	London Luton Apt	Rzeszow	6	1805	2130	Boeing 737 Passenger	1
FR	3472	London Luton Apt	Rzeszow	4	1800	2125	Boeing 737 Passenger	1
FR	3472	London Luton Apt	Rzeszow	2	1755	2120	Boeing 737 Passenger	1
FR	3473	Rzeszow	London Luton Apt	6	2155	2330	Boeing 737 Passenger	1
FR	3473	Rzeszow	London Luton Apt	4	2150	2325	Boeing 737 Passenger	1
FR	3473	Rzeszow	London Luton Apt	2	2145	2320	Boeing 737 Passenger	1
FR	3491	Lanzarote	Newcastle	7	0710	1135	Boeing 737 Passenger	1
FR	3491	Lanzarote	Newcastle	3	1350	1815	Boeing 737 Passenger	1
FR	3492	Newcastle	Lanzarote	7	1200	1625	Boeing 737 Passenger	1
FR	3492	Newcastle	Lanzarote	3	1840	2305	Boeing 737 Passenger	1
FR	35	Bratislava	Manchester (GB)	7	1645	1815	Boeing 737 Passenger	1
FR	35	Bratislava	Manchester (GB)	5	1840	2010	Boeing 737 Passenger	1
FR	35	Bratislava	Manchester (GB)	3	1210	1340	Boeing 737 Passenger	1
FR	3501	Manchester (GB)	Hamburg Airport	7	1355	1630	Boeing 737 Passenger	1
FR	3501	Manchester (GB)	Hamburg Airport	4	0630	0905	Boeing 737 Passenger	1
FR	3501	Manchester (GB)	Hamburg Airport	123 56	0640	0915	Boeing 737 Passenger	5
FR	3502	Hamburg Airport	Manchester (GB)	7	1655	1740	Boeing 737 Passenger	1
FR	3502	Hamburg Airport	Manchester (GB)	4	0930	1015	Boeing 737 Passenger	1
FR	3502	Hamburg Airport	Manchester (GB)	123 56	0940	1025	Boeing 737 Passenger	5
FR	3506	London Luton Apt	Marrakech	6	0800	1135	Boeing 737 Passenger	1
FR	3506	London Luton Apt	Marrakech	12 4	0645	1020	Boeing 737 Passenger	3
FR	3507	Marrakech	London Luton Apt	6	1200	1535	Boeing 737 Passenger	1
FR	3507	Marrakech	London Luton Apt	12 4	1045	1420	Boeing 737 Passenger	3
FR	3511	London Luton Apt	Lanzarote	3 7	0630	1040	Boeing 737 Passenger	2
FR	3512	Lanzarote	London Luton Apt	3 7	1115	1525	Boeing 737 Passenger	2
FR	3513	London Luton Apt	Tenerife Sur Apt	7	0635	1110	Boeing 737 Passenger	1
FR	3513	London Luton Apt	Tenerife Sur Apt	3	0625	1100	Boeing 737 Passenger	1
FR	3514	Tenerife Sur Apt	London Luton Apt	7	1145	1605	Boeing 737 Passenger	1
FR	3514	Tenerife Sur Apt	London Luton Apt	3	1135	1555	Boeing 737 Passenger	1
FR	3515	London Luton Apt	Gran Canaria	1 5	0630	1100	Boeing 737 Passenger	2
FR	3516	Gran Canaria	London Luton Apt	5	1135	1550	Boeing 737 Passenger	1
FR	3516	Gran Canaria	London Luton Apt	1	1140	1555	Boeing 737 Passenger	1
FR	3523	Malaga Airport	Exeter	7	0700	0835	Boeing 737 Passenger	1
FR	3523	Malaga Airport	Exeter	3	0800	0935	Boeing 737 Passenger	1
FR	3524	Exeter	Malaga Airport	7	0900	1235	Boeing 737 Passenger	1
FR	3524	Exeter	Malaga Airport	3	1000	1335	Boeing 737 Passenger	1
FR	3525	London Luton Apt	Fuerteventura	2 6	0730	1150	Boeing 737 Passenger	2
FR	3526	Fuerteventura	London Luton Apt	2 6	1225	1635	Boeing 737 Passenger	2
FR	3543	Manchester (GB)	Nantes Atlantique Airport	7	1305	1535	Boeing 737 Passenger	1
FR	3543	Manchester (GB)	Nantes Atlantique Airport	3	1345	1615	Boeing 737 Passenger	1
FR	3544	Nantes Atlantique Airport	Manchester (GB)	7	1600	1630	Boeing 737 Passenger	1
FR	3544	Nantes Atlantique Airport	Manchester (GB)	3	1640	1710	Boeing 737 Passenger	1
FR	3545	Naples Capodichino Apt	Exeter	7	0615	0805	Boeing 737 Passenger	1
FR	3545	Naples Capodichino Apt	Exeter	3	1515	1705	Boeing 737 Passenger	1
FR	3546	Exeter	Naples Capodichino Apt	7	0840	1230	Boeing 737 Passenger	1
FR	3546	Exeter	Naples Capodichino Apt	3	1740	2130	Boeing 737 Passenger	1
FR	3556	London Stansted Apt	Marrakech	6	0700	1035	Boeing 737 Passenger	1
Data copy	3556	London Stansted Apt	Marrakech	5	0555	0930	Boeing 737 Passenger	1
FR	3556	London Stansted Apt	Marrakech	2	0715	1050	Boeing 737 Passenger	1
FR	3556	London Stansted Apt	Marrakech	1 34 7	0610	0945	Boeing 737 Passenger	4
FR	3557	Marrakech	London Stansted Apt	6	1100	1440	Boeing 737 Passenger	1
FR	3557	Marrakech	London Stansted Apt	5	0955	1335	Boeing 737 Passenger	1
FR	3557	Marrakech	London Stansted Apt	2	1115	1455	Boeing 737 Passenger	1
FR	3557	Marrakech	London Stansted Apt	1 34 7	1010	1350	Boeing 737 Passenger	4
FR	36	Manchester (GB)	Carcassonne	5	1325	1630	Boeing 737 Passenger	1
FR	36	Manchester (GB)	Carcassonne	1	1400	1705	Boeing 737 Passenger	1
FR	3626	Manchester (GB)	Cagliari	7	1815	2210	Boeing 737 Passenger	1
FR	3626	Manchester (GB)	Cagliari	3	0610	1005	Boeing 737 Passenger	1
FR	3627	Cagliari	Manchester (GB)	7	2240	0030	Boeing 737 Passenger	1
FR	3627	Cagliari	Manchester (GB)	3	1030	1220	Boeing 737 Passenger	1
FR	3636	London Stansted Apt	Pardubice	6	1735	2035	Boeing 737 Passenger	1

FR	3636	London Stansted Apt	Pardubice	4	0900	1200	Boeing 737 Passenger	1
FR	3636	London Stansted Apt	Pardubice	2	1420	1720	Boeing 737 Passenger	1
FR	3637	Pardubice	London Stansted Apt	6	2100	2200	Boeing 737 Passenger	1
FR	3637	Pardubice	London Stansted Apt	4	1225	1325	Boeing 737 Passenger	1
FR	3637	Pardubice	London Stansted Apt	2	1745	1845	Boeing 737 Passenger	1
FR	3675	London Stansted Apt	Bremen	7	1905	2130	Boeing 737 Passenger	1
FR	3675	London Stansted Apt	Bremen	6	0930	1155	Boeing 737 Passenger	1
FR	3675	London Stansted Apt	Bremen	5	1120	1345	Boeing 737 Passenger	1
FR	3675	London Stansted Apt	Bremen	3	1335	1600	Boeing 737 Passenger	1
FR	3675	London Stansted Apt	Bremen	12 4	1855	2120	Boeing 737 Passenger	3
FR	3676	Bremen	London Stansted Apt	7	2155	2220	Boeing 737 Passenger	1
FR	3676	Bremen	London Stansted Apt	6	1220	1245	Boeing 737 Passenger	1
FR	3676	Bremen	London Stansted Apt	5	1410	1435	Boeing 737 Passenger	1
FR	3676	Bremen	London Stansted Apt	3	1625	1650	Boeing 737 Passenger	1
FR	3676	Bremen	London Stansted Apt	12 4	2145	2210	Boeing 737 Passenger	3
FR	3677	London Stansted Apt	Kiev Borispol Intl Apt	7	0705	1225	Boeing 737 Passenger	1
FR	3677	London Stansted Apt	Kiev Borispol Intl Apt	6	0900	1420	Boeing 737 Passenger	1
FR	3677	London Stansted Apt	Kiev Borispol Intl Apt	5	0610	1130	Boeing 737 Passenger	1
FR	3677	London Stansted Apt	Kiev Borispol Intl Apt	3	0640	1200	Boeing 737 Passenger	1
FR	3677	London Stansted Apt	Kiev Borispol Intl Apt	1	0830	1350	Boeing 737 Passenger	1
FR	3678	Kiev Borispol Intl Apt	London Stansted Apt	7	1300	1420	Boeing 737 Passenger	1
FR	3678	Kiev Borispol Intl Apt	London Stansted Apt	6	1455	1615	Boeing 737 Passenger	1
FR	3678	Kiev Borispol Intl Apt	London Stansted Apt	5	1205	1325	Boeing 737 Passenger	1
FR	3678	Kiev Borispol Intl Apt	London Stansted Apt	3	1235	1355	Boeing 737 Passenger	1
FR	3678	Kiev Borispol Intl Apt	London Stansted Apt	1	1425	1545	Boeing 737 Passenger	1
FR	37	Carcassonne	Manchester (GB)	5	1655	1800	Boeing 737 Passenger	1
FR	37	Carcassonne	Manchester (GB)	1	1730	1835	Boeing 737 Passenger	1
FR	3701	Nottingham East Midlands Airport	Fuerteventura	3 7	1445	1900	Boeing 737 Passenger	2
FR	3702	Fuerteventura	Nottingham East Midlands Airport	3 7	1935	2340	Boeing 737 Passenger	2
FR	3711	Birmingham Airport	Faro	7	1510	1805	Boeing 737 Passenger	1
FR	3711	Birmingham Airport	Faro	6	0710	1005	Boeing 737 Passenger	1
FR	3711	Birmingham Airport	Faro	5	1640	1935	Boeing 737 Passenger	1
FR	3711	Birmingham Airport	Faro	3	0800	1055	Boeing 737 Passenger	1
FR	3711	Birmingham Airport	Faro	2 4	1050	1345	Boeing 737 Passenger	2
FR	3711	Birmingham Airport	Faro	1	1740	2035	Boeing 737 Passenger	1
FR	3712	Faro	Birmingham Airport	7	1830	2120	Boeing 737 Passenger	1
FR	3712	Faro	Birmingham Airport	6	1030	1320	Boeing 737 Passenger	1
FR	3712	Faro	Birmingham Airport	5	2000	2250	Boeing 737 Passenger	1
FR	3712	Faro	Birmingham Airport	3	1120	1410	Boeing 737 Passenger	1
FR	3712	Faro	Birmingham Airport	2 4	0735	1025	Boeing 737 Passenger	2
FR	3712	Faro	Birmingham Airport	1	2100	2350	Boeing 737 Passenger	1
FR	3717	London Stansted Apt	Budapest	5	0625	0950	Boeing 737 Passenger	1
FR	3717	London Stansted Apt	Budapest	3	1635	2000	Boeing 737 Passenger	1
FR	3717	London Stansted Apt	Budapest	1	1255	1620	Boeing 737 Passenger	1
FR	3718	Budapest	London Stansted Apt	5	1015	1140	Boeing 737 Passenger	1
FR	3718	Budapest	London Stansted Apt	3	2025	2200	Boeing 737 Passenger	1
FR	3718	Budapest	London Stansted Apt	1	1645	1820	Boeing 737 Passenger	1
FR	372	London Stansted Apt	Biarritz	45 7	1355	1655	Boeing 737 Passenger	3
FR	372	London Stansted Apt	Biarritz	3	0640	0940	Boeing 737 Passenger	1
FR	372	London Stansted Apt	Biarritz	2	0835	1135	Boeing 737 Passenger	1
FR	372	London Stansted Apt	Biarritz	1 6	1405	1705	Boeing 737 Passenger	2
FR	373	Biarritz	London Stansted Apt	7	1725	1820	Boeing 737 Passenger	1
FR	373	Biarritz	London Stansted Apt	3	1005	1100	Boeing 737 Passenger	1
FR	373	Biarritz	London Stansted Apt	2	1200	1255	Boeing 737 Passenger	1
FR	373	Biarritz	London Stansted Apt	1 456	1730	1825	Boeing 737 Passenger	4
FR	3741	Birmingham Airport	Fuerteventura	1 5	0640	1100	Boeing 737 Passenger	2
FR	3742	Fuerteventura	Birmingham Airport	1 5	1135	1545	Boeing 737 Passenger	2
FR	3768	London Luton Apt	Girona Costa Brava Apt	5	2100	0005	Boeing 737 Passenger	1
FR	3768	London Luton Apt	Girona Costa Brava Apt	3	1855	2200	Boeing 737 Passenger	1
FR	3768	London Luton Apt	Girona Costa Brava Apt	1	1525	1830	Boeing 737 Passenger	1
FR	3769	Girona Costa Brava Apt	London Luton Apt	5	1915	2030	Boeing 737 Passenger	1
FR	3769	Girona Costa Brava Apt	London Luton Apt	3	1710	1825	Boeing 737 Passenger	1
FR	3769	Girona Costa Brava Apt	London Luton Apt	1	1345	1500	Boeing 737 Passenger	1
FR	3774	Bristol	Malta	2 4 7	1010	1420	Boeing 737 Passenger	3
FR	3775	Malta	Bristol	2 4 7	0720	0945	Boeing 737 Passenger	3
FR	38	Manchester (GB)	Limoges	7	1300	1545	Boeing 737 Passenger	1
FR	38	Manchester (GB)	Limoges	5	1125	1410	Boeing 737 Passenger	1
FR	38	Manchester (GB)	Limoges	2	1220	1505	Boeing 737 Passenger	1
FR	3801	Liverpool	Gran Canaria	7	1845	2320	Boeing 737 Passenger	1
FR	3801	Liverpool	Gran Canaria	3	1805	2235	Boeing 737 Passenger	1

FR	3802	Gran Canaria	Liverpool	7	1355	1815	Boeing 737 Passenger	1
FR	3802	Gran Canaria	Liverpool	3	1320	1740	Boeing 737 Passenger	1
FR	3803	Manchester (GB)	Gran Canaria	6	1810	2240	Boeing 737 Passenger	1
FR	3803	Manchester (GB)	Gran Canaria	4	1900	2330	Boeing 737 Passenger	1
FR	3803	Manchester (GB)	Gran Canaria	2	0610	1040	Boeing 737 Passenger	1
FR	3804	Gran Canaria	Manchester (GB)	6	1320	1745	Boeing 737 Passenger	1
FR	3804	Gran Canaria	Manchester (GB)	4	1405	1830	Boeing 737 Passenger	1
FR	3804	Gran Canaria	Manchester (GB)	2	1115	1540	Boeing 737 Passenger	1
FR	3805	Manchester (GB)	Fuerteventura	2 6	1430	1855	Boeing 737 Passenger	2
FR	3806	Fuerteventura	Manchester (GB)	2 6	1930	2350	Boeing 737 Passenger	2
FR	3811	Liverpool	Lanzarote	7	1840	2255	Boeing 737 Passenger	1
FR	3811	Liverpool	Lanzarote	3	1405	1820	Boeing 737 Passenger	1
FR	3812	Lanzarote	Liverpool	7	1410	1815	Boeing 737 Passenger	1
FR	3812	Lanzarote	Liverpool	3	1855	2300	Boeing 737 Passenger	1
FR	3842	London Stansted Apt	Reus	6	1140	1455	Boeing 737 Passenger	1
FR	3842	London Stansted Apt	Reus	4	0730	1045	Boeing 737 Passenger	1
FR	3842	London Stansted Apt	Reus	2	1145	1500	Boeing 737 Passenger	1
FR	3843	Reus	London Stansted Apt	6	1520	1635	Boeing 737 Passenger	1
FR	3843	Reus	London Stansted Apt	4	1110	1225	Boeing 737 Passenger	1
FR	3843	Reus	London Stansted Apt	2	1525	1640	Boeing 737 Passenger	1
FR	3851	Rhodes	Nottingham East Midlands Airport	7	2145	0010	Boeing 737 Passenger	1
FR	3851	Rhodes	Nottingham East Midlands Airport	4	1355	1620	Boeing 737 Passenger	1
FR	3852	Nottingham East Midlands Airport	Rhodes	7	1510	2120	Boeing 737 Passenger	1
FR	3852	Nottingham East Midlands Airport	Rhodes	4	0720	1330	Boeing 737 Passenger	1
FR	3853	Kerkyra	Nottingham East Midlands Airport	7	1225	1345	Boeing 737 Passenger	1
FR	3853	Kerkyra	Nottingham East Midlands Airport	4	1450	1610	Boeing 737 Passenger	1
FR	3854	Nottingham East Midlands Airport	Kerkyra	7	0645	1200	Boeing 737 Passenger	1
FR	3854	Nottingham East Midlands Airport	Kerkyra	4	0910	1425	Boeing 737 Passenger	1
FR	3855	Chania	Nottingham East Midlands Airport	6	1915	2125	Boeing 737 Passenger	1
FR	3856	Nottingham East Midlands Airport	Chania	6	1250	1850	Boeing 737 Passenger	1
FR	3872	London Stansted Apt	Pula	7	0650	1005	Boeing 737 Passenger	1
FR	3872	London Stansted Apt	Pula	4	1645	2000	Boeing 737 Passenger	1
FR	3872	London Stansted Apt	Pula	3	1720	2035	Boeing 737 Passenger	1
FR	3873	Pula	London Stansted Apt	7	1030	1145	Boeing 737 Passenger	1
FR	3873	Pula	London Stansted Apt	4	2025	2140	Boeing 737 Passenger	1
FR	3873	Pula	London Stansted Apt	3	2100	2215	Boeing 737 Passenger	1
FR	3882	London Luton Apt	Malta	7	0625	1045	Boeing 737 Passenger	1
FR	3882	London Luton Apt	Malta	5	0805	1225	Boeing 737 Passenger	1
FR	3882	London Luton Apt	Malta	4	1835	2255	Boeing 737 Passenger	1
FR	3882	London Luton Apt	Malta	123 6	1935	2355	Boeing 737 Passenger	4
FR	3883	Malta	London Luton Apt	7	1140	1405	Boeing 737 Passenger	1
FR	3883	Malta	London Luton Apt	5	1250	1515	Boeing 737 Passenger	1
FR	3883	Malta	London Luton Apt	4	1545	1810	Boeing 737 Passenger	1
FR	3883	Malta	London Luton Apt	123 6	1645	1910	Boeing 737 Passenger	4
FR	3884	London Luton Apt	Malta	4	0625	1040	Boeing 737 Passenger	1
FR	3885	Malta	London Luton Apt	4	1105	1330	Boeing 737 Passenger	1
FR	39	Limoges	Manchester (GB)	7	1610	1655	Boeing 737 Passenger	1
FR	39	Limoges	Manchester (GB)	5	1435	1520	Boeing 737 Passenger	1
FR	39	Limoges	Manchester (GB)	2	1530	1615	Boeing 737 Passenger	1
FR	3901	Birmingham Airport	Malta	7	1935	2355	Boeing 737 Passenger	1
FR	3901	Birmingham Airport	Malta	4	0625	1055	Boeing 737 Passenger	1
FR	3901	Birmingham Airport	Malta	2	1615	2035	Boeing 737 Passenger	1
FR	3902	Malta	Birmingham Airport	7	1640	1910	Boeing 737 Passenger	1
FR	3902	Malta	Birmingham Airport	4	1120	1400	Boeing 737 Passenger	1
FR	3902	Malta	Birmingham Airport	2	2100	2330	Boeing 737 Passenger	1
FR	3918	London Stansted Apt	Palermo	6	1720	2120	Boeing 737 Passenger	1
FR	3918	London Stansted Apt	Palermo	2	1715	2115	Boeing 737 Passenger	1
FR	3918	London Stansted Apt	Palermo	1 345 7	1710	2110	Boeing 737 Passenger	5
FR	3919	Palermo	London Stansted Apt	6	2145	2355	Boeing 737 Passenger	1
FR	3919	Palermo	London Stansted Apt	2	2140	2350	Boeing 737 Passenger	1
FR	3919	Palermo	London Stansted Apt	1 345 7	2135	2345	Boeing 737 Passenger	5
FR	4000	Nottingham East Midlands Airport	Shannon	5	1930	2045	Boeing 737 Passenger	1
FR	4000	Nottingham East Midlands Airport	Shannon	1	0640	0755	Boeing 737 Passenger	1
FR	4006	Alicante Airport	Manchester (GB)	6	1140	1330	Boeing 737 Passenger	1
FR	4006	Alicante Airport	Manchester (GB)	12345 7	1050	1240	Boeing 737 Passenger	6
FR	4007	Manchester (GB)	Alicante Airport	6	0720	1105	Boeing 737 Passenger	1
FR	4007	Manchester (GB)	Alicante Airport	12345 7	0630	1015	Boeing 737 Passenger	6
FR	4031	Liverpool	Faro	7	1120	1415	Boeing 737 Passenger	1
FR	4031	Liverpool	Faro	6	1410	1705	Boeing 737 Passenger	1
FR	4031	Liverpool	Faro	45	1715	2010	Boeing 737 Passenger	2

FR	4031	Liverpool	Faro	3	0830	1125	Boeing 737 Passenger	1
FR	4031	Liverpool	Faro	2	1935	2230	Boeing 737 Passenger	1
FR	4031	Liverpool	Faro	1	1735	2030	Boeing 737 Passenger	1
FR	4032	Faro	Liverpool	7	0800	1055	Boeing 737 Passenger	1
FR	4032	Faro	Liverpool	6	1730	2025	Boeing 737 Passenger	1
FR	4032	Faro	Liverpool	45	2035	2330	Boeing 737 Passenger	2
FR	4032	Faro	Liverpool	3	1150	1445	Boeing 737 Passenger	1
FR	4032	Faro	Liverpool	2	1615	1910	Boeing 737 Passenger	1
FR	4032	Faro	Liverpool	1	2055	2350	Boeing 737 Passenger	1
FR	4043	Liverpool	Nowy Dwor Mazowiecki	6	1720	2045	Boeing 737 Passenger	1
FR	4043	Liverpool	Nowy Dwor Mazowiecki	4	1630	1955	Boeing 737 Passenger	1
FR	4043	Liverpool	Nowy Dwor Mazowiecki	2	0730	1055	Boeing 737 Passenger	1
FR	4044	Nowy Dwor Mazowiecki	Liverpool	6	2110	2250	Boeing 737 Passenger	1
FR	4044	Nowy Dwor Mazowiecki	Liverpool	4	2020	2155	Boeing 737 Passenger	1
FR	4044	Nowy Dwor Mazowiecki	Liverpool	2	1120	1300	Boeing 737 Passenger	1
FR	4051	Faro	Manchester (GB)	1234567	1705	2005	Boeing 737 Passenger	7
FR	4052	Manchester (GB)	Faro	1234567	2030	2330	Boeing 737 Passenger	7
FR	4053	Nottingham East Midlands Airport	Nowy Dwor Mazowiecki	6	1810	2130	Boeing 737 Passenger	1
FR	4053	Nottingham East Midlands Airport	Nowy Dwor Mazowiecki	2	0625	0945	Boeing 737 Passenger	1
FR	4054	Nowy Dwor Mazowiecki	Nottingham East Midlands Airport	6	2155	2330	Boeing 737 Passenger	1
FR	4054	Nowy Dwor Mazowiecki	Nottingham East Midlands Airport	2	1010	1145	Boeing 737 Passenger	1
FR	4079	Alicante Airport	Newcastle	7	0855	1055	Boeing 737 Passenger	1
FR	4079	Alicante Airport	Newcastle	5	0650	0850	Boeing 737 Passenger	1
FR	4079	Alicante Airport	Newcastle	34 6	0830	1030	Boeing 737 Passenger	3
FR	4079	Alicante Airport	Newcastle	2	1555	1755	Boeing 737 Passenger	1
FR	4079	Alicante Airport	Newcastle	1	1700	1900	Boeing 737 Passenger	1
FR	4080	Newcastle	Alicante Airport	7	1120	1520	Boeing 737 Passenger	1
FR	4080	Newcastle	Alicante Airport	5	0915	1315	Boeing 737 Passenger	1
FR	4080	Newcastle	Alicante Airport	34 6	1055	1455	Boeing 737 Passenger	3
FR	4080	Newcastle	Alicante Airport	2	1820	2220	Boeing 737 Passenger	1
FR	4080	Newcastle	Alicante Airport	1	1925	2325	Boeing 737 Passenger	1
FR	4081	Liverpool	Fuerteventura	7	1535	1950	Boeing 737 Passenger	1
FR	4082	Fuerteventura	Liverpool	7	2025	0030	Boeing 737 Passenger	1
FR	4087	Faro	Manchester (GB)	7	0835	1135	Boeing 737 Passenger	1
FR	4087	Faro	Manchester (GB)	2345	0900	1200	Boeing 737 Passenger	3
FR	4087	Faro	Manchester (GB)	1	0855	1155	Boeing 737 Passenger	1
FR	4088	Manchester (GB)	Faro	7	1200	1500	Boeing 737 Passenger	1
FR	4088	Manchester (GB)	Faro	2345	1225	1525	Boeing 737 Passenger	3
FR	4088	Manchester (GB)	Faro	1	1220	1520	Boeing 737 Passenger	1
FR	4094	Manchester (GB)	Gdansk Lech Walesa	5	0555	0910	Boeing 737 Passenger	1
FR	4094	Manchester (GB)	Gdansk Lech Walesa	1	1315	1630	Boeing 737 Passenger	1
FR	4095	Gdansk Lech Walesa	Manchester (GB)	5	0935	1100	Boeing 737 Passenger	1
FR	4095	Gdansk Lech Walesa	Manchester (GB)	1	1125	1250	Boeing 737 Passenger	1
FR	4096	Manchester (GB)	Riga	6	1720	2155	Boeing 737 Passenger	1
FR	4096	Manchester (GB)	Riga	4	0955	1430	Boeing 737 Passenger	1
FR	4096	Manchester (GB)	Riga	2	0620	1055	Boeing 737 Passenger	1
FR	4097	Riga	Manchester (GB)	6	2220	2310	Boeing 737 Passenger	1
FR	4097	Riga	Manchester (GB)	4	1520	1610	Boeing 737 Passenger	1
FR	4097	Riga	Manchester (GB)	2	1120	1210	Boeing 737 Passenger	1
FR	4107	Leeds Bradford	Wroclaw	7	0825	1140	Boeing 737 Passenger	1
FR	4107	Leeds Bradford	Wroclaw	4	1410	1725	Boeing 737 Passenger	1
FR	4108	Wroclaw	Leeds Bradford	7	0645	0800	Boeing 737 Passenger	1
FR	4108	Wroclaw	Leeds Bradford	4	1230	1345	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	7	1530	1920	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	6	1320	1710	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	5	1725	2115	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	4	1355	1745	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	3	1330	1720	Boeing 737 Passenger	1
FR	4116	Manchester (GB)	Corvera	1	1715	2105	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	7	1955	2145	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	6	1745	1935	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	5	2150	2335	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	4	1820	2010	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	3	1755	1945	Boeing 737 Passenger	1
FR	4117	Corvera	Manchester (GB)	1	2140	2330	Boeing 737 Passenger	1
FR	4135	Bristol	Nowy Dwor Mazowiecki	6	1410	1740	Boeing 737 Passenger	1
FR	4135	Bristol	Nowy Dwor Mazowiecki	4	1115	1445	Boeing 737 Passenger	1
FR	4135	Bristol	Nowy Dwor Mazowiecki	2	1930	2300	Boeing 737 Passenger	1
FR	4135	Bristol	Nowy Dwor Mazowiecki	1	0840	1210	Boeing 737 Passenger	1
FR	4136	Nowy Dwor Mazowiecki	Bristol	6	1805	1945	Boeing 737 Passenger	1

FR	4136	Nowy Dwor Mazowiecki	Bristol	4	1510	1650	Boeing 737 Passenger	1
FR	4136	Nowy Dwor Mazowiecki	Bristol	2	1725	1905	Boeing 737 Passenger	1
FR	4136	Nowy Dwor Mazowiecki	Bristol	1	0635	0815	Boeing 737 Passenger	1
FR	4191	Milan Bergamo/orio al Serio Apt	London Stansted Apt	1234567	0630	0740	Boeing 737 Passenger	7
FR	4192	London Stansted Apt	Milan Bergamo/orio al Serio Apt	1234567	0805	1105	Boeing 737 Passenger	7
FR	4194	London Stansted Apt	Milan Bergamo/orio al Serio Apt	67	1335	1635	Boeing 737 Passenger	2
FR	4194	London Stansted Apt	Milan Bergamo/orio al Serio Apt	12345	1340	1640	Boeing 737 Passenger	5
FR	4195	Milan Bergamo/orio al Serio Apt	London Stansted Apt	12345 7	1425	1535	Boeing 737 Passenger	6
FR	4196	London Stansted Apt	Milan Bergamo/orio al Serio Apt	1234567	1600	1900	Boeing 737 Passenger	7
FR	4197	Milan Bergamo/orio al Serio Apt	London Stansted Apt	7	1845	1955	Boeing 737 Passenger	1
FR	4197	Milan Bergamo/orio al Serio Apt	London Stansted Apt	12345	1830	1940	Boeing 737 Passenger	5
FR	4198	London Stansted Apt	Milan Bergamo/orio al Serio Apt	7	2020	2320	Boeing 737 Passenger	1
FR	4198	London Stansted Apt	Milan Bergamo/orio al Serio Apt	123456	2005	2305	Boeing 737 Passenger	6
FR	4199	Milan Bergamo/orio al Serio Apt	London Stansted Apt	12345 7	1150	1300	Boeing 737 Passenger	6
FR	4203	Krakow John Paul II - Balice	Glasgow International Airport	7	0700	0850	Boeing 737 Passenger	1
FR	4203	Krakow John Paul II - Balice	Glasgow International Airport	3	1600	1750	Boeing 737 Passenger	1
FR	4204	Glasgow International Airport	Krakow John Paul II - Balice	7	0915	1300	Boeing 737 Passenger	1
FR	4204	Glasgow International Airport	Krakow John Paul II - Balice	3	1815	2200	Boeing 737 Passenger	1
FR	4205	Liverpool	Kerkyra	7	1510	2040	Boeing 737 Passenger	1
FR	4205	Liverpool	Kerkyra	4	0630	1200	Boeing 737 Passenger	1
FR	4206	Kerkyra	Liverpool	7	2105	2235	Boeing 737 Passenger	1
FR	4206	Kerkyra	Liverpool	4	1245	1415	Boeing 737 Passenger	1
FR	4207	Liverpool	Copenhagen Kastrup Apt	5	1650	1945	Boeing 737 Passenger	1
FR	4207	Liverpool	Copenhagen Kastrup Apt	1	1340	1635	Boeing 737 Passenger	1
FR	4208	Copenhagen Kastrup Apt	Liverpool	5	2010	2105	Boeing 737 Passenger	1
FR	4208	Copenhagen Kastrup Apt	Liverpool	1	1700	1755	Boeing 737 Passenger	1
FR	423	London Luton Apt	Cork	5	2000	2125	Boeing 737 Passenger	1
FR	423	London Luton Apt	Cork	4	1400	1525	Boeing 737 Passenger	1
FR	423	London Luton Apt	Cork	2	1115	1240	Boeing 737 Passenger	1
FR	423	London Luton Apt	Cork	1 3 67	1350	1515	Boeing 737 Passenger	4
FR	424	Cork	London Luton Apt	6	1540	1705	Boeing 737 Passenger	1
FR	424	Cork	London Luton Apt	5	2150	2315	Boeing 737 Passenger	1
FR	424	Cork	London Luton Apt	4	1550	1715	Boeing 737 Passenger	1
FR	424	Cork	London Luton Apt	2	1305	1430	Boeing 737 Passenger	1
FR	424	Cork	London Luton Apt	1 3 7	1545	1710	Boeing 737 Passenger	3
FR	4331	Tenerife Sur Apt	Manchester (GB)	1234567	1920	2350	Boeing 737 Passenger	7
FR	4332	Manchester (GB)	Tenerife Sur Apt	1234567	1410	1845	Boeing 737 Passenger	7
FR	4346	Liverpool	Tenerife Sur Apt	5	0625	1100	Boeing 737 Passenger	1
FR	4346	Liverpool	Tenerife Sur Apt	3	1910	2345	Boeing 737 Passenger	1
FR	4346	Liverpool	Tenerife Sur Apt	1	1720	2155	Boeing 737 Passenger	1
FR	4347	Tenerife Sur Apt	Liverpool	5	1135	1600	Boeing 737 Passenger	1
FR	4347	Tenerife Sur Apt	Liverpool	3	1420	1845	Boeing 737 Passenger	1
FR	4347	Tenerife Sur Apt	Liverpool	1	1230	1655	Boeing 737 Passenger	1
FR	4370	Manchester (GB)	Sevilla Airport	5	1900	2250	Boeing 737 Passenger	1
FR	4370	Manchester (GB)	Sevilla Airport	3	0655	1045	Boeing 737 Passenger	1
FR	4370	Manchester (GB)	Sevilla Airport	1	1525	1915	Boeing 737 Passenger	1
FR	4371	Sevilla Airport	Manchester (GB)	5	1635	1835	Boeing 737 Passenger	1
FR	4371	Sevilla Airport	Manchester (GB)	3	1115	1315	Boeing 737 Passenger	1
FR	4371	Sevilla Airport	Manchester (GB)	1	1945	2145	Boeing 737 Passenger	1
FR	442	Dublin (IE)	Liverpool	7	0710	0805	Boeing 737 Passenger	1
FR	442	Dublin (IE)	Liverpool	2 456	0705	0800	Boeing 737 Passenger	4
FR	442	Dublin (IE)	Liverpool	1 3	0710	0800	Boeing 737 Passenger	2
FR	443	Liverpool	Dublin (IE)	7	0830	0920	Boeing 737 Passenger	1
FR	443	Liverpool	Dublin (IE)	123456	0825	0920	Boeing 737 Passenger	6
FR	4440	Bristol	Valencia Airport	5	0635	0950	Boeing 737 Passenger	1
FR	4440	Bristol	Valencia Airport	1	2050	0005	Boeing 737 Passenger	1
FR	4441	Valencia Airport	Bristol	5	1020	1150	Boeing 737 Passenger	1
FR	4441	Valencia Airport	Bristol	1	1855	2025	Boeing 737 Passenger	1
FR	4458	Nottingham East Midlands Airport	Malaga Airport	7	1650	2045	Boeing 737 Passenger	1
FR	4458	Nottingham East Midlands Airport	Malaga Airport	56	1700	2055	Boeing 737 Passenger	2
FR	4458	Nottingham East Midlands Airport	Malaga Airport	234	1640	2035	Boeing 737 Passenger	3
FR	4459	Malaga Airport	Nottingham East Midlands Airport	7	2120	2320	Boeing 737 Passenger	1
FR	4459	Malaga Airport	Nottingham East Midlands Airport	56	2130	2330	Boeing 737 Passenger	2
FR	4459	Malaga Airport	Nottingham East Midlands Airport	234	2110	2310	Boeing 737 Passenger	3
FR	446	Dublin (IE)	Liverpool	6	1810	1900	Boeing 737 Passenger	1
FR	446	Dublin (IE)	Liverpool	5	1810	1905	Boeing 737 Passenger	1
FR	446	Dublin (IE)	Liverpool	1234 7	1750	1845	Boeing 737 Passenger	5
FR	4468	Nottingham East Midlands Airport	Malaga Airport	7	0830	1225	Boeing 737 Passenger	1
FR	4468	Nottingham East Midlands Airport	Malaga Airport	5	1815	2210	Boeing 737 Passenger	1
FR	4468	Nottingham East Midlands Airport	Malaga Airport	2	0905	1300	Boeing 737 Passenger	1

FR	4468	Nottingham East Midlands Airport	Malaga Airport	1 34 6	0640	1035	Boeing 737 Passenger	4
FR	4469	Malaga Airport	Nottingham East Midlands Airport	7	1300	1500	Boeing 737 Passenger	1
FR	4469	Malaga Airport	Nottingham East Midlands Airport	5	1550	1750	Boeing 737 Passenger	1
FR	4469	Malaga Airport	Nottingham East Midlands Airport	2	1335	1535	Boeing 737 Passenger	1
FR	4469	Malaga Airport	Nottingham East Midlands Airport	1 34 6	1110	1310	Boeing 737 Passenger	4
FR	447	Liverpool	Dublin (IE)	6	1925	2015	Boeing 737 Passenger	1
FR	447	Liverpool	Dublin (IE)	5	1930	2025	Boeing 737 Passenger	1
FR	447	Liverpool	Dublin (IE)	1234 7	1910	2005	Boeing 737 Passenger	5
FR	448	Dublin (IE)	Liverpool	1 567	2055	2150	Boeing 737 Passenger	4
FR	449	Liverpool	Dublin (IE)	6	2215	2310	Boeing 737 Passenger	1
FR	449	Liverpool	Dublin (IE)	1 5 7	2225	2320	Boeing 737 Passenger	3
FR	4524	Edinburgh	Nowy Dwor Mazowiecki	7	0810	1140	Boeing 737 Passenger	1
FR	4524	Edinburgh	Nowy Dwor Mazowiecki	6	1535	1905	Boeing 737 Passenger	1
FR	4524	Edinburgh	Nowy Dwor Mazowiecki	4	0745	1115	Boeing 737 Passenger	1
FR	4524	Edinburgh	Nowy Dwor Mazowiecki	2	1755	2125	Boeing 737 Passenger	1
FR	4525	Nowy Dwor Mazowiecki	Edinburgh	7	0600	0745	Boeing 737 Passenger	1
FR	4525	Nowy Dwor Mazowiecki	Edinburgh	6	1325	1510	Boeing 737 Passenger	1
FR	4525	Nowy Dwor Mazowiecki	Edinburgh	4	1140	1325	Boeing 737 Passenger	1
FR	4525	Nowy Dwor Mazowiecki	Edinburgh	2	2150	2335	Boeing 737 Passenger	1
FR	4541	London Stansted Apt	Verona Villafranca Airport	7	1030	1330	Boeing 737 Passenger	1
FR	4541	London Stansted Apt	Verona Villafranca Airport	5	0610	0910	Boeing 737 Passenger	1
FR	4541	London Stansted Apt	Verona Villafranca Airport	3	0905	1205	Boeing 737 Passenger	1
FR	4541	London Stansted Apt	Verona Villafranca Airport	1 4	0645	0945	Boeing 737 Passenger	2
FR	4542	Verona Villafranca Airport	London Stansted Apt	7	1355	1510	Boeing 737 Passenger	1
FR	4542	Verona Villafranca Airport	London Stansted Apt	5	0940	1055	Boeing 737 Passenger	1
FR	4542	Verona Villafranca Airport	London Stansted Apt	4	1025	1140	Boeing 737 Passenger	1
FR	4542	Verona Villafranca Airport	London Stansted Apt	3	1235	1350	Boeing 737 Passenger	1
FR	4542	Verona Villafranca Airport	London Stansted Apt	1	1010	1125	Boeing 737 Passenger	1
FR	4551	Nowy Dwor Mazowiecki	Belfast International Apt	2 6	0700	0850	Boeing 737 Passenger	2
FR	4552	Belfast International Apt	Nowy Dwor Mazowiecki	2 6	0915	1255	Boeing 737 Passenger	2
FR	4571	Faro	Belfast International Apt	6	2040	2350	Boeing 737 Passenger	1
FR	4571	Faro	Belfast International Apt	2	1225	1535	Boeing 737 Passenger	1
FR	4572	Belfast International Apt	Faro	6	1705	2015	Boeing 737 Passenger	1
FR	4572	Belfast International Apt	Faro	2	0850	1200	Boeing 737 Passenger	1
FR	4573	Milan Malpensa Apt	Bristol	7	1350	1510	Boeing 737 Passenger	1
FR	4573	Milan Malpensa Apt	Bristol	3	1340	1500	Boeing 737 Passenger	1
FR	4574	Bristol	Milan Malpensa Apt	7	1535	1845	Boeing 737 Passenger	1
FR	4574	Bristol	Milan Malpensa Apt	3	1525	1835	Boeing 737 Passenger	1
FR	4588	Barcelona Apt	Cardiff	6	0740	0845	Boeing 737 Passenger	1
FR	4588	Barcelona Apt	Cardiff	2	0825	0930	Boeing 737 Passenger	1
FR	4589	Cardiff	Barcelona Apt	6	0910	1215	Boeing 737 Passenger	1
FR	4589	Cardiff	Barcelona Apt	2	0955	1300	Boeing 737 Passenger	1
FR	464	London Stansted Apt	Turin Caselle Airport	7	0655	0950	Boeing 737 Passenger	1
FR	464	London Stansted Apt	Turin Caselle Airport	123456	0645	0940	Boeing 737 Passenger	6
FR	465	Turin Caselle Airport	London Stansted Apt	1234567	1015	1115	Boeing 737 Passenger	7
FR	4741	Glasgow International Airport	Nowy Dwor Mazowiecki	5	1925	2300	Boeing 737 Passenger	1
FR	4741	Glasgow International Airport	Nowy Dwor Mazowiecki	1	2055	0030	Boeing 737 Passenger	1
FR	4742	Nowy Dwor Mazowiecki	Glasgow International Airport	5	1715	1900	Boeing 737 Passenger	1
FR	4742	Nowy Dwor Mazowiecki	Glasgow International Airport	1	1845	2030	Boeing 737 Passenger	1
FR	4753	Bristol	Tenerife Sur Apt	6	0625	1035	Boeing 737 Passenger	1
FR	4753	Bristol	Tenerife Sur Apt	4	0835	1245	Boeing 737 Passenger	1
FR	4753	Bristol	Tenerife Sur Apt	2	0615	1025	Boeing 737 Passenger	1
FR	4754	Tenerife Sur Apt	Bristol	4	1320	1725	Boeing 737 Passenger	1
FR	4754	Tenerife Sur Apt	Bristol	2 6	1110	1515	Boeing 737 Passenger	2
FR	4755	Bristol	Lanzarote	4	0640	1035	Boeing 737 Passenger	1
FR	4755	Bristol	Lanzarote	2 6	0745	1140	Boeing 737 Passenger	2
FR	4756	Lanzarote	Bristol	4	1110	1505	Boeing 737 Passenger	1
FR	4756	Lanzarote	Bristol	2 6	1215	1610	Boeing 737 Passenger	2
FR	4757	Bristol	Gran Canaria	1 5	0625	1040	Boeing 737 Passenger	2
FR	4758	Gran Canaria	Bristol	5	1115	1515	Boeing 737 Passenger	1
FR	4758	Gran Canaria	Bristol	1	1115	1520	Boeing 737 Passenger	1
FR	4760	Cardiff	Tenerife Sur Apt	4	2005	0010	Boeing 737 Passenger	1
FR	4761	Tenerife Sur Apt	Cardiff	4	1545	1940	Boeing 737 Passenger	1
FR	4776	Manchester (GB)	Shannon	7	2120	2230	Boeing 737 Passenger	1
FR	4776	Manchester (GB)	Shannon	4	1230	1340	Boeing 737 Passenger	1
FR	4776	Manchester (GB)	Shannon	3	1505	1615	Boeing 737 Passenger	1
FR	4776	Manchester (GB)	Shannon	1 5	0845	0955	Boeing 737 Passenger	2
FR	4777	Shannon	Manchester (GB)	7	2255	0005	Boeing 737 Passenger	1
FR	4777	Shannon	Manchester (GB)	4	1055	1205	Boeing 737 Passenger	1
FR	4777	Shannon	Manchester (GB)	3	1650	1800	Boeing 737 Passenger	1

FR	4777	Shannon	Manchester (GB)	1 5	0710	0820	Boeing 737 Passenger	2
FR	4950	Malaga Airport	Cardiff	1 3 5	1740	1920	Boeing 737 Passenger	3
FR	4951	Cardiff	Malaga Airport	1 3 5	1945	2325	Boeing 737 Passenger	3
FR	4952	London Stansted Apt	Perugia	2	0930	1305	Boeing 737 Passenger	1
FR	4952	London Stansted Apt	Perugia	1 345 7	0730	1105	Boeing 737 Passenger	5
FR	4953	Perugia	London Stansted Apt	2	1330	1500	Boeing 737 Passenger	1
FR	4953	Perugia	London Stansted Apt	1 345 7	1130	1300	Boeing 737 Passenger	5
FR	4966	London Stansted Apt	Lamezia Terme	4	0915	1315	Boeing 737 Passenger	1
FR	4966	London Stansted Apt	Lamezia Terme	3	0955	1355	Boeing 737 Passenger	1
FR	4966	London Stansted Apt	Lamezia Terme	2 6	0630	1030	Boeing 737 Passenger	2
FR	4967	Lamezia Terme	London Stansted Apt	4	1340	1550	Boeing 737 Passenger	1
FR	4967	Lamezia Terme	London Stansted Apt	3	0720	0930	Boeing 737 Passenger	1
FR	4967	Lamezia Terme	London Stansted Apt	2 6	1055	1305	Boeing 737 Passenger	2
FR	4976	London Stansted Apt	Brindisi	234 67	0620	1010	Boeing 737 Passenger	5
FR	4977	Brindisi	London Stansted Apt	7	1045	1250	Boeing 737 Passenger	1
FR	4977	Brindisi	London Stansted Apt	234 6	1035	1240	Boeing 737 Passenger	4
FR	4999	Shannon	Nottingham East Midlands Airport	5	2110	2215	Boeing 737 Passenger	1
FR	4999	Shannon	Nottingham East Midlands Airport	1	0820	0925	Boeing 737 Passenger	1
FR	504	Dublin (IE)	Bristol	23456	0635	0740	Boeing 737 Passenger	5
FR	504	Dublin (IE)	Bristol	1	0650	0755	Boeing 737 Passenger	1
FR	5041	Leeds Bradford	Bratislava	5	1630	1955	Boeing 737 Passenger	1
FR	5041	Leeds Bradford	Bratislava	1	1655	2020	Boeing 737 Passenger	1
FR	5042	Bratislava	Leeds Bradford	5	2020	2145	Boeing 737 Passenger	1
FR	5042	Bratislava	Leeds Bradford	1	2045	2210	Boeing 737 Passenger	1
FR	5043	Leeds Bradford	Vilnius	5	0635	1120	Boeing 737 Passenger	1
FR	5043	Leeds Bradford	Vilnius	1	0825	1310	Boeing 737 Passenger	1
FR	5044	Vilnius	Leeds Bradford	5	1145	1230	Boeing 737 Passenger	1
FR	5044	Vilnius	Leeds Bradford	1	0715	0800	Boeing 737 Passenger	1
FR	505	Bristol	Dublin (IE)	23456	0805	0905	Boeing 737 Passenger	5
FR	505	Bristol	Dublin (IE)	1	0820	0920	Boeing 737 Passenger	1
FR	506	Dublin (IE)	Bristol	7	1445	1550	Boeing 737 Passenger	1
FR	506	Dublin (IE)	Bristol	6	1505	1610	Boeing 737 Passenger	1
FR	506	Dublin (IE)	Bristol	2	1345	1450	Boeing 737 Passenger	1
FR	506	Dublin (IE)	Bristol	1 345	1455	1600	Boeing 737 Passenger	4
FR	5062	London Stansted Apt	Poznan Lawica Apt	5	0820	1125	Boeing 737 Passenger	1
FR	5062	London Stansted Apt	Poznan Lawica Apt	1	1950	2255	Boeing 737 Passenger	1
FR	5063	Poznan Lawica Apt	London Stansted Apt	5	1150	1255	Boeing 737 Passenger	1
FR	5063	Poznan Lawica Apt	London Stansted Apt	1	1820	1925	Boeing 737 Passenger	1
FR	507	Bristol	Dublin (IE)	7	1615	1715	Boeing 737 Passenger	1
FR	507	Bristol	Dublin (IE)	6	1635	1735	Boeing 737 Passenger	1
FR	507	Bristol	Dublin (IE)	2	1535	1635	Boeing 737 Passenger	1
FR	507	Bristol	Dublin (IE)	1 345	1625	1725	Boeing 737 Passenger	4
FR	508	Dublin (IE)	Bristol	1234567	1940	2045	Boeing 737 Passenger	7
FR	509	Bristol	Dublin (IE)	1234567	2110	2210	Boeing 737 Passenger	7
FR	514	London Stansted Apt	Dinard/St-Malo	7	0715	0930	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	6	0935	1150	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	5	1230	1445	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	4	1330	1545	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	3	1500	1715	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	2	0950	1205	Boeing 737 Passenger	1
FR	514	London Stansted Apt	Dinard/St-Malo	1	1140	1355	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	7	0955	1005	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	6	1220	1230	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	5	1510	1520	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	4	1610	1620	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	3	1740	1750	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	2	1230	1240	Boeing 737 Passenger	1
FR	515	Dinard/St-Malo	London Stansted Apt	1	1420	1430	Boeing 737 Passenger	1
FR	5158	Malaga Airport	Newcastle	4 67	0655	0905	Boeing 737 Passenger	3
FR	5158	Malaga Airport	Newcastle	2	0650	0900	Boeing 737 Passenger	1
FR	5159	Newcastle	Malaga Airport	4 67	0930	1340	Boeing 737 Passenger	3
FR	5159	Newcastle	Malaga Airport	2	0925	1335	Boeing 737 Passenger	1
FR	5160	Edinburgh	Sofia	7	1830	0010	Boeing 737 Passenger	1
FR	5160	Edinburgh	Sofia	4	0715	1255	Boeing 737 Passenger	1
FR	5161	Sofia	Edinburgh	7	1620	1805	Boeing 737 Passenger	1
FR	5161	Sofia	Edinburgh	4	1320	1505	Boeing 737 Passenger	1
FR	5170	Manchester (GB)	Poitiers Biard Airport	7	1910	2145	Boeing 737 Passenger	1
FR	5170	Manchester (GB)	Poitiers Biard Airport	3	1430	1705	Boeing 737 Passenger	1
FR	5171	Poitiers Biard Airport	Manchester (GB)	7	2210	2255	Boeing 737 Passenger	1
FR	5171	Poitiers Biard Airport	Manchester (GB)	3	1730	1815	Boeing 737 Passenger	1

FR	5172	London Stansted Apt	Billund	123456	0720	0955	Boeing 737 Passenger	6
FR	5173	Billund	London Stansted Apt	123456	1020	1055	Boeing 737 Passenger	6
FR	5178	London Stansted Apt	Billund	1234567	1935	2210	Boeing 737 Passenger	7
FR	5179	Billund	London Stansted Apt	3	2245	2320	Boeing 737 Passenger	1
FR	5179	Billund	London Stansted Apt	12 4567	2235	2310	Boeing 737 Passenger	6
FR	52	London Stansted Apt	Stockholm Skavsta Airport	7	0820	1135	Boeing 737 Passenger	1
FR	52	London Stansted Apt	Stockholm Skavsta Airport	5	0840	1155	Boeing 737 Passenger	1
FR	52	London Stansted Apt	Stockholm Skavsta Airport	1234 6	0830	1145	Boeing 737 Passenger	5
FR	5209	Manchester (GB)	Malta	3 5	1920	2340	Boeing 737 Passenger	2
FR	5209	Manchester (GB)	Malta	1	0625	1045	Boeing 737 Passenger	1
FR	5210	Malta	Manchester (GB)	3 5	1615	1855	Boeing 737 Passenger	2
FR	5210	Malta	Manchester (GB)	1	1120	1400	Boeing 737 Passenger	1
FR	522	London Stansted Apt	Lourdes/Tarbes	6	0745	1045	Boeing 737 Passenger	1
FR	522	London Stansted Apt	Lourdes/Tarbes	3 5	1410	1710	Boeing 737 Passenger	2
FR	522	London Stansted Apt	Lourdes/Tarbes	1	1355	1655	Boeing 737 Passenger	1
FR	523	Lourdes/Tarbes	London Stansted Apt	6	1110	1210	Boeing 737 Passenger	1
FR	523	Lourdes/Tarbes	London Stansted Apt	1 3 5	1735	1835	Boeing 737 Passenger	3
FR	53	Stockholm Skavsta Airport	London Stansted Apt	2 5	0645	0805	Boeing 737 Passenger	2
FR	53	Stockholm Skavsta Airport	London Stansted Apt	1 34 67	0635	0755	Boeing 737 Passenger	5
FR	534	Dublin (IE)	Nottingham East Midlands Airport	1234567	0805	0910	Boeing 737 Passenger	7
FR	5341	Bristol	Bucharest Henri Coanda Apt	6	1700	2225	Boeing 737 Passenger	1
FR	5341	Bristol	Bucharest Henri Coanda Apt	2	1600	2125	Boeing 737 Passenger	1
FR	5342	Bucharest Henri Coanda Apt	Bristol	6	1500	1635	Boeing 737 Passenger	1
FR	5342	Bucharest Henri Coanda Apt	Bristol	2	2150	2325	Boeing 737 Passenger	1
FR	535	Nottingham East Midlands Airport	Dublin (IE)	1234567	0630	0740	Boeing 737 Passenger	7
FR	536	Dublin (IE)	Nottingham East Midlands Airport	1 45 7	1940	2045	Boeing 737 Passenger	4
FR	537	Nottingham East Midlands Airport	Dublin (IE)	45 7	2110	2215	Boeing 737 Passenger	3
FR	537	Nottingham East Midlands Airport	Dublin (IE)	1	2125	2230	Boeing 737 Passenger	1
FR	552	Dublin (IE)	Manchester (GB)	1234567	0630	0735	Boeing 737 Passenger	7
FR	5523	Bournemouth	Krakow John Paul II - Balice	5	2040	2359	Boeing 737 Passenger	1
FR	5523	Bournemouth	Krakow John Paul II - Balice	1	1340	1700	Boeing 737 Passenger	1
FR	5524	Krakow John Paul II - Balice	Bournemouth	5	1840	2015	Boeing 737 Passenger	1
FR	5524	Krakow John Paul II - Balice	Bournemouth	1	1140	1315	Boeing 737 Passenger	1
FR	553	Manchester (GB)	Dublin (IE)	1234567	0800	0900	Boeing 737 Passenger	7
FR	554	Dublin (IE)	Manchester (GB)	1234567	1035	1135	Boeing 737 Passenger	7
FR	555	Manchester (GB)	Dublin (IE)	1234567	1200	1300	Boeing 737 Passenger	7
FR	556	Dublin (IE)	Manchester (GB)	1 5	1640	1745	Boeing 737 Passenger	2
FR	557	Manchester (GB)	Dublin (IE)	1 5	1810	1910	Boeing 737 Passenger	2
FR	5578	Alicante Airport	Edinburgh	7	1215	1420	Boeing 737 Passenger	1
FR	5578	Alicante Airport	Edinburgh	12345	2140	2345	Boeing 737 Passenger	5
FR	5579	Edinburgh	Alicante Airport	7	0730	1140	Boeing 737 Passenger	1
FR	5579	Edinburgh	Alicante Airport	12345	1655	2105	Boeing 737 Passenger	5
FR	558	Dublin (IE)	Manchester (GB)	6	2040	2140	Boeing 737 Passenger	1
FR	558	Dublin (IE)	Manchester (GB)	12345 7	2030	2130	Boeing 737 Passenger	6
FR	559	Manchester (GB)	Dublin (IE)	6	2205	2300	Boeing 737 Passenger	1
FR	559	Manchester (GB)	Dublin (IE)	12345 7	2200	2300	Boeing 737 Passenger	6
FR	5592	Shannon	Bristol	6	2150	2305	Boeing 737 Passenger	1
FR	5592	Shannon	Bristol	2	1515	1630	Boeing 737 Passenger	1
FR	5593	Bristol	Shannon	6	2010	2125	Boeing 737 Passenger	1
FR	5593	Bristol	Shannon	2	1335	1450	Boeing 737 Passenger	1
FR	561	Manchester (GB)	Dublin (IE)	1234567	1515	1615	Boeing 737 Passenger	7
FR	562	Dublin (IE)	Manchester (GB)	1234567	1350	1450	Boeing 737 Passenger	7
FR	567	London Stansted Apt	Alicante Airport	5	1615	1955	Boeing 737 Passenger	1
FR	568	Alicante Airport	London Stansted Apt	5	2030	2215	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	7	1615	1820	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	6	1425	1630	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	5	1535	1740	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	4	1305	1510	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	3	1355	1600	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	2	1330	1535	Boeing 737 Passenger	1
FR	5681	London Stansted Apt	Eindhoven Airport	1	1555	1800	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	7	1845	1855	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	6	1655	1705	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	5	1805	1815	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	4	1535	1545	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	3	1625	1635	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	2	1600	1610	Boeing 737 Passenger	1
FR	5682	Eindhoven Airport	London Stansted Apt	1	1825	1835	Boeing 737 Passenger	1
FR	5771	Glasgow International Airport	Dublin (IE)	5	0845	0945	Boeing 737 Passenger	1
FR	5771	Glasgow International Airport	Dublin (IE)	1234 67	0840	0940	Boeing 737 Passenger	6

FR	5772	Dublin (IE)	Glasgow International Airport	5	0720	0820	Boeing 737 Passenger	1
FR	5772	Dublin (IE)	Glasgow International Airport	1234 67	0715	0815	Boeing 737 Passenger	6
FR	5773	Glasgow International Airport	Dublin (IE)	12345 7	1525	1625	Boeing 737 Passenger	5
FR	5774	Dublin (IE)	Glasgow International Airport	12345 7	1400	1500	Boeing 737 Passenger	6
FR	5775	Glasgow International Airport	Dublin (IE)	1234567	2155	2255	Boeing 737 Passenger	6
FR	5776	Dublin (IE)	Glasgow International Airport	1234567	2030	2130	Boeing 737 Passenger	7
FR	58	London Stansted Apt	Stockholm Skavsta Airport	7	1710	2025	Boeing 737 Passenger	1
FR	58	London Stansted Apt	Stockholm Skavsta Airport	456	1750	2105	Boeing 737 Passenger	3
FR	58	London Stansted Apt	Stockholm Skavsta Airport	1	1740	2055	Boeing 737 Passenger	1
FR	5812	Bournemouth	Paphos	6	0630	1315	Boeing 737 Passenger	1
FR	5812	Bournemouth	Paphos	2	1710	0005	Boeing 737 Passenger	1
FR	5813	Paphos	Bournemouth	6	1340	1625	Boeing 737 Passenger	1
FR	5813	Paphos	Bournemouth	2	1350	1645	Boeing 737 Passenger	1
FR	5833	Milan Bergamo/orio al Serio Apt	Edinburgh	5	1035	1200	Boeing 737 Passenger	1
FR	5833	Milan Bergamo/orio al Serio Apt	Edinburgh	2	1815	1950	Boeing 737 Passenger	1
FR	5833	Milan Bergamo/orio al Serio Apt	Edinburgh	1 3	1750	1925	Boeing 737 Passenger	2
FR	5834	Edinburgh	Milan Bergamo/orio al Serio Apt	5	1225	1550	Boeing 737 Passenger	1
FR	5834	Edinburgh	Milan Bergamo/orio al Serio Apt	2	2015	2340	Boeing 737 Passenger	1
FR	5834	Edinburgh	Milan Bergamo/orio al Serio Apt	1 3	1950	2315	Boeing 737 Passenger	2
FR	584	London Stansted Apt	Pisa	1234567	0850	1205	Boeing 737 Passenger	7
FR	585	Pisa	London Stansted Apt	1234567	0640	0805	Boeing 737 Passenger	7
FR	586	London Stansted Apt	Pisa	7	1315	1630	Boeing 737 Passenger	1
FR	586	London Stansted Apt	Pisa	123456	1445	1800	Boeing 737 Passenger	6
FR	587	Pisa	London Stansted Apt	7	1125	1250	Boeing 737 Passenger	1
FR	587	Pisa	London Stansted Apt	123456	1255	1420	Boeing 737 Passenger	6
FR	588	London Stansted Apt	Pisa	6	1955	2310	Boeing 737 Passenger	1
FR	588	London Stansted Apt	Pisa	4	2015	2330	Boeing 737 Passenger	1
FR	588	London Stansted Apt	Pisa	123 5 7	2005	2320	Boeing 737 Passenger	5
FR	5880	Belfast International Apt	Manchester (GB)	67	1335	1440	Boeing 737 Passenger	2
FR	5880	Belfast International Apt	Manchester (GB)	4	1225	1330	Boeing 737 Passenger	1
FR	5880	Belfast International Apt	Manchester (GB)	3	1220	1325	Boeing 737 Passenger	1
FR	5881	Manchester (GB)	Belfast International Apt	67	1505	1610	Boeing 737 Passenger	2
FR	5881	Manchester (GB)	Belfast International Apt	4	1400	1505	Boeing 737 Passenger	1
FR	5881	Manchester (GB)	Belfast International Apt	3	1350	1455	Boeing 737 Passenger	1
FR	589	Pisa	London Stansted Apt	345 7	1815	1940	Boeing 737 Passenger	4
FR	589	Pisa	London Stansted Apt	12 6	1800	1925	Boeing 737 Passenger	3
FR	59	Stockholm Skavsta Airport	London Stansted Apt	7	2050	2210	Boeing 737 Passenger	1
FR	59	Stockholm Skavsta Airport	London Stansted Apt	456	2130	2250	Boeing 737 Passenger	3
FR	59	Stockholm Skavsta Airport	London Stansted Apt	1	2120	2240	Boeing 737 Passenger	1
FR	5942	Bournemouth	Palma de Mallorca	7	0840	1155	Boeing 737 Passenger	1
FR	5942	Bournemouth	Palma de Mallorca	345	0855	1210	Boeing 737 Passenger	3
FR	5942	Bournemouth	Palma de Mallorca	2 6	1125	1440	Boeing 737 Passenger	2
FR	5942	Bournemouth	Palma de Mallorca	1	0900	1215	Boeing 737 Passenger	1
FR	5943	Palma de Mallorca	Bournemouth	7	0655	0810	Boeing 737 Passenger	1
FR	5943	Palma de Mallorca	Bournemouth	2 6	0940	1100	Boeing 737 Passenger	2
FR	5943	Palma de Mallorca	Bournemouth	1 345	0715	0830	Boeing 737 Passenger	4
FR	5944	Bournemouth	Malaga Airport	56	0845	1220	Boeing 737 Passenger	2
FR	5944	Bournemouth	Malaga Airport	4	1545	1920	Boeing 737 Passenger	1
FR	5944	Bournemouth	Malaga Airport	3 7	0905	1240	Boeing 737 Passenger	2
FR	5944	Bournemouth	Malaga Airport	2	0835	1210	Boeing 737 Passenger	1
FR	5945	Malaga Airport	Bournemouth	56	0640	0820	Boeing 737 Passenger	2
FR	5945	Malaga Airport	Bournemouth	4	1955	2135	Boeing 737 Passenger	1
FR	5945	Malaga Airport	Bournemouth	3 7	0700	0840	Boeing 737 Passenger	2
FR	5945	Malaga Airport	Bournemouth	2	0630	0810	Boeing 737 Passenger	1
FR	5946	Bournemouth	Corvera	2	1655	2025	Boeing 737 Passenger	1
FR	5946	Bournemouth	Corvera	1 3 5	0630	1000	Boeing 737 Passenger	3
FR	5947	Corvera	Bournemouth	2	2130	2255	Boeing 737 Passenger	1
FR	5947	Corvera	Bournemouth	1 3 5	1035	1200	Boeing 737 Passenger	3
FR	5953	Bournemouth	Faro	7	1030	1310	Boeing 737 Passenger	1
FR	5953	Bournemouth	Faro	1 3 5	1705	1945	Boeing 737 Passenger	3
FR	5954	Faro	Bournemouth	7	0730	1005	Boeing 737 Passenger	1
FR	5954	Faro	Bournemouth	1 3 5	1405	1640	Boeing 737 Passenger	3
FR	5991	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	7	1135	1305	Boeing 737 Passenger	1
FR	5991	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	123456	1035	1205	Boeing 737 Passenger	6
FR	5992	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	7	0725	1100	Boeing 737 Passenger	1
FR	5992	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	123456	0625	1000	Boeing 737 Passenger	6
FR	5993	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	234567	0615	0745	Boeing 737 Passenger	6
FR	5993	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	1	0630	0800	Boeing 737 Passenger	1
FR	5994	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	234567	0825	1200	Boeing 737 Passenger	6
FR	5994	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	1	0840	1215	Boeing 737 Passenger	1

FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	7	1335	1505	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	6	1610	1740	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	5	1650	1820	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	4	1540	1710	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	3	1605	1735	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	2	1310	1440	Boeing 737 Passenger	1
FR	5995	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	1	1710	1840	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	7	1530	1905	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	6	1140	1515	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	5	1240	1615	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	4	1130	1505	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	3	1155	1530	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	2	0900	1235	Boeing 737 Passenger	1
FR	5996	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	1	1300	1635	Boeing 737 Passenger	1
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	7	1815	1945	Boeing 737 Passenger	1
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	56	2210	2340	Boeing 737 Passenger	2
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	4	2230	2359	Boeing 737 Passenger	1
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	3	2140	2310	Boeing 737 Passenger	1
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	2	2235	0005	Boeing 737 Passenger	1
FR	5997	Madrid Adolfo Suarez-Barajas Apt	London Stansted Apt	1	2055	2225	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	7	2015	2350	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	6	1800	2135	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	5	1755	2130	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	4	1815	2145	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	3	1730	2105	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	2	1810	2145	Boeing 737 Passenger	1
FR	5998	London Stansted Apt	Madrid Adolfo Suarez-Barajas Apt	1	1645	2020	Boeing 737 Passenger	1
FR	6022	Bristol	Beziers	3	0930	1225	Boeing 737 Passenger	1
FR	6022	Bristol	Beziers	1 5	1300	1555	Boeing 737 Passenger	2
FR	6023	Beziers	Bristol	3	1250	1350	Boeing 737 Passenger	1
FR	6023	Beziers	Bristol	1 5	1620	1720	Boeing 737 Passenger	2
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	7	0740	1110	Boeing 737 Passenger	1
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	6	0855	1225	Boeing 737 Passenger	1
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	45	0700	1030	Boeing 737 Passenger	2
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	3	0920	1250	Boeing 737 Passenger	1
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	2	0815	1145	Boeing 737 Passenger	1
FR	6031	Nottingham East Midlands Airport	Palma de Mallorca	1	0805	1135	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	7	1145	1325	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	6	1330	1505	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	5	1105	1245	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	4	1105	1240	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	3	1325	1505	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	2	1220	1400	Boeing 737 Passenger	1
FR	6032	Palma de Mallorca	Nottingham East Midlands Airport	1	1210	1345	Boeing 737 Passenger	1
FR	6035	London Stansted Apt	Rimini	6	1715	2025	Boeing 737 Passenger	1
FR	6035	London Stansted Apt	Rimini	2	1005	1315	Boeing 737 Passenger	1
FR	6036	Rimini	London Stansted Apt	6	2050	2200	Boeing 737 Passenger	1
FR	6036	Rimini	London Stansted Apt	2	1340	1450	Boeing 737 Passenger	1
FR	6080	London Stansted Apt	Kalamata	6	1245	1820	Boeing 737 Passenger	1
FR	6081	Kalamata	London Stansted Apt	6	1845	2030	Boeing 737 Passenger	1
FR	6153	Glasgow Prestwick Apt	Lanzarote	6	1900	2335	Boeing 737 Passenger	1
FR	6153	Glasgow Prestwick Apt	Lanzarote	2	0640	1115	Boeing 737 Passenger	1
FR	6154	Lanzarote	Glasgow Prestwick Apt	6	1410	1835	Boeing 737 Passenger	1
FR	6154	Lanzarote	Glasgow Prestwick Apt	2	1150	1615	Boeing 737 Passenger	1
FR	6241	Duesseldorf Weeze Airport	Edinburgh	4	1435	1515	Boeing 737 Passenger	1
FR	6241	Duesseldorf Weeze Airport	Edinburgh	2 6	1545	1625	Boeing 737 Passenger	2
FR	6242	Edinburgh	Duesseldorf Weeze Airport	4	1130	1410	Boeing 737 Passenger	1
FR	6242	Edinburgh	Duesseldorf Weeze Airport	2 6	1240	1520	Boeing 737 Passenger	2
FR	6253	Glasgow Prestwick Apt	Gran Canaria	6	1330	1805	Boeing 737 Passenger	1
FR	6253	Glasgow Prestwick Apt	Gran Canaria	2	0700	1135	Boeing 737 Passenger	1
FR	6254	Gran Canaria	Glasgow Prestwick Apt	6	1845	2315	Boeing 737 Passenger	1
FR	6254	Gran Canaria	Glasgow Prestwick Apt	2	1210	1640	Boeing 737 Passenger	1
FR	6266	Edinburgh	Barcelona Apt	7	0700	1050	Boeing 737 Passenger	1
FR	6266	Edinburgh	Barcelona Apt	123456	0630	1020	Boeing 737 Passenger	6
FR	6267	Barcelona Apt	Edinburgh	7	1125	1325	Boeing 737 Passenger	1
FR	6267	Barcelona Apt	Edinburgh	123456	1055	1255	Boeing 737 Passenger	6
FR	6335	Sofia	Birmingham Airport	2 4 6	1645	1810	Boeing 737 Passenger	3
FR	6336	Birmingham Airport	Sofia	2 4 6	1835	2350	Boeing 737 Passenger	3
FR	6337	Sofia	Liverpool	6	0740	0915	Boeing 737 Passenger	1
FR	6337	Sofia	Liverpool	2	1645	1820	Boeing 737 Passenger	1

FR	6338	Liverpool	Sofia	6	0940	1505	Boeing 737 Passenger	1
FR	6338	Liverpool	Sofia	2	1845	0010	Boeing 737 Passenger	1
FR	6339	Edinburgh	Tallinn	7	0715	1200	Boeing 737 Passenger	1
FR	6339	Edinburgh	Tallinn	3	0730	1215	Boeing 737 Passenger	1
FR	6340	Tallinn	Edinburgh	7	1230	1315	Boeing 737 Passenger	1
FR	6340	Tallinn	Edinburgh	3	1240	1325	Boeing 737 Passenger	1
FR	6432	Ibiza	Liverpool	6	1445	1630	Boeing 737 Passenger	1
FR	6432	Ibiza	Liverpool	3	2130	2315	Boeing 737 Passenger	1
FR	6432	Ibiza	Liverpool	1	2040	2225	Boeing 737 Passenger	1
FR	6433	Liverpool	Ibiza	6	1025	1410	Boeing 737 Passenger	1
FR	6433	Liverpool	Ibiza	3	1710	2055	Boeing 737 Passenger	1
FR	6433	Liverpool	Ibiza	1	1620	2005	Boeing 737 Passenger	1
FR	6460	Lisbon	Edinburgh	6	1740	2050	Boeing 737 Passenger	1
FR	6460	Lisbon	Edinburgh	2	1155	1505	Boeing 737 Passenger	1
FR	6461	Edinburgh	Lisbon	6	1405	1715	Boeing 737 Passenger	1
FR	6461	Edinburgh	Lisbon	2	0745	1055	Boeing 737 Passenger	1
FR	651	Glasgow Prestwick Apt	Faro	7	0910	1220	Boeing 737 Passenger	1
FR	651	Glasgow Prestwick Apt	Faro	6	0830	1140	Boeing 737 Passenger	1
FR	651	Glasgow Prestwick Apt	Faro	3	0820	1130	Boeing 737 Passenger	1
FR	651	Glasgow Prestwick Apt	Faro	1 5	0720	1030	Boeing 737 Passenger	2
FR	652	Faro	Glasgow Prestwick Apt	7	1300	1605	Boeing 737 Passenger	1
FR	652	Faro	Glasgow Prestwick Apt	6	1205	1510	Boeing 737 Passenger	1
FR	652	Faro	Glasgow Prestwick Apt	3	1155	1500	Boeing 737 Passenger	1
FR	652	Faro	Glasgow Prestwick Apt	1 5	1055	1400	Boeing 737 Passenger	2
FR	653	Glasgow Prestwick Apt	Tenerife Sur Apt	6	1845	2325	Boeing 737 Passenger	1
FR	653	Glasgow Prestwick Apt	Tenerife Sur Apt	1234 7	0610	1050	Boeing 737 Passenger	5
FR	654	Tenerife Sur Apt	Glasgow Prestwick Apt	7	1150	1620	Boeing 737 Passenger	1
FR	654	Tenerife Sur Apt	Glasgow Prestwick Apt	6	1350	1820	Boeing 737 Passenger	1
FR	654	Tenerife Sur Apt	Glasgow Prestwick Apt	1234	1140	1610	Boeing 737 Passenger	4
FR	6541	London Stansted Apt	Marseille Provence Apt	123456	0800	1105	Boeing 737 Passenger	6
FR	6542	Marseille Provence Apt	London Stansted Apt	123456	0630	0735	Boeing 737 Passenger	6
FR	6543	London Stansted Apt	Marseille Provence Apt	7	1740	2045	Boeing 737 Passenger	1
FR	6543	London Stansted Apt	Marseille Provence Apt	45	1930	2235	Boeing 737 Passenger	2
FR	6543	London Stansted Apt	Marseille Provence Apt	2 6	1940	2245	Boeing 737 Passenger	2
FR	6543	London Stansted Apt	Marseille Provence Apt	1	2000	2305	Boeing 737 Passenger	1
FR	6544	Marseille Provence Apt	London Stansted Apt	7	2110	2215	Boeing 737 Passenger	1
FR	6544	Marseille Provence Apt	London Stansted Apt	5	1800	1905	Boeing 737 Passenger	1
FR	6544	Marseille Provence Apt	London Stansted Apt	4	1755	1900	Boeing 737 Passenger	1
FR	6544	Marseille Provence Apt	London Stansted Apt	12 6	1810	1915	Boeing 737 Passenger	3
FR	655	Glasgow Prestwick Apt	Malaga Airport	6	1600	2010	Boeing 737 Passenger	1
FR	655	Glasgow Prestwick Apt	Malaga Airport	4	0605	1015	Boeing 737 Passenger	1
FR	655	Glasgow Prestwick Apt	Malaga Airport	3	1015	1425	Boeing 737 Passenger	1
FR	655	Glasgow Prestwick Apt	Malaga Airport	2	1750	2200	Boeing 737 Passenger	1
FR	655	Glasgow Prestwick Apt	Malaga Airport	1 5	0700	1110	Boeing 737 Passenger	2
FR	656	Malaga Airport	Glasgow Prestwick Apt	6	2100	2320	Boeing 737 Passenger	1
FR	656	Malaga Airport	Glasgow Prestwick Apt	5	1200	1420	Boeing 737 Passenger	1
FR	656	Malaga Airport	Glasgow Prestwick Apt	4	1050	1310	Boeing 737 Passenger	1
FR	656	Malaga Airport	Glasgow Prestwick Apt	3	0730	0950	Boeing 737 Passenger	1
FR	656	Malaga Airport	Glasgow Prestwick Apt	2	1505	1725	Boeing 737 Passenger	1
FR	656	Malaga Airport	Glasgow Prestwick Apt	1	1145	1405	Boeing 737 Passenger	1
FR	6571	Nottingham East Midlands Airport	Venice Treviso/Sant'Angelo Apt	7	1350	1700	Boeing 737 Passenger	1
FR	6571	Nottingham East Midlands Airport	Venice Treviso/Sant'Angelo Apt	5	1150	1500	Boeing 737 Passenger	1
FR	6571	Nottingham East Midlands Airport	Venice Treviso/Sant'Angelo Apt	1	1245	1555	Boeing 737 Passenger	1
FR	6572	Venice Treviso/Sant'Angelo Apt	Nottingham East Midlands Airport	7	1725	1840	Boeing 737 Passenger	1
FR	6572	Venice Treviso/Sant'Angelo Apt	Nottingham East Midlands Airport	5	1525	1640	Boeing 737 Passenger	1
FR	6572	Venice Treviso/Sant'Angelo Apt	Nottingham East Midlands Airport	1	1620	1735	Boeing 737 Passenger	1
FR	6601	Nottingham East Midlands Airport	Palma de Mallorca	7	1655	2025	Boeing 737 Passenger	1
FR	6601	Nottingham East Midlands Airport	Palma de Mallorca	6	1620	1950	Boeing 737 Passenger	1
FR	6601	Nottingham East Midlands Airport	Palma de Mallorca	12345	1710	2040	Boeing 737 Passenger	5
FR	6602	Palma de Mallorca	Nottingham East Midlands Airport	7	2105	2245	Boeing 737 Passenger	1
FR	6602	Palma de Mallorca	Nottingham East Midlands Airport	6	2025	2205	Boeing 737 Passenger	1
FR	6602	Palma de Mallorca	Nottingham East Midlands Airport	12345	2115	2255	Boeing 737 Passenger	5
FR	6603	Edinburgh	Porto	6	1750	2035	Boeing 737 Passenger	1
FR	6603	Edinburgh	Porto	2	1740	2025	Boeing 737 Passenger	1
FR	6604	Ibiza	Edinburgh	7	1950	2150	Boeing 737 Passenger	1
FR	6604	Ibiza	Edinburgh	3	1535	1735	Boeing 737 Passenger	1
FR	6605	Edinburgh	Ibiza	7	1515	1915	Boeing 737 Passenger	1
FR	6605	Edinburgh	Ibiza	3	1100	1500	Boeing 737 Passenger	1
FR	6606	Porto	Edinburgh	6	2100	2345	Boeing 737 Passenger	1
FR	6606	Porto	Edinburgh	2	2050	2335	Boeing 737 Passenger	1

FR	6610	Kefallinia	London Stansted Apt	5	2040	2205	Boeing 737 Passenger	1
FR	6610	Kefallinia	London Stansted Apt	1	2230	2355	Boeing 737 Passenger	1
FR	6611	London Stansted Apt	Kefallinia	5	1450	2015	Boeing 737 Passenger	1
FR	6611	London Stansted Apt	Kefallinia	1	1640	2205	Boeing 737 Passenger	1
FR	6618	Edinburgh	Poznan Lawica Apt	5	0825	1150	Boeing 737 Passenger	1
FR	6618	Edinburgh	Poznan Lawica Apt	1	1755	2120	Boeing 737 Passenger	1
FR	6619	Poznan Lawica Apt	Edinburgh	5	0635	0800	Boeing 737 Passenger	1
FR	6619	Poznan Lawica Apt	Edinburgh	1	2145	2310	Boeing 737 Passenger	1
FR	662	Dublin (IE)	Birmingham Airport	7	0640	0750	Boeing 737 Passenger	1
FR	662	Dublin (IE)	Birmingham Airport	123456	0625	0735	Boeing 737 Passenger	6
FR	6621	Edinburgh	Tenerife Sur Apt	1 3 56	1345	1830	Boeing 737 Passenger	4
FR	6622	Tenerife Sur Apt	Edinburgh	1 3 56	1905	2340	Boeing 737 Passenger	4
FR	6624	Edinburgh	Krakow John Paul II - Balice	6	1745	2130	Boeing 737 Passenger	1
FR	6624	Edinburgh	Krakow John Paul II - Balice	2 4	1605	1950	Boeing 737 Passenger	2
FR	6624	Edinburgh	Krakow John Paul II - Balice	1	1735	2120	Boeing 737 Passenger	1
FR	6625	Krakow John Paul II - Balice	Edinburgh	6	2155	2340	Boeing 737 Passenger	1
FR	6625	Krakow John Paul II - Balice	Edinburgh	2 4	2015	2200	Boeing 737 Passenger	2
FR	6625	Krakow John Paul II - Balice	Edinburgh	1	2145	2330	Boeing 737 Passenger	1
FR	6626	Edinburgh	Lanzarote	1 5	0610	1045	Boeing 737 Passenger	2
FR	6627	Lanzarote	Edinburgh	1 5	1120	1550	Boeing 737 Passenger	2
FR	663	Birmingham Airport	Dublin (IE)	7	0815	0925	Boeing 737 Passenger	1
FR	663	Birmingham Airport	Dublin (IE)	123456	0800	0910	Boeing 737 Passenger	6
FR	664	Dublin (IE)	Birmingham Airport	6	1135	1240	Boeing 737 Passenger	1
FR	664	Dublin (IE)	Birmingham Airport	5	1040	1145	Boeing 737 Passenger	1
FR	664	Dublin (IE)	Birmingham Airport	3	1035	1140	Boeing 737 Passenger	1
FR	664	Dublin (IE)	Birmingham Airport	12 4 7	1045	1150	Boeing 737 Passenger	4
FR	6642	Edinburgh	Bratislava	7	0640	1020	Boeing 737 Passenger	1
FR	6642	Edinburgh	Bratislava	4	2040	0020	Boeing 737 Passenger	1
FR	6643	Bratislava	Edinburgh	7	1045	1225	Boeing 737 Passenger	1
FR	6643	Bratislava	Edinburgh	4	1835	2015	Boeing 737 Passenger	1
FR	665	Birmingham Airport	Dublin (IE)	6	1305	1415	Boeing 737 Passenger	1
FR	665	Birmingham Airport	Dublin (IE)	5	1210	1320	Boeing 737 Passenger	1
FR	665	Birmingham Airport	Dublin (IE)	3	1205	1315	Boeing 737 Passenger	1
FR	665	Birmingham Airport	Dublin (IE)	12 4 7	1215	1325	Boeing 737 Passenger	4
FR	6652	Edinburgh	Malaga Airport	1234567	1640	2100	Boeing 737 Passenger	7
FR	6653	Malaga Airport	Edinburgh	1234567	2135	2355	Boeing 737 Passenger	7
FR	6654	Edinburgh	Bordeaux Merignac Apt	4	0850	1210	Boeing 737 Passenger	1
FR	6654	Edinburgh	Bordeaux Merignac Apt	2 6	0715	1035	Boeing 737 Passenger	2
FR	6655	Bordeaux Merignac Apt	Edinburgh	4	0710	0825	Boeing 737 Passenger	1
FR	6655	Bordeaux Merignac Apt	Edinburgh	2 6	1100	1215	Boeing 737 Passenger	2
FR	6656	Edinburgh	Palma de Mallorca	7	0715	1115	Boeing 737 Passenger	1
FR	6656	Edinburgh	Palma de Mallorca	6	0745	1145	Boeing 737 Passenger	1
FR	6656	Edinburgh	Palma de Mallorca	2	1920	2320	Boeing 737 Passenger	1
FR	6656	Edinburgh	Palma de Mallorca	1 345	0735	1135	Boeing 737 Passenger	4
FR	6657	Palma de Mallorca	Edinburgh	7	1150	1400	Boeing 737 Passenger	1
FR	6657	Palma de Mallorca	Edinburgh	6	1300	1510	Boeing 737 Passenger	1
FR	6657	Palma de Mallorca	Edinburgh	2	1645	1855	Boeing 737 Passenger	1
FR	6657	Palma de Mallorca	Edinburgh	1 345	1210	1420	Boeing 737 Passenger	4
FR	666	Dublin (IE)	Birmingham Airport	2 5 7	2035	2140	Boeing 737 Passenger	3
FR	666	Dublin (IE)	Birmingham Airport	1 34	2045	2150	Boeing 737 Passenger	3
FR	667	Birmingham Airport	Dublin (IE)	2 5 7	1900	2010	Boeing 737 Passenger	3
FR	667	Birmingham Airport	Dublin (IE)	1 34	1910	2020	Boeing 737 Passenger	3
FR	6673	Liverpool	Knock	7	1150	1255	Boeing 737 Passenger	1
FR	6673	Liverpool	Knock	56	1410	1515	Boeing 737 Passenger	2
FR	6673	Liverpool	Knock	2	0815	0920	Boeing 737 Passenger	1
FR	6673	Liverpool	Knock	1	1335	1440	Boeing 737 Passenger	1
FR	6674	Knock	Liverpool	7	1320	1425	Boeing 737 Passenger	1
FR	6674	Knock	Liverpool	56	1540	1645	Boeing 737 Passenger	2
FR	6674	Knock	Liverpool	2	0945	1050	Boeing 737 Passenger	1
FR	6674	Knock	Liverpool	1	1505	1610	Boeing 737 Passenger	1
FR	668	Dublin (IE)	Birmingham Airport	2345 7	2155	2300	Boeing 737 Passenger	5
FR	668	Dublin (IE)	Birmingham Airport	1 6	2225	2330	Boeing 737 Passenger	2
FR	6681	Edinburgh	Rome Ciampino Apt	7	0635	1030	Boeing 737 Passenger	1
FR	6681	Edinburgh	Rome Ciampino Apt	6	0645	1040	Boeing 737 Passenger	1
FR	6681	Edinburgh	Rome Ciampino Apt	5	0915	1310	Boeing 737 Passenger	1
FR	6681	Edinburgh	Rome Ciampino Apt	3	0625	1020	Boeing 737 Passenger	1
FR	6681	Edinburgh	Rome Ciampino Apt	1	0615	1010	Boeing 737 Passenger	1
FR	6682	Rome Ciampino Apt	Edinburgh	7	1055	1310	Boeing 737 Passenger	1
FR	6682	Rome Ciampino Apt	Edinburgh	6	1105	1315	Boeing 737 Passenger	1
FR	6682	Rome Ciampino Apt	Edinburgh	5	0635	0850	Boeing 737 Passenger	1

FR	6682	Rome Ciampino Apt	Edinburgh	3	1045	1300	Boeing 737 Passenger	1
FR	6682	Rome Ciampino Apt	Edinburgh	1	1035	1250	Boeing 737 Passenger	1
FR	6689	Sevilla Airport	Bristol	6	1715	1855	Boeing 737 Passenger	1
FR	6689	Sevilla Airport	Bristol	2	1130	1310	Boeing 737 Passenger	1
FR	669	Birmingham Airport	Dublin (IE)	2345 7	2025	2130	Boeing 737 Passenger	5
FR	669	Birmingham Airport	Dublin (IE)	1 6	2055	2200	Boeing 737 Passenger	2
FR	6690	Bristol	Sevilla Airport	6	1920	2240	Boeing 737 Passenger	1
FR	6690	Bristol	Sevilla Airport	2	0740	1100	Boeing 737 Passenger	1
FR	6695	Edinburgh	Malta	6	1805	2255	Boeing 737 Passenger	1
FR	6695	Edinburgh	Malta	4	0730	1220	Boeing 737 Passenger	1
FR	6695	Edinburgh	Malta	23	0700	1150	Boeing 737 Passenger	2
FR	6696	Malta	Edinburgh	6	1440	1740	Boeing 737 Passenger	1
FR	6696	Malta	Edinburgh	4	1245	1545	Boeing 737 Passenger	1
FR	6696	Malta	Edinburgh	23	1215	1515	Boeing 737 Passenger	2
FR	6698	Edinburgh	Gran Canaria	6	1400	1850	Boeing 737 Passenger	1
FR	6698	Edinburgh	Gran Canaria	2	1900	2350	Boeing 737 Passenger	1
FR	6699	Gran Canaria	Edinburgh	6	1925	2359	Boeing 737 Passenger	1
FR	6699	Gran Canaria	Edinburgh	2	1400	1835	Boeing 737 Passenger	1
FR	670	Dublin (IE)	Birmingham Airport	1234567	1325	1435	Boeing 737 Passenger	7
FR	671	Birmingham Airport	Dublin (IE)	1234567	1500	1610	Boeing 737 Passenger	7
FR	672	Dublin (IE)	Birmingham Airport	7	1550	1700	Boeing 737 Passenger	1
FR	672	Dublin (IE)	Birmingham Airport	1 5	1615	1725	Boeing 737 Passenger	2
FR	673	Birmingham Airport	Dublin (IE)	7	1725	1835	Boeing 737 Passenger	1
FR	673	Birmingham Airport	Dublin (IE)	1 5	1750	1900	Boeing 737 Passenger	2
FR	6760	Edinburgh	Sevilla Airport	6	0910	1325	Boeing 737 Passenger	1
FR	6760	Edinburgh	Sevilla Airport	2	1810	2225	Boeing 737 Passenger	1
FR	6761	Sevilla Airport	Edinburgh	6	1355	1610	Boeing 737 Passenger	1
FR	6761	Sevilla Airport	Edinburgh	2	1530	1745	Boeing 737 Passenger	1
FR	6762	Bournemouth	Tenerife Sur Apt	2	0710	1120	Boeing 737 Passenger	1
FR	6763	Tenerife Sur Apt	Bournemouth	2	1155	1550	Boeing 737 Passenger	1
FR	6764	Bournemouth	Gran Canaria	6	1030	1435	Boeing 737 Passenger	1
FR	6765	Gran Canaria	Bournemouth	6	0600	1005	Boeing 737 Passenger	1
FR	682	London Stansted Apt	Stockholm Vasteras Apt	7	1640	1955	Boeing 737 Passenger	1
FR	682	London Stansted Apt	Stockholm Vasteras Apt	3	1325	1640	Boeing 737 Passenger	1
FR	682	London Stansted Apt	Stockholm Vasteras Apt	1 5	1140	1455	Boeing 737 Passenger	2
FR	6826	Edinburgh	Faro	7	1955	2315	Boeing 737 Passenger	1
FR	6826	Edinburgh	Faro	5	0840	1200	Boeing 737 Passenger	1
FR	6826	Edinburgh	Faro	3	1600	1920	Boeing 737 Passenger	1
FR	6826	Edinburgh	Faro	1	0635	0955	Boeing 737 Passenger	1
FR	6827	Faro	Edinburgh	7	1610	1930	Boeing 737 Passenger	1
FR	6827	Faro	Edinburgh	5	1225	1545	Boeing 737 Passenger	1
FR	6827	Faro	Edinburgh	3	1945	2305	Boeing 737 Passenger	1
FR	6827	Faro	Edinburgh	1	1020	1340	Boeing 737 Passenger	1
FR	683	Stockholm Vasteras Apt	London Stansted Apt	7	2020	2140	Boeing 737 Passenger	1
FR	683	Stockholm Vasteras Apt	London Stansted Apt	3	1705	1825	Boeing 737 Passenger	1
FR	683	Stockholm Vasteras Apt	London Stansted Apt	1 5	1520	1640	Boeing 737 Passenger	2
FR	6834	Naples Capodichino Apt	Manchester (GB)	6	0600	0805	Boeing 737 Passenger	1
FR	6834	Naples Capodichino Apt	Manchester (GB)	4	0805	1010	Boeing 737 Passenger	1
FR	6834	Naples Capodichino Apt	Manchester (GB)	2	1425	1630	Boeing 737 Passenger	1
FR	6835	Manchester (GB)	Naples Capodichino Apt	6	0830	1225	Boeing 737 Passenger	1
FR	6835	Manchester (GB)	Naples Capodichino Apt	4	1035	1430	Boeing 737 Passenger	1
FR	6835	Manchester (GB)	Naples Capodichino Apt	2	1005	1400	Boeing 737 Passenger	1
FR	691	Glasgow Prestwick Apt	Alicante Airport	5	1520	1920	Boeing 737 Passenger	1
FR	691	Glasgow Prestwick Apt	Alicante Airport	4 7	1655	2055	Boeing 737 Passenger	2
FR	691	Glasgow Prestwick Apt	Alicante Airport	3	1625	2025	Boeing 737 Passenger	1
FR	691	Glasgow Prestwick Apt	Alicante Airport	1	1530	1930	Boeing 737 Passenger	1
FR	692	Alicante Airport	Glasgow Prestwick Apt	7	2130	2340	Boeing 737 Passenger	1
FR	692	Alicante Airport	Glasgow Prestwick Apt	5	1955	2205	Boeing 737 Passenger	1
FR	692	Alicante Airport	Glasgow Prestwick Apt	4	2140	2350	Boeing 737 Passenger	1
FR	692	Alicante Airport	Glasgow Prestwick Apt	3	2100	2310	Boeing 737 Passenger	1
FR	692	Alicante Airport	Glasgow Prestwick Apt	1	2005	2215	Boeing 737 Passenger	1
FR	694	Glasgow Prestwick Apt	Ibiza	3 7	1450	1850	Boeing 737 Passenger	2
FR	695	Ibiza	Glasgow Prestwick Apt	3 7	1925	2130	Boeing 737 Passenger	2
FR	696	Glasgow Prestwick Apt	Palma de Mallorca	6	1500	1850	Boeing 737 Passenger	1
FR	696	Glasgow Prestwick Apt	Palma de Mallorca	345 7	0700	1050	Boeing 737 Passenger	4
FR	696	Glasgow Prestwick Apt	Palma de Mallorca	2	1705	2055	Boeing 737 Passenger	1
FR	697	Palma de Mallorca	Glasgow Prestwick Apt	6	1925	2130	Boeing 737 Passenger	1
FR	697	Palma de Mallorca	Glasgow Prestwick Apt	345 7	1125	1330	Boeing 737 Passenger	4
FR	697	Palma de Mallorca	Glasgow Prestwick Apt	2	2130	2335	Boeing 737 Passenger	1
FR	701	London Stansted Apt	Kerry	3 7	1355	1525	Boeing 737 Passenger	2

FR	701	London Stansted Apt	Kerry	1 45	1410	1540	Boeing 737 Passenger	3
FR	702	Kerry	London Stansted Apt	1 345 7	1605	1735	Boeing 737 Passenger	5
FR	703	Gdansk Lech Walesa	Manchester (GB)	3	1710	1845	Boeing 737 Passenger	1
FR	704	Manchester (GB)	Gdansk Lech Walesa	3	1910	2225	Boeing 737 Passenger	1
FR	7111	Liverpool	Szczecin	7	0645	0950	Boeing 737 Passenger	1
FR	7111	Liverpool	Szczecin	4	0620	0925	Boeing 737 Passenger	1
FR	7112	Szczecin	Liverpool	7	1015	1120	Boeing 737 Passenger	1
FR	7112	Szczecin	Liverpool	4	0950	1055	Boeing 737 Passenger	1
FR	7117	London Stansted Apt	Strasbourg	7	0755	1020	Boeing 737 Passenger	1
FR	7117	London Stansted Apt	Strasbourg	3	1500	1725	Boeing 737 Passenger	1
FR	7118	Strasbourg	London Stansted Apt	7	1045	1110	Boeing 737 Passenger	1
FR	7118	Strasbourg	London Stansted Apt	3	1750	1815	Boeing 737 Passenger	1
FR	712	London Stansted Apt	Aarhus Tirstrup Airport	7	0840	1120	Boeing 737 Passenger	1
FR	712	London Stansted Apt	Aarhus Tirstrup Airport	6	1425	1705	Boeing 737 Passenger	1
FR	712	London Stansted Apt	Aarhus Tirstrup Airport	4	1130	1410	Boeing 737 Passenger	1
FR	712	London Stansted Apt	Aarhus Tirstrup Airport	23 5	1125	1405	Boeing 737 Passenger	3
FR	712	London Stansted Apt	Aarhus Tirstrup Airport	1	1120	1400	Boeing 737 Passenger	1
FR	713	Aarhus Tirstrup Airport	London Stansted Apt	7	1150	1230	Boeing 737 Passenger	1
FR	713	Aarhus Tirstrup Airport	London Stansted Apt	6	1730	1810	Boeing 737 Passenger	1
FR	713	Aarhus Tirstrup Airport	London Stansted Apt	4	1435	1515	Boeing 737 Passenger	1
FR	713	Aarhus Tirstrup Airport	London Stansted Apt	23 5	1430	1510	Boeing 737 Passenger	3
FR	713	Aarhus Tirstrup Airport	London Stansted Apt	1	1425	1505	Boeing 737 Passenger	1
FR	72	London Stansted Apt	Carcassonne	7	1455	1755	Boeing 737 Passenger	1
FR	72	London Stansted Apt	Carcassonne	6	1430	1730	Boeing 737 Passenger	1
FR	72	London Stansted Apt	Carcassonne	2345	1410	1710	Boeing 737 Passenger	4
FR	72	London Stansted Apt	Carcassonne	1	1140	1440	Boeing 737 Passenger	1
FR	7226	Bristol	Krakow John Paul II - Balice	5	0930	1255	Boeing 737 Passenger	1
FR	7226	Bristol	Krakow John Paul II - Balice	3	0850	1215	Boeing 737 Passenger	1
FR	7226	Bristol	Krakow John Paul II - Balice	1	0905	1230	Boeing 737 Passenger	1
FR	7227	Krakow John Paul II - Balice	Bristol	5	0725	0905	Boeing 737 Passenger	1
FR	7227	Krakow John Paul II - Balice	Bristol	3	0645	0825	Boeing 737 Passenger	1
FR	7227	Krakow John Paul II - Balice	Bristol	1	0700	0840	Boeing 737 Passenger	1
FR	7275	Belfast International Apt	Manchester (GB)	1234567	0800	0905	Boeing 737 Passenger	7
FR	7276	Manchester (GB)	Belfast International Apt	1234567	0630	0735	Boeing 737 Passenger	7
FR	73	Carcassonne	London Stansted Apt	7	1820	1920	Boeing 737 Passenger	1
FR	73	Carcassonne	London Stansted Apt	6	1755	1855	Boeing 737 Passenger	1
FR	73	Carcassonne	London Stansted Apt	2345	1735	1835	Boeing 737 Passenger	4
FR	73	Carcassonne	London Stansted Apt	1	1505	1605	Boeing 737 Passenger	1
FR	734	Birmingham Airport	Bratislava	4 6	1935	2300	Boeing 737 Passenger	2
FR	734	Birmingham Airport	Bratislava	2	1035	1400	Boeing 737 Passenger	1
FR	7342	Glasgow Prestwick Apt	Rome Ciampino Apt	6	0655	1055	Boeing 737 Passenger	1
FR	7342	Glasgow Prestwick Apt	Rome Ciampino Apt	2	1705	2105	Boeing 737 Passenger	1
FR	7343	Rome Ciampino Apt	Glasgow Prestwick Apt	6	1120	1330	Boeing 737 Passenger	1
FR	7343	Rome Ciampino Apt	Glasgow Prestwick Apt	2	2130	2340	Boeing 737 Passenger	1
FR	735	Bratislava	Birmingham Airport	4 6	1745	1910	Boeing 737 Passenger	2
FR	735	Bratislava	Birmingham Airport	2	0845	1010	Boeing 737 Passenger	1
FR	7352	Edinburgh	Brussels S. Charleroi Airport	7	1845	2130	Boeing 737 Passenger	1
FR	7352	Edinburgh	Brussels S. Charleroi Airport	5	1130	1415	Boeing 737 Passenger	1
FR	7352	Edinburgh	Brussels S. Charleroi Airport	4	1950	2235	Boeing 737 Passenger	1
FR	7352	Edinburgh	Brussels S. Charleroi Airport	3	1415	1700	Boeing 737 Passenger	1
FR	7352	Edinburgh	Brussels S. Charleroi Airport	1	1340	1625	Boeing 737 Passenger	1
FR	7353	Brussels S. Charleroi Airport	Edinburgh	7	2155	2235	Boeing 737 Passenger	1
FR	7353	Brussels S. Charleroi Airport	Edinburgh	5	1440	1520	Boeing 737 Passenger	1
FR	7353	Brussels S. Charleroi Airport	Edinburgh	4	1845	1925	Boeing 737 Passenger	1
FR	7353	Brussels S. Charleroi Airport	Edinburgh	3	1725	1805	Boeing 737 Passenger	1
FR	7353	Brussels S. Charleroi Airport	Edinburgh	1	1650	1730	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	6	1710	1810	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	5	1740	1840	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	4	1620	1720	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	3	1720	1820	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	2	1730	1825	Boeing 737 Passenger	1
FR	7381	Copenhagen Kastrup Apt	London Stansted Apt	1 7	1730	1830	Boeing 737 Passenger	2
FR	7382	London Stansted Apt	Copenhagen Kastrup Apt	6	1400	1645	Boeing 737 Passenger	1
FR	7382	London Stansted Apt	Copenhagen Kastrup Apt	5	1430	1715	Boeing 737 Passenger	1
FR	7382	London Stansted Apt	Copenhagen Kastrup Apt	4	1310	1555	Boeing 737 Passenger	1
FR	7382	London Stansted Apt	Copenhagen Kastrup Apt	3	1410	1655	Boeing 737 Passenger	1
FR	7382	London Stansted Apt	Copenhagen Kastrup Apt	12 7	1420	1705	Boeing 737 Passenger	3
FR	7383	Copenhagen Kastrup Apt	London Stansted Apt	1234567	0715	0815	Boeing 737 Passenger	7
FR	7384	London Stansted Apt	Copenhagen Kastrup Apt	34567	0900	1145	Boeing 737 Passenger	5
FR	7384	London Stansted Apt	Copenhagen Kastrup Apt	2	0855	1140	Boeing 737 Passenger	1

FR	7384	London Stansted Apt	Copenhagen Kastrup Apt	1	0840	1125	Boeing 737 Passenger	1
FR	7385	Copenhagen Kastrup Apt	London Stansted Apt	2 567	2215	2315	Boeing 737 Passenger	4
FR	7385	Copenhagen Kastrup Apt	London Stansted Apt	1 34	2210	2310	Boeing 737 Passenger	3
FR	7386	London Stansted Apt	Copenhagen Kastrup Apt	567	1905	2150	Boeing 737 Passenger	3
FR	7386	London Stansted Apt	Copenhagen Kastrup Apt	1234	1900	2145	Boeing 737 Passenger	4
FR	7407	Copenhagen Kastrup Apt	London Luton Apt	7	2140	2230	Boeing 737 Passenger	1
FR	7407	Copenhagen Kastrup Apt	London Luton Apt	1 3456	1435	1525	Boeing 737 Passenger	5
FR	7408	London Luton Apt	Copenhagen Kastrup Apt	7	1825	2115	Boeing 737 Passenger	1
FR	7408	London Luton Apt	Copenhagen Kastrup Apt	6	1115	1405	Boeing 737 Passenger	1
FR	7408	London Luton Apt	Copenhagen Kastrup Apt	1 345	1115	1410	Boeing 737 Passenger	4
FR	748	Birmingham Airport	Gdansk Lech Walesa	7	1955	2315	Boeing 737 Passenger	1
FR	748	Birmingham Airport	Gdansk Lech Walesa	3	1700	2020	Boeing 737 Passenger	1
FR	749	Gdansk Lech Walesa	Birmingham Airport	7	1800	1930	Boeing 737 Passenger	1
FR	749	Gdansk Lech Walesa	Birmingham Airport	3	1510	1635	Boeing 737 Passenger	1
FR	7542	Manchester (GB)	Barcelona Apt	1234567	0625	0945	Boeing 737 Passenger	7
FR	7543	Barcelona Apt	Manchester (GB)	1234567	1020	1155	Boeing 737 Passenger	7
FR	7544	Manchester (GB)	Barcelona Apt	1234567	1810	2130	Boeing 737 Passenger	7
FR	7545	Barcelona Apt	Manchester (GB)	6	2205	2340	Boeing 737 Passenger	1
FR	7545	Barcelona Apt	Manchester (GB)	5	1600	1740	Boeing 737 Passenger	1
FR	7545	Barcelona Apt	Manchester (GB)	234 7	2205	2345	Boeing 737 Passenger	4
FR	7545	Barcelona Apt	Manchester (GB)	1	1605	1745	Boeing 737 Passenger	1
FR	7608	London Stansted Apt	Chania	7	1255	1850	Boeing 737 Passenger	1
FR	7608	London Stansted Apt	Chania	5	0715	1310	Boeing 737 Passenger	1
FR	7608	London Stansted Apt	Chania	1	0640	1235	Boeing 737 Passenger	1
FR	7609	Chania	London Stansted Apt	7	1935	2145	Boeing 737 Passenger	1
FR	7609	Chania	London Stansted Apt	5	1335	1545	Boeing 737 Passenger	1
FR	7609	Chania	London Stansted Apt	1	1300	1510	Boeing 737 Passenger	1
FR	7616	Edinburgh	Santander	7	0655	1020	Boeing 737 Passenger	1
FR	7616	Edinburgh	Santander	3	1830	2155	Boeing 737 Passenger	1
FR	7617	Santander	Edinburgh	7	1045	1205	Boeing 737 Passenger	1
FR	7617	Santander	Edinburgh	3	2220	2340	Boeing 737 Passenger	1
FR	7622	Nottingham East Midlands Airport	Rzeszow	4	1410	1750	Boeing 737 Passenger	1
FR	7622	Nottingham East Midlands Airport	Rzeszow	2 6	0610	0950	Boeing 737 Passenger	2
FR	7623	Rzeszow	Nottingham East Midlands Airport	4	1815	2000	Boeing 737 Passenger	1
FR	7623	Rzeszow	Nottingham East Midlands Airport	2 6	1015	1200	Boeing 737 Passenger	2
FR	7624	Glasgow Prestwick Apt	Bydgoszcz	6	0720	1040	Boeing 737 Passenger	1
FR	7624	Glasgow Prestwick Apt	Bydgoszcz	2	1730	2050	Boeing 737 Passenger	1
FR	7625	Bydgoszcz	Glasgow Prestwick Apt	6	1105	1235	Boeing 737 Passenger	1
FR	7625	Bydgoszcz	Glasgow Prestwick Apt	2	2115	2245	Boeing 737 Passenger	1
FR	7672	Glasgow International Airport	Wroclaw	1 5	1305	1630	Boeing 737 Passenger	2
FR	7673	Wroclaw	Glasgow International Airport	1 5	1105	1240	Boeing 737 Passenger	2
FR	7784	London Luton Apt	Malaga Airport	4	0715	1105	Boeing 737 Passenger	1
FR	7784	London Luton Apt	Malaga Airport	3	1650	2045	Boeing 737 Passenger	1
FR	7784	London Luton Apt	Malaga Airport	2	0655	1050	Boeing 737 Passenger	1
FR	7784	London Luton Apt	Malaga Airport	1 567	0650	1045	Boeing 737 Passenger	4
FR	7785	Malaga Airport	London Luton Apt	7	1120	1310	Boeing 737 Passenger	1
FR	7785	Malaga Airport	London Luton Apt	5	1140	1330	Boeing 737 Passenger	1
FR	7785	Malaga Airport	London Luton Apt	4	1200	1350	Boeing 737 Passenger	1
FR	7785	Malaga Airport	London Luton Apt	3	2140	2330	Boeing 737 Passenger	1
FR	7785	Malaga Airport	London Luton Apt	2	1210	1400	Boeing 737 Passenger	1
FR	7785	Malaga Airport	London Luton Apt	1 6	1125	1315	Boeing 737 Passenger	2
FR	7786	Bristol	Chania	7	0915	1515	Boeing 737 Passenger	1
FR	7786	Bristol	Chania	3	0630	1230	Boeing 737 Passenger	1
FR	7787	Chania	Bristol	7	1540	1800	Boeing 737 Passenger	1
FR	7787	Chania	Bristol	3	1255	1515	Boeing 737 Passenger	1
FR	7805	London Luton Apt	Athens (GR)	7	0805	1355	Boeing 737 Passenger	1
FR	7805	London Luton Apt	Athens (GR)	56	0645	1235	Boeing 737 Passenger	2
FR	7805	London Luton Apt	Athens (GR)	1234	0800	1350	Boeing 737 Passenger	4
FR	7806	Athens (GR)	London Luton Apt	7	1420	1610	Boeing 737 Passenger	1
FR	7806	Athens (GR)	London Luton Apt	6	1300	1450	Boeing 737 Passenger	1
FR	7806	Athens (GR)	London Luton Apt	5	1315	1505	Boeing 737 Passenger	1
FR	7806	Athens (GR)	London Luton Apt	1234	1415	1605	Boeing 737 Passenger	4
FR	7807	London Luton Apt	Barcelona Apt	7	1655	2010	Boeing 737 Passenger	1
FR	7807	London Luton Apt	Barcelona Apt	3 6	1645	2000	Boeing 737 Passenger	2
FR	7807	London Luton Apt	Barcelona Apt	2 45	1600	1915	Boeing 737 Passenger	3
FR	7807	London Luton Apt	Barcelona Apt	1	1550	1905	Boeing 737 Passenger	1
FR	7808	Barcelona Apt	London Luton Apt	7	2045	2200	Boeing 737 Passenger	1
FR	7808	Barcelona Apt	London Luton Apt	3 6	2035	2150	Boeing 737 Passenger	2
FR	7808	Barcelona Apt	London Luton Apt	12 45	1950	2105	Boeing 737 Passenger	4
FR	7823	Glasgow Prestwick Apt	Barcelona Apt	6	1910	2250	Boeing 737 Passenger	1

FR	7823	Glasgow Prestwick Apt	Barcelona Apt	3 7	1730	2110	Boeing 737 Passenger	2
FR	7823	Glasgow Prestwick Apt	Barcelona Apt	1 45	1735	2115	Boeing 737 Passenger	3
FR	7824	Barcelona Apt	Glasgow Prestwick Apt	6	1650	1845	Boeing 737 Passenger	1
FR	7824	Barcelona Apt	Glasgow Prestwick Apt	1 345 7	2150	2345	Boeing 737 Passenger	5
FR	7834	Edinburgh	Beziers	7	1255	1625	Boeing 737 Passenger	1
FR	7834	Edinburgh	Beziers	3	1135	1505	Boeing 737 Passenger	1
FR	7835	Beziers	Edinburgh	7	1650	1820	Boeing 737 Passenger	1
FR	7835	Beziers	Edinburgh	3	1530	1700	Boeing 737 Passenger	1
FR	7842	Glasgow Prestwick Apt	Corvera	5	1505	1905	Boeing 737 Passenger	1
FR	7842	Glasgow Prestwick Apt	Corvera	1	1510	1910	Boeing 737 Passenger	1
FR	7843	Corvera	Glasgow Prestwick Apt	5	1940	2145	Boeing 737 Passenger	1
FR	7843	Corvera	Glasgow Prestwick Apt	1	1945	2150	Boeing 737 Passenger	1
FR	7844	Edinburgh	Kerkyra	6	0745	1325	Boeing 737 Passenger	1
FR	7844	Edinburgh	Kerkyra	4	1600	2140	Boeing 737 Passenger	1
FR	7845	Kerkyra	Edinburgh	6	1350	1535	Boeing 737 Passenger	1
FR	7845	Kerkyra	Edinburgh	4	2205	2350	Boeing 737 Passenger	1
FR	7846	Glasgow Prestwick Apt	Pisa	7	0840	1220	Boeing 737 Passenger	1
FR	7846	Glasgow Prestwick Apt	Pisa	3	1240	1620	Boeing 737 Passenger	1
FR	7847	Pisa	Glasgow Prestwick Apt	7	0630	0815	Boeing 737 Passenger	1
FR	7847	Pisa	Glasgow Prestwick Apt	3	1030	1215	Boeing 737 Passenger	1
FR	7892	Edinburgh	Goteborg Landvetter Apt	1 5	1250	1540	Boeing 737 Passenger	2
FR	7893	Goteborg Landvetter Apt	Edinburgh	1 5	1130	1225	Boeing 737 Passenger	2
FR	792	London Stansted Apt	Venice Marco Polo Apt	1234567	0620	0920	Boeing 737 Passenger	7
FR	7921	Edinburgh	Gdansk Lech Walesa	6	1930	2250	Boeing 737 Passenger	1
FR	7921	Edinburgh	Gdansk Lech Walesa	4	1850	2210	Boeing 737 Passenger	1
FR	7921	Edinburgh	Gdansk Lech Walesa	2	1945	2305	Boeing 737 Passenger	1
FR	7922	Gdansk Lech Walesa	Edinburgh	6	1740	1905	Boeing 737 Passenger	1
FR	7922	Gdansk Lech Walesa	Edinburgh	4	1700	1825	Boeing 737 Passenger	1
FR	7922	Gdansk Lech Walesa	Edinburgh	2	1755	1920	Boeing 737 Passenger	1
FR	793	Venice Marco Polo Apt	London Stansted Apt	1234567	0945	1055	Boeing 737 Passenger	7
FR	794	London Stansted Apt	Venice Marco Polo Apt	7	1410	1710	Boeing 737 Passenger	1
FR	794	London Stansted Apt	Venice Marco Polo Apt	456	1310	1610	Boeing 737 Passenger	3
FR	794	London Stansted Apt	Venice Marco Polo Apt	3	1230	1530	Boeing 737 Passenger	1
FR	794	London Stansted Apt	Venice Marco Polo Apt	2	1040	1340	Boeing 737 Passenger	1
FR	794	London Stansted Apt	Venice Marco Polo Apt	1	1245	1545	Boeing 737 Passenger	1
FR	795	Venice Marco Polo Apt	London Stansted Apt	7	1735	1845	Boeing 737 Passenger	1
FR	795	Venice Marco Polo Apt	London Stansted Apt	3	1555	1705	Boeing 737 Passenger	1
FR	795	Venice Marco Polo Apt	London Stansted Apt	2	1405	1515	Boeing 737 Passenger	1
FR	795	Venice Marco Polo Apt	London Stansted Apt	1	1610	1720	Boeing 737 Passenger	1
FR	795	Venice Marco Polo Apt	London Stansted Apt	1 456	1635	1745	Boeing 737 Passenger	3
FR	7961	London Stansted Apt	Podgorica	7	0645	1035	Boeing 737 Passenger	1
FR	7961	London Stansted Apt	Podgorica	3	0715	1105	Boeing 737 Passenger	1
FR	7962	Podgorica	London Stansted Apt	7	1100	1255	Boeing 737 Passenger	1
FR	7962	Podgorica	London Stansted Apt	3	1130	1325	Boeing 737 Passenger	1
FR	7963	London Stansted Apt	Brive-La-Gaillarde	6	0730	1010	Boeing 737 Passenger	1
FR	7963	London Stansted Apt	Brive-La-Gaillarde	3	0930	1210	Boeing 737 Passenger	1
FR	7964	Brive-La-Gaillarde	London Stansted Apt	6	1035	1120	Boeing 737 Passenger	1
FR	7964	Brive-La-Gaillarde	London Stansted Apt	3	1235	1320	Boeing 737 Passenger	1
FR	7965	London Stansted Apt	Porto	7	1615	1835	Boeing 737 Passenger	1
FR	7965	London Stansted Apt	Porto	6	1610	1830	Boeing 737 Passenger	1
FR	7965	London Stansted Apt	Porto	5	1320	1540	Boeing 737 Passenger	1
FR	7965	London Stansted Apt	Porto	3	1540	1800	Boeing 737 Passenger	1
FR	7965	London Stansted Apt	Porto	1	1650	1910	Boeing 737 Passenger	1
FR	7966	Porto	London Stansted Apt	7	1320	1550	Boeing 737 Passenger	1
FR	7966	Porto	London Stansted Apt	6	1315	1545	Boeing 737 Passenger	1
FR	7966	Porto	London Stansted Apt	5	1035	1255	Boeing 737 Passenger	1
FR	7966	Porto	London Stansted Apt	3	1250	1510	Boeing 737 Passenger	1
FR	7966	Porto	London Stansted Apt	1	1400	1620	Boeing 737 Passenger	1
FR	798	London Stansted Apt	Venice Marco Polo Apt	7	1755	2055	Boeing 737 Passenger	1
FR	798	London Stansted Apt	Venice Marco Polo Apt	6	1830	2130	Boeing 737 Passenger	1
FR	798	London Stansted Apt	Venice Marco Polo Apt	5	1805	2105	Boeing 737 Passenger	1
FR	798	London Stansted Apt	Venice Marco Polo Apt	3	1815	2115	Boeing 737 Passenger	1
FR	798	London Stansted Apt	Venice Marco Polo Apt	2	1800	2100	Boeing 737 Passenger	1
FR	799	Venice Marco Polo Apt	London Stansted Apt	7	2120	2230	Boeing 737 Passenger	1
FR	799	Venice Marco Polo Apt	London Stansted Apt	6	2155	2305	Boeing 737 Passenger	1
FR	799	Venice Marco Polo Apt	London Stansted Apt	5	2130	2240	Boeing 737 Passenger	1
FR	799	Venice Marco Polo Apt	London Stansted Apt	2	2125	2235	Boeing 737 Passenger	1
FR	799	Venice Marco Polo Apt	London Stansted Apt	23	2140	2250	Boeing 737 Passenger	1
FR	8005	Alicante Airport	Aberdeen (GB)	4 7	0745	1010	Boeing 737 Passenger	2
FR	8006	Aberdeen (GB)	Alicante Airport	4 7	1035	1450	Boeing 737 Passenger	2

FR	8007	Malaga Airport	Aberdeen (GB)	7	0805	1030	Boeing 737 Passenger	1
FR	8007	Malaga Airport	Aberdeen (GB)	4	0625	0850	Boeing 737 Passenger	1
FR	8008	Aberdeen (GB)	Malaga Airport	7	1055	1525	Boeing 737 Passenger	1
FR	8008	Aberdeen (GB)	Malaga Airport	4	0915	1345	Boeing 737 Passenger	1
FR	8025	Corvera	London Stansted Apt	3	1120	1305	Boeing 737 Passenger	1
FR	8025	Corvera	London Stansted Apt	1 5	1145	1330	Boeing 737 Passenger	2
FR	8026	London Stansted Apt	Corvera	3	0700	1045	Boeing 737 Passenger	1
FR	8026	London Stansted Apt	Corvera	1 5	0725	1110	Boeing 737 Passenger	2
FR	8027	Corvera	London Stansted Apt	5	2120	2305	Boeing 737 Passenger	1
FR	8027	Corvera	London Stansted Apt	2 4	2115	2300	Boeing 737 Passenger	2
FR	8027	Corvera	London Stansted Apt	1 3 67	2110	2255	Boeing 737 Passenger	4
FR	8028	London Stansted Apt	Corvera	5	1700	2045	Boeing 737 Passenger	1
FR	8028	London Stansted Apt	Corvera	4	1655	2040	Boeing 737 Passenger	1
FR	8028	London Stansted Apt	Corvera	123 67	1650	2035	Boeing 737 Passenger	5
FR	8044	Birmingham Airport	Chania	6	1445	2040	Boeing 737 Passenger	1
FR	8044	Birmingham Airport	Chania	2	1530	2125	Boeing 737 Passenger	1
FR	8045	Chania	Birmingham Airport	6	2105	2315	Boeing 737 Passenger	1
FR	8045	Chania	Birmingham Airport	2	2150	2359	Boeing 737 Passenger	1
FR	8046	Birmingham Airport	Girona Costa Brava Apt	5	1950	2300	Boeing 737 Passenger	1
FR	8046	Birmingham Airport	Girona Costa Brava Apt	3	0625	0935	Boeing 737 Passenger	1
FR	8046	Birmingham Airport	Girona Costa Brava Apt	1	0630	0940	Boeing 737 Passenger	1
FR	8047	Girona Costa Brava Apt	Birmingham Airport	5	1815	1925	Boeing 737 Passenger	1
FR	8047	Girona Costa Brava Apt	Birmingham Airport	3	1015	1125	Boeing 737 Passenger	1
FR	8047	Girona Costa Brava Apt	Birmingham Airport	1	1005	1115	Boeing 737 Passenger	1
FR	805	London Stansted Apt	Knock	6	0805	0935	Boeing 737 Passenger	1
FR	805	London Stansted Apt	Knock	34	0800	0930	Boeing 737 Passenger	2
FR	805	London Stansted Apt	Knock	12 5 7	0755	0925	Boeing 737 Passenger	4
FR	806	Knock	London Stansted Apt	6	1000	1130	Boeing 737 Passenger	1
FR	806	Knock	London Stansted Apt	34	0955	1125	Boeing 737 Passenger	2
FR	806	Knock	London Stansted Apt	12 5 7	0950	1120	Boeing 737 Passenger	4
FR	8061	Kerkyra	Birmingham Airport	6	1540	1705	Boeing 737 Passenger	1
FR	8061	Kerkyra	Birmingham Airport	2	1300	1425	Boeing 737 Passenger	1
FR	8062	Birmingham Airport	Kerkyra	6	0925	1440	Boeing 737 Passenger	1
FR	8062	Birmingham Airport	Kerkyra	2	0710	1225	Boeing 737 Passenger	1
FR	807	London Stansted Apt	Knock	5 7	1510	1640	Boeing 737 Passenger	2
FR	807	London Stansted Apt	Knock	1	1515	1645	Boeing 737 Passenger	1
FR	808	Knock	London Stansted Apt	5 7	1705	1835	Boeing 737 Passenger	2
FR	808	Knock	London Stansted Apt	1	1710	1840	Boeing 737 Passenger	1
FR	8083	Birmingham Airport	Nowy Dwor Mazowiecki	7	1925	2255	Boeing 737 Passenger	1
FR	8083	Birmingham Airport	Nowy Dwor Mazowiecki	4	1955	2325	Boeing 737 Passenger	1
FR	8083	Birmingham Airport	Nowy Dwor Mazowiecki	2	0950	1320	Boeing 737 Passenger	1
FR	8084	Nowy Dwor Mazowiecki	Birmingham Airport	7	1720	1900	Boeing 737 Passenger	1
FR	8084	Nowy Dwor Mazowiecki	Birmingham Airport	4	1750	1930	Boeing 737 Passenger	1
FR	8084	Nowy Dwor Mazowiecki	Birmingham Airport	2	0745	0925	Boeing 737 Passenger	1
FR	8087	Birmingham Airport	Reus	7	1350	1700	Boeing 737 Passenger	1
FR	8087	Birmingham Airport	Reus	3	1155	1505	Boeing 737 Passenger	1
FR	8088	Reus	Birmingham Airport	7	1725	1835	Boeing 737 Passenger	1
FR	8088	Reus	Birmingham Airport	3	1530	1640	Boeing 737 Passenger	1
FR	8108	Malaga Airport	Bristol	7	0855	1040	Boeing 737 Passenger	1
FR	8109	Bristol	Malaga Airport	7	1105	1445	Boeing 737 Passenger	1
FR	8116	Nuremberg, Nuremberg	London Stansted Apt	7	2250	2340	Boeing 737 Passenger	1
FR	8116	Nuremberg, Nuremberg	London Stansted Apt	6	2140	2230	Boeing 737 Passenger	1
FR	8116	Nuremberg, Nuremberg	London Stansted Apt	12345	2235	2325	Boeing 737 Passenger	5
FR	8117	London Stansted Apt	Nuremberg, Nuremberg	7	1945	2225	Boeing 737 Passenger	1
FR	8117	London Stansted Apt	Nuremberg, Nuremberg	6	1835	2115	Boeing 737 Passenger	1
FR	8117	London Stansted Apt	Nuremberg, Nuremberg	12345	1930	2210	Boeing 737 Passenger	5
FR	8119	London Stansted Apt	Nuremberg, Nuremberg	12345	0735	1015	Boeing 737 Passenger	5
FR	812	Dublin (IE)	Edinburgh	2 5	0640	0750	Boeing 737 Passenger	2
FR	812	Dublin (IE)	Edinburgh	1 34 67	0625	0735	Boeing 737 Passenger	5
FR	8120	Nuremberg, Nuremberg	London Stansted Apt	12345	0630	0710	Boeing 737 Passenger	5
FR	8121	Bristol	Malaga Airport	6	2010	2350	Boeing 737 Passenger	1
FR	8121	Bristol	Malaga Airport	5	1735	2115	Boeing 737 Passenger	1
FR	8121	Bristol	Malaga Airport	1234 7	1730	2110	Boeing 737 Passenger	5
FR	8122	Malaga Airport	Bristol	6	1800	1945	Boeing 737 Passenger	1
FR	8122	Malaga Airport	Bristol	5	1530	1710	Boeing 737 Passenger	1
FR	8122	Malaga Airport	Bristol	1234 7	2145	2325	Boeing 737 Passenger	5
FR	813	Edinburgh	Dublin (IE)	2 5	0815	0920	Boeing 737 Passenger	2
FR	813	Edinburgh	Dublin (IE)	1 34 67	0800	0905	Boeing 737 Passenger	5
FR	8132	London Stansted Apt	Gran Canaria	4	0610	1045	Boeing 737 Passenger	1
FR	8132	London Stansted Apt	Gran Canaria	23 67	0705	1140	Boeing 737 Passenger	4

FR	8133	Gran Canaria	London Stansted Apt	4	1120	1545	Boeing 737 Passenger	1
FR	8133	Gran Canaria	London Stansted Apt	23 67	1215	1640	Boeing 737 Passenger	4
FR	814	Dublin (IE)	Edinburgh	1 5	1710	1820	Boeing 737 Passenger	2
FR	8142	London Luton Apt	Knock	1234567	1000	1125	Boeing 737 Passenger	7
FR	8143	Knock	London Luton Apt	2 4	1200	1315	Boeing 737 Passenger	2
FR	8143	Knock	London Luton Apt	1 3 567	1150	1305	Boeing 737 Passenger	5
FR	8144	London Luton Apt	Knock	7	1455	1620	Boeing 737 Passenger	1
FR	8144	London Luton Apt	Knock	5	1355	1520	Boeing 737 Passenger	1
FR	8145	Knock	London Luton Apt	7	1645	1800	Boeing 737 Passenger	1
FR	8145	Knock	London Luton Apt	5	1545	1700	Boeing 737 Passenger	1
FR	815	Edinburgh	Dublin (IE)	5	1540	1645	Boeing 737 Passenger	1
FR	815	Edinburgh	Dublin (IE)	1	1530	1635	Boeing 737 Passenger	1
FR	8156	London Stansted Apt	Tenerife Sur Apt	7	1355	1830	Boeing 737 Passenger	1
FR	8157	Tenerife Sur Apt	London Stansted Apt	7	1905	2330	Boeing 737 Passenger	1
FR	816	Dublin (IE)	Edinburgh	1234567	1235	1345	Boeing 737 Passenger	7
FR	8162	London Stansted Apt	Malaga Airport	5	0730	1120	Boeing 737 Passenger	1
FR	8162	London Stansted Apt	Malaga Airport	1234 67	0725	1120	Boeing 737 Passenger	6
FR	8163	Malaga Airport	London Stansted Apt	1234567	1155	1355	Boeing 737 Passenger	7
FR	8164	London Stansted Apt	Malaga Airport	1234567	1725	2120	Boeing 737 Passenger	7
FR	8165	Malaga Airport	London Stansted Apt	1234567	2155	2359	Boeing 737 Passenger	7
FR	8166	London Stansted Apt	Tenerife Sur Apt	5	0555	1030	Boeing 737 Passenger	1
FR	8166	London Stansted Apt	Tenerife Sur Apt	1234 67	0615	1050	Boeing 737 Passenger	6
FR	8167	Tenerife Sur Apt	London Stansted Apt	5	1105	1525	Boeing 737 Passenger	1
FR	8167	Tenerife Sur Apt	London Stansted Apt	1234 67	1125	1545	Boeing 737 Passenger	6
FR	817	Edinburgh	Dublin (IE)	1234567	1410	1515	Boeing 737 Passenger	7
FR	818	Dublin (IE)	Edinburgh	7	2110	2220	Boeing 737 Passenger	1
FR	818	Dublin (IE)	Edinburgh	5	2055	2205	Boeing 737 Passenger	1
FR	818	Dublin (IE)	Edinburgh	4 6	1935	2045	Boeing 737 Passenger	2
FR	818	Dublin (IE)	Edinburgh	3	2035	2145	Boeing 737 Passenger	1
FR	818	Dublin (IE)	Edinburgh	2	2025	2135	Boeing 737 Passenger	1
FR	818	Dublin (IE)	Edinburgh	1	2010	2120	Boeing 737 Passenger	1
FR	8182	London Stansted Apt	Fuerteventura	2 4 67	0610	1035	Boeing 737 Passenger	4
FR	8183	Fuerteventura	London Stansted Apt	2 4 67	1110	1525	Boeing 737 Passenger	4
FR	819	Edinburgh	Dublin (IE)	7	2245	2350	Boeing 737 Passenger	1
FR	819	Edinburgh	Dublin (IE)	5	2230	2335	Boeing 737 Passenger	1
FR	819	Edinburgh	Dublin (IE)	4 6	2110	2215	Boeing 737 Passenger	2
FR	819	Edinburgh	Dublin (IE)	3	2210	2315	Boeing 737 Passenger	1
FR	819	Edinburgh	Dublin (IE)	2	2205	2310	Boeing 737 Passenger	1
FR	819	Edinburgh	Dublin (IE)	1	2145	2250	Boeing 737 Passenger	1
FR	8202	Bristol	Knock	7	1410	1525	Boeing 737 Passenger	1
FR	8202	Bristol	Knock	5	1215	1330	Boeing 737 Passenger	1
FR	8202	Bristol	Knock	3	1415	1530	Boeing 737 Passenger	1
FR	8203	Knock	Bristol	7	1550	1705	Boeing 737 Passenger	1
FR	8203	Knock	Bristol	5	1355	1510	Boeing 737 Passenger	1
FR	8203	Knock	Bristol	3	1555	1710	Boeing 737 Passenger	1
FR	8206	Bristol	Budapest	2 4 6	1950	2330	Boeing 737 Passenger	3
FR	8207	Budapest	Bristol	2 4 6	1740	1925	Boeing 737 Passenger	3
FR	8208	Prague Ruzyne	Bournemouth	7	1455	1555	Boeing 737 Passenger	1
FR	8208	Prague Ruzyne	Bournemouth	4	0730	0830	Boeing 737 Passenger	1
FR	8209	Bournemouth	Prague Ruzyne	7	1620	1920	Boeing 737 Passenger	1
FR	8209	Bournemouth	Prague Ruzyne	4	0855	1155	Boeing 737 Passenger	1
FR	8212	Bristol	Wroclaw	7	1535	1855	Boeing 737 Passenger	1
FR	8212	Bristol	Wroclaw	3	0910	1230	Boeing 737 Passenger	1
FR	8213	Wroclaw	Bristol	7	1350	1510	Boeing 737 Passenger	1
FR	8213	Wroclaw	Bristol	3	0725	0845	Boeing 737 Passenger	1
FR	8216	Bristol	Poznan Lawica Apt	3 7	0645	1000	Boeing 737 Passenger	2
FR	8217	Poznan Lawica Apt	Bristol	3 7	1025	1145	Boeing 737 Passenger	2
FR	8224	Bristol	Rzeszow	5	1600	1945	Boeing 737 Passenger	1
FR	8224	Bristol	Rzeszow	1	0630	1015	Boeing 737 Passenger	1
FR	8225	Rzeszow	Bristol	5	2010	2200	Boeing 737 Passenger	1
FR	8225	Rzeszow	Bristol	1	1040	1230	Boeing 737 Passenger	1
FR	8234	Bristol	Palma de Mallorca	4	0820	1145	Boeing 737 Passenger	1
FR	8234	Bristol	Palma de Mallorca	2 6	0845	1210	Boeing 737 Passenger	2
FR	8235	Palma de Mallorca	Bristol	4	0625	0755	Boeing 737 Passenger	1
FR	8235	Palma de Mallorca	Bristol	2 6	0650	0820	Boeing 737 Passenger	2
FR	8240	Bristol	Venice Marco Polo Apt	7	1850	2205	Boeing 737 Passenger	1
FR	8240	Bristol	Venice Marco Polo Apt	6	0655	1010	Boeing 737 Passenger	1
FR	8240	Bristol	Venice Marco Polo Apt	5	1700	2015	Boeing 737 Passenger	1
FR	8240	Bristol	Venice Marco Polo Apt	4	0700	1015	Boeing 737 Passenger	1
FR	8240	Bristol	Venice Marco Polo Apt	2	1805	2120	Boeing 737 Passenger	1

FR	8241	Venice Marco Polo Apt	Bristol	7	2230	2350	Boeing 737 Passenger	1
FR	8241	Venice Marco Polo Apt	Bristol	6	1035	1155	Boeing 737 Passenger	1
FR	8241	Venice Marco Polo Apt	Bristol	5	2040	2200	Boeing 737 Passenger	1
FR	8241	Venice Marco Polo Apt	Bristol	4	1040	1200	Boeing 737 Passenger	1
FR	8241	Venice Marco Polo Apt	Bristol	2	2145	2305	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	7	0755	1120	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	6	1800	2125	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	4	1755	2120	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	3	0845	1210	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	2	1145	1510	Boeing 737 Passenger	1
FR	8244	Bristol	Palma de Mallorca	1 5	1745	2110	Boeing 737 Passenger	2
FR	8245	Palma de Mallorca	Bristol	7	1155	1325	Boeing 737 Passenger	1
FR	8245	Palma de Mallorca	Bristol	6	2200	2335	Boeing 737 Passenger	1
FR	8245	Palma de Mallorca	Bristol	4	2155	2325	Boeing 737 Passenger	1
FR	8245	Palma de Mallorca	Bristol	3	0650	0820	Boeing 737 Passenger	1
FR	8245	Palma de Mallorca	Bristol	2	1545	1715	Boeing 737 Passenger	1
FR	8245	Palma de Mallorca	Bristol	1 5	2145	2320	Boeing 737 Passenger	2
FR	8248	Bristol	Faro	6	1805	2045	Boeing 737 Passenger	1
FR	8248	Bristol	Faro	5	1035	1315	Boeing 737 Passenger	1
FR	8248	Bristol	Faro	234 7	1755	2035	Boeing 737 Passenger	4
FR	8248	Bristol	Faro	1	1730	2010	Boeing 737 Passenger	1
FR	8249	Faro	Bristol	6	2110	2350	Boeing 737 Passenger	1
FR	8249	Faro	Bristol	5	0730	1010	Boeing 737 Passenger	1
FR	8249	Faro	Bristol	234 7	2100	2340	Boeing 737 Passenger	4
FR	8249	Faro	Bristol	1	2035	2315	Boeing 737 Passenger	1
FR	8254	Bristol	Gdansk Lech Walesa	5	0755	1115	Boeing 737 Passenger	1
FR	8254	Bristol	Gdansk Lech Walesa	1	0635	0955	Boeing 737 Passenger	1
FR	8255	Gdansk Lech Walesa	Bristol	5	1140	1305	Boeing 737 Passenger	1
FR	8255	Gdansk Lech Walesa	Bristol	1	1020	1145	Boeing 737 Passenger	1
FR	8262	Bristol	Milan Bergamo/orio al Serio Apt	6	1220	1530	Boeing 737 Passenger	1
FR	8262	Bristol	Milan Bergamo/orio al Serio Apt	4	1225	1535	Boeing 737 Passenger	1
FR	8262	Bristol	Milan Bergamo/orio al Serio Apt	2	2050	2359	Boeing 737 Passenger	1
FR	8263	Milan Bergamo/orio al Serio Apt	Bristol	6	1555	1705	Boeing 737 Passenger	1
FR	8263	Milan Bergamo/orio al Serio Apt	Bristol	4	1600	1710	Boeing 737 Passenger	1
FR	8263	Milan Bergamo/orio al Serio Apt	Bristol	2	1915	2025	Boeing 737 Passenger	1
FR	8264	Bristol	Ibiza	3	1610	1940	Boeing 737 Passenger	1
FR	8264	Bristol	Ibiza	1 5	0630	1000	Boeing 737 Passenger	2
FR	8265	Ibiza	Bristol	3	2015	2145	Boeing 737 Passenger	1
FR	8265	Ibiza	Bristol	1 5	1035	1205	Boeing 737 Passenger	2
FR	8266	London Stansted Apt	Katowice	7	1210	1525	Boeing 737 Passenger	1
FR	8266	London Stansted Apt	Katowice	6	1730	2045	Boeing 737 Passenger	1
FR	8266	London Stansted Apt	Katowice	3 5	1120	1435	Boeing 737 Passenger	2
FR	8266	London Stansted Apt	Katowice	2	0750	1105	Boeing 737 Passenger	1
FR	8266	London Stansted Apt	Katowice	1 4	1810	2125	Boeing 737 Passenger	2
FR	8267	Katowice	London Stansted Apt	7	1550	1710	Boeing 737 Passenger	1
FR	8267	Katowice	London Stansted Apt	6	2110	2230	Boeing 737 Passenger	1
FR	8267	Katowice	London Stansted Apt	3 5	1500	1620	Boeing 737 Passenger	2
FR	8267	Katowice	London Stansted Apt	2	1130	1250	Boeing 737 Passenger	1
FR	8267	Katowice	London Stansted Apt	1 4	2150	2310	Boeing 737 Passenger	2
FR	8270	Malta	Exeter	6	1655	1915	Boeing 737 Passenger	1
FR	8270	Malta	Exeter	2	0630	0850	Boeing 737 Passenger	1
FR	8271	Exeter	Malta	6	1940	2359	Boeing 737 Passenger	1
FR	8271	Exeter	Malta	2	0915	1335	Boeing 737 Passenger	1
FR	828	Palma de Mallorca	Bournemouth	4	1700	1815	Boeing 737 Passenger	1
FR	8286	Bristol	Alicante Airport	7	0840	1210	Boeing 737 Passenger	1
FR	8286	Bristol	Alicante Airport	5	1110	1440	Boeing 737 Passenger	1
FR	8286	Bristol	Alicante Airport	3	0900	1230	Boeing 737 Passenger	1
FR	8287	Alicante Airport	Bristol	7	0640	0815	Boeing 737 Passenger	1
FR	8287	Alicante Airport	Bristol	5	0910	1045	Boeing 737 Passenger	1
FR	8287	Alicante Airport	Bristol	3	0700	0835	Boeing 737 Passenger	1
FR	8288	London Stansted Apt	Lanzarote	345 7	0705	1125	Boeing 737 Passenger	4
FR	8288	London Stansted Apt	Lanzarote	2	1330	1750	Boeing 737 Passenger	1
FR	8288	London Stansted Apt	Lanzarote	1	0750	1210	Boeing 737 Passenger	1
FR	8289	Lanzarote	London Stansted Apt	345 7	1200	1610	Boeing 737 Passenger	4
FR	8289	Lanzarote	London Stansted Apt	2	1825	2235	Boeing 737 Passenger	1
FR	8289	Lanzarote	London Stansted Apt	1	1245	1655	Boeing 737 Passenger	1
FR	829	Bournemouth	Palma de Mallorca	4	1840	2155	Boeing 737 Passenger	1
FR	8296	Bristol	Alicante Airport	4	1815	2145	Boeing 737 Passenger	1
FR	8296	Bristol	Alicante Airport	2	1110	1440	Boeing 737 Passenger	1
FR	8296	Bristol	Alicante Airport	1 3 567	1805	2135	Boeing 737 Passenger	5

FR	8297	Alicante Airport	Bristol	4	2220	2355	Boeing 737 Passenger	1
FR	8297	Alicante Airport	Bristol	2	0905	1040	Boeing 737 Passenger	1
FR	8297	Alicante Airport	Bristol	1 3 567	2210	2345	Boeing 737 Passenger	5
FR	8307	Wroclaw	Manchester (GB)	3 5	1335	1500	Boeing 737 Passenger	2
FR	8307	Wroclaw	Manchester (GB)	1	1920	2045	Boeing 737 Passenger	1
FR	8308	Manchester (GB)	Wroclaw	3 5	1525	1840	Boeing 737 Passenger	2
FR	8308	Manchester (GB)	Wroclaw	1	2110	0025	Boeing 737 Passenger	1
FR	8309	Wroclaw	Newcastle	7	1410	1525	Boeing 737 Passenger	1
FR	8309	Wroclaw	Newcastle	4	1750	1905	Boeing 737 Passenger	1
FR	8310	Newcastle	Wroclaw	7	1550	1905	Boeing 737 Passenger	1
FR	8310	Newcastle	Wroclaw	4	1930	2245	Boeing 737 Passenger	1
FR	8313	Gdansk Lech Walesa	Newcastle	5	1820	1935	Boeing 737 Passenger	1
FR	8313	Gdansk Lech Walesa	Newcastle	1	1720	1835	Boeing 737 Passenger	1
FR	8314	Newcastle	Gdansk Lech Walesa	5	2000	2315	Boeing 737 Passenger	1
FR	8314	Newcastle	Gdansk Lech Walesa	1	1900	2215	Boeing 737 Passenger	1
FR	8321	London Stansted Apt	Valencia Airport	2 567	0710	1040	Boeing 737 Passenger	4
FR	8321	London Stansted Apt	Valencia Airport	1 34	0715	1045	Boeing 737 Passenger	3
FR	8322	Valencia Airport	London Stansted Apt	2 567	1110	1240	Boeing 737 Passenger	4
FR	8322	Valencia Airport	London Stansted Apt	1 34	1115	1245	Boeing 737 Passenger	3
FR	8323	London Stansted Apt	Valencia Airport	6	1655	2025	Boeing 737 Passenger	1
FR	8323	London Stansted Apt	Valencia Airport	3	1400	1730	Boeing 737 Passenger	1
FR	8323	London Stansted Apt	Valencia Airport	2	1745	2115	Boeing 737 Passenger	1
FR	8324	Valencia Airport	London Stansted Apt	6	2055	2225	Boeing 737 Passenger	1
FR	8324	Valencia Airport	London Stansted Apt	3	1820	1950	Boeing 737 Passenger	1
FR	8324	Valencia Airport	London Stansted Apt	2	2145	2315	Boeing 737 Passenger	1
FR	8343	London Stansted Apt	Porto	1234567	0925	1150	Boeing 737 Passenger	7
FR	8344	Porto	London Stansted Apt	1234567	0635	0900	Boeing 737 Passenger	7
FR	8347	London Stansted Apt	Porto	5	2120	2345	Boeing 737 Passenger	1
FR	8347	London Stansted Apt	Porto	2	1720	1945	Boeing 737 Passenger	1
FR	8347	London Stansted Apt	Porto	1 34 67	2055	2320	Boeing 737 Passenger	5
FR	8348	Porto	London Stansted Apt	5	1830	2055	Boeing 737 Passenger	1
FR	8348	Porto	London Stansted Apt	2	2010	2235	Boeing 737 Passenger	1
FR	8348	Porto	London Stansted Apt	1 34 67	1805	2030	Boeing 737 Passenger	5
FR	8351	London Stansted Apt	Almeria	1 5	0650	1050	Boeing 737 Passenger	2
FR	8352	Almeria	London Stansted Apt	1 5	1115	1310	Boeing 737 Passenger	2
FR	8353	London Stansted Apt	Budapest	1234567	0830	1155	Boeing 737 Passenger	7
FR	8354	Budapest	London Stansted Apt	1234567	0630	0805	Boeing 737 Passenger	7
FR	8357	Budapest	Manchester (GB)	4	0645	0835	Boeing 737 Passenger	1
FR	8357	Budapest	Manchester (GB)	2 67	0625	0815	Boeing 737 Passenger	3
FR	8358	Manchester (GB)	Budapest	67	0845	1225	Boeing 737 Passenger	2
FR	8358	Manchester (GB)	Budapest	4	0900	1240	Boeing 737 Passenger	1
FR	8358	Manchester (GB)	Budapest	2	0840	1220	Boeing 737 Passenger	1
FR	8361	London Stansted Apt	Sevilla Airport	7	0555	0945	Boeing 737 Passenger	1
FR	8361	London Stansted Apt	Sevilla Airport	4	0730	1120	Boeing 737 Passenger	1
FR	8362	Sevilla Airport	London Stansted Apt	7	1015	1205	Boeing 737 Passenger	1
FR	8362	Sevilla Airport	London Stansted Apt	4	1200	1350	Boeing 737 Passenger	1
FR	8363	London Stansted Apt	Sevilla Airport	7	0935	1325	Boeing 737 Passenger	1
FR	8363	London Stansted Apt	Sevilla Airport	6	1315	1705	Boeing 737 Passenger	1
FR	8363	London Stansted Apt	Sevilla Airport	5	0940	1330	Boeing 737 Passenger	1
FR	8363	London Stansted Apt	Sevilla Airport	234	1225	1615	Boeing 737 Passenger	3
FR	8363	London Stansted Apt	Sevilla Airport	1	0555	0945	Boeing 737 Passenger	1
FR	8364	Sevilla Airport	London Stansted Apt	6	1735	1925	Boeing 737 Passenger	1
FR	8364	Sevilla Airport	London Stansted Apt	5 7	1400	1550	Boeing 737 Passenger	2
FR	8364	Sevilla Airport	London Stansted Apt	234	1645	1835	Boeing 737 Passenger	3
FR	8364	Sevilla Airport	London Stansted Apt	1	1015	1200	Boeing 737 Passenger	1
FR	8369	Budapest	London Stansted Apt	3	2155	2330	Boeing 737 Passenger	1
FR	8369	Budapest	London Stansted Apt	2	1820	1955	Boeing 737 Passenger	1
FR	8369	Budapest	London Stansted Apt	1 4567	2150	2325	Boeing 737 Passenger	5
FR	8371	London Stansted Apt	Budapest	3	1805	2130	Boeing 737 Passenger	1
FR	8371	London Stansted Apt	Budapest	2	2020	2345	Boeing 737 Passenger	1
FR	8371	London Stansted Apt	Budapest	1 4567	1800	2125	Boeing 737 Passenger	5
FR	8378	London Stansted Apt	Santiago de Compostela	7	1445	1755	Boeing 737 Passenger	1
FR	8378	London Stansted Apt	Santiago de Compostela	6	1920	2230	Boeing 737 Passenger	1
FR	8378	London Stansted Apt	Santiago de Compostela	4	1340	1650	Boeing 737 Passenger	1
FR	8378	London Stansted Apt	Santiago de Compostela	3	1215	1525	Boeing 737 Passenger	1
FR	8378	London Stansted Apt	Santiago de Compostela	12 5	1210	1520	Boeing 737 Passenger	3
FR	8379	Santiago de Compostela	London Stansted Apt	7	1310	1420	Boeing 737 Passenger	1
FR	8379	Santiago de Compostela	London Stansted Apt	6	2255	0005	Boeing 737 Passenger	1
FR	8379	Santiago de Compostela	London Stansted Apt	4	1715	1825	Boeing 737 Passenger	1
FR	8379	Santiago de Compostela	London Stansted Apt	123 5	1035	1145	Boeing 737 Passenger	4

FR	8380	London Stansted Apt	Santiago de Compostela	6	1125	1435	Boeing 737 Passenger	1
FR	8380	London Stansted Apt	Santiago de Compostela	2	0800	1110	Boeing 737 Passenger	1
FR	8381	Santiago de Compostela	London Stansted Apt	6	1520	1630	Boeing 737 Passenger	1
FR	8381	Santiago de Compostela	London Stansted Apt	2	1135	1245	Boeing 737 Passenger	1
FR	8382	London Stansted Apt	Alicante Airport	7	0715	1055	Boeing 737 Passenger	1
FR	8382	London Stansted Apt	Alicante Airport	6	0610	0950	Boeing 737 Passenger	1
FR	8382	London Stansted Apt	Alicante Airport	12345	0635	1015	Boeing 737 Passenger	5
FR	8383	Alicante Airport	London Stansted Apt	7	1130	1315	Boeing 737 Passenger	1
FR	8383	Alicante Airport	London Stansted Apt	6	1030	1215	Boeing 737 Passenger	1
FR	8383	Alicante Airport	London Stansted Apt	12345	1050	1235	Boeing 737 Passenger	5
FR	8386	London Stansted Apt	Palma de Mallorca	1234567	1335	1700	Boeing 737 Passenger	7
FR	8387	Palma de Mallorca	London Stansted Apt	1234567	1735	1910	Boeing 737 Passenger	7
FR	8388	London Stansted Apt	Zadar	6	0705	1030	Boeing 737 Passenger	1
FR	8388	London Stansted Apt	Zadar	4	1220	1545	Boeing 737 Passenger	1
FR	8388	London Stansted Apt	Zadar	2	1125	1450	Boeing 737 Passenger	1
FR	8388	London Stansted Apt	Zadar	1	1720	2045	Boeing 737 Passenger	1
FR	8389	Zadar	London Stansted Apt	6	1055	1220	Boeing 737 Passenger	1
FR	8389	Zadar	London Stansted Apt	4	1610	1735	Boeing 737 Passenger	1
FR	8389	Zadar	London Stansted Apt	2	1515	1640	Boeing 737 Passenger	1
FR	8389	Zadar	London Stansted Apt	1	2110	2235	Boeing 737 Passenger	1
FR	8396	London Stansted Apt	Jerez	5	0640	1035	Boeing 737 Passenger	1
FR	8396	London Stansted Apt	Jerez	3	0645	1040	Boeing 737 Passenger	1
FR	8396	London Stansted Apt	Jerez	1 7	0655	1050	Boeing 737 Passenger	2
FR	8397	Jerez	London Stansted Apt	5	1135	1330	Boeing 737 Passenger	1
FR	8397	Jerez	London Stansted Apt	3	1105	1300	Boeing 737 Passenger	1
FR	8397	Jerez	London Stansted Apt	1 7	1115	1310	Boeing 737 Passenger	2
FR	8403	London Stansted Apt	Brno	2 4567	1350	1700	Boeing 737 Passenger	5
FR	8403	London Stansted Apt	Brno	1 3	1355	1705	Boeing 737 Passenger	2
FR	8404	Brno	London Stansted Apt	4	1725	1835	Boeing 737 Passenger	1
FR	8404	Brno	London Stansted Apt	123 567	1730	1840	Boeing 737 Passenger	6
FR	8405	London Stansted Apt	Wroclaw	5	0900	1155	Boeing 737 Passenger	1
FR	8405	London Stansted Apt	Wroclaw	2	1930	2225	Boeing 737 Passenger	1
FR	8405	London Stansted Apt	Wroclaw	1 34 67	0835	1130	Boeing 737 Passenger	5
FR	8406	Wroclaw	London Stansted Apt	2	2250	2359	Boeing 737 Passenger	1
FR	8406	Wroclaw	London Stansted Apt	1 34567	0700	0810	Boeing 737 Passenger	6
FR	8407	London Stansted Apt	Wroclaw	7	1925	2220	Boeing 737 Passenger	1
FR	8407	London Stansted Apt	Wroclaw	1 3 56	2040	2335	Boeing 737 Passenger	4
FR	8408	Wroclaw	London Stansted Apt	7	2245	2355	Boeing 737 Passenger	1
FR	8408	Wroclaw	London Stansted Apt	1 3 56	1905	2015	Boeing 737 Passenger	4
FR	842	London Luton Apt	Kerry	1234567	1615	1745	Boeing 737 Passenger	7
FR	8421	Edinburgh	Fuerteventura	7	1350	1830	Boeing 737 Passenger	1
FR	8421	Edinburgh	Fuerteventura	4	0700	1140	Boeing 737 Passenger	1
FR	8422	Fuerteventura	Edinburgh	7	1905	2340	Boeing 737 Passenger	1
FR	8422	Fuerteventura	Edinburgh	4	1215	1650	Boeing 737 Passenger	1
FR	8425	London Luton Apt	Alicante Airport	6	1725	2105	Boeing 737 Passenger	1
FR	8425	London Luton Apt	Alicante Airport	3 7	1655	2035	Boeing 737 Passenger	2
FR	8425	London Luton Apt	Alicante Airport	2 45	1640	2020	Boeing 737 Passenger	3
FR	8425	London Luton Apt	Alicante Airport	1	1645	2025	Boeing 737 Passenger	1
FR	8426	Alicante Airport	London Luton Apt	6	2140	2325	Boeing 737 Passenger	1
FR	8426	Alicante Airport	London Luton Apt	5	2055	2240	Boeing 737 Passenger	1
FR	8426	Alicante Airport	London Luton Apt	1234 7	2110	2255	Boeing 737 Passenger	5
FR	843	Kerry	London Luton Apt	1234567	1810	1940	Boeing 737 Passenger	7
FR	8445	London Stansted Apt	Budapest	2	1515	1840	Boeing 737 Passenger	1
FR	8445	London Stansted Apt	Budapest	1 34567	1145	1510	Boeing 737 Passenger	6
FR	8446	Budapest	London Stansted Apt	2	1315	1450	Boeing 737 Passenger	1
FR	8446	Budapest	London Stansted Apt	1 34567	1535	1710	Boeing 737 Passenger	6
FR	8474	London Stansted Apt	Poitiers Biard Airport	3	1230	1500	Boeing 737 Passenger	1
FR	8474	London Stansted Apt	Poitiers Biard Airport	1 5 7	1405	1635	Boeing 737 Passenger	3
FR	8475	Poitiers Biard Airport	London Stansted Apt	3	1525	1600	Boeing 737 Passenger	1
FR	8475	Poitiers Biard Airport	London Stansted Apt	1 5 7	1700	1735	Boeing 737 Passenger	3
FR	8503	London Stansted Apt	Nantes Atlantique Airport	5 7	1305	1525	Boeing 737 Passenger	2
FR	8503	London Stansted Apt	Nantes Atlantique Airport	3	1310	1530	Boeing 737 Passenger	1
FR	8503	London Stansted Apt	Nantes Atlantique Airport	1	1330	1550	Boeing 737 Passenger	1
FR	8504	Nantes Atlantique Airport	London Stansted Apt	5 7	1550	1610	Boeing 737 Passenger	2
FR	8504	Nantes Atlantique Airport	London Stansted Apt	3	1555	1615	Boeing 737 Passenger	1
FR	8504	Nantes Atlantique Airport	London Stansted Apt	1	1615	1635	Boeing 737 Passenger	1
FR	8513	Porto	Birmingham Airport	7	1720	1940	Boeing 737 Passenger	1
FR	8513	Porto	Birmingham Airport	3	1030	1250	Boeing 737 Passenger	1
FR	8514	Birmingham Airport	Porto	7	2005	2225	Boeing 737 Passenger	1
FR	8514	Birmingham Airport	Porto	3	0745	1005	Boeing 737 Passenger	1

FR	8520	Malta	Cardiff	7	0700	0935	Boeing 737 Passenger	1
FR	8520	Malta	Cardiff	3	0700	0925	Boeing 737 Passenger	1
FR	8521	Cardiff	Malta	7	1000	1435	Boeing 737 Passenger	1
FR	8521	Cardiff	Malta	3	0950	1415	Boeing 737 Passenger	1
FR	8542	London Stansted Apt	Berlin Schoenefeld Apt	3 5	0630	0930	Boeing 737 Passenger	2
FR	8542	London Stansted Apt	Berlin Schoenefeld Apt	12 4 67	0635	0935	Boeing 737 Passenger	5
FR	8543	Berlin Schoenefeld Apt	London Stansted Apt	3	0955	1055	Boeing 737 Passenger	1
FR	8543	Berlin Schoenefeld Apt	London Stansted Apt	12 4567	1000	1100	Boeing 737 Passenger	6
FR	8544	London Stansted Apt	Berlin Schoenefeld Apt	123456	1900	2200	Boeing 737 Passenger	6
FR	8545	Berlin Schoenefeld Apt	London Stansted Apt	123456	2225	2325	Boeing 737 Passenger	6
FR	8554	Castellon de la Plana	London Stansted Apt	6	2225	2350	Boeing 737 Passenger	1
FR	8554	Castellon de la Plana	London Stansted Apt	2 4	1820	1945	Boeing 737 Passenger	2
FR	8555	London Stansted Apt	Castellon de la Plana	6	1830	2155	Boeing 737 Passenger	1
FR	8555	London Stansted Apt	Castellon de la Plana	2 4	1415	1740	Boeing 737 Passenger	2
FR	8561	Liverpool	Prague Ruzyne	3	1825	2130	Boeing 737 Passenger	1
FR	8561	Liverpool	Prague Ruzyne	1 5	1550	1900	Boeing 737 Passenger	2
FR	8562	Prague Ruzyne	Liverpool	3	1650	1800	Boeing 737 Passenger	1
FR	8562	Prague Ruzyne	Liverpool	1 5	1415	1525	Boeing 737 Passenger	2
FR	8582	London Stansted Apt	Thessaloniki	2 7	1700	2210	Boeing 737 Passenger	2
FR	8582	London Stansted Apt	Thessaloniki	1 3456	1655	2205	Boeing 737 Passenger	5
FR	8583	Thessaloniki	London Stansted Apt	1234567	2235	2359	Boeing 737 Passenger	7
FR	8584	London Stansted Apt	Rhodes	2 6	0635	1235	Boeing 737 Passenger	2
FR	8585	Rhodes	London Stansted Apt	2 6	1300	1510	Boeing 737 Passenger	2
FR	8592	London Stansted Apt	Bergerac	5	0715	1000	Boeing 737 Passenger	1
FR	8592	London Stansted Apt	Bergerac	234 67	1215	1500	Boeing 737 Passenger	5
FR	8592	London Stansted Apt	Bergerac	1	0825	1110	Boeing 737 Passenger	1
FR	8593	Bergerac	London Stansted Apt	5	1025	1110	Boeing 737 Passenger	1
FR	8593	Bergerac	London Stansted Apt	234 67	1525	1610	Boeing 737 Passenger	5
FR	8593	Bergerac	London Stansted Apt	1	1135	1220	Boeing 737 Passenger	1
FR	8681	Bristol	Kaunas	6	0700	1150	Boeing 737 Passenger	1
FR	8681	Bristol	Kaunas	2	1715	2205	Boeing 737 Passenger	1
FR	8682	Kaunas	Bristol	6	1215	1310	Boeing 737 Passenger	1
FR	8682	Kaunas	Bristol	2	1555	1650	Boeing 737 Passenger	1
FR	8728	Milan Malpensa Apt	London Stansted Apt	1234567	0710	0815	Boeing 737 Passenger	7
FR	8729	London Stansted Apt	Milan Malpensa Apt	1234567	0845	1140	Boeing 737 Passenger	7
FR	8736	London Stansted Apt	Milan Malpensa Apt	6	1750	2050	Boeing 737 Passenger	1
FR	8736	London Stansted Apt	Milan Malpensa Apt	345 7	1825	2125	Boeing 737 Passenger	4
FR	8736	London Stansted Apt	Milan Malpensa Apt	2	1925	2225	Boeing 737 Passenger	1
FR	8736	London Stansted Apt	Milan Malpensa Apt	1	1820	2120	Boeing 737 Passenger	1
FR	8737	Milan Malpensa Apt	London Stansted Apt	6	2115	2220	Boeing 737 Passenger	1
FR	8737	Milan Malpensa Apt	London Stansted Apt	345 7	2150	2255	Boeing 737 Passenger	4
FR	8737	Milan Malpensa Apt	London Stansted Apt	2	2255	2359	Boeing 737 Passenger	1
FR	8737	Milan Malpensa Apt	London Stansted Apt	1	2145	2250	Boeing 737 Passenger	1
FR	8742	Malta	Bournemouth	7	1110	1335	Boeing 737 Passenger	1
FR	8742	Malta	Bournemouth	4	1140	1405	Boeing 737 Passenger	1
FR	8743	Bournemouth	Malta	7	0630	1045	Boeing 737 Passenger	1
FR	8743	Bournemouth	Malta	4	0700	1115	Boeing 737 Passenger	1
FR	8746	London Stansted Apt	La Rochelle	7	1400	1635	Boeing 737 Passenger	1
FR	8746	London Stansted Apt	La Rochelle	6	1435	1710	Boeing 737 Passenger	1
FR	8746	London Stansted Apt	La Rochelle	4	1230	1505	Boeing 737 Passenger	1
FR	8746	London Stansted Apt	La Rochelle	2	1405	1640	Boeing 737 Passenger	1
FR	8746	London Stansted Apt	La Rochelle	1	1520	1755	Boeing 737 Passenger	1
FR	8747	La Rochelle	London Stansted Apt	7	1700	1730	Boeing 737 Passenger	1
FR	8747	La Rochelle	London Stansted Apt	6	1735	1805	Boeing 737 Passenger	1
FR	8747	La Rochelle	London Stansted Apt	4	1530	1600	Boeing 737 Passenger	1
FR	8747	La Rochelle	London Stansted Apt	2	1705	1735	Boeing 737 Passenger	1
FR	8747	La Rochelle	London Stansted Apt	1	1820	1850	Boeing 737 Passenger	1
FR	876	London Stansted Apt	Beziers	7	1420	1710	Boeing 737 Passenger	1
FR	876	London Stansted Apt	Beziers	5	1205	1455	Boeing 737 Passenger	1
FR	876	London Stansted Apt	Beziers	3	1125	1415	Boeing 737 Passenger	1
FR	877	Beziers	London Stansted Apt	7	1735	1835	Boeing 737 Passenger	1
FR	877	Beziers	London Stansted Apt	5	1520	1620	Boeing 737 Passenger	1
FR	877	Beziers	London Stansted Apt	3	1440	1540	Boeing 737 Passenger	1
FR	8776	London Stansted Apt	Limoges	7	1410	1650	Boeing 737 Passenger	1
FR	8776	London Stansted Apt	Limoges	5	1500	1740	Boeing 737 Passenger	1
FR	8776	London Stansted Apt	Limoges	4	1450	1730	Boeing 737 Passenger	1
FR	8776	London Stansted Apt	Limoges	2	0950	1230	Boeing 737 Passenger	1
FR	8776	London Stansted Apt	Limoges	1 3 6	1205	1445	Boeing 737 Passenger	3
FR	8777	Limoges	London Stansted Apt	7	1715	1755	Boeing 737 Passenger	1
FR	8777	Limoges	London Stansted Apt	5	1805	1845	Boeing 737 Passenger	1

FR	8777	Limoges	London Stansted Apt	4	1800	1840	Boeing 737 Passenger	1
FR	8777	Limoges	London Stansted Apt	2	1255	1335	Boeing 737 Passenger	1
FR	8777	Limoges	London Stansted Apt	1 3 6	1510	1550	Boeing 737 Passenger	3
FR	8816	London Stansted Apt	Nimes Garons Airport	7	1200	1455	Boeing 737 Passenger	1
FR	8816	London Stansted Apt	Nimes Garons Airport	5	1305	1600	Boeing 737 Passenger	1
FR	8816	London Stansted Apt	Nimes Garons Airport	3	0730	1025	Boeing 737 Passenger	1
FR	8816	London Stansted Apt	Nimes Garons Airport	1	0900	1155	Boeing 737 Passenger	1
FR	8817	Nimes Garons Airport	London Stansted Apt	7	1520	1615	Boeing 737 Passenger	1
FR	8817	Nimes Garons Airport	London Stansted Apt	5	1625	1720	Boeing 737 Passenger	1
FR	8817	Nimes Garons Airport	London Stansted Apt	3	1050	1145	Boeing 737 Passenger	1
FR	8817	Nimes Garons Airport	London Stansted Apt	1	1220	1315	Boeing 737 Passenger	1
FR	8823	London Stansted Apt	Edinburgh	45 7	2125	2245	Boeing 737 Passenger	3
FR	8824	Edinburgh	London Stansted Apt	45 7	1935	2100	Boeing 737 Passenger	3
FR	8852	Malta	London Stansted Apt	7	2145	0015	Boeing 737 Passenger	1
FR	8852	Malta	London Stansted Apt	12 456	2125	2355	Boeing 737 Passenger	5
FR	8853	London Stansted Apt	Malta	7	1710	2120	Boeing 737 Passenger	1
FR	8853	London Stansted Apt	Malta	12 456	1650	2100	Boeing 737 Passenger	5
FR	8868	London Stansted Apt	Poitiers Biard Airport	4	1440	1700	Boeing 737 Passenger	1
FR	8868	London Stansted Apt	Poitiers Biard Airport	2	1355	1615	Boeing 737 Passenger	1
FR	8868	London Stansted Apt	Poitiers Biard Airport	1	0805	1025	Boeing 737 Passenger	1
FR	8868	London Stansted Apt	Tours Val de Loire Airport	6	0730	0950	Boeing 737 Passenger	1
FR	8869	Poitiers Biard Airport	London Stansted Apt	4	1725	1750	Boeing 737 Passenger	1
FR	8869	Poitiers Biard Airport	London Stansted Apt	2	1640	1705	Boeing 737 Passenger	1
FR	8869	Poitiers Biard Airport	London Stansted Apt	1	1050	1115	Boeing 737 Passenger	1
FR	8869	Tours Val de Loire Airport	London Stansted Apt	6	1015	1040	Boeing 737 Passenger	1
FR	8881	London Stansted Apt	Edinburgh	6	0855	1015	Boeing 737 Passenger	1
FR	8882	Edinburgh	London Stansted Apt	6	0650	0825	Boeing 737 Passenger	1
FR	8894	Manchester (GB)	Brindisi	5	1635	2045	Boeing 737 Passenger	1
FR	8894	Manchester (GB)	Brindisi	1	1610	2020	Boeing 737 Passenger	1
FR	8895	Brindisi	Manchester (GB)	5	2110	2325	Boeing 737 Passenger	1
FR	8895	Brindisi	Manchester (GB)	1	2045	2300	Boeing 737 Passenger	1
FR	8928	Liverpool	Malta	5	1530	1950	Boeing 737 Passenger	1
FR	8928	Liverpool	Malta	2	0955	1425	Boeing 737 Passenger	1
FR	8929	Malta	Liverpool	5	2015	2250	Boeing 737 Passenger	1
FR	8929	Malta	Liverpool	2	0645	0930	Boeing 737 Passenger	1
FR	8944	Malaga Airport	London Stansted Apt	7	1550	1745	Boeing 737 Passenger	1
FR	8944	Malaga Airport	London Stansted Apt	4	1445	1640	Boeing 737 Passenger	1
FR	8945	London Stansted Apt	Malaga Airport	7	1810	2210	Boeing 737 Passenger	1
FR	8945	London Stansted Apt	Malaga Airport	4	1705	2105	Boeing 737 Passenger	1
FR	8975	Alicante Airport	London Stansted Apt	6	2115	2300	Boeing 737 Passenger	1
FR	8975	Alicante Airport	London Stansted Apt	3	1545	1730	Boeing 737 Passenger	1
FR	8975	Alicante Airport	London Stansted Apt	2	2100	2245	Boeing 737 Passenger	1
FR	8975	Alicante Airport	London Stansted Apt	1 45 7	1540	1725	Boeing 737 Passenger	4
FR	8976	London Stansted Apt	Alicante Airport	6	1700	2040	Boeing 737 Passenger	1
FR	8976	London Stansted Apt	Alicante Airport	3	1755	2135	Boeing 737 Passenger	1
FR	8976	London Stansted Apt	Alicante Airport	2	1645	2025	Boeing 737 Passenger	1
FR	8976	London Stansted Apt	Alicante Airport	1 45 7	1750	2130	Boeing 737 Passenger	4
FR	901	London Stansted Apt	Cork	7	0815	0940	Boeing 737 Passenger	1
FR	901	London Stansted Apt	Cork	123456	0820	0945	Boeing 737 Passenger	6
FR	9014	London Stansted Apt	Barcelona Apt	5	1555	1910	Boeing 737 Passenger	1
FR	9014	London Stansted Apt	Barcelona Apt	234 67	1610	1925	Boeing 737 Passenger	5
FR	9014	London Stansted Apt	Barcelona Apt	1	1615	1930	Boeing 737 Passenger	1
FR	9015	Barcelona Apt	London Stansted Apt	5	1400	1530	Boeing 737 Passenger	1
FR	9015	Barcelona Apt	London Stansted Apt	234 7	1405	1535	Boeing 737 Passenger	4
FR	9015	Barcelona Apt	London Stansted Apt	1	1420	1550	Boeing 737 Passenger	1
FR	902	Cork	London Stansted Apt	7	0615	0745	Boeing 737 Passenger	1
FR	902	Cork	London Stansted Apt	123456	0625	0755	Boeing 737 Passenger	6
FR	9032	Manchester (GB)	Ponta Delgada	5	0745	1040	Boeing 737 Passenger	1
FR	9033	Ponta Delgada	Manchester (GB)	5	1105	1555	Boeing 737 Passenger	1
FR	9036	Manchester (GB)	Palma de Mallorca	7	1000	1340	Boeing 737 Passenger	1
FR	9036	Manchester (GB)	Palma de Mallorca	6	1110	1450	Boeing 737 Passenger	1
FR	9036	Manchester (GB)	Palma de Mallorca	4	1800	2140	Boeing 737 Passenger	1
FR	9036	Manchester (GB)	Palma de Mallorca	2	1625	2005	Boeing 737 Passenger	1
FR	9037	Palma de Mallorca	Manchester (GB)	7	1415	1555	Boeing 737 Passenger	1
FR	9037	Palma de Mallorca	Manchester (GB)	6	1530	1710	Boeing 737 Passenger	1
FR	9037	Palma de Mallorca	Manchester (GB)	4	2220	2359	Boeing 737 Passenger	1
FR	9037	Palma de Mallorca	Manchester (GB)	2	2040	2220	Boeing 737 Passenger	1
FR	9044	London Stansted Apt	Barcelona Apt	1234567	1245	1600	Boeing 737 Passenger	7
FR	9045	Barcelona Apt	London Stansted Apt	12345 7	1050	1220	Boeing 737 Passenger	6
FR	9046	Manchester (GB)	Palermo	5	1625	2035	Boeing 737 Passenger	1

FR	9046	Manchester (GB)	Palermo	1	0815	1225	Boeing 737 Passenger	1
FR	9047	Palermo	Manchester (GB)	5	2100	2325	Boeing 737 Passenger	1
FR	9047	Palermo	Manchester (GB)	1	1255	1520	Boeing 737 Passenger	1
FR	905	London Stansted Apt	Cork	1234567	2035	2200	Boeing 737 Passenger	7
FR	9058	Manchester (GB)	Almeria	7	0715	1115	Boeing 737 Passenger	1
FR	9058	Manchester (GB)	Almeria	4	1655	2055	Boeing 737 Passenger	1
FR	9059	Almeria	Manchester (GB)	7	1140	1340	Boeing 737 Passenger	1
FR	9059	Almeria	Manchester (GB)	4	2120	2320	Boeing 737 Passenger	1
FR	906	Cork	London Stansted Apt	1234567	1840	2010	Boeing 737 Passenger	7
FR	9060	Manchester (GB)	Lisbon	6	1800	2050	Boeing 737 Passenger	1
FR	9063	Lisbon	Manchester (GB)	6	2120	0010	Boeing 737 Passenger	1
FR	9072	Alicante Airport	Manchester (GB)	6	2235	0025	Boeing 737 Passenger	1
FR	9072	Alicante Airport	Manchester (GB)	4	2140	2330	Boeing 737 Passenger	1
FR	9072	Alicante Airport	Manchester (GB)	2	1710	1900	Boeing 737 Passenger	1
FR	9072	Alicante Airport	Manchester (GB)	1 3 5 7	1720	1910	Boeing 737 Passenger	4
FR	9073	Manchester (GB)	Alicante Airport	6	1815	2200	Boeing 737 Passenger	1
FR	9073	Manchester (GB)	Alicante Airport	4	1710	2055	Boeing 737 Passenger	1
FR	9073	Manchester (GB)	Alicante Airport	2	1925	2310	Boeing 737 Passenger	1
FR	9073	Manchester (GB)	Alicante Airport	1 3 5 7	1935	2320	Boeing 737 Passenger	4
FR	9074	Manchester (GB)	Naples Capodichino Apt	7	1430	1825	Boeing 737 Passenger	1
FR	9075	Naples Capodichino Apt	Manchester (GB)	7	1850	2055	Boeing 737 Passenger	1
FR	9076	Manchester (GB)	Rhodes	1 5	1430	2055	Boeing 737 Passenger	2
FR	9077	Rhodes	Manchester (GB)	1 5	2120	2355	Boeing 737 Passenger	2
FR	9078	Alicante Airport	Leeds Bradford	7	1200	1355	Boeing 737 Passenger	1
FR	9078	Alicante Airport	Leeds Bradford	6	1750	1940	Boeing 737 Passenger	1
FR	9078	Alicante Airport	Leeds Bradford	5	1600	1755	Boeing 737 Passenger	1
FR	9078	Alicante Airport	Leeds Bradford	3	0655	0850	Boeing 737 Passenger	1
FR	9078	Alicante Airport	Leeds Bradford	12 4	2135	2330	Boeing 737 Passenger	3
FR	9079	Leeds Bradford	Alicante Airport	7	0735	1125	Boeing 737 Passenger	1
FR	9079	Leeds Bradford	Alicante Airport	6	1325	1715	Boeing 737 Passenger	1
FR	9079	Leeds Bradford	Alicante Airport	5	1820	2210	Boeing 737 Passenger	1
FR	9079	Leeds Bradford	Alicante Airport	3	0915	1305	Boeing 737 Passenger	1
FR	9079	Leeds Bradford	Alicante Airport	12 4	1710	2100	Boeing 737 Passenger	3
FR	908	London Stansted Apt	Cork	6	1210	1335	Boeing 737 Passenger	1
FR	908	London Stansted Apt	Cork	12345 7	1650	1815	Boeing 737 Passenger	6
FR	9082	Alicante Airport	Bournemouth	7	1830	1955	Boeing 737 Passenger	1
FR	9082	Alicante Airport	Bournemouth	1 3 5	2140	2305	Boeing 737 Passenger	3
FR	9083	Bournemouth	Alicante Airport	7	1425	1755	Boeing 737 Passenger	1
FR	9083	Bournemouth	Alicante Airport	1 3 5	1735	2105	Boeing 737 Passenger	3
FR	9084	Alicante Airport	Nottingham East Midlands Airport	7	1235	1415	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	6	1245	1430	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	5	1015	1155	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	4	1045	1225	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	3	1130	1310	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	2	1245	1425	Boeing 737 Passenger	1
FR	9084	Alicante Airport	Nottingham East Midlands Airport	1	1115	1255	Boeing 737 Passenger	1
FR	9085	Nottingham East Midlands Airport	Alicante Airport	7	0820	1200	Boeing 737 Passenger	1
FR	9085	Nottingham East Midlands Airport	Alicante Airport	5	0600	0935	Boeing 737 Passenger	1
FR	9085	Nottingham East Midlands Airport	Alicante Airport	4	0630	1010	Boeing 737 Passenger	1
FR	9085	Nottingham East Midlands Airport	Alicante Airport	2 6	0830	1210	Boeing 737 Passenger	2
FR	9085	Nottingham East Midlands Airport	Alicante Airport	1 3	0700	1040	Boeing 737 Passenger	2
FR	909	Cork	London Stansted Apt	6	1015	1145	Boeing 737 Passenger	1
FR	909	Cork	London Stansted Apt	12345 7	1455	1625	Boeing 737 Passenger	6
FR	9094	Manchester (GB)	Alicante Airport	7	1515	1900	Boeing 737 Passenger	1
FR	9094	Manchester (GB)	Alicante Airport	6	1555	1940	Boeing 737 Passenger	1
FR	9094	Manchester (GB)	Alicante Airport	5	0825	1210	Boeing 737 Passenger	1
FR	9094	Manchester (GB)	Alicante Airport	3	1615	2000	Boeing 737 Passenger	1
FR	9094	Manchester (GB)	Alicante Airport	1	1025	1410	Boeing 737 Passenger	1
FR	9095	Alicante Airport	Manchester (GB)	7	1300	1450	Boeing 737 Passenger	1
FR	9095	Alicante Airport	Manchester (GB)	6	2015	2205	Boeing 737 Passenger	1
FR	9095	Alicante Airport	Manchester (GB)	5	1245	1435	Boeing 737 Passenger	1
FR	9095	Alicante Airport	Manchester (GB)	3	2035	2225	Boeing 737 Passenger	1
FR	9095	Alicante Airport	Manchester (GB)	1	0810	1000	Boeing 737 Passenger	1
FR	9122	Manchester (GB)	Faro	7	0950	1250	Boeing 737 Passenger	1
FR	9122	Manchester (GB)	Faro	3	0945	1245	Boeing 737 Passenger	1
FR	9122	Manchester (GB)	Faro	1	1610	1910	Boeing 737 Passenger	1
FR	9125	Faro	Manchester (GB)	7	1315	1615	Boeing 737 Passenger	1
FR	9125	Faro	Manchester (GB)	3	1310	1610	Boeing 737 Passenger	1
FR	9125	Faro	Manchester (GB)	1	1935	2235	Boeing 737 Passenger	1
FR	9126	Manchester (GB)	Fuerteventura	4	1430	1925	Boeing 737 Passenger	1

FR	9127	Fuerteventura	Manchester (GB)	4	2000	0020	Boeing 737 Passenger	1
FR	9142	London Stansted Apt	Faro	7	0715	1010	Boeing 737 Passenger	1
FR	9142	London Stansted Apt	Faro	6	0735	1030	Boeing 737 Passenger	1
FR	9142	London Stansted Apt	Faro	2	0655	0950	Boeing 737 Passenger	1
FR	9142	London Stansted Apt	Faro	1 345	0710	1005	Boeing 737 Passenger	4
FR	9143	Faro	London Stansted Apt	7	1035	1325	Boeing 737 Passenger	1
FR	9143	Faro	London Stansted Apt	6	1055	1345	Boeing 737 Passenger	1
FR	9143	Faro	London Stansted Apt	2	1015	1305	Boeing 737 Passenger	1
FR	9143	Faro	London Stansted Apt	1 345	1030	1320	Boeing 737 Passenger	4
FR	9145	Barcelona Apt	Liverpool	6	1120	1300	Boeing 737 Passenger	1
FR	9145	Barcelona Apt	Liverpool	4	0630	0810	Boeing 737 Passenger	1
FR	9145	Barcelona Apt	Liverpool	3 5	2030	2210	Boeing 737 Passenger	2
FR	9145	Barcelona Apt	Liverpool	2	1840	2020	Boeing 737 Passenger	1
FR	9145	Barcelona Apt	Liverpool	1	0830	1010	Boeing 737 Passenger	1
FR	9146	Liverpool	Barcelona Apt	6	0725	1045	Boeing 737 Passenger	1
FR	9146	Liverpool	Barcelona Apt	4	0835	1155	Boeing 737 Passenger	1
FR	9146	Liverpool	Barcelona Apt	3 5	1635	1955	Boeing 737 Passenger	2
FR	9146	Liverpool	Barcelona Apt	2	1445	1805	Boeing 737 Passenger	1
FR	9146	Liverpool	Barcelona Apt	1	1035	1355	Boeing 737 Passenger	1
FR	9162	Barcelona Apt	Birmingham Airport	6	2145	2315	Boeing 737 Passenger	1
FR	9162	Barcelona Apt	Birmingham Airport	4	1240	1410	Boeing 737 Passenger	1
FR	9162	Barcelona Apt	Birmingham Airport	3	1405	1535	Boeing 737 Passenger	1
FR	9162	Barcelona Apt	Birmingham Airport	12 5 7	1350	1520	Boeing 737 Passenger	4
FR	9163	Birmingham Airport	Barcelona Apt	6	1755	2110	Boeing 737 Passenger	1
FR	9163	Birmingham Airport	Barcelona Apt	4	1435	1745	Boeing 737 Passenger	1
FR	9163	Birmingham Airport	Barcelona Apt	3	1600	1910	Boeing 737 Passenger	1
FR	9163	Birmingham Airport	Barcelona Apt	12 5 7	1545	1855	Boeing 737 Passenger	4
FR	9184	Alicante Airport	Nottingham East Midlands Airport	6	1525	1710	Boeing 737 Passenger	1
FR	9184	Alicante Airport	Nottingham East Midlands Airport	4	2230	0015	Boeing 737 Passenger	1
FR	9184	Alicante Airport	Nottingham East Midlands Airport	2	2155	2340	Boeing 737 Passenger	1
FR	9184	Alicante Airport	Nottingham East Midlands Airport	1 3 5 7	2200	2345	Boeing 737 Passenger	4
FR	9185	Nottingham East Midlands Airport	Alicante Airport	4	1815	2155	Boeing 737 Passenger	1
FR	9185	Nottingham East Midlands Airport	Alicante Airport	2 6	1740	2120	Boeing 737 Passenger	2
FR	9185	Nottingham East Midlands Airport	Alicante Airport	1 3 5 7	1745	2125	Boeing 737 Passenger	4
FR	9188	Palma de Mallorca	Edinburgh	6	0615	0825	Boeing 737 Passenger	1
FR	9188	Palma de Mallorca	Edinburgh	5	2155	0005	Boeing 737 Passenger	1
FR	9189	Edinburgh	Palma de Mallorca	6	0915	1315	Boeing 737 Passenger	1
FR	9189	Edinburgh	Palma de Mallorca	5	1720	2120	Boeing 737 Passenger	1
FR	9190	Palma de Mallorca	London Stansted Apt	3	0825	1000	Boeing 737 Passenger	1
FR	9190	Palma de Mallorca	London Stansted Apt	1	1500	1635	Boeing 737 Passenger	1
FR	9191	London Stansted Apt	Palma de Mallorca	3	1100	1425	Boeing 737 Passenger	1
FR	9191	London Stansted Apt	Palma de Mallorca	1	1700	2025	Boeing 737 Passenger	1
FR	9202	Liverpool	Porto	5	1215	1440	Boeing 737 Passenger	1
FR	9202	Liverpool	Porto	1	1820	2045	Boeing 737 Passenger	1
FR	9203	Porto	Liverpool	5	0930	1150	Boeing 737 Passenger	1
FR	9203	Porto	Liverpool	1	2115	2335	Boeing 737 Passenger	1
FR	9206	London Luton Apt	Faro	3	1735	2030	Boeing 737 Passenger	1
FR	9206	London Luton Apt	Faro	2 56	1930	2225	Boeing 737 Passenger	3
FR	9206	London Luton Apt	Faro	1	1820	2115	Boeing 737 Passenger	1
FR	9207	Faro	London Luton Apt	3	1420	1710	Boeing 737 Passenger	1
FR	9207	Faro	London Luton Apt	2 56	1615	1905	Boeing 737 Passenger	3
FR	9207	Faro	London Luton Apt	1	1505	1755	Boeing 737 Passenger	1
FR	9221	Faro	Aberdeen (GB)	2 6	0800	1130	Boeing 737 Passenger	2
FR	9222	Aberdeen (GB)	Faro	2 6	1155	1525	Boeing 737 Passenger	2
FR	9223	Faro	Cardiff	5	1620	1900	Boeing 737 Passenger	1
FR	9223	Faro	Cardiff	1	0845	1125	Boeing 737 Passenger	1
FR	9224	Cardiff	Faro	5	1925	2205	Boeing 737 Passenger	1
FR	9224	Cardiff	Faro	1	1150	1430	Boeing 737 Passenger	1
FR	9225	Faro	Newquay	2 6	1755	2025	Boeing 737 Passenger	2
FR	9226	Newquay	Faro	2 6	2050	2320	Boeing 737 Passenger	2
FR	9227	Manchester (GB)	Kiev Borispol Intl Apt	5	0605	1135	Boeing 737 Passenger	1
FR	9227	Manchester (GB)	Kiev Borispol Intl Apt	1	0735	1305	Boeing 737 Passenger	1
FR	9228	Kiev Borispol Intl Apt	Manchester (GB)	5	1210	1340	Boeing 737 Passenger	1
FR	9228	Kiev Borispol Intl Apt	Manchester (GB)	1	1340	1510	Boeing 737 Passenger	1
FR	9251	London Stansted Apt	Ibiza	1234567	1725	2105	Boeing 737 Passenger	7
FR	9252	Ibiza	London Stansted Apt	1234567	2140	2320	Boeing 737 Passenger	7
FR	9253	London Stansted Apt	Ibiza	7	0745	1125	Boeing 737 Passenger	1
FR	9253	London Stansted Apt	Ibiza	6	0715	1055	Boeing 737 Passenger	1
FR	9253	London Stansted Apt	Ibiza	2 4	0700	1040	Boeing 737 Passenger	2
FR	9253	London Stansted Apt	Ibiza	1	1520	1900	Boeing 737 Passenger	1

FR	9254	Ibiza	London Stansted Apt	7	1200	1340	Boeing 737 Passenger	1
FR	9254	Ibiza	London Stansted Apt	6	1130	1310	Boeing 737 Passenger	1
FR	9254	Ibiza	London Stansted Apt	2 4	1115	1255	Boeing 737 Passenger	2
FR	9254	Ibiza	London Stansted Apt	1	1935	2115	Boeing 737 Passenger	1
FR	9271	London Stansted Apt	Eindhoven Airport	5 7	0630	0835	Boeing 737 Passenger	2
FR	9271	London Stansted Apt	Eindhoven Airport	4 6	0620	0825	Boeing 737 Passenger	2
FR	9271	London Stansted Apt	Eindhoven Airport	3	0625	0830	Boeing 737 Passenger	1
FR	9271	London Stansted Apt	Eindhoven Airport	2	0645	0850	Boeing 737 Passenger	1
FR	9271	London Stansted Apt	Eindhoven Airport	1	0615	0820	Boeing 737 Passenger	1
FR	9272	Eindhoven Airport	London Stansted Apt	5 7	0900	0910	Boeing 737 Passenger	2
FR	9272	Eindhoven Airport	London Stansted Apt	4 6	0850	0900	Boeing 737 Passenger	2
FR	9272	Eindhoven Airport	London Stansted Apt	3	0855	0905	Boeing 737 Passenger	1
FR	9272	Eindhoven Airport	London Stansted Apt	2	0915	0925	Boeing 737 Passenger	1
FR	9272	Eindhoven Airport	London Stansted Apt	1	0845	0855	Boeing 737 Passenger	1
FR	9273	London Stansted Apt	Eindhoven Airport	6	1855	2100	Boeing 737 Passenger	1
FR	9273	London Stansted Apt	Eindhoven Airport	3	1805	2010	Boeing 737 Passenger	1
FR	9273	London Stansted Apt	Eindhoven Airport	2 7	1845	2050	Boeing 737 Passenger	2
FR	9273	London Stansted Apt	Eindhoven Airport	1 45	1825	2030	Boeing 737 Passenger	3
FR	9274	Eindhoven Airport	London Stansted Apt	6	2125	2135	Boeing 737 Passenger	1
FR	9274	Eindhoven Airport	London Stansted Apt	5	2105	2115	Boeing 737 Passenger	1
FR	9274	Eindhoven Airport	London Stansted Apt	3	2035	2045	Boeing 737 Passenger	1
FR	9274	Eindhoven Airport	London Stansted Apt	2 7	2115	2125	Boeing 737 Passenger	2
FR	9274	Eindhoven Airport	London Stansted Apt	1 4	2100	2110	Boeing 737 Passenger	2
FR	9282	London Stansted Apt	Faro	7	1050	1345	Boeing 737 Passenger	1
FR	9282	London Stansted Apt	Faro	5	1715	2010	Boeing 737 Passenger	1
FR	9282	London Stansted Apt	Faro	4 6	1915	2210	Boeing 737 Passenger	2
FR	9282	London Stansted Apt	Faro	3	1500	1755	Boeing 737 Passenger	1
FR	9282	London Stansted Apt	Faro	2	1600	1855	Boeing 737 Passenger	1
FR	9282	London Stansted Apt	Faro	1	1505	1800	Boeing 737 Passenger	1
FR	9283	Faro	London Stansted Apt	7	0710	1000	Boeing 737 Passenger	1
FR	9283	Faro	London Stansted Apt	5	2050	2340	Boeing 737 Passenger	1
FR	9283	Faro	London Stansted Apt	4 6	1535	1825	Boeing 737 Passenger	2
FR	9283	Faro	London Stansted Apt	3	1845	2135	Boeing 737 Passenger	1
FR	9283	Faro	London Stansted Apt	2	1935	2225	Boeing 737 Passenger	1
FR	9283	Faro	London Stansted Apt	1	1850	2140	Boeing 737 Passenger	1
FR	9284	Alicante Airport	Nottingham East Midlands Airport	3 5	1830	2015	Boeing 737 Passenger	2
FR	9284	Alicante Airport	Nottingham East Midlands Airport	1	0825	1010	Boeing 737 Passenger	1
FR	9285	Nottingham East Midlands Airport	Alicante Airport	3 5	1415	1755	Boeing 737 Passenger	2
FR	9285	Nottingham East Midlands Airport	Alicante Airport	1	1035	1415	Boeing 737 Passenger	1
FR	9301	Belfast International Apt	Girona Costa Brava Apt	4	1925	2300	Boeing 737 Passenger	1
FR	9301	Belfast International Apt	Girona Costa Brava Apt	1	1325	1700	Boeing 737 Passenger	1
FR	9302	Girona Costa Brava Apt	Belfast International Apt	4	1725	1900	Boeing 737 Passenger	1
FR	9302	Girona Costa Brava Apt	Belfast International Apt	1	1125	1300	Boeing 737 Passenger	1
FR	9303	Girona Costa Brava Apt	Edinburgh	7	1755	1935	Boeing 737 Passenger	1
FR	9303	Girona Costa Brava Apt	Edinburgh	4	0650	0830	Boeing 737 Passenger	1
FR	9304	Edinburgh	Girona Costa Brava Apt	7	2000	2340	Boeing 737 Passenger	1
FR	9304	Edinburgh	Girona Costa Brava Apt	4	0855	1235	Boeing 737 Passenger	1
FR	9305	Girona Costa Brava Apt	Liverpool	7	1100	1215	Boeing 737 Passenger	1
FR	9305	Girona Costa Brava Apt	Liverpool	3	1715	1830	Boeing 737 Passenger	1
FR	9306	Liverpool	Girona Costa Brava Apt	7	1240	1555	Boeing 737 Passenger	1
FR	9306	Liverpool	Girona Costa Brava Apt	3	1855	2210	Boeing 737 Passenger	1
FR	9307	Girona Costa Brava Apt	Glasgow Prestwick Apt	6	1815	2000	Boeing 737 Passenger	1
FR	9307	Girona Costa Brava Apt	Glasgow Prestwick Apt	3	0630	0815	Boeing 737 Passenger	1
FR	9308	Glasgow Prestwick Apt	Girona Costa Brava Apt	6	2025	2350	Boeing 737 Passenger	1
FR	9308	Glasgow Prestwick Apt	Girona Costa Brava Apt	3	0840	1205	Boeing 737 Passenger	1
FR	9335	Girona Costa Brava Apt	Bristol	7	1550	1700	Boeing 737 Passenger	1
FR	9335	Girona Costa Brava Apt	Bristol	45	1105	1215	Boeing 737 Passenger	2
FR	9335	Girona Costa Brava Apt	Bristol	3	1555	1705	Boeing 737 Passenger	1
FR	9335	Girona Costa Brava Apt	Bristol	1	1815	1925	Boeing 737 Passenger	1
FR	9336	Bristol	Girona Costa Brava Apt	7	1225	1525	Boeing 737 Passenger	1
FR	9336	Bristol	Girona Costa Brava Apt	45	1240	1540	Boeing 737 Passenger	2
FR	9336	Bristol	Girona Costa Brava Apt	3	1205	1505	Boeing 737 Passenger	1
FR	9336	Bristol	Girona Costa Brava Apt	1	1950	2250	Boeing 737 Passenger	1
FR	934	London Stansted Apt	Perpignan	3	0610	0915	Boeing 737 Passenger	1
FR	935	Perpignan	London Stansted Apt	3	0940	1050	Boeing 737 Passenger	1
FR	936	London Stansted Apt	Perpignan	7	1155	1500	Boeing 737 Passenger	1
FR	936	London Stansted Apt	Perpignan	6	0640	0945	Boeing 737 Passenger	1
FR	936	London Stansted Apt	Perpignan	4	0635	0940	Boeing 737 Passenger	1
FR	936	London Stansted Apt	Perpignan	2	0755	1100	Boeing 737 Passenger	1
FR	937	Perpignan	London Stansted Apt	7	1525	1635	Boeing 737 Passenger	1

FR	937	Perpignan	London Stansted Apt	6	1025	1135	Boeing 737 Passenger	1
FR	937	Perpignan	London Stansted Apt	4	1005	1115	Boeing 737 Passenger	1
FR	937	Perpignan	London Stansted Apt	2	1125	1235	Boeing 737 Passenger	1
FR	9387	Barcelona Apt	Nottingham East Midlands Airport	1234567	1325	1450	Boeing 737 Passenger	7
FR	9388	Nottingham East Midlands Airport	Barcelona Apt	1234567	0935	1250	Boeing 737 Passenger	7
FR	9406	Ibiza	Nottingham East Midlands Airport	6	2040	2220	Boeing 737 Passenger	1
FR	9406	Ibiza	Nottingham East Midlands Airport	2	2140	2320	Boeing 737 Passenger	1
FR	9407	Nottingham East Midlands Airport	Ibiza	6	1625	2005	Boeing 737 Passenger	1
FR	9407	Nottingham East Midlands Airport	Ibiza	2	1725	2105	Boeing 737 Passenger	1
FR	9417	Glasgow Prestwick Apt	Palma de Mallorca	4	1615	2005	Boeing 737 Passenger	1
FR	9418	Palma de Mallorca	Glasgow Prestwick Apt	4	2040	2245	Boeing 737 Passenger	1
FR	9501	Manchester (GB)	Zadar	26	1740	2125	Boeing 737 Passenger	2
FR	9502	Zadar	Manchester (GB)	26	2150	2330	Boeing 737 Passenger	2
FR	9509	London Stansted Apt	Bremen	7	0625	0850	Boeing 737 Passenger	1
FR	9509	London Stansted Apt	Bremen	4	0750	1015	Boeing 737 Passenger	1
FR	9509	London Stansted Apt	Bremen	35	0800	1025	Boeing 737 Passenger	2
FR	9509	London Stansted Apt	Bremen	1	0755	1020	Boeing 737 Passenger	1
FR	9510	Bremen	London Stansted Apt	7	0915	0940	Boeing 737 Passenger	1
FR	9510	Bremen	London Stansted Apt	4	1040	1105	Boeing 737 Passenger	1
FR	9510	Bremen	London Stansted Apt	35	1050	1115	Boeing 737 Passenger	2
FR	9510	Bremen	London Stansted Apt	1	1045	1110	Boeing 737 Passenger	1
FR	9542	London Stansted Apt	Faro	6	1105	1400	Boeing 737 Passenger	1
FR	9542	London Stansted Apt	Faro	23	1800	2055	Boeing 737 Passenger	1
FR	9543	Faro	London Stansted Apt	6	1425	1715	Boeing 737 Passenger	1
FR	9543	Faro	London Stansted Apt	23	1445	1735	Boeing 737 Passenger	1
FR	9552	Barcelona Apt	Birmingham Airport	26	0800	0925	Boeing 737 Passenger	2
FR	9553	Birmingham Airport	Barcelona Apt	26	0950	1305	Boeing 737 Passenger	2
FR	9592	Liverpool	Palma de Mallorca	7	1750	2125	Boeing 737 Passenger	1
FR	9592	Liverpool	Palma de Mallorca	6	1900	2235	Boeing 737 Passenger	1
FR	9592	Liverpool	Palma de Mallorca	4	1510	1845	Boeing 737 Passenger	1
FR	9592	Liverpool	Palma de Mallorca	3	2045	0020	Boeing 737 Passenger	1
FR	9592	Liverpool	Palma de Mallorca	2	1615	1950	Boeing 737 Passenger	1
FR	9592	Liverpool	Palma de Mallorca	15	2010	2345	Boeing 737 Passenger	2
FR	9593	Palma de Mallorca	Liverpool	7	2220	0005	Boeing 737 Passenger	1
FR	9593	Palma de Mallorca	Liverpool	6	1355	1540	Boeing 737 Passenger	1
FR	9593	Palma de Mallorca	Liverpool	4	1245	1430	Boeing 737 Passenger	1
FR	9593	Palma de Mallorca	Liverpool	3	1835	2020	Boeing 737 Passenger	1
FR	9593	Palma de Mallorca	Liverpool	2	2025	2210	Boeing 737 Passenger	1
FR	9593	Palma de Mallorca	Liverpool	15	1800	1945	Boeing 737 Passenger	2
FR	9621	Vilnius	Liverpool	4	1205	1305	Boeing 737 Passenger	1
FR	9621	Vilnius	Liverpool	1	1150	1250	Boeing 737 Passenger	1
FR	9622	Liverpool	Vilnius	4	0645	1140	Boeing 737 Passenger	1
FR	9622	Liverpool	Vilnius	1	0630	1125	Boeing 737 Passenger	1
FR	9626	Liverpool	Pisa	5	1350	1715	Boeing 737 Passenger	1
FR	9626	Liverpool	Pisa	1	1240	1605	Boeing 737 Passenger	1
FR	9627	Pisa	Liverpool	5	1150	1325	Boeing 737 Passenger	1
FR	9627	Pisa	Liverpool	1	1040	1215	Boeing 737 Passenger	1
FR	9628	Liverpool	Poznan Lawica Apt	26	1830	2150	Boeing 737 Passenger	2
FR	9629	Poznan Lawica Apt	Liverpool	26	2215	2335	Boeing 737 Passenger	2
FR	964	London Stansted Apt	Goteborg Landvetter Apt	7	1805	2100	Boeing 737 Passenger	1
FR	964	London Stansted Apt	Goteborg Landvetter Apt	4	1755	2050	Boeing 737 Passenger	1
FR	964	London Stansted Apt	Goteborg Landvetter Apt	3	1845	2140	Boeing 737 Passenger	1
FR	964	London Stansted Apt	Goteborg Landvetter Apt	2	1715	2010	Boeing 737 Passenger	1
FR	964	London Stansted Apt	Goteborg Landvetter Apt	156	2015	2310	Boeing 737 Passenger	3
FR	9646	Liverpool	Krakow John Paul II - Balice	5	2010	2335	Boeing 737 Passenger	1
FR	9646	Liverpool	Krakow John Paul II - Balice	3	2020	2345	Boeing 737 Passenger	1
FR	9646	Liverpool	Krakow John Paul II - Balice	1	1810	2135	Boeing 737 Passenger	1
FR	9647	Krakow John Paul II - Balice	Liverpool	5	1800	1945	Boeing 737 Passenger	1
FR	9647	Krakow John Paul II - Balice	Liverpool	3	1810	1955	Boeing 737 Passenger	1
FR	9647	Krakow John Paul II - Balice	Liverpool	1	2210	2355	Boeing 737 Passenger	1
FR	9648	Liverpool	Wroclaw	7	0620	0935	Boeing 737 Passenger	1
FR	9648	Liverpool	Wroclaw	4	1130	1445	Boeing 737 Passenger	1
FR	9649	Wroclaw	Liverpool	7	1000	1125	Boeing 737 Passenger	1
FR	9649	Wroclaw	Liverpool	4	0940	1105	Boeing 737 Passenger	1
FR	965	Goteborg Landvetter Apt	London Stansted Apt	7	2125	2230	Boeing 737 Passenger	1
FR	965	Goteborg Landvetter Apt	London Stansted Apt	4	2115	2220	Boeing 737 Passenger	1
FR	965	Goteborg Landvetter Apt	London Stansted Apt	3	2205	2310	Boeing 737 Passenger	1
FR	965	Goteborg Landvetter Apt	London Stansted Apt	2	2035	2140	Boeing 737 Passenger	1
FR	965	Goteborg Landvetter Apt	London Stansted Apt	156	1845	1950	Boeing 737 Passenger	3
FR	9651	Rome Ciampino Apt	Nottingham East Midlands Airport	7	1955	2135	Boeing 737 Passenger	1

FR	9651	Rome Ciampino Apt	Nottingham East Midlands Airport	4	2105	2245	Boeing 737 Passenger	1
FR	9652	Nottingham East Midlands Airport	Rome Ciampino Apt	7	1550	1930	Boeing 737 Passenger	1
FR	9652	Nottingham East Midlands Airport	Rome Ciampino Apt	4	1700	2040	Boeing 737 Passenger	1
FR	966	London Stansted Apt	Goteborg Landvetter Apt	1 5	0815	1105	Boeing 737 Passenger	2
FR	967	Goteborg Landvetter Apt	London Stansted Apt	1 5	0655	0750	Boeing 737 Passenger	2
FR	972	London Stansted Apt	Genoa	123456	1210	1520	Boeing 737 Passenger	6
FR	973	Genoa	London Stansted Apt	123456	1545	1650	Boeing 737 Passenger	6
FR	9772	London Stansted Apt	Karlsruhe/Baden-Baden Baden Airpar	6	1300	1535	Boeing 737 Passenger	1
FR	9772	London Stansted Apt	Karlsruhe/Baden-Baden Baden Airpar	5	1425	1650	Boeing 737 Passenger	1
FR	9772	London Stansted Apt	Karlsruhe/Baden-Baden Baden Airpar	4	1345	1610	Boeing 737 Passenger	1
FR	9772	London Stansted Apt	Karlsruhe/Baden-Baden Baden Airpar	2	1350	1615	Boeing 737 Passenger	1
FR	9772	London Stansted Apt	Karlsruhe/Baden-Baden Baden Airpar	1 3 7	1410	1635	Boeing 737 Passenger	3
FR	9773	Karlsruhe/Baden-Baden Baden Airpar	London Stansted Apt	6	1600	1630	Boeing 737 Passenger	1
FR	9773	Karlsruhe/Baden-Baden Baden Airpar	London Stansted Apt	5	1330	1400	Boeing 737 Passenger	1
FR	9773	Karlsruhe/Baden-Baden Baden Airpar	London Stansted Apt	4	1250	1320	Boeing 737 Passenger	1
FR	9773	Karlsruhe/Baden-Baden Baden Airpar	London Stansted Apt	2	1640	1710	Boeing 737 Passenger	1
FR	9773	Karlsruhe/Baden-Baden Baden Airpar	London Stansted Apt	1 3 7	1310	1340	Boeing 737 Passenger	3
FR	9802	London Stansted Apt	Girona Costa Brava Apt	6	0915	1220	Boeing 737 Passenger	1
FR	9802	London Stansted Apt	Girona Costa Brava Apt	4	0910	1215	Boeing 737 Passenger	1
FR	9802	London Stansted Apt	Girona Costa Brava Apt	1 3 5 7	1445	1750	Boeing 737 Passenger	4
FR	9803	Girona Costa Brava Apt	London Stansted Apt	6	0725	0840	Boeing 737 Passenger	1
FR	9803	Girona Costa Brava Apt	London Stansted Apt	4	1240	1355	Boeing 737 Passenger	1
FR	9803	Girona Costa Brava Apt	London Stansted Apt	1 3 5 7	1305	1420	Boeing 737 Passenger	4
FR	9810	London Stansted Apt	Barcelona Apt	1234567	0815	1130	Boeing 737 Passenger	7
FR	9811	Barcelona Apt	London Stansted Apt	1234567	0620	0750	Boeing 737 Passenger	7
FR	9812	Liverpool	Derry	6	1610	1710	Boeing 737 Passenger	1
FR	9812	Liverpool	Derry	4	1120	1220	Boeing 737 Passenger	1
FR	9812	Liverpool	Derry	2	1115	1215	Boeing 737 Passenger	1
FR	9813	Derry	Liverpool	6	1735	1835	Boeing 737 Passenger	1
FR	9813	Derry	Liverpool	4	1245	1345	Boeing 737 Passenger	1
FR	9813	Derry	Liverpool	2	1240	1340	Boeing 737 Passenger	1
FR	9814	London Stansted Apt	Barcelona Apt	1234567	2035	2350	Boeing 737 Passenger	7
FR	9815	Barcelona Apt	London Stansted Apt	12345 7	1840	2010	Boeing 737 Passenger	6
FR	982	London Stansted Apt	Pescara	7	1350	1725	Boeing 737 Passenger	1
FR	982	London Stansted Apt	Pescara	6	1810	2145	Boeing 737 Passenger	1
FR	982	London Stansted Apt	Pescara	4	0710	1045	Boeing 737 Passenger	1
FR	982	London Stansted Apt	Pescara	3	0830	1205	Boeing 737 Passenger	1
FR	982	London Stansted Apt	Pescara	1	1330	1705	Boeing 737 Passenger	1
FR	9824	Liverpool	Reus	7	1145	1505	Boeing 737 Passenger	1
FR	9824	Liverpool	Reus	4	1540	1900	Boeing 737 Passenger	1
FR	9825	Reus	Liverpool	7	1530	1655	Boeing 737 Passenger	1
FR	9825	Reus	Liverpool	4	1925	2050	Boeing 737 Passenger	1
FR	983	Pescara	London Stansted Apt	7	1750	1925	Boeing 737 Passenger	1
FR	983	Pescara	London Stansted Apt	6	2210	2345	Boeing 737 Passenger	1
FR	983	Pescara	London Stansted Apt	4	1110	1245	Boeing 737 Passenger	1
FR	983	Pescara	London Stansted Apt	3	1230	1405	Boeing 737 Passenger	1
FR	983	Pescara	London Stansted Apt	1	1730	1905	Boeing 737 Passenger	1
FR	9852	Cork	London Gatwick Apt	7	1005	1125	Boeing 737 Passenger	1
FR	9852	Cork	London Gatwick Apt	6	1405	1530	Boeing 737 Passenger	1
FR	9852	Cork	London Gatwick Apt	5	1030	1155	Boeing 737 Passenger	1
FR	9852	Cork	London Gatwick Apt	2	1025	1150	Boeing 737 Passenger	1
FR	9852	Cork	London Gatwick Apt	1 34	1010	1135	Boeing 737 Passenger	3
FR	9853	London Gatwick Apt	Cork	6	1555	1720	Boeing 737 Passenger	1
FR	9853	London Gatwick Apt	Cork	34	1240	1405	Boeing 737 Passenger	2
FR	9853	London Gatwick Apt	Cork	2 5	1225	1350	Boeing 737 Passenger	2
FR	9853	London Gatwick Apt	Cork	1 7	1215	1340	Boeing 737 Passenger	2
FR	9862	Liverpool	Malaga Airport	7	0810	1210	Boeing 737 Passenger	1
FR	9862	Liverpool	Malaga Airport	4	1825	2220	Boeing 737 Passenger	1
FR	9862	Liverpool	Malaga Airport	123 56	0640	1035	Boeing 737 Passenger	5
FR	9863	Malaga Airport	Liverpool	7	1245	1445	Boeing 737 Passenger	1
FR	9863	Malaga Airport	Liverpool	4	1600	1800	Boeing 737 Passenger	1
FR	9863	Malaga Airport	Liverpool	123 56	1110	1310	Boeing 737 Passenger	5
FR	9884	Liverpool	Bari	6	0635	1040	Boeing 737 Passenger	1
FR	9884	Liverpool	Bari	2	0800	1205	Boeing 737 Passenger	1
FR	9885	Bari	Liverpool	6	1105	1320	Boeing 737 Passenger	1
FR	9885	Bari	Liverpool	2	1230	1445	Boeing 737 Passenger	1
FR	9886	Liverpool	Alicante Airport	7	0715	1100	Boeing 737 Passenger	1
FR	9886	Liverpool	Alicante Airport	6	1725	2110	Boeing 737 Passenger	1
FR	9886	Liverpool	Alicante Airport	4	0945	1330	Boeing 737 Passenger	1
FR	9886	Liverpool	Alicante Airport	3 5	0655	1040	Boeing 737 Passenger	2

FR	9886	Liverpool	Alicante Airport	2	1635	2020	Boeing 737 Passenger	1
FR	9886	Liverpool	Alicante Airport	1	0625	1010	Boeing 737 Passenger	1
FR	9887	Alicante Airport	Liverpool	7	1135	1325	Boeing 737 Passenger	1
FR	9887	Alicante Airport	Liverpool	6	2145	2335	Boeing 737 Passenger	1
FR	9887	Alicante Airport	Liverpool	4	0730	0920	Boeing 737 Passenger	1
FR	9887	Alicante Airport	Liverpool	3 5	1115	1305	Boeing 737 Passenger	2
FR	9887	Alicante Airport	Liverpool	2	2055	2245	Boeing 737 Passenger	1
FR	9887	Alicante Airport	Liverpool	1	1045	1235	Boeing 737 Passenger	1
FR	9892	Liverpool	Malaga Airport	6	0900	1255	Boeing 737 Passenger	1
FR	9892	Liverpool	Malaga Airport	5	0930	1325	Boeing 737 Passenger	1
FR	9892	Liverpool	Malaga Airport	4	0815	1210	Boeing 737 Passenger	1
FR	9892	Liverpool	Malaga Airport	3	1655	2050	Boeing 737 Passenger	1
FR	9892	Liverpool	Malaga Airport	2	1840	2235	Boeing 737 Passenger	1
FR	9893	Malaga Airport	Liverpool	6	0635	0835	Boeing 737 Passenger	1
FR	9893	Malaga Airport	Liverpool	5	0705	0905	Boeing 737 Passenger	1
FR	9893	Malaga Airport	Liverpool	4	1245	1445	Boeing 737 Passenger	1
FR	9893	Malaga Airport	Liverpool	3	2125	2325	Boeing 737 Passenger	1
FR	9893	Malaga Airport	Liverpool	2	1615	1815	Boeing 737 Passenger	1
FR	9895	Liverpool	Cork	7	0805	0915	Boeing 737 Passenger	1
FR	9895	Liverpool	Cork	6	0710	0820	Boeing 737 Passenger	1
FR	9895	Liverpool	Cork	4	1435	1545	Boeing 737 Passenger	1
FR	9895	Liverpool	Cork	1	1500	1610	Boeing 737 Passenger	1
FR	9896	Cork	Liverpool	7	0630	0740	Boeing 737 Passenger	1
FR	9896	Cork	Liverpool	6	0845	0955	Boeing 737 Passenger	1
FR	9896	Cork	Liverpool	4	1610	1720	Boeing 737 Passenger	1
FR	9896	Cork	Liverpool	1	1635	1745	Boeing 737 Passenger	1
FR	9898	Liverpool	Alicante Airport	7	1805	2145	Boeing 737 Passenger	1
FR	9898	Liverpool	Alicante Airport	4	1745	2125	Boeing 737 Passenger	1
FR	9898	Liverpool	Alicante Airport	2	1820	2200	Boeing 737 Passenger	1
FR	9899	Alicante Airport	Liverpool	7	1550	1740	Boeing 737 Passenger	1
FR	9899	Alicante Airport	Liverpool	4	2200	2350	Boeing 737 Passenger	1
FR	9899	Alicante Airport	Liverpool	2	1605	1755	Boeing 737 Passenger	1
FR	9911	Girona Costa Brava Apt	Bournemouth	6	2040	2140	Boeing 737 Passenger	1
FR	9911	Girona Costa Brava Apt	Bournemouth	1 3 5	1550	1650	Boeing 737 Passenger	3
FR	9912	Bournemouth	Girona Costa Brava Apt	6	1715	2015	Boeing 737 Passenger	1
FR	9912	Bournemouth	Girona Costa Brava Apt	1 3 5	1225	1525	Boeing 737 Passenger	3
FR	9918	Liverpool	Bergerac	2 6	1400	1650	Boeing 737 Passenger	2
FR	9919	Bergerac	Liverpool	2 6	1715	1805	Boeing 737 Passenger	2
FR	9961	London Stansted Apt	Sofia	6	0610	1120	Boeing 737 Passenger	1
FR	9961	London Stansted Apt	Sofia	12345 7	0630	1140	Boeing 737 Passenger	6
FR	9962	Sofia	London Stansted Apt	6	1145	1300	Boeing 737 Passenger	1
FR	9962	Sofia	London Stansted Apt	12345 7	1205	1320	Boeing 737 Passenger	6
FR	9967	London Stansted Apt	Sofia	5	1610	2120	Boeing 737 Passenger	1
FR	9967	London Stansted Apt	Sofia	3	1630	2140	Boeing 737 Passenger	1
FR	9967	London Stansted Apt	Sofia	12 4 67	1620	2130	Boeing 737 Passenger	5
FR	9968	Sofia	London Stansted Apt	5	2145	2255	Boeing 737 Passenger	1
FR	9968	Sofia	London Stansted Apt	3	2205	2315	Boeing 737 Passenger	1
FR	9968	Sofia	London Stansted Apt	12 4 67	2155	2305	Boeing 737 Passenger	5

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Row Labels	Sum of Frequency	
Aberdeen (GB)	**8**	
0915	1	6
1035	2	
1055	1	
1155	2	
1835	1	
1845	1	
Belfast International Apt	**45**	
0630	2	
0645	2	
0655	2	
0800	7	
0840	1	
0845	2	
0850	1	
0905	2	9
0910	1	
0915	3	
0950	1	
1015	1	
1030	1	
1220	1	
1225	1	
1325	2	
1335	2	
1635	2	
1640	3	
1645	2	
1705	1	
1725	1	
1845	1	
1900	1	
1925	1	
2205	1	
Bournemouth	**44**	
0630	5	
0700	1	
0710	1	
0835	1	
0840	1	
0845	2	
0855	4	
0900	1	7
0905	2	

1030	2	
1125	2	
1225	3	
1300	1	
1340	1	
1345	1	
1425	1	
1545	1	
1605	1	
1620	1	
1655	1	
1705	3	
1710	1	
1715	1	
1735	3	
1840	1	
2020	1	
2040	1	
Cardiff	**10**	
0910	1	5
0950	1	
0955	1	
1000	1	
1150	1	
1925	1	
1945	3	
2005	1	
Exeter	**6**	
0840	1	
0900	1	3
0915	1	
1000	1	
1740	1	
1940	1	
Glasgow International Airport	**33**	
0840	6	
0845	1	
0915	1	3
1145	2	
1305	2	
1525	5	
1605	1	
1705	1	
1730	1	
1755	1	
1815	3	
1925	1	

1930	1	
2055	1	
2155	6	
Glasgow Prestwick Apt	**51**	
0605	1	
0610	5	
0640	1	
0655	1	
0700	7	
0720	3	
0820	1	
0830	1	
0840	2	
0910	1	2
1015	1	
1240	1	
1330	1	
1450	2	
1500	1	
1505	1	
1510	1	
1520	1	
1530	1	
1600	1	
1615	1	
1625	1	
1655	2	
1705	2	
1730	3	
1735	3	
1750	1	
1845	1	
1900	1	
1910	1	
2025	1	
Leeds Bradford	**85**	
0615	1	
0620	1	
0625	4	
0630	4	
0635	4	
0640	1	
0645	2	
0700	2	
0735	1	
0745	1	
0825	3	

0845	2	
0915	1	12
0925	1	
0930	6	
0945	2	
1105	1	
1125	1	
1325	1	
1335	1	
1345	1	
1405	1	
1410	1	
1505	1	
1535	1	
1545	1	
1610	1	
1620	1	
1630	2	
1635	1	
1650	2	
1655	4	
1705	1	
1710	6	
1720	1	
1725	1	
1735	1	
1820	2	
1830	1	
1850	1	
1855	3	
1905	2	
1930	1	
1935	1	
1945	1	
1950	3	
2005	1	
2010	1	
2025	1	
London Gatwick Apt	**62**	
0850	7	
0940	6	9
1015	1	
1025	1	
1100	1	
1215	2	
1225	2	
1240	2	

1310	5	
1315	1	
1450	3	
1455	1	
1535	1	
1555	1	
1735	8	
1740	1	
1900	6	
1955	3	
2010	2	
2020	1	
2025	1	
2135	6	
London Southend Apt	**63**	
0630	4	
0640	1	
0645	3	
0650	1	
0655	2	
0700	1	
0705	2	
0710	1	
0715	3	
0740	1	
0745	1	
0815	1	
1045	2	10
1050	3	
1055	2	
1105	2	
1125	1	
1300	5	
1305	2	
1310	1	
1325	1	
1340	1	
1455	1	
1610	2	
1650	1	
1705	3	
1725	1	
1735	2	
1745	1	
1750	1	
1800	1	
1920	1	

1930	1		
1955	4		
2005	1		
2015	1		
2040	1		
Newcastle	**43**		
0830	1		
0845	2		
0850	2		
0910	1	18	
0915	1		
0925	1		
0930	3		
1000	1		
1055	3		
1120	7		
1200	1		
1550	1		
1820	1		
1825	1		
1840	1		
1900	1		
1905	1		
1910	5		
1925	2		
1930	1		
1955	1		
2000	1		
2110	1		
2140	1		
2230	2		
Newquay	**4**		
0905	1	1	
2005	1		
2050	2		
Grand Total	**454**	85	19%

Appendix C KLM UK Flight Timetable week beginning 24th June 2019

Carrier Code	Flight No	Dep Airport Name	Arr Airport Name	Local Days Of Op	Local Dep Time	Local Arr Time	General Aircraft Name	Frequency
KL	0922	Inverness	Amsterdam	7	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	6	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	5	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	4	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	3	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	2	0625	0900	Embraer 170/195	1
KL	0922	Inverness	Amsterdam	1	0625	0900	Embraer 170/195	1
KL	0923	Amsterdam	Inverness	7	0930	1010	Embraer 170/195	1
KL	0924	Inverness	Amsterdam	7	1055	1330	Embraer 170/195	1
KL	0925	Amsterdam	Inverness	6	1430	1510	Embraer 170/195	1
KL	0926	Inverness	Amsterdam	6	1550	1825	Embraer 170/195	1
KL	0927	Amsterdam	Inverness	23456	1200	1240	Embraer 170/195	1
KL	0927	Amsterdam	Inverness	12345	1200	1240	Embraer 170/195	5
KL	0928	Inverness	Amsterdam	6	1320	1555	Embraer 170/195	1
KL	0928	Inverness	Amsterdam	3	1325	1600	Embraer 170/195	1
KL	0928	Inverness	Amsterdam	12 45	1325	1600	Embraer 170/195	4
KL	0931	Amsterdam	Inverness	1234567	2135	2215	Embraer 170/195	7
KL	0947	Amsterdam	Belfast George Best City Apt	1234567	1610	1645	Embraer 170/195	7
KL	0948	Belfast George Best City Apt	Amsterdam	7	1715	1950	Embraer 170/195	1
KL	0948	Belfast George Best City Apt	Amsterdam	6	1715	1950	Embraer 170/195	1
KL	0948	Belfast George Best City Apt	Amsterdam	2 4	1715	1950	Embraer 170/195	2
KL	0948	Belfast George Best City Apt	Amsterdam	1 3 5	1715	1950	Embraer 170/195	3
KL	0952	Newcastle	Amsterdam	67	0600	0825	Boeing 737 Passenger	2
KL	0952	Newcastle	Amsterdam	1	0600	0825	Boeing 737 Passenger	1
KL	0952	Newcastle	Amsterdam	12345	0600	0825	Boeing 737 Passenger	4
KL	0953	Amsterdam	Newcastle	6	0835	0845	Boeing 737 Passenger	1
KL	0953	Amsterdam	Newcastle	12345 7	0835	0845	Boeing 737 Passenger	6
KL	0954	Newcastle	Amsterdam	6	0930	1150	Boeing 737 Passenger	1
KL	0954	Newcastle	Amsterdam	12345 7	0930	1150	Boeing 737 Passenger	6
KL	0959	Amsterdam	Newcastle	67	1230	1245	Embraer 170/195	2
KL	0959	Amsterdam	Newcastle	12345	1230	1245	Embraer 170/195	5
KL	0960	Newcastle	Amsterdam	7	1315	1535	Embraer 170/195	1
KL	0960	Newcastle	Amsterdam	6	1315	1535	Embraer 170/195	1
KL	0960	Newcastle	Amsterdam	4	1315	1535	Embraer 170/195	1
KL	0960	Newcastle	Amsterdam	2	1315	1535	Embraer 170/195	1
KL	0960	Newcastle	Amsterdam	1 3 5	1315	1535	Embraer 170/195	3
KL	0963	Amsterdam	Newcastle	6	1620	1640	Embraer 170/195	1
KL	0963	Amsterdam	Newcastle	3 567	1620	1640	Boeing 737 Passenger	1
KL	0963	Amsterdam	Newcastle	12345	1620	1640	Boeing 737 Passenger	5
KL	0964	Newcastle	Amsterdam	6	1730	1955	Embraer 170/195	1
KL	0964	Newcastle	Amsterdam	3 567	1730	1955	Boeing 737 Passenger	1
KL	0964	Newcastle	Amsterdam	12345	1730	1955	Boeing 737 Passenger	5
KL	0965	Amsterdam	Newcastle	1234567	2215	2230	Boeing 737 Passenger	7
KL	0969	Amsterdam	London City Apt	12345 7	2005	2015	Embraer 170/195	6
KL	0970	London City Apt	Amsterdam	12345 7	2045	2300	Embraer 170/195	6
KL	0971	Amsterdam	London City Apt	7	1305	1315	Embraer 170/195	1
KL	0972	London City Apt	Amsterdam	7	1345	1600	Embraer 170/195	1
KL	0981	Amsterdam	London City Apt	12345	0705	0715	Embraer 170/195	5
KL	0982	London City Apt	Amsterdam	12345	0745	1000	Embraer 170/195	5
KL	0983	Amsterdam	London City Apt	123456	0800	0810	Embraer 170/195	6
KL	0984	London City Apt	Amsterdam	123456	0840	1100	Embraer 170/195	6
KL	0985	Amsterdam	London City Apt	12345	0845	0850	Embraer 170/195	5
KL	0986	London City Apt	Amsterdam	3	0925	1130	Embraer 170/195	1
KL	0986	London City Apt	Amsterdam	12 45	0925	1130	Embraer 170/195	4
KL	0987	Amsterdam	London City Apt	123456	0925	0930	Embraer 170/195	6
KL	0988	London City Apt	Amsterdam	123456	1000	1210	Embraer 170/195	6
KL	0989	Amsterdam	London City Apt	12345	1635	1640	Embraer 170/195	5
KL	0990	London City Apt	Amsterdam	12345	1710	1920	Embraer 170/195	5

KL	0991	Amsterdam	London City Apt	12345 7	1715	1720	Embraer 170/195	6
KL	0992	London City Apt	Amsterdam	12345 7	1750	2005	Embraer 170/195	6
KL	0993	Amsterdam	London City Apt	12345 7	1825	1835	Embraer 170/195	6
KL	0994	London City Apt	Amsterdam	7	1905	2120	Embraer 170/195	1
KL	0994	London City Apt	Amsterdam	12345	1905	2115	Embraer 170/195	5
KL	0995	Amsterdam	London City Apt	6	1130	1140	Embraer 170/195	1
KL	0996	London City Apt	Amsterdam	6	1210	1415	Embraer 170/195	1
KL	0997	Amsterdam	London City Apt	12345 7	1925	1935	Embraer 170/195	6
KL	0998	London City Apt	Amsterdam	7	2005	2220	Embraer 170/195	1
KL	0998	London City Apt	Amsterdam	12345	2005	2215	Embraer 170/195	5
KL	1000	London Heathrow Apt	Amsterdam	3	0630	0900	Boeing 737 Passenger	1
KL	1000	London Heathrow Apt	Amsterdam	1	0630	0900	Boeing 737 Passenger	1
KL	1000	London Heathrow Apt	Amsterdam	12 4567	0630	0900	Boeing 737 Passenger	5
KL	1001	Amsterdam	London Heathrow Apt	2 45 7	0720	0740	Boeing 737 Passenger	4
KL	1001	Amsterdam	London Heathrow Apt	1 3 6	0720	0740	Boeing 737 Passenger	3
KL	1002	London Heathrow Apt	Amsterdam	2 45 7	0840	1100	Boeing 737 Passenger	4
KL	1002	London Heathrow Apt	Amsterdam	1 3 6	0840	1100	Boeing 737 Passenger	3
KL	1007	Amsterdam	London Heathrow Apt	12345	0835	0900	Boeing 737 Passenger	5
KL	1008	London Heathrow Apt	Amsterdam	12345	0955	1225	Boeing 737 Passenger	5
KL	1009	Amsterdam	London Heathrow Apt	1 4 7	1015	1045	Boeing 737 Passenger	2
KL	1009	Amsterdam	London Heathrow Apt	123 56	1015	1045	Boeing 737 Passenger	5
KL	1010	London Heathrow Apt	Amsterdam	1 4 7	1145	1405	Boeing 737 Passenger	2
KL	1010	London Heathrow Apt	Amsterdam	123 56	1145	1405	Boeing 737 Passenger	5
KL	1017	Amsterdam	London Heathrow Apt	6	1320	1350	Boeing 737 Passenger	1
KL	1017	Amsterdam	London Heathrow Apt	67	1320	1350	Embraer 170/195	1
KL	1017	Amsterdam	London Heathrow Apt	12345	1320	1350	Boeing 737 Passenger	5
KL	1018	London Heathrow Apt	Amsterdam	6	1445	1700	Boeing 737 Passenger	1
KL	1018	London Heathrow Apt	Amsterdam	67	1445	1700	Embraer 170/195	1
KL	1018	London Heathrow Apt	Amsterdam	12345	1445	1700	Boeing 737 Passenger	5
KL	1019	Amsterdam	London Heathrow Apt	4	1440	1500	Embraer 170/195	1
KL	1019	Amsterdam	London Heathrow Apt	2	1440	1500	Embraer 170/195	1
KL	1019	Amsterdam	London Heathrow Apt	1 3 5	1440	1500	Embraer 170/195	3
KL	1020	London Heathrow Apt	Amsterdam	2	1605	1820	Embraer 170/195	1
KL	1020	London Heathrow Apt	Amsterdam	1 345	1605	1820	Embraer 170/195	4
KL	1021	Amsterdam	London Heathrow Apt	3 6	1555	1615	Boeing 737 Passenger	1
KL	1021	Amsterdam	London Heathrow Apt	12345 7	1555	1615	Boeing 737 Passenger	6
KL	1022	London Heathrow Apt	Amsterdam	3 6	1710	1935	Boeing 737 Passenger	1
KL	1022	London Heathrow Apt	Amsterdam	12345 7	1710	1935	Boeing 737 Passenger	6
KL	1023	Amsterdam	London Heathrow Apt	7	1715	1735	Boeing 737 Passenger	1
KL	1023	Amsterdam	London Heathrow Apt	2	1715	1735	Embraer 170/195	1
KL	1023	Amsterdam	London Heathrow Apt	1 345	1715	1735	Embraer 170/195	4
KL	1024	London Heathrow Apt	Amsterdam	7	1835	2050	Boeing 737 Passenger	1
KL	1024	London Heathrow Apt	Amsterdam	6	1835	2050	Boeing 737 Passenger	1
KL	1024	London Heathrow Apt	Amsterdam	12345	1835	2050	Embraer 170/195	5
KL	1027	Amsterdam	London Heathrow Apt	7	1910	1930	Boeing 737 Passenger	1
KL	1027	Amsterdam	London Heathrow Apt	123456	1905	1925	Embraer 170/195	6
KL	1028	London Heathrow Apt	Amsterdam	7	2055	2305	Boeing 737 Passenger	1
KL	1028	London Heathrow Apt	Amsterdam	123456	2055	2305	Embraer 170/195	6
KL	1029	Amsterdam	London Heathrow Apt	5	1700	1710	Embraer 170/195	1
KL	1029	Amsterdam	London Heathrow Apt	1234	1655	1710	Embraer 170/195	4
KL	1030	London Heathrow Apt	Amsterdam	12345	1915	2125	Embraer 170/195	5
KL	1031	Amsterdam	London Heathrow Apt	6	1735	1750	Boeing 737 Passenger	1
KL	1031	Amsterdam	London Heathrow Apt	12345 7	1735	1750	Embraer 170/195	6
KL	1032	London Heathrow Apt	Amsterdam	12345 7	2025	2240	Embraer 170/195	6
KL	1033	Amsterdam	London Heathrow Apt	2	2030	2055	Boeing 737 Passenger	1
KL	1033	Amsterdam	London Heathrow Apt	1 34567	2030	2055	Boeing 737 Passenger	6
KL	1046	Bristol	Amsterdam	1	0620	0850	Embraer 170/195	1
KL	1046	Bristol	Amsterdam	1234567	0620	0850	Embraer 170/195	6
KL	1049	Amsterdam	Bristol	5	0835	0850	Boeing 737 Passenger	1
KL	1049	Amsterdam	Bristol	1234 67	0835	0850	Embraer 170/195	6
KL	1050	Bristol	Amsterdam	5	0930	1145	Boeing 737 Passenger	1

KL	1050	Bristol	Amsterdam	1234 67	0920	1135	Embraer 170/195	6
KL	1051	Amsterdam	Bristol	67	1300	1315	Embraer 170/195	2
KL	1051	Amsterdam	Bristol	12345	1300	1315	Embraer 170/195	5
KL	1052	Bristol	Amsterdam	67	1345	1605	Embraer 170/195	2
KL	1052	Bristol	Amsterdam	12345	1345	1605	Embraer 170/195	5
KL	1053	Amsterdam	Bristol	7	1640	1655	Embraer 170/195	1
KL	1053	Amsterdam	Bristol	6	1630	1645	Embraer 170/195	1
KL	1053	Amsterdam	Bristol	12345	1640	1655	Boeing 737 Passenger	5
KL	1054	Bristol	Amsterdam	7	1725	1945	Embraer 170/195	1
KL	1054	Bristol	Amsterdam	6	1715	1935	Embraer 170/195	1
KL	1054	Bristol	Amsterdam	12345	1735	1955	Boeing 737 Passenger	5
KL	1057	Amsterdam	Bristol	1234567	2200	2210	Embraer 170/195	7
KL	1058	Cardiff	Amsterdam	2 5	0605	0830	Embraer 170/195	2
KL	1058	Cardiff	Amsterdam	1	0605	0830	Embraer 170/195	1
KL	1058	Cardiff	Amsterdam	1 34 6	0605	0830	Embraer 170/195	3
KL	1059	Amsterdam	Cardiff	7	0905	0925	Embraer 170/195	1
KL	1059	Amsterdam	Cardiff	23456	0855	0915	Embraer 170/195	5
KL	1059	Amsterdam	Cardiff	1	0850	0910	Embraer 170/195	1
KL	1060	Cardiff	Amsterdam	7	0955	1215	Embraer 170/195	1
KL	1060	Cardiff	Amsterdam	23456	0945	1205	Embraer 170/195	5
KL	1060	Cardiff	Amsterdam	1	0940	1200	Embraer 170/195	1
KL	1063	Amsterdam	Cardiff	1234567	1625	1645	Embraer 170/195	7
KL	1064	Cardiff	Amsterdam	1234567	1715	1935	Embraer 170/195	7
KL	1069	Amsterdam	Cardiff	23 5 7	2110	2130	Embraer 170/195	4
KL	1069	Amsterdam	Cardiff	1 4	2110	2130	Embraer 170/195	2
KL	1070	Manchester (GB)	Amsterdam	56	0555	0815	Boeing 737 Passenger	2
KL	1070	Manchester (GB)	Amsterdam	1	0555	0820	Boeing 737 Passenger	1
KL	1070	Manchester (GB)	Amsterdam	1234 7	0555	0820	Boeing 737 Passenger	4
KL	1071	Amsterdam	Manchester (GB)	7	0755	0815	Boeing 737 Passenger	1
KL	1071	Amsterdam	Manchester (GB)	6	0810	0830	Boeing 737 Passenger	1
KL	1071	Amsterdam	Manchester (GB)	12345	0800	0820	Boeing 737 Passenger	5
KL	1072	Manchester (GB)	Amsterdam	7	0900	1115	Boeing 737 Passenger	1
KL	1072	Manchester (GB)	Amsterdam	6	0910	1125	Boeing 737 Passenger	1
KL	1072	Manchester (GB)	Amsterdam	1	0900	1115	Boeing 737 Passenger	1
KL	1072	Manchester (GB)	Amsterdam	12345	0900	1115	Boeing 737 Passenger	4
KL	1073	Amsterdam	Manchester (GB)	67	1005	1025	Boeing 737 Passenger	2
KL	1073	Amsterdam	Manchester (GB)	2345	1005	1025	Boeing 737 Passenger	3
KL	1073	Amsterdam	Manchester (GB)	12	1005	1025	Boeing 737 Passenger	2
KL	1074	Manchester (GB)	Amsterdam	6	1110	1330	Boeing 737 Passenger	1
KL	1074	Manchester (GB)	Amsterdam	2345 7	1110	1330	Boeing 737 Passenger	4
KL	1074	Manchester (GB)	Amsterdam	12	1110	1330	Boeing 737 Passenger	2
KL	1075	Amsterdam	Manchester (GB)	67	1250	1305	Embraer 170/195	2
KL	1075	Amsterdam	Manchester (GB)	12345	1250	1305	Embraer 170/195	5
KL	1076	Manchester (GB)	Amsterdam	67	1345	1605	Embraer 170/195	2
KL	1076	Manchester (GB)	Amsterdam	12345	1345	1605	Embraer 170/195	5
KL	1079	Amsterdam	Manchester (GB)	6	1625	1645	Boeing 737 Passenger	1
KL	1079	Amsterdam	Manchester (GB)	1 4 67	1625	1645	Boeing 737 Passenger	1
KL	1079	Amsterdam	Manchester (GB)	12345	1625	1645	Boeing 737 Passenger	5
KL	1080	Manchester (GB)	Amsterdam	6	1730	1950	Boeing 737 Passenger	1
KL	1080	Manchester (GB)	Amsterdam	1 4 7	1730	1950	Boeing 737 Passenger	1
KL	1080	Manchester (GB)	Amsterdam	12345	1730	1950	Boeing 737 Passenger	5
KL	1081	Amsterdam	Manchester (GB)	7	1845	1900	Embraer 170/195	1
KL	1081	Amsterdam	Manchester (GB)	12345	1845	1900	Embraer 170/195	5
KL	1082	Manchester (GB)	Amsterdam	12345 7	1935	2150	Embraer 170/195	6
KL	1083	Amsterdam	Manchester (GB)	7	2115	2135	Boeing 737 Passenger	1
KL	1083	Amsterdam	Manchester (GB)	6	2115	2135	Boeing 737 Passenger	1
KL	1083	Amsterdam	Manchester (GB)	12345	2115	2135	Boeing 737 Passenger	5
KL	1276	Edinburgh	Amsterdam	5	0600	0835	Boeing 737 Passenger	1
KL	1276	Edinburgh	Amsterdam	1	0600	0835	Boeing 737 Passenger	1
KL	1276	Edinburgh	Amsterdam	1234 67	0600	0835	Boeing 737 Passenger	5
KL	1277	Amsterdam	Edinburgh	7	0800	0825	Embraer 170/195	1

KL	1277	Amsterdam	Edinburgh	2	0800	0825	Boeing 737 Passenger	1
KL	1277	Amsterdam	Edinburgh	1 3456	0800	0825	Boeing 737 Passenger	5
KL	1278	Edinburgh	Amsterdam	7	0910	1145	Embraer 170/195	1
KL	1278	Edinburgh	Amsterdam	2	0910	1145	Boeing 737 Passenger	1
KL	1278	Edinburgh	Amsterdam	1 3456	0910	1145	Boeing 737 Passenger	5
KL	1281	Amsterdam	Edinburgh	67	1215	1240	Embraer 170/195	2
KL	1281	Amsterdam	Edinburgh	12345	1215	1240	Boeing 737 Passenger	5
KL	1282	Edinburgh	Amsterdam	6	1325	1555	Embraer 170/195	1
KL	1282	Edinburgh	Amsterdam	67	1315	1550	Embraer 170/195	1
KL	1282	Edinburgh	Amsterdam	4	1325	1555	Boeing 737 Passenger	1
KL	1282	Edinburgh	Amsterdam	123 5	1325	1600	Boeing 737 Passenger	4
KL	1289	Amsterdam	Edinburgh	2 6	1620	1640	Boeing 737 Passenger	2
KL	1289	Amsterdam	Edinburgh	1 345 7	1615	1640	Boeing 737 Passenger	5
KL	1290	Edinburgh	Amsterdam	1234567	1725	1955	Boeing 737 Passenger	7
KL	1293	Amsterdam	Edinburgh	4	2110	2135	Boeing 737 Passenger	1
KL	1293	Amsterdam	Edinburgh	123 567	2110	2135	Boeing 737 Passenger	6
KL	1420	Birmingham Airport	Amsterdam	234 67	0600	0825	Boeing 737 Passenger	4
KL	1420	Birmingham Airport	Amsterdam	1	0600	0825	Boeing 737 Passenger	1
KL	1420	Birmingham Airport	Amsterdam	12 5	0600	0825	Boeing 737 Passenger	2
KL	1421	Amsterdam	Birmingham Airport	7	0815	0830	Boeing 737 Passenger	1
KL	1421	Amsterdam	Birmingham Airport	123456	0815	0830	Boeing 737 Passenger	6
KL	1422	Birmingham Airport	Amsterdam	7	0915	1130	Boeing 737 Passenger	1
KL	1422	Birmingham Airport	Amsterdam	123456	0915	1130	Boeing 737 Passenger	6
KL	1423	Amsterdam	Birmingham Airport	7	0935	0950	Boeing 737 Passenger	1
KL	1424	Birmingham Airport	Amsterdam	7	1035	1250	Boeing 737 Passenger	1
KL	1425	Amsterdam	Birmingham Airport	6	1215	1230	Embraer 170/195	1
KL	1425	Amsterdam	Birmingham Airport	12345 7	1215	1230	Boeing 737 Passenger	6
KL	1426	Birmingham Airport	Amsterdam	6	1300	1515	Embraer 170/195	1
KL	1426	Birmingham Airport	Amsterdam	12345 7	1310	1525	Boeing 737 Passenger	6
KL	1431	Amsterdam	Birmingham Airport	6	1635	1650	Embraer 170/195	1
KL	1431	Amsterdam	Birmingham Airport	12345 7	1635	1650	Boeing 737 Passenger	6
KL	1432	Birmingham Airport	Amsterdam	6	1740	1955	Embraer 170/195	1
KL	1432	Birmingham Airport	Amsterdam	12345 7	1740	1955	Boeing 737 Passenger	6
KL	1433	Amsterdam	Birmingham Airport	5	1900	1915	Embraer 170/195	1
KL	1433	Amsterdam	Birmingham Airport	1234	1900	1915	Embraer 170/195	4
KL	1434	Birmingham Airport	Amsterdam	5	1945	2155	Embraer 170/195	1
KL	1434	Birmingham Airport	Amsterdam	1234	1945	2155	Embraer 170/195	4
KL	1435	Amsterdam	Birmingham Airport	1 4 7	2105	2120	Boeing 737 Passenger	3
KL	1435	Amsterdam	Birmingham Airport	123 56	2105	2120	Boeing 737 Passenger	4
KL	1440	Aberdeen (GB)	Amsterdam	1	0600	0835	Boeing 737 Passenger	1
KL	1440	Aberdeen (GB)	Amsterdam	1234567	0600	0835	Boeing 737 Passenger	6
KL	1441	Amsterdam	Aberdeen (GB)	1234567	0815	0845	Embraer 170/195	7
KL	1442	Aberdeen (GB)	Amsterdam	6	0915	1145	Embraer 170/195	1
KL	1442	Aberdeen (GB)	Amsterdam	12345 7	0915	1145	Embraer 170/195	6
KL	1443	Amsterdam	Aberdeen (GB)	7	0935	1005	Embraer 170/195	1
KL	1443	Amsterdam	Aberdeen (GB)	123456	0935	1005	Embraer 170/195	6
KL	1444	Aberdeen (GB)	Amsterdam	7	1035	1310	Embraer 170/195	1
KL	1444	Aberdeen (GB)	Amsterdam	123456	1035	1310	Embraer 170/195	6
KL	1445	Amsterdam	Aberdeen (GB)	7	1140	1210	Embraer 170/195	1
KL	1445	Amsterdam	Aberdeen (GB)	6	1125	1155	Embraer 170/195	1
KL	1445	Amsterdam	Aberdeen (GB)	2345	1140	1210	Embraer 170/195	4
KL	1445	Amsterdam	Aberdeen (GB)	1	1140	1210	Embraer 170/195	1
KL	1446	Aberdeen (GB)	Amsterdam	7	1240	1515	Embraer 170/195	1
KL	1446	Aberdeen (GB)	Amsterdam	6	1225	1500	Embraer 170/195	1
KL	1446	Aberdeen (GB)	Amsterdam	12345	1240	1515	Embraer 170/195	5
KL	1449	Amsterdam	Aberdeen (GB)	67	1610	1635	Boeing 737 Passenger	2
KL	1449	Amsterdam	Aberdeen (GB)	12345	1610	1635	Boeing 737 Passenger	5
KL	1450	Aberdeen (GB)	Amsterdam	67	1720	1955	Boeing 737 Passenger	2
KL	1450	Aberdeen (GB)	Amsterdam	12345	1720	1955	Boeing 737 Passenger	5
KL	1451	Amsterdam	Aberdeen (GB)	234567	2145	2215	Boeing 737 Passenger	6
KL	1451	Amsterdam	Aberdeen (GB)	1	2200	2230	Boeing 737 Passenger	1

KL	1470	Glasgow International Airport	Amsterdam	2	0605	0845	Boeing 737 Passenger	1
KL	1470	Glasgow International Airport	Amsterdam	1	0605	0845	Boeing 737 Passenger	1
KL	1470	Glasgow International Airport	Amsterdam	1234567	0605	0845	Boeing 737 Passenger	5
KL	1473	Amsterdam	Glasgow International Airport	67	0930	1000	Boeing 737 Passenger	2
KL	1473	Amsterdam	Glasgow International Airport	1	0930	1000	Boeing 737 Passenger	1
KL	1473	Amsterdam	Glasgow International Airport	12345	0930	1000	Boeing 737 Passenger	4
KL	1474	Glasgow International Airport	Amsterdam	67	1045	1320	Boeing 737 Passenger	2
KL	1474	Glasgow International Airport	Amsterdam	3	1045	1320	Boeing 737 Passenger	1
KL	1474	Glasgow International Airport	Amsterdam	1	1045	1320	Boeing 737 Passenger	1
KL	1474	Glasgow International Airport	Amsterdam	12 45	1045	1320	Boeing 737 Passenger	3
KL	1477	Amsterdam	Glasgow International Airport	4 7	1535	1605	Boeing 737 Passenger	2
KL	1477	Amsterdam	Glasgow International Airport	2	1535	1605	Boeing 737 Passenger	1
KL	1477	Amsterdam	Glasgow International Airport	1 3 56	1535	1605	Boeing 737 Passenger	4
KL	1478	Glasgow International Airport	Amsterdam	4 7	1655	1930	Boeing 737 Passenger	2
KL	1478	Glasgow International Airport	Amsterdam	123 56	1655	1930	Boeing 737 Passenger	5
KL	1481	Amsterdam	Glasgow International Airport	6	2140	2210	Boeing 737 Passenger	1
KL	1481	Amsterdam	Glasgow International Airport	1	2115	2145	Boeing 737 Passenger	1
KL	1481	Amsterdam	Glasgow International Airport	12345 7	2115	2145	Boeing 737 Passenger	5
KL	1482	Humberside	Amsterdam	1	0610	0810	Embraer 170/195	1
KL	1482	Humberside	Amsterdam	1234567	0610	0810	Embraer 170/195	6
KL	1485	Amsterdam	Humberside	123456	0930	0930	Embraer 170/195	6
KL	1486	Humberside	Amsterdam	1	1000	1200	Embraer 170/195	1
KL	1486	Humberside	Amsterdam	123456	1000	1200	Embraer 170/195	5
KL	1489	Amsterdam	Humberside	12345 7	1640	1640	Embraer 170/195	6
KL	1490	Humberside	Amsterdam	12345 7	1710	1915	Embraer 170/195	6
KL	1493	Amsterdam	Humberside	1234567	2130	2130	Embraer 170/195	7
KL	1514	Norwich	Amsterdam	1	0605	0800	Embraer 170/195	1
KL	1514	Norwich	Amsterdam	1234567	0605	0800	Embraer 170/195	6
KL	1515	Amsterdam	Norwich	6	0910	0900	Embraer 170/195	1
KL	1515	Amsterdam	Norwich	12345	0910	0900	Embraer 170/195	5
KL	1516	Norwich	Amsterdam	6	0930	1125	Embraer 170/195	1
KL	1516	Norwich	Amsterdam	12345	0930	1125	Embraer 170/195	5
KL	1519	Amsterdam	Norwich	7	1350	1340	Embraer 170/195	1
KL	1519	Amsterdam	Norwich	12345	1350	1340	Embraer 170/195	5
KL	1520	Norwich	Amsterdam	12345 7	1410	1605	Embraer 170/195	6
KL	1521	Amsterdam	Norwich	1	1700	1650	Embraer 170/195	1
KL	1522	Norwich	Amsterdam	1	1720	1915	Embraer 170/195	1
KL	1523	Amsterdam	Norwich	2345 7	1700	1650	Embraer 170/195	5
KL	1524	Norwich	Amsterdam	2345 7	1720	1915	Embraer 170/195	5
KL	1527	Amsterdam	Norwich	1234567	2120	2110	Embraer 170/195	7
KL	1530	Durham	Amsterdam	1	0620	0840	Embraer 170/195	1
KL	1530	Durham	Amsterdam	1234567	0620	0840	Embraer 170/195	6
KL	1533	Amsterdam	Durham	7	0920	0930	Embraer 170/195	1
KL	1533	Amsterdam	Durham	6	0925	0935	Embraer 170/195	1
KL	1533	Amsterdam	Durham	12345	0920	0930	Embraer 170/195	5
KL	1534	Durham	Amsterdam	6	1005	1220	Embraer 170/195	1
KL	1534	Durham	Amsterdam	3 7	1000	1215	Embraer 170/195	2
KL	1534	Durham	Amsterdam	12 45	1000	1220	Embraer 170/195	4
KL	1535	Amsterdam	Durham	12345	1640	1650	Embraer 170/195	5
KL	1536	Durham	Amsterdam	12345	1720	1935	Embraer 170/195	5
KL	1539	Amsterdam	Durham	1234567	2135	2145	Embraer 170/195	7
KL	1540	Leeds Bradford	Amsterdam	1	0620	0840	Embraer 170/195	1
KL	1540	Leeds Bradford	Amsterdam	1234567	0620	0840	Embraer 170/195	6
KL	1541	Amsterdam	Leeds Bradford	6	0925	0935	Embraer 170/195	1
KL	1541	Amsterdam	Leeds Bradford	12345 7	0920	0930	Embraer 170/195	6
KL	1542	Leeds Bradford	Amsterdam	6	1005	1215	Embraer 170/195	1
KL	1542	Leeds Bradford	Amsterdam	12345 7	1000	1210	Embraer 170/195	6
KL	1549	Amsterdam	Leeds Bradford	6	1640	1650	Embraer 170/195	1
KL	1549	Amsterdam	Leeds Bradford	12345 7	1640	1650	Embraer 170/195	6
KL	1550	Leeds Bradford	Amsterdam	6	1720	1935	Embraer 170/195	1
KL	1550	Leeds Bradford	Amsterdam	12345 7	1720	1935	Embraer 170/195	6

KL	1551	Amsterdam	Leeds Bradford	67	2210	2220	Embraer 170/195	2
KL	1551	Amsterdam	Leeds Bradford	12345	2200	2210	Embraer 170/195	5

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Sum of Frequency	Column Labels								
Row Labels	**Belfast George Best City Apt**	**Cardiff**	**Durham**	**Glasgow International Airport**	**Humberside**	**Inverness**	**Leeds Bradford**	**Grand Total**
0605		6		7				13
0610					7			7
0620			7				7	14
0625						7		7
0940		1						1
0945		5						5
0955		1						1
1000			6		6		6	18
1005			1				1	2
1045				7				7
1055						1		1
1320						1		1
1325						5		5
1550						1		1
1655				7				7
1710					6			6
1715	7	7						14
1720			5				7	12
Grand Total	**7**	**20**	**19**	**21**	**19**	**15**	**21**	**122**

Appendix 09c

(DL9 Appendix 2)
Analysis of “Property Income” in the Applicant’s “Business Plan”

APPENDIX 2: ANALYSIS OF "PROPERTY INCOME" IN THE APPLICANT'S "BUSINESS PLAN"

1. In Appendix 10 (Note substantiating net income figure) to the Applicant's Written Summary of Oral Representations to the First Compulsory Acquisition Hearing [REP5-011], the Applicant attempt to explain the basis for the Property Income it had included within its "business plan".

2. In summary, the Applicant explained that this income related to;

    - The rental income paid by an "E-commerce" carrier for airside facilities. In paragraph 1.3, the Applicant claims it had applied a "conservative lease charge";
    - Northern Grass Area – in paragraph 2.2, the Applicant asserts that it has "ascribed conservative lease rates, terms and scenarios"; to the 105,000sq metre of B1 and B8 business space on the Northern Grass area. This has been assessed in the ES as comprising 75% of B8 space (distribution and storage) and 25% of B1 space (office and light industrial use).
    - Ground rent charged to FBO / MRO operations – this would be expected to be relatively insignificant in the overall context given each tenant would be required to build , occupy, staff and maintain the facilities.

3. Based on the forecast Property Income in the latest "business plan" submitted as Appendix CAH2-15 to the Applicant's Written Summary, the Applicant has again made heroic assumptions regarding the income that could be achieved **without a shred of evidence to substantiate its assertions.**

4. This note demonstrates the extent to which the Applicant has overstated property income **even when the most optimistic set of assumptions are applied**. In this regard, the rental levels have been benchmarked to the prime rental levels achievable at the established, successful East Midlands Airport. This is a very generous comparator.

5. In reality, any tenants would expect a material discount to attract them to a more peripheral location, particularly for a start-up operation as proposed by the Applicant, where any tenants would be acutely aware of the risk of the airport failing to sustain viable operations.

6. <u>Key Assumptions Applied:</u>

- Year 6 has been used as the assessment year, as this is the date at which the Works 15-17 are fully developed and the first two phases (28,500sqm) of airside cargo facilities have been developed. In line with the Applicant's assertions, 50% of the airside cargo facilities are assumed to be leased to an "e-commerce" provider;
- This would equate to 14,250 sq m plus all of the 105,000 sq m space (75% of which is B8) on the Northern Grass, being available in Year 6;
- All space is assumed to be 100% occupied, with rent being paid – again this would be completely unrealistic, but the purpose is to demonstrate the wholly unrealistic nature of the Applicant's forecasts;
- Rental levels;
    - B8 space is assumed to be let at the prime rent levels achieved at East Midlands – this equates to £6.75 per sq ft (as evidenced by appended Savills report appended as

Appendix 3.A) – NB. the occupational space has been converted to sq ft when calculating rents;

- The airside cargo space is leased to the "e-commerce" provider at an equivalent level to £6.75 per sq ft – clearly this would be a material premium to the conservative lease charge suggested by the Applicant;
- B1 space is let at headline level of c.£15.00 per sq ft achieved for recent lettings of Grade A office at East Midlands (see attached Appendix 3.B sale document for Donnington Court, at Pegasus Business Park, which shows rents of c.£15.00 being paid by PWC and HSBC, with vacant space expected to achieve between £7.63 and £15.25 per sq ft). **Consistent with the evidence submitted previously by York Aviation the ExA will note that PwC and HSBC are not "airport-related" occupiers, but have chosen the location due to its central location in the East Midlands;**
- Ground rent of £250,000 per annum has been applied to the MRO / FBO land.

- No rental incentives have been applied – in reality, rent free periods and other tenant incentives would be normal, which would materially reduce income levels in early years;
- No discount has been applied to account for the lower value uses suggested by the Applicant in its submissions (e.g. the uses set out in the updated NSIP Justification). As explained in paragraph 33 of York Aviation's Supplementary Note (Appendix 1);

  "[M]ost essential airport operationally related activities are generally low rental income generators."

- No costs of switching airports have been taken into account – this is despite the Azimuth report (paragraph 2.2.10 of Volume III) advising the significant costs of switching airports had been accounted for.

7. The Table below shows that even when the most optimistic and completely unrealistic assumptions are adopted (as set out above), there would be no prospect of the Applicant generating revenue anywhere near to the level it has forecast in its business plan (i.e. £22.168m in Year 6).

Works	Use Class	Use Type	Sq M	Sq Ft	Rent (£/sq ft)	Annual Rent
15-17	B1	Office or light industry	26,250	282,555	15.00	4,238,325
15-17	B8	Storage or distribution	78,750	847,665	6.75	5,721,739
			105,000	**1,130,220**		**9,960,064**
1	B8	Storage or distribution	14,250	153,387	6.75	1,035,362
		MRO and FBO Ground Rent				250,000
				Total Rent		**11,245,426**

8. Notwithstanding the lack of credibility attaching to the Applicant's proposals, the analysis above further demonstrates that the Applicant's scheme is not intended to be cost efficient nor does it seek to minimise costs to airlines or freight owners.

SPOTLIGHT
Savills Research

Big shed briefing

savills



DP World London Gateway Logistics Park where 231,000 sq ft is due for speculative delivery in 2019

32% take-up increase • Supply at highest level since ‘14 • Record level of spec development

76% Rise in the rolling average take-up level since 2009

Nationwide overview

Take-up records tumble in many regions



Richard Sullivan
National Head
of Industrial & Logistics
020 7409 8125
rsullivan@savills.com



Integra 61 Durham, the largest deal of the year at 1.99m sq ft

With recent headlines about the high st and retailers trading updates starting to filter through it would be tempting to suggest that the logistics property market might be experiencing similar headwinds.

It is pleasing to report that take-up in 2018 has risen by more than 8m sq ft year on year and take-up related to retail (in all its forms) accounted for 53% of this demand.

We expect that this trend will continue into 2019 and beyond as retailers continue to get their supply chains fit for purpose in the multi-channel world. Both Next and Marks & Spencer have announced they will be spending hundreds of millions of pounds on their supply chains in the coming years.

We should make note of the growth of new entrants to the market, such as Wayfair.com who are increasing the amount of warehouse space they need at exponential level.

Lastly, we are not currently seeing Brexit have a significant impact on occupier demand, either positive or negative. This may change as more clarity emerges on the UK's post 29th March trading arrangements, but occupiers should be comforted by the fact that supply levels are now at their highest level since 2014.

Take-up

At a nationwide level take-up reached 34.1m sq ft for 2018 a 32% increase on 2017 and 14.1m sq ft above the long term average.

Whilst the actual deal counts were marginally up the average deal size is at its highest level ever and now stands as 281,000 sq ft.

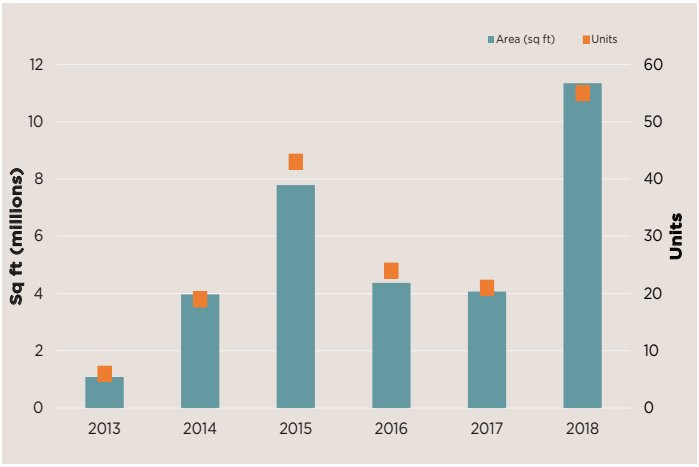
New records were set in many markets including the East Midlands, Yorkshire, the North West and the South East.

Supply and Pipeline

Nationwide supply has risen in 2018 and now stands at 31.4m sq ft, reflecting a vacancy rate of just 5.3%. Of the current supply on the market 51% is classified as grade A, up from just 35% in Q1 2015 .

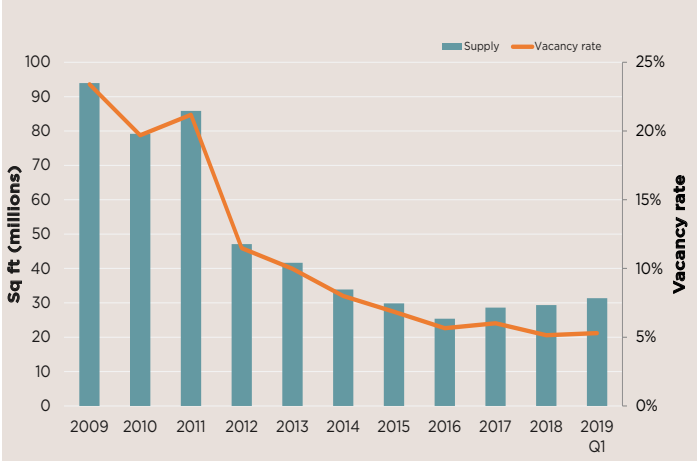
We expect this balance to alter further in favour of grade A units in 2019 as 2018 saw a record number of speculative development announcements; 55 units were announced totalling 11.3m sq ft. Of the units due for delivery 67.5% are under 200,000 sq ft.

Speculative announcements almost triple



Source Savills Research

Supply and vacancy slight up-tick in supply



Source Savills Research

> **Strong occupier demand and the lack of stock in London continues to drive rental growth across the region**

London and the South East

Unprecedented demand for larger units



Toby Green
Director,
South East
020 7409 9903
tgreen@savills.com



Panattoni Park Luton
345,000 sq ft due in 2019

Supply

The quality balance of the supply has shifted as speculatively developed units have come to the market. Grade A stock now makes up 69% of all space on the market totalling 3.83 million sq ft across seventeen units, a 108% increase on the amount of grade A space available in 2017.

Increased speculative development paired with large 2nd hand units returning to the market such as Tectonic 620 comprising 617,393 sq ft has caused supply to rise. Current supply totals 5.54 m sq ft, representing a 42% rise from 2017, 71% of this supply is under 200,000 sq ft, which correlates with long term take-up trends with 64% of deals being in the same size band. Unit sizes increase as you move north with the largest units, Tectonic 620 and Altitude both being in Milton Keynes.

Take-up

Take-up levels increased 33% in 2018 reaching 6.35 m sq ft through 20 separate deals, the highest amount of activity since 2014. The average deal size has risen by 66.4% from 2017 reaching a record high of 312,379 sq ft for the region, a 40% increase above the long term yearly average.

Build-to-suit transactions accounted for 45% of deals within the region, totalling 4.58 million sq ft. The largest deal in the region was Lidl acquiring land and self-building 1.1 million sq ft in Dunstable.

We are expecting a strong start to 2019 with 1.5m sq ft of warehouse space already under offer.

Development Pipeline

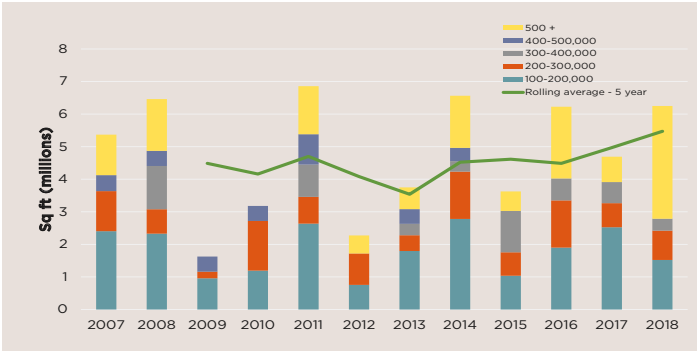
There are eight units under construction totalling 1.52 m sq ft, but there are no units under construction inside the M25 and just two in the Home Counties. The largest unit due for delivery in 2019 is Bedford 405 where Goodman are speculatively developing 405,000 sq ft, set to reach practical completion in Q3 2019.

Key statistics

	Stats	yr/yr change
Take-up	6.35m sq ft	↑ 33%
Supply	5.54m sq ft	↑ 42%
Development Pipeline	1.52m sq ft	↓ 2.9%
Quoting Grade A Rent	£7.5-£18/ sq ft	↑ 9%
Vacancy rate	5.5%	↑ 120bps

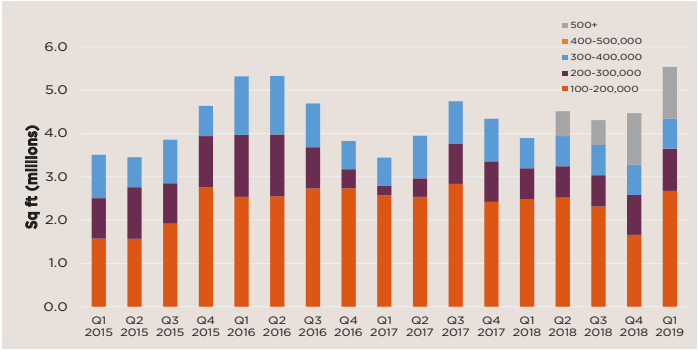
Source Savills Research

Take up rolling average reaches new high



Source Savills Research

Supply rises in smaller units



Source Savills Research

> 2018 saw grade A space account for 94% of the total space transacted with grade B &C space equating to just 6%.

East Midlands

Best year ever for take-up in the region



Charles Spicer
Director
Birmingham
0121 6348407
caspicer@savills.com



Panattoni Park Northampton
532,00 sq ft due for 2019 completion

Supply

Since the recent high point was reached in Q4 2017 supply has been decreasing and now stands at 3.28m sq ft, a fall of 33.99% in 12 months, reflecting a vacancy rate of just 3.8%.

Whilst the vacancy rate has fluctuated around the 4% market in the last four years the make-up of the supply has altered dramatically. For example at the start of 2015 there was 2.7m sq ft of grade B & C supply on the market accounting for 67% of supply. On the other hand at the start of 2019 this proportion had fallen to 43%.

The largest unit on the market remains Quantum at Magna Park at 411,613 sq ft which has been vacant for 32 months having been under offer twice in the last 12 months.

Take-up

2018 has been a record year with 8.92 m sq ft of space transacted, 101% above the long term average and more than double what was transacted in 2017.

Comparing transaction volumes with 2017, all building types experienced around twice as much activity in 2018, such as the amount of new grade A space transacted increasing 166%. In fact, 2018 saw grade A space account for 94% of the total space transacted with grade B &C space equating to just 6%.

Build-to-suit space dominated the market with the largest deal being c.1.3 million sq ft at Segro Logistics Park East Midlands Gateway (Big Box 1). Segro Logistics Park East Midlands Gateway has been one of the most successful schemes in the region in 2018 securing 4 build to suit deals totalling over 2 million sq ft of space.

Development Pipeline

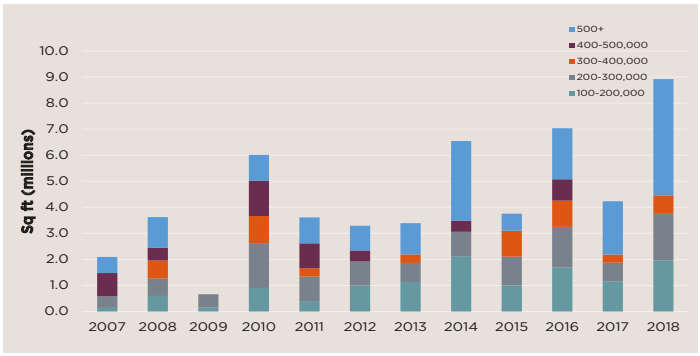
There are 12 units under construction which total 3.34msq ft, primarily located in Northamptonshire where seven units are under construction. The largest unit is Nottingham 550, where Panattoni are developing 550,000 sq ft due to reach practical completion in Q1 2019.

Key statistics

	Stats	yr/yr change
Take-up	8.92m sq ft	↑ 111%
Supply	3.28m sq ft	↓ 19%
Development Pipeline	3.34m sq ft	↑ 149%
Quoting Grade A Rent	£6.75/sq ft	↑ 4%
Vacancy rate	2.9%	↓ 160bps

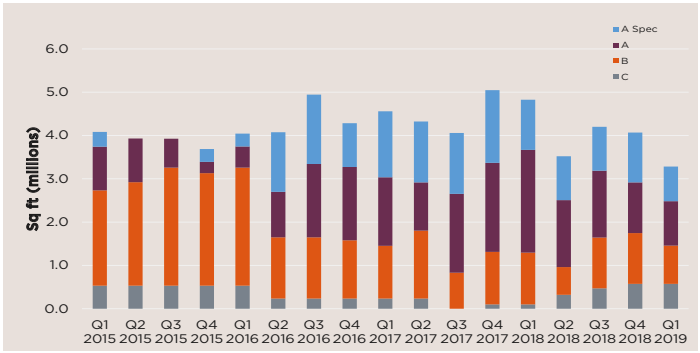
Source Savills Research

Take up record year for units over 500,000 sq ft



Source Savills Research

Supply proportion of grade A supply increases



Source Savills Research

> **Understandably Brexit has dampened demand in certain sectors such manufacturing but others remain active and we expect a pick up once the uncertainty is lifted**

West Midlands

Supply still less than two years despite recent rise



Ranjit Gill
Director,
Birmingham
0121 634 8402
rsgill@savills.com



Supply

The level of supply currently stands at 7.46 m sq ft, the highest level ever recorded representing a 76% increase from 2017. Of this, however, 46% of the supply is considered to be grade B & C, accounting for close to 3.5m sq ft.

Recent strong demand has stimulated speculative development and since 2016 over 1.8 m sq ft of grade A space has come to the market through units such as Wolverhampton 450 where Panattoni delivered 448,089 sq ft.

Supply has also been skewed by multiple large 2nd hand units further increasing supply such as the UK's current largest available unit Goliath at Cross Point Business Park in Coventry at 666,044 sq ft.

Take-up

After two strong years take-up has tailed off in 2018 reaching 3.41 m sq ft through 18 transactions, representing a 44% decrease from take-up in 2017.

Second hand units accounted for 44% of the total space leased in the region, whilst build-to-suit units accounted for 38% of the total space leased.

Take-up was skewed towards smaller sized units with 67% of the deal count involving units between 100,000-200,000 sq ft.

Sectors previously inactive, particularly wholesale retail which accounted for 28% of the total space leased (up from 3% in 2017), took more space then historically active industries such as automotive and manufacturing.

Development Pipeline

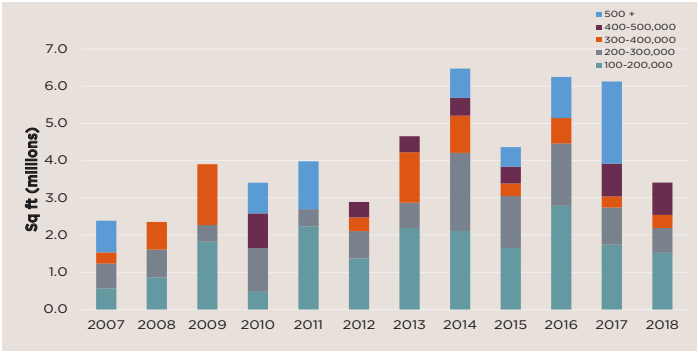
Five units are currently under construction totalling 837,584 sq ft. The largest unit currently under construction is 233,025 sqft at Prologis Park Birmingham Interchange, the others are all sub 200,000 sqft.

Key statistics

	Stats	yr/yr change
Take-up	3.41m sq ft	↓ 44%
Supply	7.46m sq ft	↑ 76%
Development Pipeline	0.84m sq ft	↑ 29%
Quoting Grade A Rent	£7/sq ft	no change
Vacancy rate	7.7%	↑ 310bps

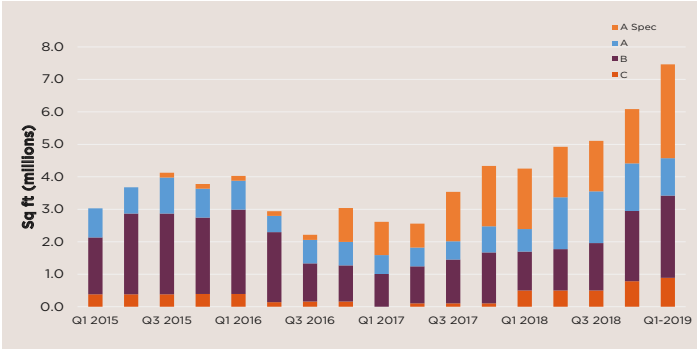
Source Savills Research

Take up falls to 2012 levels



Source Savills Research

Supply rises in all grades



Source Savills Research

> “The North West bounced back from a sluggish 2017 to report a record year. We expect 2019 to continue this trend going forward”

North West

Build-to-suit deals help take-up rise



Jon Atherton
Director,
Manchester
0161 277 7207
jatherton@savills.com



375 at Logistics North

Supply

The North West now has the second largest amount of supply within the UK, currently sitting at 5.97 m sq ft across 31 units.

The grade balance of the available stock has slowly shifted with grade A stock now accounting for42% of all vacant units on, up from 30% a year ago. Despite the increase in grade A quality units, based upon the long term average take-up of grade A space, the region has just 1.3 years left of grade A supply.

The current supply is skewed towards the smaller size bands with 65% of available units between 100,000-200,000 sq ft. There are only five units available in the region over 300,000 sq ft.

Take-up

Following a below average year in 2017 transactional activity for 2018 has risen above the long term average. Take-up reached 4.58 m sq ft across 23 separate transactions, representing a 63% increase from take-up in 2017 and a 26% increase above the long term average.

Following UK wide trends, take-up was dominated by the 100,000-200,000 sq ft which accounted for 70% of the market by deal count. There were no deals above 400,000 sq ft in the region.

The majority of the deals involved lower quality units with 70% of the units transacted being second hand, amounting to 2.87m sq ft. Additionally the amount of build to suit space increased to 902,062 sq ft in 2018, a 175% rise on the level of BTS space transacted in 2017.

The average deal size in 2018 was 198,952 sq ft, a 13% increase on 2017 evidencing increased occupier demand for larger units. The largest deal of the year was Movianto acquiring 373,000 sq ft at Haydock Green in Saint Helens.

Development Pipeline

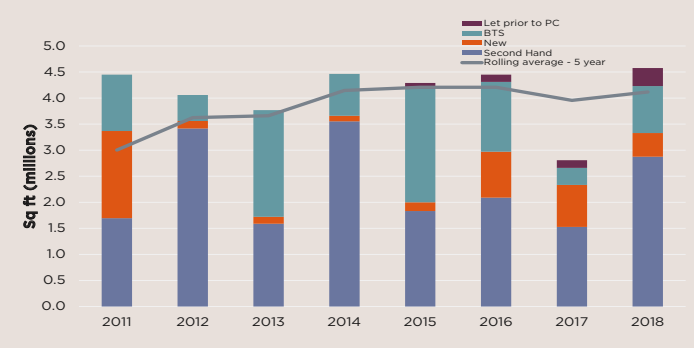
There are seven units being developed n totaling 1.55 m sq ft. The largest being 525 Haydock in Saint Helens at 523,500 sq ft, set to reach practical completion in Q2 2019.

Key statistics

	Stats	yr/yr change
Take-up	4.58m sq ft	↑ 63%
Supply	5.97m sq ft	↑ 3.3%
Development Pipeline	1.55m sq ft	↑ 0.36%
Quoting Grade A Rent	£6.75/sq ft	↑ 4%
Vacancy rate	4.7%	↑ 10bps

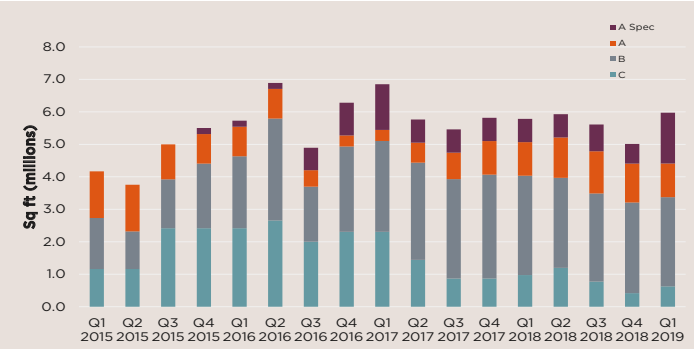
Source Savills Research

Take up returning to recent levels



Source Savills Research

Supply Grade A supply increases



Source Savills Research

> **“A stellar year with large build-to-suit deals driving the market. With large sites and a readily available labour force we expect the trend to continue”**

Yorkshire and the North East

Take-up levels reach new high as supply continues to fall



Dave Robinson
Director,
Leeds
0113 220 1218
darobinson@savills.com



Symmetry Park Darlington where DB Symmetry are delivering 1.5m sq ft

Supply

The market has experienced increasing supply constraints stimulated by record levels of take-up throughout 2018. Available supply currently sits at 3.75 m sq ft across 19 separate units representing a 35% fall from 2017.

The majority of available supply sits within the 100,000-200,000 sq ft size band accounting for 84% of available units. However, there are three units in the region over 400,000 sq ft, the largest being Premier North Industrial Estate which comprises 546,970 sq ft. Of the available supply 83.81% is classified as 2nd hand.

Take-up

2018 has seen the strongest levels of demand ever recorded. Take-up reached 9.48 m sq ft through 25 separate deals, a 562% increase from 2017 and a 68.6% increase from the previous high water mark of 5.62 m sq ft in 2014. It should be noted that we regard 2017 as an anomalous year as take-up was a 66% decrease on the long term average.

The increase can be attributed to multiple large BTS deals, such as Amazon acquiring 1.99 m sq ft at Integra 61 in Durham. In 2018, 28% of of the floor space transacted was for build-to-suit units however by deal count 68% of deals were for second hand units. In fact, Yorkshire saw the largest second hand deal nationwide through Clipper acquiring Sheffield 615 totalling 615,000 sq ft.

The 100,000-200,000 sq ft size band experienced the highest deal volume in 2018, with 48% of deals recorded being within this size band. The 400,000 sq ft+ size band also performed well, accounting for 24% of units transacted.

Development Pipeline

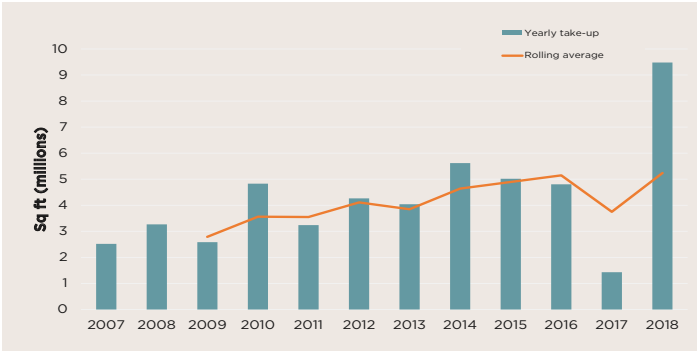
There are currently four units under construction throughout the region totalling 804,765 sq ft. The largest unit is G Park Doncaster where Gazeley are speculatively developing 275,300 sq ft. The unit is set to achieve practical completion in Q1 2019.

Key statistics

	Stats	yr/yr change
Take-up	9.48m sq ft	↑ 562%
Supply	3.75m sq ft	↓ 35%
Development Pipeline	0.80m sq ft	↑ 199%
Quoting Grade A Rent	£5.75/ sq ft	no change
Vacancy rate	5.8%	↓ 260bps

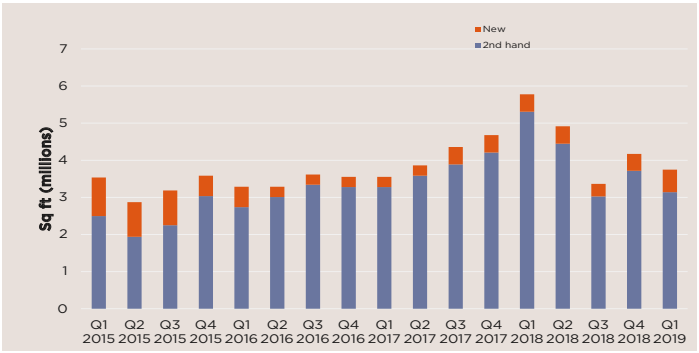
Source Savills Research

Take up new record achieved



Source Savills Research

Supply yearly fall of 35%



Source Savills Research

> **“The increased speculative activity and contraction of land supply will mean a shift away from build-to-suit into existing stock”**

South West

Speculative development filling “the void”



Rob Cleeves
Director,
Bristol
01179 102 227
rcleeves@savills.com



Junction One Central Park
137,315 sq ft due for delivery in Q3 2019

Supply

The supply constraints within the market have alleviated in 2018 with supply rising 41.6% to reach 2.03m sq ft.

The supply is skewed towards smaller sized units as 44% of available units are under 200,000 sq ft with no units above 400,000 sq ft. The largest unit on the market is the Former Morrison’s at Cribbs Causeway Distribution Centre totalling 384,786 sq ft.

62% of available space is classified as grade A, a 32% increase on the amount of grade A supply in 2017. However, Western 105 is the only new speculatively developed unit currently available where Richardsons and Curtis Hall developed 105,500 sq ft, the eight other units (89%) are all classed as second hand.

Take-up

Following two strong years of take-up, activity within the region has fallen to the lowest levels since 2014. Take-up reached 995,106 sq ft through five separate deals; a 50% fall from 2017 take-up and a 66% decrease below the long term average, albeit with recent years being dominated by large deals by Lidl, The Range and Amazon.

All 2018 deals involved solely speculatively developed or build-to-suit demonstrating demand for high quality units. Indeed the two speculatively developed units let in 2018 with a void of below 8 months.

The largest deal of 2018 was B&Q acquiring G Park Swindon, a build-to-suit unit totalling 375,286 sq ft.

The market was dominated by retailers who accounted for 70% of the total space leased with manufacturing and automotive making up the balance.

Development Pipeline

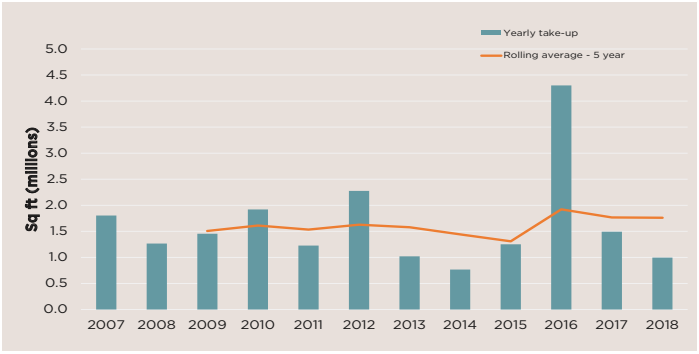
There is a total of 416,520 sq ft being speculatively developed across three separate units. The largest unit being Access 18 where St Modwen are speculatively developing 151,330 sq ft, set to reach practical completion in Q1 2019.

Key statistics

	Stats	yr/yr change
Take-up	0.99m sq ft	↓ 33%
Supply	2.03m sq ft	↑ 43%
Development Pipeline	0.42m sq ft	↑ 27%
Quoting Grade A Rent	£7.25/sq ft	no change
Vacancy rate	7.3%	↑ 200 bps

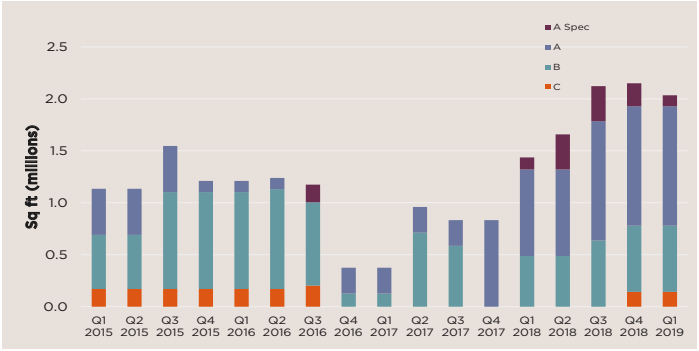
Source Savills Research

Take up returns to 2014 levels



Source Savills Research

Supply Just over a years supply on the market



Source Savills Research

> **It is pleasing to see new speculative units come forward which, with vacancy rates so low in the region, will drive rental growth**

East of England

Next wave of development sites will drive future demand



William Rose
Director,
Peterborough
01733 201 391
wrose@savills.com



Supply

Even with the delivery of 353,732 sq ft speculative space at Suffolk Park Bury St Edmunds the total supply of units over 100,000 sq ft has fallen year on year and now stands at 861,833 sq ft across five separate units.

The main driver for the fall in supply has been almost 500,000 sq ft of grade C space being withdrawn from the market in King's Lynn after Gardman chose to re-occupy after their Midlands warehouse was damaged by fire.

All units in the region on the market are under 300,000 sq ft, with the average size being 172,000 sq ft. The largest unit on the market is Huntingdon 252 which has been vacant for 16 months.

Take-up

Following on from four consecutive years of growth and the success of Gateway Peterborough, developed by Roxhill, which is now has just two plots remaining, 2018 has started slowly. There have been just three deals on units over 100,000 sq ft which total 467,470 sq ft.

Online retailer Yours Clothing have taken 127,470 sq ft at Newcombe House in Peterborough.

Meanwhile at Suffolk Park, Bury St Edmunds, Sealey Professional Tools has bought a seven acre site where they intend to construct a 110,000 sq ft unit for future expansion. The largest deal of the year has been LDH Ladoria who have purchased a site at Ipswich Gateway where Panattoni are constructing a 40m high unit of c.230,000 sq ft.

Development Pipeline

Following the delivery in Q4 2018 of two units at Suffolk Park Bury St Edmunds which total 353,732 sq ft there are no speculative units scheduled for delivery in 2019.

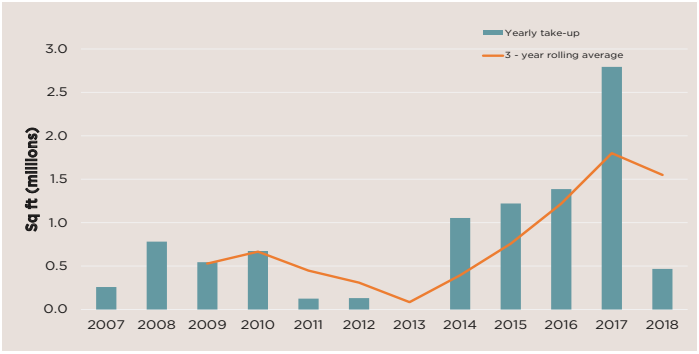
These units are the first speculative units to be delivered in the region for over a decade.

Key statistics

	Stats	yr/yr change
Take-up	0.47m sq ft	↓ 83%
Supply	0.86m sq ft	↓ 20%
Development Pipeline	0m sq ft	↓ 100%
Quoting Grade A Rent	£5.50/sq ft	no change
Vacancy rate	2.5%	↓ 50bps

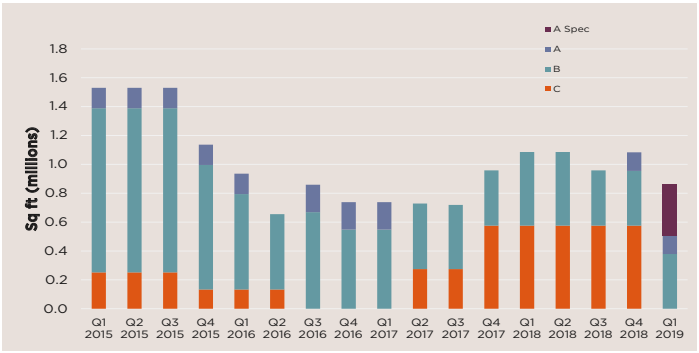
Source Savills Research

Take up falls to 2012 levels



Source Savills Research

Supply balance shifts towards grade A



Source Savills Research

> **“The supply of new and modern space in Scotland is at a critical stage. It is felt that the market is on the cusp of receiving much needed speculative development. Until such time we continue to rely on Build-to-Suit opportunties.”**

Scotland

Subdued big box market continues



Ross Sinclair
Director,
Glasgow
0141 222 4145
rsinclair@savills.com



Lidl unit, Deans Industrial Estate

Supply

The supply of warehouse space in Scotland for units over 100,000 sq ft has risen by 38% in 2018 and now stands at 1.72m sq ft across the Central Belt.

This is made up of 11 separate units of which all bar two are between 100,000 and 200,000 sq ft, with the average size being 156,232 sq ft.

The largest unit on the market in Scotland at present is the former Lidl RDC at Deans Industrial Estate which totals 291,710 sq ft, which came to the market in the second quarter of 2018. This follows the purchase of 50 acres by Lidl at Eurocentral where a new 750,000 sq ft RDC is currently under construction and due for occupation in 2020.

Take-up

Largely predicated by the lack of good quality supply the deal flow for units over 100,000 sq ft in Scotland this year has been subdued with just one unit transacted so far this year.

Drinks manufacturer BrewDog has completed the acquisition of the Vertex building at Eurocentral near Motherwell.

The 128,000 sq ft unit sold for a capital value rate of £60 per sq ft.

Along with the reduced supply, take up has perhaps also been constrained by occupiers seeking critically required features which existing second had speculative buildings can't offer or adapt to provide.

Development Pipeline

There are no units under construction speculatively over 100,000 sq ft in Scotland meaning we do not expect vacancy rates to fluctuate in the medium term.

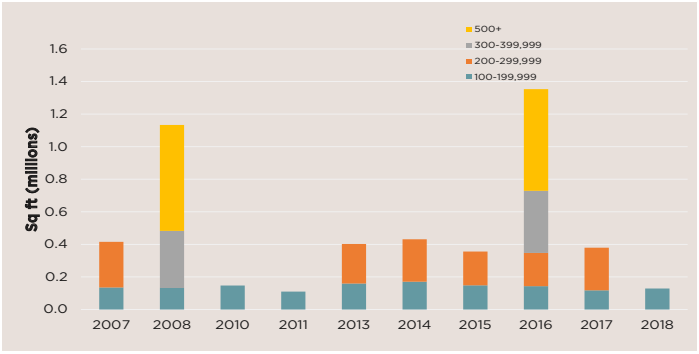
Larger scale occupiers such as Lidl and DPD for example have elected to purchase land at Eurocentral and progress Built to Suit with their preferred developer. However it is hoped that the lack of supply will encourage new development, albeit, typically for Scotland this is very much likely to be under 100,000 sq ft.

Key statistics

	Stats	yr/yr change
Take-up	0.13m sq ft	↓ 66%
Supply	1.72m sq ft	↑ 38%
Development Pipeline	0 sq ft	no change
Quoting Grade A Rent	£5.75/ sq ft	↑ 9.5%
Vacancy rate	4.9%	↑ 135 bps

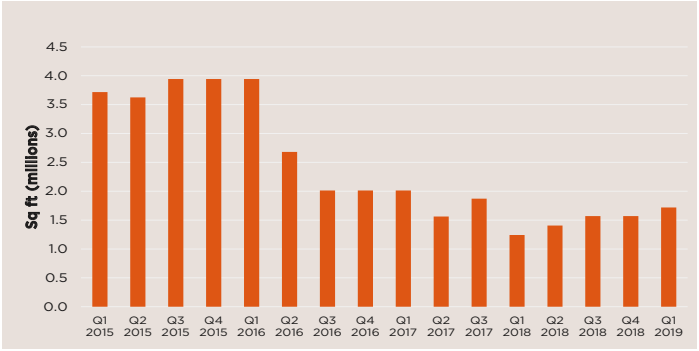
Source Savills Research

Take up falls to 2011 levels



Source Savills Research

Supply slight rise in 2018



Source Savills Research

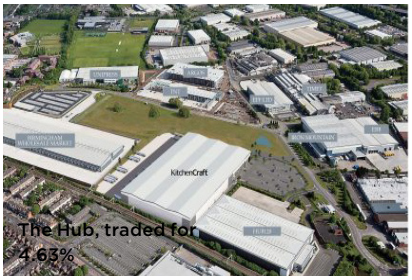
> **Relative to other sectors which saw significantly reduced transaction levels, volumes and notably pricing logistics proved stubbornly resilient despite growing geopolitical and economic uncertainty**

National investment

Market proves to be resilient and liquidity remains



Tom Scott
Director,
UK Investment
020 7075 2819
tscott@savills.com



The Hub, traded for 4.63%

The industrial and logistics market continues to be resilient despite the many geopolitical and economic headwinds converging on the commercial real estate asset class as a whole.

It is therefore encouraging that investment volumes for distribution warehouses have reached £3.55bn for 2018, marginally lower than 2017. The three year rolling average has now reached a new height of £3.32bn, the highest level ever recorded and up from £2.1bn just five years ago.

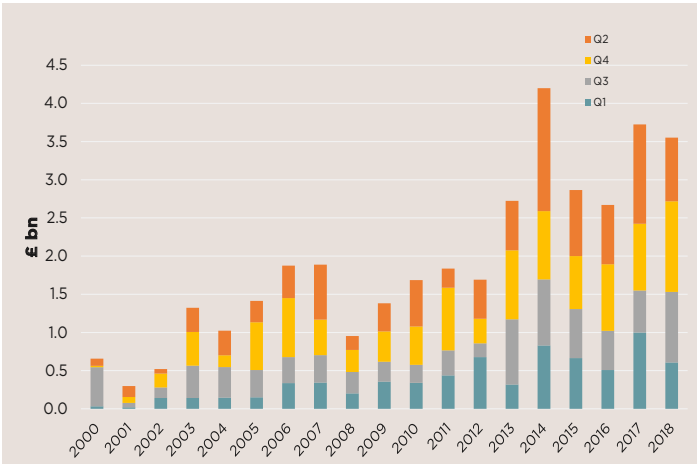
By almost every metric 2018 mirrored 2017 - deal count, average lot sizes and the proportions of deals within certain ranges were all broadly in line with last year. 2018 did however lack larger portfolio transactions over £300m, with two of that scale in 2017.

The largest single let transaction of the year was Tritax's forward funding of a 1.99m sq ft facility Amazon facility in Durham. Upon completion Amazon will take a 20 year lease at a rent reflecting a net initial yield of 5.25%.

Savills prime yields have remained largely static for the last 12 months and now stand at 4.25% for prime single let logistics units and 4.00% for multi-let industrial estates, the lowest level ever seen.

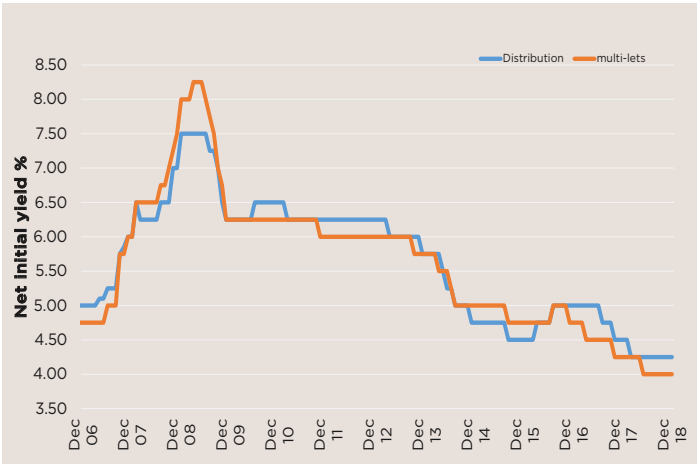
As we move through 2019, we expect that continued Brexit uncertainty will see some investors pause for thought until greater clarity emerges although given the sustained popularity of the sector amongst investors it is difficult to envisage any significant adjustment in pricing, notwithstanding any political or economic shocks.

Investment volumes slight fall in 2018

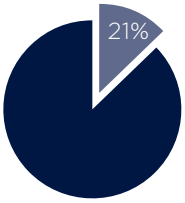


Source Savills Research

Prime investment yields remain static



Source Savills Research



In November 2018 online retail accounted for its highest proportion of retail sales ever

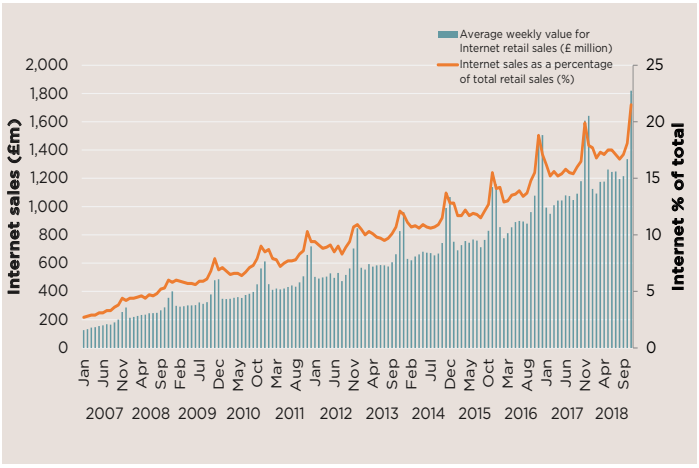
2019 Outlook

Is Brexit a non event when compared to structural change?

A glance at the mainstream press would suggest that companies are stockpiling product at such a rate that supply cant keep track of demand. To date Savills have tracked just two deals over 100,000 sq ft that have any link to Brexit at all. That may change of course as preparations for "no deal" intensify but it remains to be seen how the short term Brexit related requirements will marry up with the longer term aspirations of the landlord community.

More likely to have an impact on demand is the continued shift online which in November reached its highest level ever of 21.5%. Global Data are forecasting online spend to reach £75bn by 2023 which based on historical norms would suggest an extra 20m sq ft being required, but based on recent take-up levels would actually seem conservative.

Online retail reaches highest level ever



Source ONS

BUILD COST AND PROGRAMME



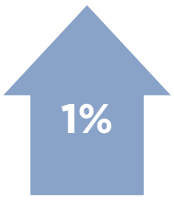
Will Cooper
Director, Building & Project Consultancy
020 7409 8952
wcooper@savills.com

The latest indicators from the Savills ProgrammE and Cost Sentiment Survey (S.P.E.C.S) demonstrate that build costs and programme delivery time scales have remained largely static for the second half of 2018.

Continued geo-political uncertainty does however have the potential to impact two of the key elements of build costs and programme length; the price and availability of steel and the availability of skilled labour

Uncertainty around Brexit will keep overseas contractors away from the UK. Combined with an already strong speculative and build-to-suit programme the sector could face labour shortages into 2019.

With no end in sight to the current trade war between the USA and China, combined with further currency fluctuations the price of imported steel could change further into 2019.



Overall 2019 tender price inflation forecast by Gardiner & Theobald

Savills Research
We're a dedicated team with an unrivalled reputation for producing well-informed and accurate analysis, research and commentary across all sectors of the UK property market.

Richard Sullivan
Agency
0207 409 8125
rsullivan@savills.com

Richard Merryweather
Investment
0207 409 8838
rmerryweather
@savills.com

Simon Collett
Building Consultancy
0207 409 5951
scollet@savills.com

Kevin Mofid
Research
0203 618 3612
kmofid@savills.com

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CASTLE DONINGTON | DE74 2UZ

savills


M1
23a
east midlands airport
SECRETARY OF STATE
Regus
Radisson
WESTERN POWER DISTRIBUTION
DONINGTON COURT
DC
Holiday Inn Express
Premier Inn
PKF Cooper Parry
nationalgrid
DHL
Royal Mail

Investment Summary

- **Strategically located** within the UK with **access directly from the M1 motorway** and within close proximity of the A42 and A50 Dual Carriageways
- **Next to East Midlands International Airport**, one of the UK's most strategically important airports
- **Prime Business Park environment** with high profile branding opportunity
- With close proximity of **SEGRO Logistics Park**, East Midlands, Gateway and **Rail Freight Interchange**
- High Specification purpose built office building extending to **43,847 sq ft** (NIA) (4,073.60 sq m)
- Excellent parking ratio of **6.75 spaces per 1,000 sq ft**
- Passing net rent of **£355,135** per annum
- Potential gross rent **£624,782** per annum (net £561,904 per annum)
- Let in part to PriceWaterhouseCoopers Services Limited and HSBC Bank plc
- Low capital value **£170** per sq ft
- Long leasehold
- Seeking offers in excess of **£7,265,000 (Seven Million, Two Hundred & Sixty Five Thousand Pounds)**, subject to contract providing a net initial yield of **7.25%**, assuming purchasers' costs at **6.66%**
- A rental guarantee equivalent to one year, **£229,744 per annum** and the corresponding rental equivalent to the residue rent free granted to HSBC Bank plc, will be deducted from the purchase price



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Location

Donington Court is located on Pegasus Business Park, within the boundary of East Midlands International Airport, one of the UK's most strategically important airports outside London.

East Midlands International Airport accommodates 4.3 million passengers each year offering routes to over 80 leisure and business destinations. The Airport is the second busiest cargo airport in the UK (after Heathrow) and handles over 310,000 tonnes of air freight every year. It is the UK hub for DHL and UPS and acts in support of operations for TNT and Royal Mail as well as a number of distribution companies that have bases in the area. The world-famous Donington Park motor racing circuit is also near by.

Demographics

The East Midlands has an excellent track record for attracting flourishing world class companies in the transport, healthcare, professional services, food and drink and environmental sectors. The area offers a competitive environment supported by world leading research and development capabilities, a highly skilled workforce and it also benefits from being at the centre of the UK transport network.

> EAST MIDLANDS AIRPORT IS SITUATED ADJACENT TO JUNCTION 23A OF THE M1 MOTORWAY BENEFITING FROM IMMEDIATE ACCESS TO THE NATIONAL MOTORWAY NETWORK AND A DIRECT ROUTE TO LONDON









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Connectivity

In addition to air travel, East Midlands Airport is situated adjacent to Junction 23A of the M1 Motorway benefiting from immediate access to the national motorway network and a direct route to London (2 hour drive time) and Leeds (1.5 hour drive time). The Airport also benefits from direct access to Birmingham via the A42 (40 miles to the south west). The A50 dual carriageway, situated directly to the north of the Airport, provides direct access to the M6 Motorway.

East Midlands parkway station is a short 10 minute taxi ride away from the property providing frequent direct trains to London St Pancras International Station in under 1 hour and 30 minutes.

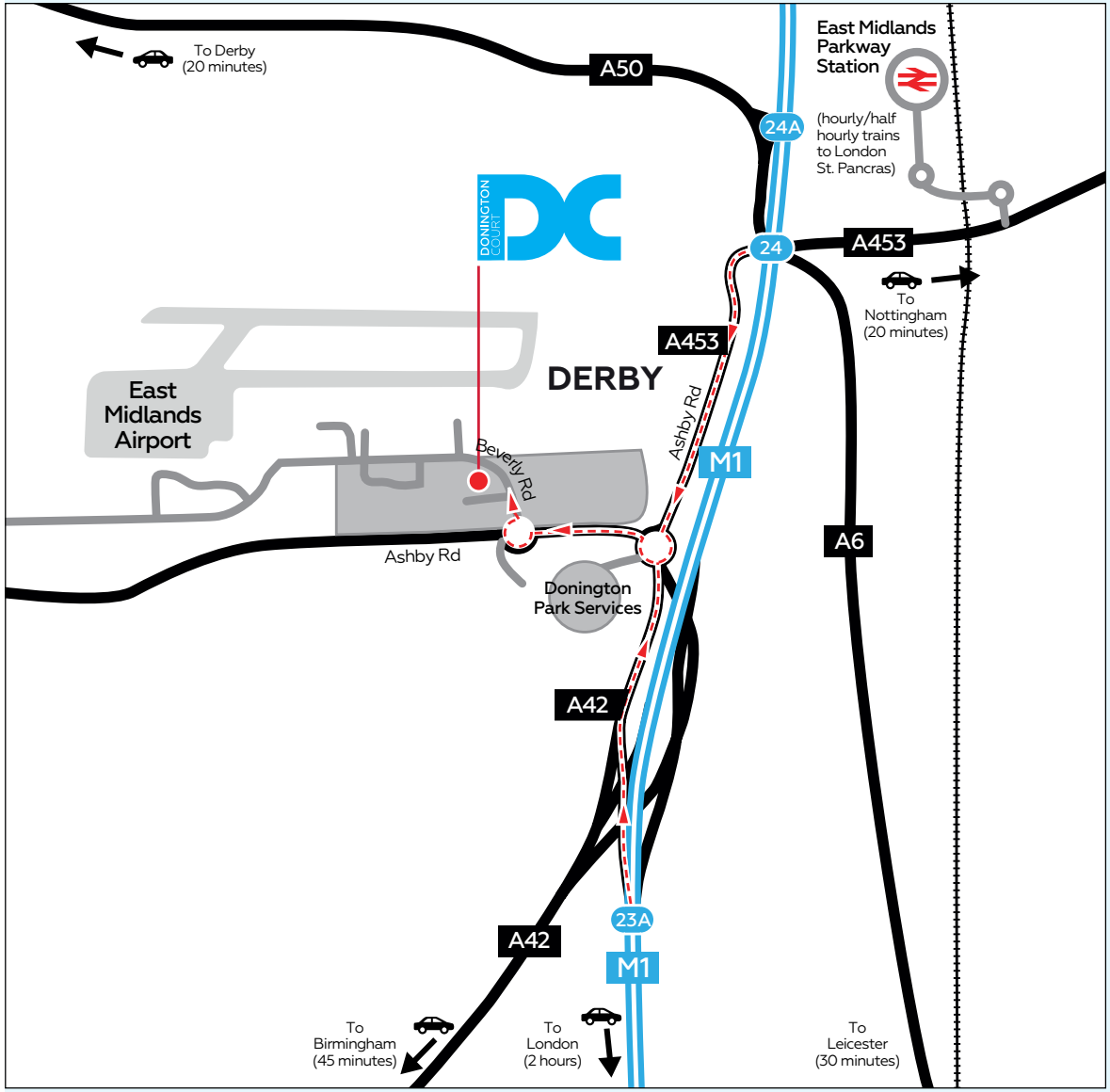
Logistics

The property is within close proximity of SEGRO Logistics Park East Midlands Gateway (SLPEMG) which is a 700 acre development with planning consent for up to 6,000,000 sq ft of logistics accommodation. The development incorporates a 50 acre Strategic Rail Freight Interchange (SRFI) which will include a rail freight terminal, capable of handling up to sixteen 775m rail freight trains per day, container storage and HGV parking.

Extensive infrastructure works are currently underway. These works include improvements to Junction 24 and 24A of the M1 including the introduction of a smart motorway system by Highways England, safer access to the A50 at Lockington and Hemington and the new Kegworth Bypass.

Situation

Donington Court occupies a prominent position within Pegasus Business Park on one of the principle airport boundary roads leading to the passenger terminal and numerous cargo facilities. Surrounding office occupiers include HSBC, Regus, Nikon, PKF Cooper-Parry, National Grid, PWC, UPS and Home Office and there also are several hotels nearby including Premier Inn, Holiday Inn Express, Radisson Blu and Thistle.



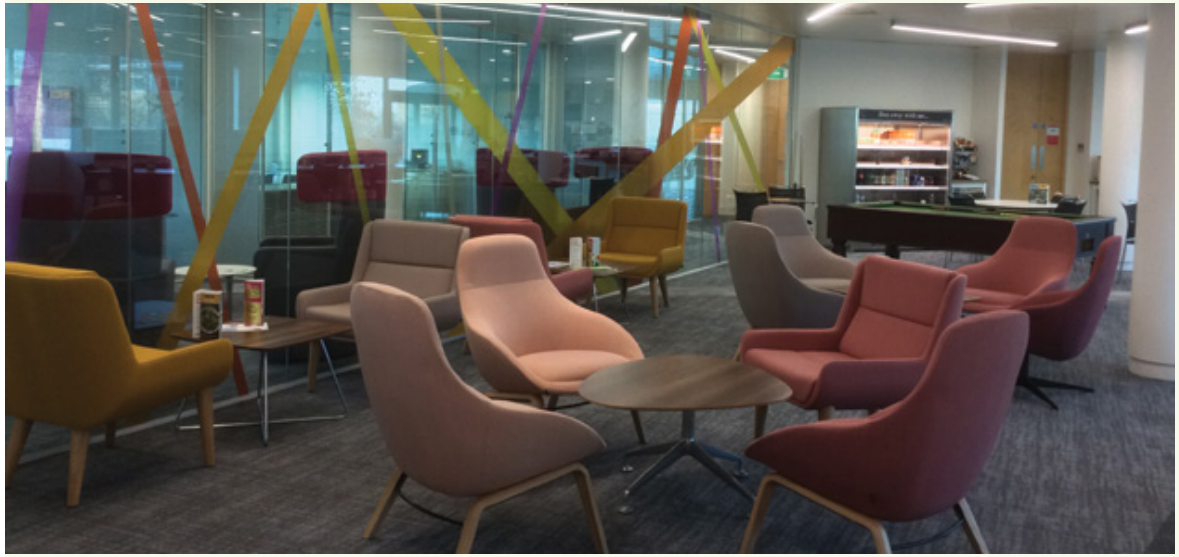
Donington Court | Unit 2A Donington Court
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Description

Donnington Court was constructed in 2002 to provide high specification Grade A headquarters offices primarily arranged over ground, first and second floor.

The building provides the following amenities:

- Air conditioning
- Fully accessed raised floors.
- Suspended ceilings with recessed integral lighting
- Feature double height reception
- Excellent parking ratio with 265 secure parking spaces and more potentially available (6.75 spaces per 1,000 sq ft)
- Fully refurbished and with the benefit of an attractive Concierge Reception
- Passenger lift(s)
- Dedicated kitchen and WC facilities
- DDA compliant
- 24 hour access and CCTV monitoring





Donington Court | Unit 2A Donington Court
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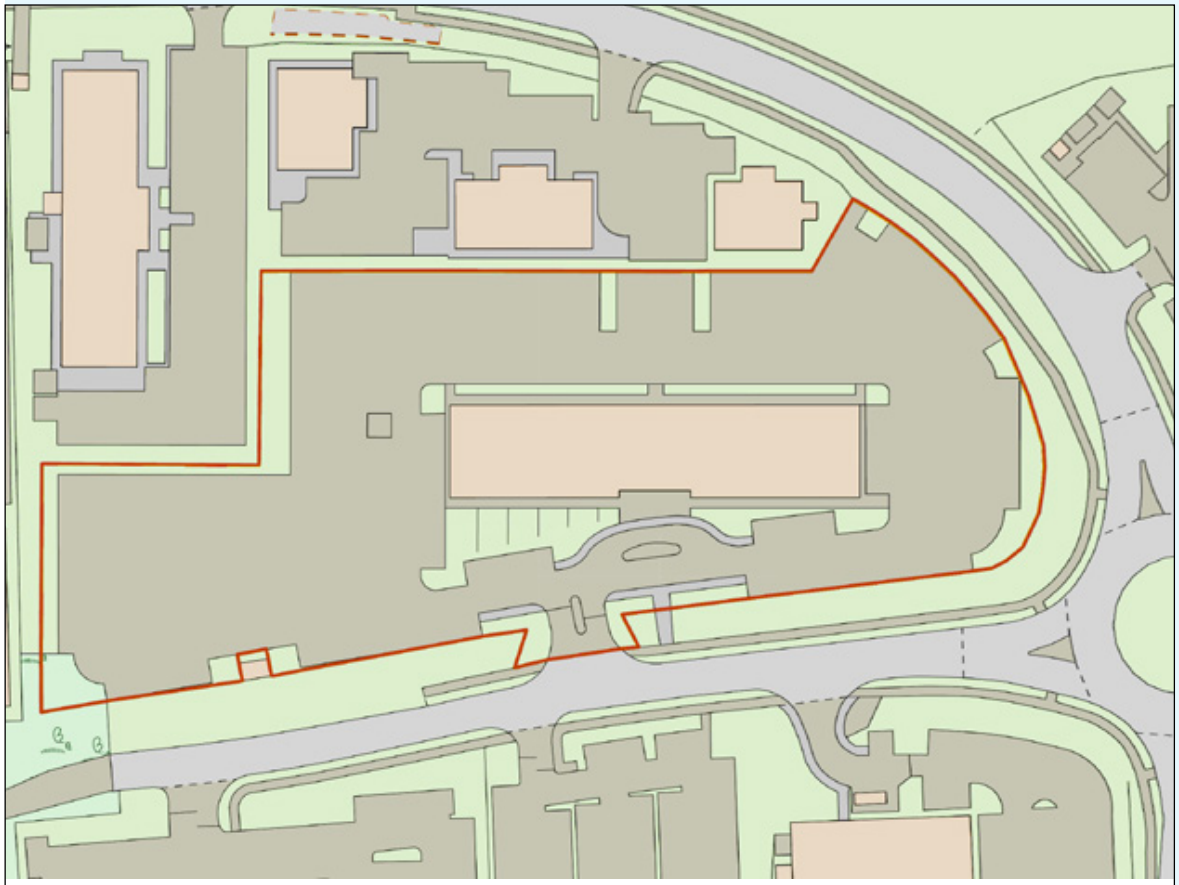
Accommodation

Net Internal Area	Size (Sq Ft)	Size (Sq M)
Ground Floor	13,520	1,256.1
First Floor	13,245	1,230.5
Second Floor	13,558	1,259.6
Roof	3,524	327.4
Total	**43,847**	**4,073.6**

The property has been measured in accordance with the RICS Code of Measuring Practice, published in 2007 (6th Edition). We have not measured the property nor have we calculated the floor areas in accordance with IPMS 3 – Offices. The site extends to approximately 3.209 acres (1.299 hectares).







NOTE:- Reproduced from the Ordnance Survey Map with the permission of the Controller of H.M. Stationery Office. © Crown copyright licence number 100024244 Savills (UK) Limited. NOTE:- Published for the purposes of identification only and although believed to be correct accuracy is not guaranteed.

Tenure

The property is held on a long leasehold from East Midlands International Airport Limited for a term of 150 years from 26 November 2002, subject to a head rent equivalent to 10% of rents received and £400 ground rent.

After deduction of the head rent and ground rent, the net rent received is £355,135 per annum.

The property is let on two full repairing and insuring leases, in part, as follows:

Ground Floor Left Wing (6,469 sq ft) let to PriceWaterhouseCoopers Services Limited – 10 years with effect from 26 November 2017, subject to rent review in the 5th year of the term, 26 November 2022, and tenant break clause on 26 November 2022, at a rental of £98,465 per annum, reflecting £15.22 per sq ft.

First Floor Left and Right Wings (13,245 sq ft) let to PriceWaterhouseCoopers Services Limited – 10 years with effect from 26 November 2017, subject to rent review in the 5th year of the term, 26 November 2022 and tenant break clause on 26 November 2022, at a rental of £201,535 per annum, reflecting £15.22 per sq ft.

Second Floor West Wing (6,232 sq ft) let to HSBC Bank plc – 10 years with effect from 6 April 2018, subject to rent review in the 5th year of the term and tenant break clause on 6 April 2023 at a rental of £95,038 per annum, reflecting £15.25 per sq ft.

Vacant space

Reflecting the above tenancies, two suites remain vacant and are currently being marketed as follows:

Ground Floor Right Wing (Office B) 5,976 sq ft (555.19 sq m)

Second Floor Right Wing (Office B) 7,326 sq ft (680.60 sq m)

In addition to the above, there is ancillary storage in the roof void extending to 3,524 sq ft (327.4 sq m).

Based on the above tenancies we are of the opinion that an ERV of £15.25 per sq ft would be applicable on the remaining two suites and 50% of the main space rate of £7.63 per sq ft on ancillary storage providing an additional gross rental of £229,744 per annum.





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Covenants

PriceWaterhouseCoopers Services Limited
D&B Rating of 4A1 – represents minimum risk of business failure score

	Fiscal Non consolidated GBP 30 Jun 2016 (000's)	Fiscal Non consolidated GBP 30 Jun 2015 (000's)	Fiscal Non consolidated GBP 30 Jun 2014 (000's)
Sales Turnover	1,832,831	1,708,763	1,534,690
Profit / (Loss) Before Taxes	102,337	93,223	59,600
Tangible Net Worth	16,374	71,519	29,027
Net Current Assets (Liabilities)	(161,798)	(110,152)	(157,900)

HSBC Bank plc
D&B Rating of 5A1 – represents minimum risk of business failure score

	Fiscal Consolidated GBP 31 Dec 2016 (000's)	Fiscal Consolidated GBP 31 Dec 2015 (000's)	Fiscal Consolidated GBP 31 Dec 2014 (000's)
Sales Turnover	20,041,000	18,630,000	18,313,000
Profit / (Loss) Before Taxes	874,000	2,971,000	1,953,000
Tangible Net Worth	34,195,000	30,486,000	28,784,000
Net Current Assets (Liabilities)	65,577,000	42,025,000	38,543,000

EPC

The property has an Energy Performance Rating of:

D81
C71.

VAT

The property is elected for VAT. We would anticipate the transaction being treated as a Transfer of a Going Concern (TOGC), however prospective purchasers should make their own enquiries.

Proposal

We are seeking offers in excess of **£7,265,000 (Seven Million, Two Hundred & Sixty Five Thousand Pounds)**, subject to contract providing a net initial yield of **7.25%**, assuming purchaser's costs at **6.66%**.

A rental guarantee equivalent to one year, **£229,744 per annum** and the corresponding rental equivalent to the residue rent free granted to HSBC Bank plc, will be deducted from the purchase price.

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Pegasus Business Park Castle Donington | DE74 2UZ

Savills Nottingham

Enfield Chambers, 18 Low Pavement,
Nottingham NG1 7DG
+44 (0) 115 934 8000
nottingham@savills.com

Contacts

Strictly by appointment only with the Sole Agent Savills.

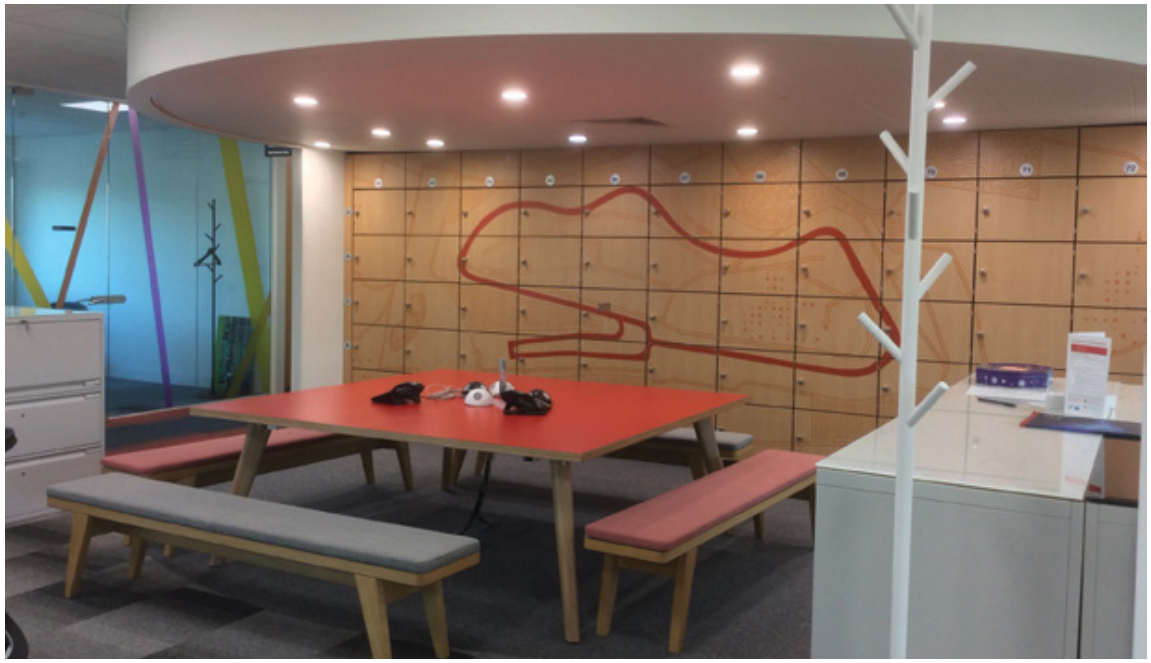
Victor Ktori
T: +44 (0) 115 9348171
E: vktori@savills.com

Christine Thorn
T: +44 (0) 115 934 8152
E: cthorn@savills.com





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Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum

UK Regional Airport Financial Performance and Debt Funding Characteristics

Issued: February 2019

Scope of the Report and Limitation of Liability

- This report contains the results of our analysis in relation to potential air cargo demand at the former Manston Airport site and our assessment of the debt funding characteristics of UK regional airports (the "Work"). It has been prepared for Stone Hill Park Limited ("SHP") in connection with the application for a Development Consent Order by RiverOak Strategic Partners Limited and for no other purpose. The application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). The application would also, we understand, seek to compulsorily acquire the whole of the former Manston Airport site from SHP.
- We do not accept a duty of care to any person other than SHP in respect of this report.

ALTITUDE AVIATION ADVISORY LIMITED

February 2019

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1. Overview of Report

1. This report has been commissioned by Stone Hill Park Limited ("SHP"), the owners of the former Manston Airport site. The site is currently subject to an application for a Development Consent Order ("DCO") under the Planning Act 2008 currently promoted by RiverOak Strategic Partners Limited ("RSP"). The application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). RSP contends that the Project is a Nationally Significant Infrastructure Project for airport development for air freight and hence, should fall within the Planning Act 2008. RSP's application also seeks powers of compulsory acquisition over the site, allowing RSP to compel the purchase of the site from SHP's ownership to RSP's ownership. The report has been developed in this context.

2. In 2017, we developed an evidence-based assessment of key issues impacting the future development of air cargo in the UK. This work was completed in October 2017 and published on the Stone Hill Park website in January 2018[1].

3. As part of our work, we reviewed a range of submissions as part of the DCO pre-application process. These included reports commissioned by RSP from Azimuth Associates ("Azimuth")[2] and Northpoint Aviation Services ("Northpoint")[3] and two AviaSolutions reports[4] commissioned by Thanet District Council.

4. Since our work was completed, Azimuth has twice updated its set of reports. First, as part of the consultation process, Azimuth released updated versions of its reports in January 2018[5]. Then in July 2018, a further updated version was issued as part of the DCO application[6]. The changes to the Azimuth reports were relatively minor in substance, while no changes were made to the forecasts presented.

5. The first two parts of this report acts as an addendum to our report issued in January 2018. It covers:

   - A review of relevant developments in the air cargo sector since October 2017 (when our previous analysis was completed).
   - An assessment of relevant new material in the recent Azimuth reports (issued after completion of our January 2018 report).

6. The third part of this report provides an assessment of the debt funding characteristics of UK regional airports. The various submissions by RSP provide very limited information on how the Project would be funded.

   - We highlight the challenges that established small regional airports face in securing funding.
   - In particular, we also outline the typical information sought by providers of debt and / or equity funding for lower throughput UK regional airports.

7. This report also contains an overarching Executive Summary, drawing upon both the original report and new material included in this document.

[1] (Altitude Aviation Advisory, 2018)
[2] (Azimuth Associates, 2017 a), (Azimuth Associates, 2017 b), (Azimuth Associates, 2017 c)
[3] (Northpoint Aviation Services)
[4] (AviaSolutions, 2016), (AviaSolutions, 2017)
[5] (Azimuth Associates, January 2018 a), (Azimuth Associates, January 2018 b), (Azimuth Associates, January 2018 c)
[6] (Azimuth Associates, July 2018 a), (Azimuth Associates, July 2018 b), (Azimuth Associates, July 2018 c)

2. Executive Summary

2.1. Overview

8. We have undertaken an in-depth review of the Azimuth reports, and developed our own analysis of the future potential for freight at a reopened Manston Airport.

    - The Executive Summary sets out our overall conclusions.
    - Full supporting references can be found either in the main body of the report or in our original report.

9. Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. This is in contrast to Azimuth. Azimuth's forecasts show the airport more than doubling its previous annual freight record in the first year of freight traffic returning. By year 18 of Azimuth's forecast, Manston is forecast to exceed the 2018 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK). This is simply not credible or likely.

10. We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected:

    - There is no overall shortage of freight capacity in the UK or South East specifically. While Heathrow is constrained, there is significant spare freight capacity at the established dedicated freighter hubs at Stansted and East Midlands.
    - Cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands). All three of these airports have plans to significantly expand cargo capacity, and they forecast strong growth in cargo tonnage. Furthermore, other established passenger airports have the capability of handling much higher cargo volumes if demand existed.
    - There has been a strong trend towards bellyhold freight, with the role of dedicated freighters diminishing. The most recent (2017) Department for Transport ("DfT") forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[7].
    - Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK.
    - Manston is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions. These factors have limited Manston's role to that of a niche freight airport.

11. We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular:

    - Historic performance is ignored (both at Manston or more generally across the UK market – the Azimuth growth forecast for Manston would be unprecedented in a UK context).
    - There is a heavy reliance on qualitative techniques, with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share.
    - Many of the references from published studies are too generic to be meaningful or are taken out of context.
    - In making the case for Manston, Azimuth seeks to rely on reports prepared by York Aviation in 2013 and 2015. We share York Aviation's view, as set out in a parallel report commissioned by

[7] (UK Department for Transport, 2017, p. 33)

SHP, that these reports do not support Azimuth's conclusion that there would be a substantive role for Manston in the UK air freight industry.

12. Finally, we also view the Azimuth cargo air transport movement ("ATM") projections for Manston to be very optimistic and again unlikely. The projected average freight loads per flight are much lower than historic levels, and also lower than typically seen at cargo airports specialising in general freight (i.e. with limited integrator presence). Even if the freight forecasts were achieved (which we consider very unlikely), we would anticipate significantly lower numbers of cargo air transport movements.

13. RSP has not provided any detailed business plan / financial forecasts that would be necessary to support either debt and/or equity raising processes. As a start-up business with no track record of performance or profitability, it should be noted that there would be a much higher threshold of information required by funders. With RSP stating that construction will be underway in 2020, it is highly surprising that this information has not been shared with the Examination

14. Based on the analysis of lower throughput UK regional airports and our experience of the UK airport funding market, we would expect RSP to struggle to secure material levels of debt or equity investment for its project.

15. Furthermore, based on our experience and taking into account the very high-level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its optimistic forecasts.

2.2. Introduction

16. Azimuth has published four reports in support of RSP's DCO application. Volume 1[8] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

17. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question and are not relevant to RSP's proposals for Manston.

18. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[9] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[10]".

[8] (Azimuth Associates, July 2018 a, p. I)
[9] (Airports Commission, 2015, p. 37)
[10] (Airports Commission, 2015, p. 4)

- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in the Airports National Policy Statement ("ANPS"), published in June 2018. The ANPS[11] stated that "*expansion at Heathrow Airport delivers the biggest boost in long haul flights, and the greatest benefit therefore to air freight. This is further facilitated by the existing and proposed airport development of freight facilities as part of the Northwest Runway scheme…. Expansion at Heathrow Airport will further strengthen the connections of firms from across the UK to international markets*." The ANPS, ratified by Parliament, has settled the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

19. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

20. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[12]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[13]*"*

21. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises over 70% of mainland UK[14] freight, a proportion that has been growing since 2004. Azimuth's freight forecasts do not assume any bellyhold freight[15]. We agree with this Azimuth assumption and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth's forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[16]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2018 passenger traffic at London airports.

22. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

23. In the rest of the Executive Summary, we address each of the sub-questions above in turn.

2.3. Need for Further Airport Capacity in the UK for Dedicated Freighters

Current Situation

[11] (UK Department for Transport, June 2018, p. 23)
[12] (Airports Commission, 2015, p. 238)
[13] (Airports Commission, 2015, p. 245)
[14] For data robustness reasons, Northern Ireland airports have been excluded from some of our analysis. In these circumstances, we reference mainland UK as shorthand for England, Scotland and Wales.
[15] (Azimuth Associates, July 2018 c, p. 13)
[16] (Azimuth Associates, July 2018 c, p. I)

24. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest freighter hubs, East Midlands and Stansted, can accommodate significantly more freighter services than they currently operate.

25. The UK does lack available dedicated freighter capacity at its major passenger hub airport, Heathrow.

    - Heathrow is also the UK's largest freight airport with ca. 65% of the mainland UK overall throughput.
    - Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long-haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity.
    - At Heathrow, only ca. 5% of freight is carried on dedicated freighters. A lack of available runway slots restricts freighter activity. In the absence of operating constraints, major passenger hubs tend to also play a role as key hubs for freighter aircraft (e.g. Frankfurt). Freighter services complement the connectively provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity at a hub airport.

26. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

    - Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
    - Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).
    - Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by road truck.
    - Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

27. Azimuth asserts that UK air freight has been constrained since 2000[17]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[18]").

28. We consider that these conclusions are highly simplistic:

    - As discussed above, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
    - Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow hub capacity rather than a more general lack of capacity.
    - Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK. We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
    - In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

[17] (Azimuth Associates, July 2018 a, p. 17)
[18] (Azimuth Associates, July 2018 a, p. 40)

Future Requirement

29. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

    - Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand.
    - This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines. In mainland UK, freight tonnes carried on all-freighter aircraft peaked in 2004, and has fallen from 36% of the total air freight to 29% by 2018E. The most recent Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[19].
    - There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs. In mainland UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall air freight tonnes on dedicated freighter services – from 44% in 1990 to 88% in 2018E. The mainland UK bellyhold market is even more consolidated, with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996.

30. These fundamental market trends have not been recognised or have been ignored by Azimuth in its assessment of the potential for a reopened Manston.

31. In our original report, we developed a forecast of UK air freight demand to 2050, linked to UK economic growth. We forecast a compound annual growth rate ("CAGR") 2016-40 of 2.4%, much higher than recent growth rates. This results in ca. 4.2m tonnes of demand in 2040. We consider that these forecasts remain valid.

32. Based on published expansion plans and various prudent assumptions, in our original report we estimated that the available air freight capacity at the leading 5 UK airports alone will be around 5m tonnes per year in 2040 (see Section 7.1 of our original report). This is comfortably higher than the envisaged demand levels. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is significantly above our bellyhold demand forecast.

    - Since our original report, Heathrow, Gatwick, Stansted and Luton have all either progressed existing expansion plans or identified further capacity enhancements (incremental to the levels identified in the original report).

33. Furthermore, we do not envisage overall capacity shortages in the shorter term. Only towards 2050 could capacity start to become constrained, assuming no further development of capacity from 2040 onwards. Therefore, any business that Manston could capture would primarily be at the expense of other UK airports.

Conclusion

34. The UK currently has sufficient overall airport capacity for air freight, albeit capacity at Heathrow is constrained.

35. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, or possibly 2050.

36. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK.

[19] (UK Department for Transport, 2017, p. 33)

2.4. South East Requirement for Additional Dedicated Freighter Capacity

37. Cargo is less time sensitive than passengers. Therefore, an airport's cargo catchment area is typically many times larger than its passenger catchment. This is one of the key factors that leads to the high degree of consolidation seen for air cargo.

    - For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius, while Liege sees its catchment as all areas within access of a full day trucking.
    - East Midlands serves the whole of England and Wales, exploiting its central location in England.
    - Similarly, the extensive network of long haul flights from Heathrow means it attracts freight from the whole of Great Britain.

38. Mainly due to the hub strength of Heathrow, almost 80% of 2018E mainland UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 9% market share respectively.

39. Much of the UK's high value manufacturing is located outside London and the South East[20]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[21]. Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

40. We do not see a need for new air freight capacity to be located in the South East specifically. New capacity would be most usefully concentrated at existing major air freight hubs, whether in the South East (Heathrow, Stansted) or outside (East Midlands). This would enable the air freight industry to continue to benefit from the economies of scale and scope flowing from market consolidation.

41. The Airports Commission negatively assessed the freight potential of Gatwick due to its location. It stated, "*Gatwick's position to the south of London limits its effectiveness as a national freight hub*[22]." This is consistent with our view that locations which can be accessed from a wide national catchment (whether in the South East or not) are more advantageous than locations in less accessible parts of the South East. We would also consider Gatwick to be a more accessible location than Manston.

2.5. Market Position of a Reopened Manston

42. We have argued above that there is no requirement for additional air freighter capacity in the South East, over and above developments already in the pipeline (being consented or planned) at existing airports.

43. However, even if our assessment is incorrect and further capacity is needed in the future, Manston would not be an effective solution.

44. While a reopened Manston would contribute to overall UK freighter capacity, it clearly would not provide "hub" capacity of the type that is constrained at Heathrow.

    - The inability of Manston to achieve more than 43,000 tonnes[23] in any single year in the period from 2000 until its 2014 closure highlights that the capacity provided at Manston was not a suitable substitute for Heathrow freighter capacity.
    - In the same way, many other UK airports have material underutilised freighter capacity despite Heathrow constraints.

45. Manston's geographical location severely restricts its ability to develop into a national dedicated freighter hub. Were Manston airport to be reopened at some point in future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

[20] (Heathrow Airport, 2014, p. 19)
[21] (House of Commons Library, 2015, p. 7)
[22] (Airports Commission, 2015, p. 24)
[23] Average ca. 28,000 tonnes/year for the period 2000-2013 (last full year of operation). Source: CAA airport statistics.

46. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3-hour drive, only the South East & East of England, and a small part of the Midlands, are accessible.
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig, as well as the strong growth of cargo at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

47. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe have been shown to be extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time[24].

48. Secondly, there is a consensus in the air freight industry that the ability to handle night flights is critical for many types of air cargo (in particular for express freight, but also for other types of cargo).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.
- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success.
- It is unclear (in the context of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air cargo potential at the airport.

49. Finally, as noted previously, there is a clear move towards consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

50. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed in both geographic and potential operational terms to service such a requirement. Other airports are in a much better position to exploit any such future opportunities.

[24] For example, East Midlands Airport is within 3 miles of the M1 motorway. Similarly, Stansted is less than 3 miles of the M11 motorway. The Heathrow Cargo Centre is within 3 miles of the M4, ca. 5 miles from the M25 and ca. 8 miles from the M3.

2.6. Other Potential Options for New Dedicated Freight Capacity

51. Azimuth concludes that "*Manston is the only real choice for the location of a freight-focused airport in the South East of England*[25]". As discussed above, we dispute the need for a new freight-focussed airport, or that any such airport would need to be located in the South East. If new capacity was needed in the South East, a more central location than Manston's position on a peninsula would be desirable.

52. Bournemouth Airport is dismissed by Azimuth on account of its location and distance from the motorway network. We agree that these are significant disadvantages but similar issues apply to Manston (with its location arguably even more compromised than Bournemouth).

- From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston.[26]
- Bournemouth Airport[27] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."*

53. As discussed, the South East is not necessarily the best location for new freighter capacity. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[28]":

> *"At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster- Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."*

54. Both these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

55. Furthermore, Birmingham and Doncaster Sheffield have longer runways than Manston, with spare capacity to develop freighter activity. Both have superior locations than Manston.

[25] (Azimuth Associates, July 2018 a, p. 29)
[26] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[27] www.bournemouthairport.com/about-us/doing-business-together/cargo/
[28] www.therouteshop.com/profiles/doncaster-sheffield-airport/

2.7. Conclusion

56. It is highly unlikely that a reopened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

57. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2018 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 20, Manston is forecast to exceed the 2018 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

58. We consider the forecasts to be extremely optimistic, not credible or likely, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance.
- As discussed previously, we do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[29] per annum). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight, driven by competitive pricing of bellyhold cargo space (due in turn to strong growth in bellyhold capacity as a result of expansion of passenger services).

59. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported, we would not expect freight volumes to be materially above historic levels, and considerably below the volumes forecast by Azimuth.

60. Finally, the forecast of freighter ATMs is simply not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.
- This represents one-third of current mainland UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the DfT, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels[30].

[29] (Wiggins Group plc, 2002, p. 16)
[30] (UK Department for Transport, 2017, p. 33)

61. In particular, we note that York Aviation's professional opinion[31] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This capacity is more than enough to accommodate any potential a reopened Manston Airport may have.

62. In paragraph 22, we put forward four questions in relation to RSP's proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[32]. The answers to our questions have been developed over the course of the Executive Summary of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 1 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

63. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts, in line with previous levels when in operation.

[31] (York Aviation, 2017)
[32] (Azimuth Associates, 2017 a, p. I)

2.8. Addendum

64. There have been some relevant developments in the air cargo sector since October 2018. Cargo demand in the UK and globally was particularly strong at the end of 2017 and in the early months of 2018. However, this was a short-term spike, with UK cargo volumes contracting by the end of 2018. IATA[33] has expressed concerns about the strength of the cargo market globally.

65. In any case, the assessment of future cargo demand for Manston should be based on established historic trends, not short-term fluctuations in demand. Recent developments have not changed our view on the long-term growth potential of the air cargo market in the UK.

66. The general trend towards bellyhold freight has continued (albeit with year to year variations), as has the consolidation of freight at the largest cargo airports. On the supply side, the Heathrow third runway project has continued to progress. Stansted has received planning permission for a lifting of its passenger planning cap, while Gatwick and Luton have brought forward plans to grow capacity.

67. There have been only some relatively minor changes to content in the updated Azimuth reports from the versions we reviewed as part of our previous report. The arguments put forward by Azimuth are fundamentally unchanged, the unrealistic Manston traffic projections have not been modified and the weaknesses we had previously identified have not been addressed.

68. The new Azimuth reports contain some new material. This new material can be broadly characterised as:

- Extrapolation from the (temporary) strong global cargo demand in late 2017/early 2018 to support the long-term case for Manston.
- New references in support of its arguments for the potential of Manston. However, the conclusions drawn from these references are typically inappropriate. A deeper analysis of the new material highlights either limited applicability for Manston or that the new material is not supportive of the case made by Azimuth.
- Additional background material which is not directly relevant to the case for Manston.

69. Therefore, our conclusions from our original report remain valid. The Azimuth forecasts and report do not provide any meaningful evidence that a reopened Manston Airport would be remotely viable.

- The arguments put forward by Azimuth run contrary to well established industry trends.
- The projections put forward have negligible quantitative justification, relying on a range of potential operators which either are unlikely to be interested in Manston or are no longer active in the freighter segment[34].
- There is no convincing reasoning why a reopened Manston would be more successful than other airports with similar characteristics, or that improvements on historic performance could be achieved.

[33] (IATA, 2019)
[34] (York Aviation, 2019, p. 23)

2.9. Funding Viability

70. RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

71. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

72. The RSP forecasts equate to demand of 3.1m Work Load Units[35] (WLUs) in Year 10. The performance benchmarking illustrates the difficulty that smaller throughput airports up to ca. 3m WLUs per annum have to generate sufficient revenue and profitability to be commercially viable.

73. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis:

- **Glasgow Prestwick Airport**: purchased by Scottish Government for a reported £1 in 2013. Since taking ownership, the Scottish Government has provided loans of ca. £38m. The business reported a post-tax loss of £7.6m in the year to 31st March 2018. We also note that Infratil was a previous owner of Manston Airport and, despite having airport experience from its 66% ownership of Wellington Airport in New Zealand (with 6.3m passengers in 2018), was unable to develop either Prestwick or Manston into sustainable businesses.
- **Cardiff Airport**: purchased by the Welsh Government for a reported £52m in 2013. Since taking ownership, the Welsh Government has provided loans of ca. £14m. The business reported a post-tax loss of £5.6m in the year to 31st March 2018. The previous owner, Abertis, was an experienced operator of Belfast International and Luton airports in the UK and a number of international airports. Despite this, passenger numbers declined from ca. 2m in 2007 to just over 1.0m in 2012.
- **Durham Tees Valley Airport:** purchase announced in January 2019 by Tees Valley Combined Authority for a reported £40m. The business reported a post-tax loss of £2.4m in the year to 31st March 2017. Current owner, Peel Group, is an experienced operator of Liverpool and Doncaster Sheffield airports.

74. This context is important for the proposed reopening of Manston Airport as the analysis illustrates:

- A significant level of throughput is required to generate sufficient revenue to result in positive EBITDA[36] to service debt and / or capital investment – London Southend and Cardiff with 1.1m and 1.5m WLUs respectively achieved marginally positive EBITDA but posted large post-tax losses.
- Commercial lenders and equity providers will expect a track record of EBITDA generation to support funding of the business. A reopened Manston Airport would be a start-up business with a material capital investment requirement and no history of profitability.
- Our experience is that commercial debt and equity providers would be unlikely to provide funding to a reopened Manston Airport on a standalone basis without (i) parent company guarantees (from an entity of sufficient financial standing), and (ii) strong evidence of clear contractual volume and revenue commitments from airline users.
- The benchmarking indicates that a significant proportion (or all) of the funding would need to be provided by way of shareholder loans, as the required levels would not be available from debt providers.
- Based on the analysis of lower throughput UK regional airports and our experience of the UK airport debt market, we would expect a reopened Manston Airport to struggle to secure material

[35] A Work Load Unit = 1 passenger or 100kg of cargo
[36] EBITDA is earnings before interest, tax, depreciation and amortisation

levels of debt in the commercial lending market. As equity funders would also require detailed business plan information to inform their investment decisions, we would expect RSP to struggle to secure material equity investment given the loss-making history of the business over many years.

- RSP's application documents do not provide the most basic information that would allow any funder (debt or equity) to assess the financial viability of a reopened airport.
- Without a detailed business plan and supporting financial forecasts with detailed cost and revenue assumptions and supporting information that can be assessed and tested, there is little prospect of RSP raising any debt and / or investor finance from parties that would ordinarily fund UK airports.
- With RSP stating that construction will be underway in 2020, it is surprising that this information is not available and been shared with the Examination.
- The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports being taken over by the public sector. Where new airports across Europe have been developed or airports reopened, it is highly unusual that the public sector has not made a material financial contribution to the viability of the proposals. The potential wider economic benefits to the region are usually cited to justify public sector investment (as was the case for the Cardiff and Prestwick airport investments by the public sector).
- No public sector investment is proposed by RSP which is likely to make funding of the proposal even more challenging on a commercial basis.
- Notwithstanding this, based on our experience and taking into account the very high level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its highly optimistic forecasts.
- Our expertise of supporting many institutional investors in the UK and international airport sector confirms that they would have the same issues and challenges as a debt provider with the lack of financial information related to the deliverability and viability of the RSP proposals.
- A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

3. Review of Recent Developments

3.1. Cargo Demand Growth

75. Since 1990, the UK air freight market can be divided into two distinct periods based on the growth trends seen. The period 1990-2000 was generally one of strong growth, with CAGR of 6.9% and positive annual growth in 9 of 10 years. In contrast, the period from 2000-2016 (as highlighted in our previous report) was one of stagnation (CAGR 0.2%, positive annual growth in only 8 of 16 years).

76. 2017 was a much stronger year for UK air freight, with a 10% increase in the tonnes handled at mainland UK airports. However, growth as not sustained in 2018, where the estimated outturn was flat[37]. Furthermore, as we highlight later in this report, the growth in demand did not translate into more freighter activity.

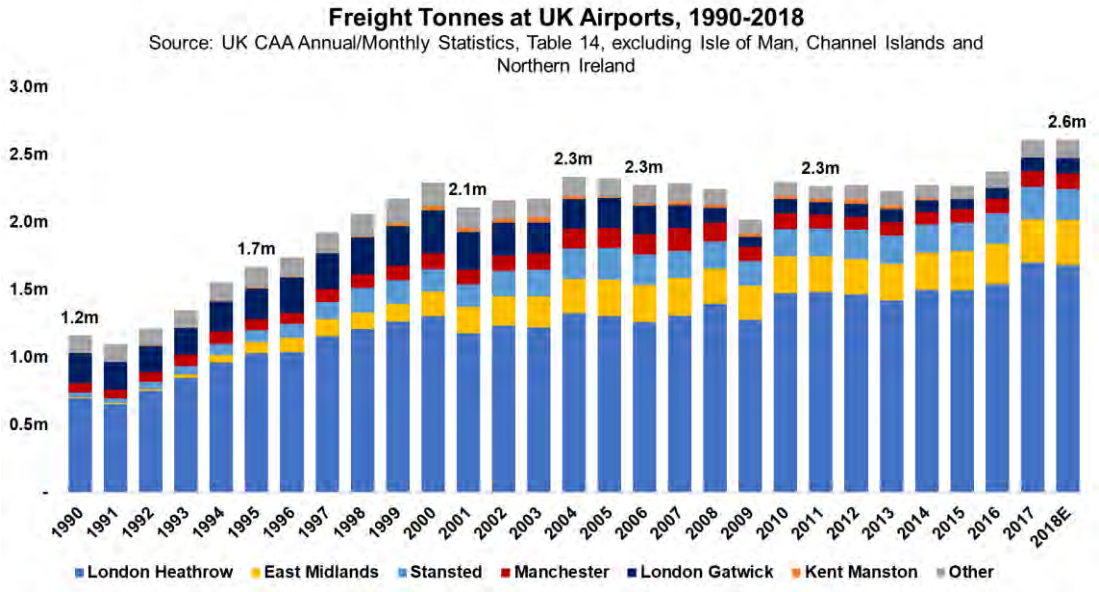


Figure 1 – Timeseries of mainland UK freight tonnage[38]

77. The short-term spike in demand was consistent with global trends. IATA reported that 2017 global air freight demand grew by 9.0%, measured in freight tonne kilometres[39], while European airlines recorded an 11.8% increase.

> *"Full-year 2017 demand for air freight grew at twice the pace of the expansion in world trade (4.3%). This outperformance was a result of strong global demand for manufacturing exports as companies moved to restock inventories quickly.*
>
> *Air cargo had its strongest performance since the rebound from the global financial crisis in 2010. Demand grew by 9.0%. That outpaced the industry-wide growth in both cargo capacity and in passenger demand. We saw improvements in load factors, yields and revenues. Air cargo is still a very tough and competitive business, but the developments in 2017 were the most positive that we have seen in a very long time."*

[37] In this report, we have estimated 2018 outturns for the UK from monthly CAA data. Traffic for the first 11 months of the year has been published. At the time of completion of this report, the December 2018 statistics were not complete. Data from airports representing around 7% of cargo tonnage had not yet reported. We have assumed that the trends for these "missing" airports were the same as for the reporting airports.

[38] In this report, we have removed Northern Ireland airports from our analysis of the UK market. We understand that there have been some data reliability issues with the Belfast International Airport cargo statistics. This was referenced on P68 of the Department for Transport UK Aviation Forecasts from 2017 (UK Department for Transport, 2017).

[39] (IATA, 2018)

78. However, more recent data indicates this period of strong growth has come to an end. Since June 2018, monthly growth in freight tonnes across mainland UK airports has been low or negative, with the trend generally worsening.

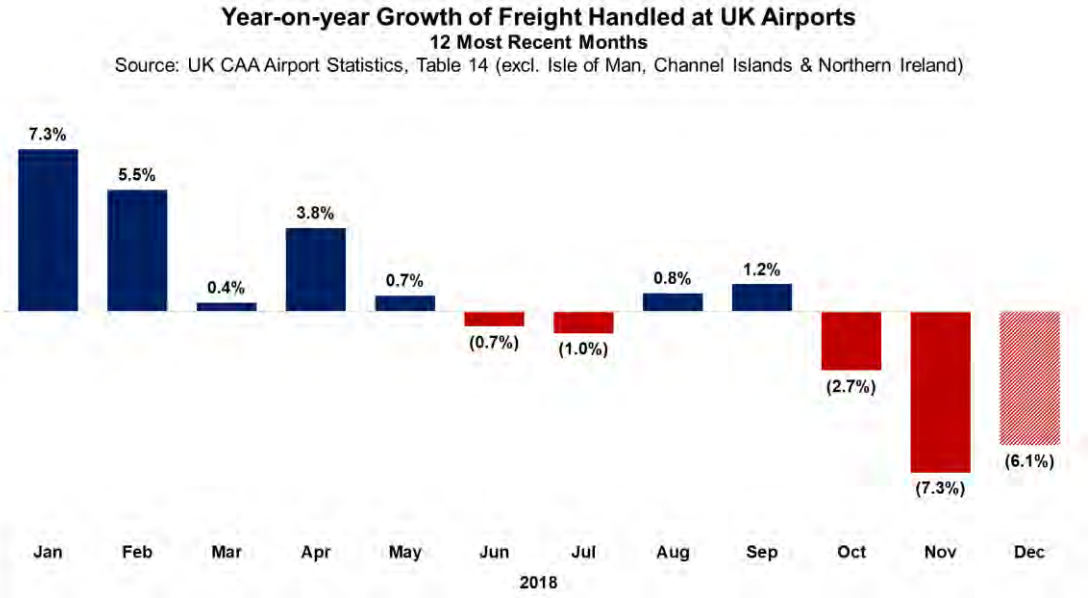


Figure 2 – Monthly freight tonnes at mainland UK airports (December estimated from preliminary results)

79. Global air freight demand has also been cooling and there is some caution about the outlook for 2019. In December 2018, global freight traffic declined compared to December 2017[40].

> *"Air cargo's performance in 2018 was sealed by a softening in demand in December. Year-on-year, December demand decreased by 0.5%. This was the worst performance since March 2016. Freight capacity, however, grew by 3.8%. This was the tenth month in a row that year-on-year capacity growth outstripped demand growth.*
>
> *International e-commerce grew in 2018 which was a positive factor for the year. Yet, there was a softening of several key demand drivers:*
>
> - *The restocking cycle, during which businesses rapidly built up inventories to meet demand, ended in early 2018;*
> - *Global economic activity weakened;*
> - *The export order books of all major exporting nations, with the exception of the US, contracted in the second half of 2018;*
> - *Consumer confidence weakened compared to very high levels at the beginning of 2018.*
>
> *"Air cargo demand lost momentum towards the end of 2018 in the face of weakening global trade, sagging consumer confidence and geopolitical headwinds. Still, demand grew by 3.5% compared to 2017. We are cautiously optimistic that demand will grow in the region of 3.7% in 2019. But with the persistence of trade tensions and protectionist actions by some governments there is significant downside risk. Keeping borders open to people and to trade is critical," said Alexandre de Juniac, IATA's Director General and CEO."*

[40] (IATA, 2019)

80. In our previous report, we forecast that the UK air freight market would grow by CAGR 2.4% to 2040. This level of growth is well ahead of overall trends since 2000.

- The strong growth recorded in 2017 and the first part of 2018 has not been sustained. A characteristic of the air cargo sector is temporary fluctuations in demand.
- Therefore, it is premature to reassess potential future growth rates until there is evidence of a continued uplift in growth rates.

3.2. Freighter vs. Bellyhold

81. One of the key trends seen in the UK has been the increasing role of passenger aircraft for carrying cargo, with the role of freighter aircraft diminishing. In 2004, freight carried on cargo only flights accounted for 37% of the mainland UK market. This has been consistently reducing, falling to 29% of the market by 2018E.

- While freight carried on all cargo aircraft grew in absolute terms in 2017, passenger aircraft bellyhold freight grew significantly faster.
- In 2018, we estimate that freight carried on all cargo aircraft fell in absolute terms, resulting in a further drop in share of total cargo.

82. Therefore, the established trend towards bellyhold freight has continued in both 2017 and 2018. The all-cargo segment that a reopened Manston would be targeting has become less important within the UK market.

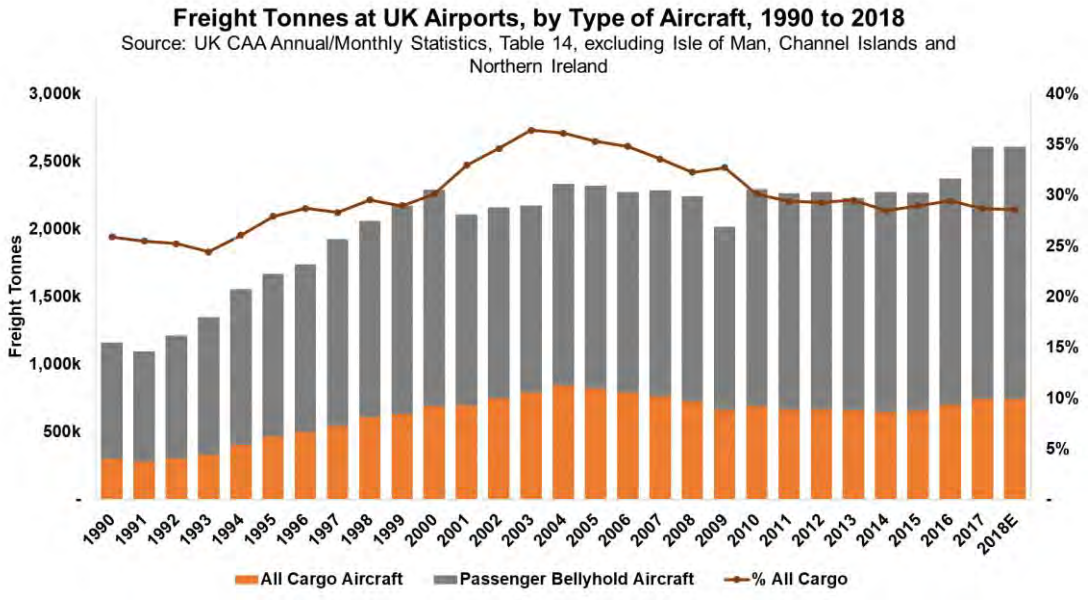


Figure 3 – Annual freight tonnes at mainland UK airports by type of aircraft

3.3. Consolidation Trend of Cargo-only Operations at Main Airports

83. In 1990, there were many UK airports from which carriers operated cargo only flights. Since then, there has been a very clear trend to consolidate cargo only operations at a few airports.

84. 2017 and 2018 have seen the continuation of this consolidation trend. The three largest airports for freight carried on cargo only aircraft (Heathrow, East Midlands, Stansted) accounted for 87.6% of this mainland UK market (by tonnage) in 2018E. This is up from 44% in 1990 and 86.7% in 2016.

85. Similarly, the consolidation trend at these top three airports continued for freighter ATMs in both 2017 and 2018. Despite strong growth in overall cargo volumes in 2017, the number of freighter movements across mainland UK actually fell. We estimate that there was a further drop in 2018.

- This indicates that even during spikes in cargo demand, this has not translated into additional freighter activity.
- The additional demand has been accommodated through a combination of greater use of passenger aircraft bellyhold capacity and increasing average loads per freighter aircraft.

86. These freighter flights have been increasingly concentrated on East Midlands, Heathrow and Stansted. We estimate that these three airports accounted for 68.4% of all cargo flights in 2018, compared to 65.0% in 2016 (and 23.3% in 1990).

- Number of freighter flights at "other" airports has fallen from ca. 73,000 in 1990 to ca. 16,000 in 2018E.

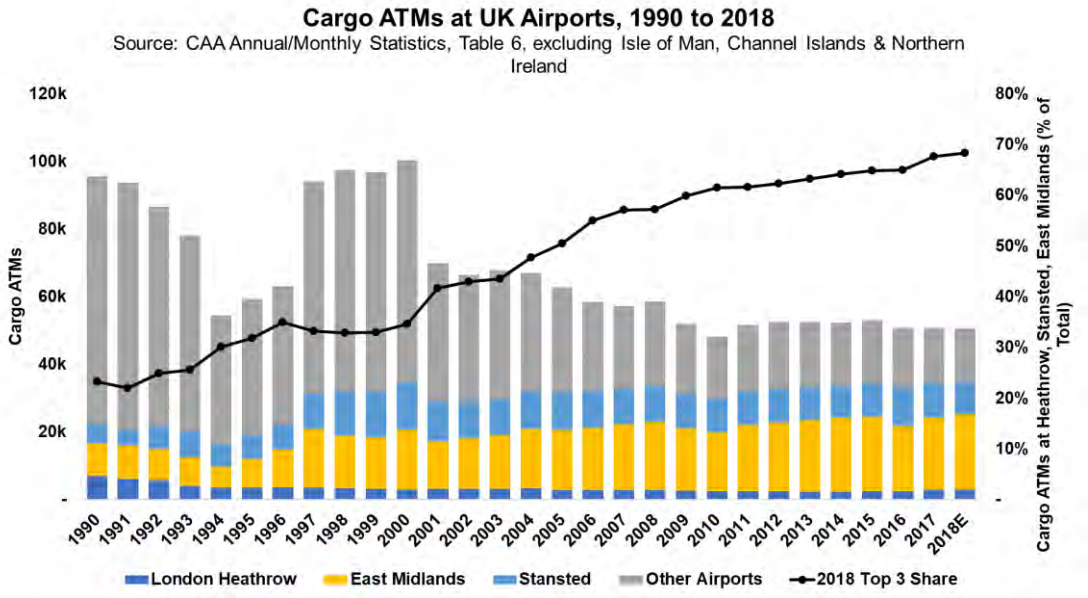


Figure 4 – Annual cargo flights at mainland UK airports

3.4. Developments at Individual Airports

Heathrow

87. Heathrow recorded strong freight growth in 2017, highlighting that there remains scope to grow even before the third runway is opened.

- +15.6% increase in freight carried on all-cargo aircraft (4th consecutive year of growth).
- +9.9% growth in freight carried in the bellyhold of passenger aircraft.
- Source: UK CAA Statistics.

88. The airport has reported marginal growth in cargo in 2018 (+0.1%), reflecting the more challenging market conditions[41].

89. Progress towards the opening of a third runway has continued, with the UK Parliament voting to approve the Airports National Policy Statement, which provides support for Heathrow expansion, by 415 votes to 119 in June 2018.

- Our previous report (Section 6.2) highlighted Heathrow's strategy to improve cargo competitiveness and lift freight volumes to 3 million tonnes a year by 2040 (compared to ca. 1.7m tonnes in 2018).

90. In January 2019, Heathrow launched an airspace consultation process[42], which includes plans to increase the number of flights operated off the existing two runways.

> *"We are exploring plans to use the existing runways more to create up to 25,000 ATMs per year. This would be in advance of the completion of the third runway and could only happen if consent for expansion is granted."*

Gatwick

91. Gatwick has continued to grow cargo volumes, linked to the development of long-haul passenger services using widebody aircraft. Cargo tonnes grew by 16.1% in 2018[43], following growth of +24.4% in 2017[44].

92. As of 2018, only 11% of ATMs at Gatwick were used by widebody aircraft (source: OAG). Thus, there is significant scope for Gatwick to increase its cargo capacity by increasing the share of widebody aircraft using the airport. To some extent this will happen naturally as passenger demand increases. Widebody share has risen in every year since 2014 (from 7.3% in 2014, to 11.2% in 2018).

93. Gatwick[45] is also exploring the potential utilisation of its existing standby runway, to increase the number of flights it can operate.

> *"… this draft master plan also sets out for the first time how the airport could meet future demand by potentially using our existing standby runway for departing flights only, alongside our main runway. We believe this development could be delivered by the mid-2020s, with relatively little disruption..."*

94. The scheme has the potential to increase the number of flights operated at the airport to 375,000–390,000, compared to 315,000-340,000 potentially achievable from the main runway only. Note in 2017/18, the actual number of flights was just above 280,000[46].

[41] (Heathrow Airport, 2019 a)
[42] (Heathrow Airport, 2019 b, p. 13)
[43] (Gatwick Airport, 2019)
[44] (Gatwick Airport, 2018 a)
[45] (Gatwick Airport, 2018 b, p. 7)
[46] (Gatwick Airport, 2018 b, pp. 80, 88)

Stansted

95. In 2018, Stansted was successful in its application to increase the planning condition limiting its passenger throughput. Its passenger cap was lifted to 43 million passengers per annum, compared to the previous limit of 35 million passengers[47].

96. In relation to air transport movements, the airport previously was constrained by the following annual limits:

- Passenger ATMs: A maximum of 243,500 p.a.
- Cargo ATMs: A maximum of 20,500 p.a.
- Other ATMs: A maximum of 10,000 p.a.

97. The new application did not raise the overall number of flights allowed (274,000) but abolished the sub-categories. This means there is now no specific limit to the number of cargo or passenger flights that can be operated in the future (within the overall cap).

Luton

98. Luton Airport currently is subject to a planning cap of 18 million passengers per annum. The freehold owners of Luton Airport (London Luton Airport Limited, a Luton Council company) have issued its vision[48] for development of the airport to 2050. It envisages growth up to 36-38 million passengers per year.

> *"To make the best use of the existing runway at LTN to provide the maximum benefit to the local and sub-regional economy; to deliver good levels of service; and to actively manage environmental impacts at the local and wider levels in line with our commitment to responsible and sustainable development."*
>
> *Our assessment is that the capacity of the existing runway is 36-38 mppa, or in the region of 240,000 aircraft movements[49] per year."*

[47] (Stansted Airport, 2018 b), (Stansted Airport, 2018 a, pp. 4, 26)
[48] (London Luton Airport Limited, December 2017, p. 5)
[49] During 2018, there were just over 105,000 air transport movements at Luton (source: UK CAA Statistics), less than half the assessed runway capacity.

3.5. Summary

99. There have been some relevant developments in the air cargo sector since October 2018. Cargo demand in the UK and globally was particularly strong at the end of 2017 and in the early months of 2018. However, this was a short-term event, with UK cargo volumes contracting by the end of 2018. IATA[50] has expressed concerns about the strength of the cargo market globally.

100. In any case, the assessment of future cargo demand for Manston should be based on established historic trends, not short-term fluctuations in demand. Recent developments have not changed our view on the long-term growth potential of the air cargo market in the UK. The general trend towards bellyhold freight has continued (albeit with year to year variations), as has the consolidation of freight at the largest cargo airports. Finally, despite strong growth in cargo demand in 2017, the number of freighter flights in the UK actually reduced.

101. In the period since our previous report, both Heathrow and Gatwick have recorded substantive growth in air freight tonnage. This demonstrates the continuing role both airports will play in meeting future demand. As both Heathrow and Gatwick grow the proportion of long-haul widebody passenger flights, this will generate incremental bellyhold capacity.

102. Furthermore, the four largest airports in the London airport system have all recently presented plans to add capacity in the medium term, prior to the proposed new runway at Heathrow. The scale of these proposed developments – if implemented – will make a significant contribution to relieving future airport capacity pressures. This is in addition to the forthcoming capacity increases that were highlighted in Section 6.4 of our previous report.

[50] (IATA, 2019)

4. Review of Recent Azimuth Reports

4.1. Introduction

103. Since we completed our analysis for our previous report, Azimuth has twice updated its set of reports. First, as part of the consultation process, Azimuth released an updated version of its set of reports in January 2018[51]. Then in July 2018, a further updated version was issued as part of the DCO application[52].

104. We have reviewed both sets of Azimuth reports.

- Much of the Azimuth reports are unchanged from the original version. We therefore do not duplicate our critique from the previous report.
- Where significant new material has been added, this has been critiqued.
- However, we have not commented on general background or non-material additions to the Azimuth reports.

105. The rest of this section reviews each Azimuth report in turn, in chronological order. Where new material appears more than once (e.g. in the Executive Summary and the main body of text, or in both sets of reports), we only comment on the first occurrence.

4.2. Reports Supporting Consultation Process (January 2018)

Volume I

106. Azimuth[53] refers to airfreight in Europe reaching capacity in 2017:

> *"At the end of November 2017, airfreight in Europe reached capacity, which has led to an increase in prices and delays[.] Heathrow Airport also reported severe congestion, with trucks queuing and some being turned away."*

107. It could be wrongly inferred that the lack of capacity being discussed relates to airport capacity. In fact, the situation appears to have been caused by a lack of airline capacity due to seasonal peaks (freight demand can be very lumpy).

- As noted above (see paragraph 77), in 2017 freight demand grew faster than airline capacity.
- This situation reversed in 2018 (see paragraph 79).
- In any case, there was no shortage of available airport capacity at all but the most congested passenger hubs.

108. Azimuth[54] also restates similar arguments as previously put forward in relation to the low level of freighter activity in the UK.

> *"… However, when the air freight market in the UK is considered against that of Europe, the lack of availability in the UK for freighter slots, airports' preference, in a constrained market, for passenger flights, and delays in loading and unloading freighter aircraft provide an equally plausible explanation for the reduced proportion of freighter to belly freight transport of goods in the UK."*

109. This argument ignores the availability of freighter capacity at centrally located airports such as East Midlands Airport. Other regional airports with the capacity to accommodate substantial freighter

[51] (Azimuth Associates, January 2018 a), (Azimuth Associates, January 2018 b), (Azimuth Associates, January 2018 c)
[52] (Azimuth Associates, July 2018 a), (Azimuth Associates, July 2018 b), (Azimuth Associates, July 2018 c)
[53] (Azimuth Associates, January 2018 a, p. I)
[54] (Azimuth Associates, January 2018 a, p. II)

operations include Doncaster Sheffield, Manchester, Liverpool and Prestwick (see Section 6.3 of our previous report).

110. Azimuth[55] refers to updated aviation demand forecasts:

> *"Chris Grayling MP, Secretary of State for Transport said that evidence from updated aviation demand forecasts, 'show that the need for additional runway capacity is even greater than originally thought. They show that all 5 of London's main airports will be completely full by the mid-2030s, and 4 of them within a decade.' "*

111. We have previously shown that Heathrow, Gatwick, Stansted and Luton have all recently presented plans to develop capacity (see Section 3.4). In all cases, the additional capacity is beyond what was envisaged by the Airports Commission[56] in its assessment of the potential for maximising existing runway capacity.

112. Furthermore, as discussed in the previous report[57], more centrally located airports such as East Midlands Airport are better placed to serve UK freight demand than London airports.

113. Azimuth[58] comments on congestion at Heathrow.

> *"Heathrow …. has seen cargo volumes increase by 10% this year, leading to congestion, delays and an inability to reach the airport's cargo centre."*

114. It is worth clarifying that the congestion is related to road access, rather than airport capacity itself. These road congestion issues are in the process of being addressed.

115. There are also references to recent developments at Amsterdam Schiphol Airport. Firstly[59], a parallel is drawn with Stansted Airport in relation to the possibility of freighter flights being displaced.

> *"Ryanair is the dominant carrier at Stansted Airport and, since the low cost carrier (LCC) model is based on fast turnarounds, the airline will not tolerate interference from cargo handling. Ryanair is increasing their offering to more distant destinations including Turkey, North Africa, Cyprus and the Middle East. For the airline to operate four rotations per day to maximise the profitability of each aircraft, late evening and potentially night time slots will be required….*
>
> *Freight carriers have traditionally used night slots at the airport and these may become less available if the LCCs utilise them. This situation occurred at Schiphol Airport (see Section 7.5 for more details), where air traffic capacity constraints were announced in September 2017. These constraints particularly affected freight operators, as passenger flights were preferenced for a number of reasons. As such, it may be that moving freight to Manston Airport could represent a significant opportunity for MAG should they want to free up slots for higher value passenger aircraft use."*

116. Low cost carriers and cargo airlines can coexist at airports (for example, East Midlands). The potential loss of night slots to low cost carriers at Stansted is purely speculative. Schiphol (one of Europe's major passenger connecting hubs) is not a good comparator airport to Stansted (a low cost carrier focussed airport).

117. The Azimuth report[60] then goes on to speculate:

> *"Manston Airport, focused on air freight, may benefit from the relocation of operations from Schiphol and the knock-on effect in northern Europe…. A freight-focused operation at*

[55] (Azimuth Associates, January 2018 a, p. 6)
[56] (Airports Commission, 2015)
[57] (Altitude Aviation Advisory, 2018, p. 47)
[58] (Azimuth Associates, January 2018 a, p. 11)
[59] (Azimuth Associates, January 2018 a, p. 17)
[60] (Azimuth Associates, January 2018 a, p. 38)

Manston Airport, in the South East of England but close to the rest of Europe, may provide an ideal option."

118. Manston is hardly in an ideal location to act as on overflow from Schiphol. Lelystad Airport, 45km to the north east of Amsterdam is being designated as an overflow airport from 2020. Otherwise, Liege and Leipzig (leading cargo hubs) are much more closely located to Schiphol than Manston.

119. On a separate point, we note that Schiphol saw a reduction in freighter flights of 10.4% in 2018 (due to slot restrictions), but cargo volumes only reduced by 2.5%. This is another illustration of the role passenger bellyhold capacity plays[61].

120. Finally, Azimuth refers on various occasions to recent strong growth in cargo demand. In Section 3.1 we highlight that growth in recent months has been slowing or negative. Furthermore, we argue it is more robust to base future projections on long established trends rather than short term spikes in demand.

Volume III

121. Azimuth make a couple of observations in relation to its forecasts.

"… However, in order to avoid any bias (optimism or pessimism), efforts to quality assure the analysis should be made. For this study, the methodology used to forecast air freight traffic has been peer reviewed by Loughborough University and by the RiverOak consultancy team.[62]"

"Some commentators believe that combining the volume and weight load factors would result in a considerably different, more successful, picture of the airfreight industry…. …. coupled with the potential for current reporting to underestimate the success of the airfreight industry, the DfT figure of 4% has been used to uplift on the Year 10 figures to extrapolate the long-term forecast for Manston Airport[63]."

122. We have not seen any evidence of satisfactory peer review.

- Clearly, the RiverOak consultancy team is not an independent reviewer, nor likely to have the specialist aviation expertise to adequately peer review the methodology.
- The reference to peer review by Loughborough University is not clear – we cannot see any further reference to a Loughborough University review of the Azimuth forecast approach. We do not know if Loughborough University has specifically peer reviewed the Azimuth forecasts themselves or commented (in another context) on the generic methodology that Azimuth subsequently claim to have applied.

123. Secondly, the industry approach to measuring load factor is irrelevant in the context of forecasts – while we agree that load factor as measured by weight does not always reflect volume restrictions, it does not distort historic cargo trends or invalidate future projections.

[61] (Schiphol, 2019)
[62] (Azimuth Associates, January 2018 c, p. 4)
[63] (Azimuth Associates, January 2018 c, p. 8)

4.3. Reports Supporting DCO Application (July 2018)

Volume I

124. In a general discussion on the political context for aviation in the UK, Azimuth draws on the Airports National Policy Statement issued by the Department for Transport in June 2018. This includes quotations from the document on the economic importance of air freight – which we do not dispute.

125. Azimuth[64] also states – in relation to the National Policy Statement – that:

> *"The Airport NPS indicates the Government's concerns over capacity constraints, pointing to the impact on connectivity. Profit maximisation means that profitable routes are operated at higher frequencies but other routes cease to be served, reducing the possibility of using belly freight to those destinations and increasing the need for dedicated freighers [freighters]".*

126. The conclusion about increasing the need for dedicated freighters appears to be from Azimuth rather than the National Policy Statement (there is no reference to freighters in the National Policy Statement).

- This is one of several examples where references cited by Azimuth are somewhat misleading – either by not clearly distinguishing between the source material and Azimuth's viewpoint, or by taking quotes out of their original context.

127. In fact, the National Policy Statement[65] recognises the leading role that long-haul passenger services play at Heathrow in relation to serving the UK freight market.

> *"The aviation sector can also boost the wider economy by providing more opportunities for trade through air freight. The time-sensitive air freight industry, and those industries that use air freight, benefit from greater quantity and frequency of services, especially long haul. By providing more space for cargo, lowering costs, and by the greater frequency of services, this should in turn provide a boost to trade and GDP benefits.*
>
> *As set out above, expansion at Heathrow Airport delivers the biggest boost in long haul flights, and the greatest benefit therefore to air freight. This is further facilitated by the existing and proposed airport development of freight facilities as part of the Northwest Runway scheme.…"*

128. Azimuth[66] also attempts to draw inappropriate parallels with Manchester in relation to the potential economic benefit of routes to /china.

> *"The potential for increased trade with China has been demonstrated by the impact of direct flights operating from Manchester. The DfT report that the value of goods exported by businesses from Manchester Airport has doubled since the route commenced (DfT, 2018a, p. 38). This success provides an indication of the potential for East Kent should routes between China and Manston Airport be made available."*

129. The growth in value of goods that is referenced was most probably driven by the launching of direct passenger services between Manchester and Beijing. This illustrates the important role bellyhold cargo plays. Linking this development to theoretical direct freighter services from China to Manston has limited relevance.

130. Azimuth[67] makes further assertions in relation to capacity constraints at Heathrow (see also paragraph 113):

[64] (Azimuth Associates, July 2018 a, p. 9)
[65] (UK Department for Transport, June 2018, p. 23)
[66] (Azimuth Associates, July 2018 a, p. 14)
[67] (Azimuth Associates, July 2018 a, p. 15)

> *"With warnings that services on key trade routes from Heathrow are reaching capacity, the UK's exporters could be hampered by lack of access to markets. In particular, routes such as Shanghai, Delhi, Mumbai, Los Angeles, Kokyo Haneda and Dubai are affected".*

131. The warnings have been issued by Heathrow, as part of its argument for a third runway. We point out that:

- New capacity will be added at Heathrow in the bellyhold of passenger aircraft when passenger demand results in additional flights (displacing less lucrative short haul flights prior to a third runway).
- Furthermore, there has been an expansion of long haul at Gatwick recently, with various new services to the Asia Pacific and Middle East regions. These are contributing to high rates of cargo growth at Gatwick.
- Finally, available capacity exists for additional dedicated freighter services at Stansted or East Midlands Airport, if demand exists.

132. Additional reference is made to recent strong growth rates in the UK for the cargo only market[68].

> *"In London, the cargo-only market grew by 5.5% in terms of tonnage between Q1 2016 to Q4 2016 and Q1 2017 to Q4 2017 … AirBridgeCargo has increased its freighters into Heathrow, Etihad has commenced freighter services at Stansted and East Midlands, and Manchester Airport saw 15% growth to China with the addition of Hainan Airline's Beijing service."*

133. Given the natural short-term fluctuations in the cargo market, we consider it of limited value to draw conclusions from growth rates of a single year. The references to new freighter services at Stansted and East Midlands contradicts the Azimuth assertion that the low levels of freighter growth in recent years are mainly due to airport capacity shortages.

134. Azimuth[69] also discusses the Department for Transport projections for freighters, where zero growth is modelled.

> *"Despite 2017 figures and industry forecasts, the DfT are currently showing no growth from 2016 figures in the all cargo market (DfT, 2017, 2.5.6). This issue was raised at a meeting with the DfT on 25 January 2018. The DfT's response, received on the 1 June 2018, points out that they do not model freight in detail and the zero percent growth is an assumption. The Department is currently revaluating air freight policy as part of the developing Aviation Strategy. It is unclear whether the zero percentage growth assumption is due to the absence of detailed information or is simply pragmatic, since the lack of capacity for dedicated freighters would preclude any substantial increase in movements, particularly in the South East."*

135. It is not normal practice to revise long term projections on the basis of a single year. Furthermore, there is no evidence to suggest that the zero-growth projection for all cargo services is based on capacity constraints.

- As discussed earlier in this report, there is no overall shortage of freighter capacity in the UK, either now or likely in the foreseeable future. Airports such as East Midlands are well positioned to serve freighter demand through most of mainland UK, including South-East England.

[68] (Azimuth Associates, July 2018 a, p. 17)
[69] (Azimuth Associates, July 2018 a, p. 18)

- A more likely explanation for the zero-growth assumption is that the DfT anticipates a continuation of trends towards bellyhold (UK CAA statistics indicate that the number of freighter flights have almost halved in the period 1998-2018).

136. Further assertions are made in relation to Stansted Airport[70], and the risk that freighter flights could be displaced (see also paragraph 115).

> *"… Viscount Aviation's analysis of this situation is that cargo flight timings are likely to be impacted severely since the airport will prioritise servicing Ryanair. This is because the proportion of the airport's income derived from Ryanair is considerable. This focus on service quality of the LCCs, coupled with the high usage of the single runway is likely to result in all-cargo flights waiting to land or take off, causing a knock-on effect to their schedules and hampering their operations. "*

137. This argument is speculative. The times of peak runway requirement for low cost carriers and freighters are unlikely to overlap. In any case, the Viscount Aviation report has not been published. Therefore, it is not possible to fully comment on the arguments put forward.

138. Azimuth[71] draws on a news article to put forward the proposition that there is potential for the transformation of low usage cargo focused airports, referencing Hahn Airport in particular.

> *"This move to build up dedicated freighter capacity, 'is opening a new debate about the viability of cargo airports'. Amazon's interest in Hahn Airport, a former military airbase, 120 kilometres from Frankfurt, which has reported years of losses, low usage, and has a 23.00 to 05.00 hours curfew, is indicative of the potential for the redevelopment of cargo focused airports. "*

139. However, the article[72] provided as a source for this proposition is generally sceptical about the potential for the redevelopment of cargo focussed airports such as Hahn:

> *"Even a flight curfew between 11 pm and 5 am at Frankfurt [the main airport] could not cement Hahn's position as a cargo gateway. "*
>
> *"Mike Webber, a former airport cargo executive turned industry consultant… "If you had to do a cost analysis to build a cargo airport to accommodate Amazon, you wouldn't do it," he said. He argued that the growth of e-commerce may open opportunities for some airports with existing infrastructure, but would not usher in a renaissance for cargo airports, because the industry was unlikely to see a proliferation of e-tailers with dedicated airfreight operations. "How many Amazons are there going to be?" he asked."*
>
> *"Whether an operation would translate into profits for airports which landed a chunk of this business is another question. Few cargo airports have managed to produce black figures, Mr Webber said…… cargo is an unlikely avenue to profitability, Mr Webber added."*

140. Furthermore, Amazon's apparent interest in Hahn has been refuted[73].

> *"Earlier this year, the newspaper Süddeutschen Zeitung had reported that Amazon had held talks with Frankfurt-Hahn Airport, which has been losing money and up for sale at least since February. Amazon, the paper reported, was likely one of three unnamed bidders that had shown interest in buying HHN.*

[70] (Azimuth Associates, July 2018 a, p. 25)
[71] (Azimuth Associates, July 2018 a, p. 31)
[72] (The Load Star, 2016)
[73] (Air Cargo World, 2016)

Today, however, officials for HHN told Lloyd's Loading List that neither the airport nor its municipal owner had been in contact with Amazon regarding any possible sale."

141. Section 6.3 of the Azimuth[74] report discusses – in some detail - dedicated freighter use compared to belly freight. It expands previous arguments about the importance of dedicated freighters within the air cargo sector. The role played by dedicated freighters, despite diminishing in recent years, is not disputed. However – as with previous Azimuth reports - no evidence is provided to support the assertion that the low level of freighter activity in the UK is due to lack of airport capacity. Once again, Azimuth does not acknowledge:

- The availability of substantial airport capacity in central UK locations (e.g. East Midlands Airport).
- The availability of substantial bellyhold capacity due to the extensive long-haul network at Heathrow.
- The obvious geographic disadvantages of the UK as a location for distribution of long-haul cargo across Europe. In particular, for the important freight market of Europe-Asia, the UK's location requires dedicated freighters to overfly most of Europe to reach the UK (inefficient from a time and cost perspective compared to flying to/from mainland European points and then distributing cargo across Europe through road feeder services).

142. Section 6.4[75] of the Azimuth report highlights the role of road feeder services. It correctly identifies that cost and convenience have been key factors in the relative growth of trucking (compared to air) for short haul cargo.

143. We agree that for long haul cargo, an entire journey by truck is not practical. However, road feeder services are an integral part of the air cargo business model. For all but the most time sensitive cargo, a combination of flying and road feeder services provides fast journey times.

- This approach has massive cost benefits from the consolidation of disparate cargo flows.
- For example, accessing cheap bellyhold capacity at Heathrow and major mainland European hubs can more than offset the costs of cross channel trucking.

144. As discussed earlier, the UK is not suitably located to act as a central distribution point for Europe, which has been a major factor in the relatively limited freighter activity in the UK.

145. The most recent Boeing cargo forecast[76] comments on the role of trucking in the context of Europe.

"Air cargo has never been solely an airport-to-airport service. Rather, air cargo is a single component of a transportation infrastructure that links the shipper and the consignee. Trucking offers door-to-door and factory-to-distribution center service, which air transport alone cannot provide.

Scheduled airlines that serve the intra-Europe market have used truck flights, trucking services registered with their own flight number, to extend their networks and add scheduling flexibility.

Long-haul truck-flight operations in Europe supplement overall air logistics systems. Their dramatic rise in the past decade has clearly contributed to a decline in growth of scheduled freight carried by air. According to the truck-flight schedules published by airlines, since 2008, airport pairs of truck flights grew 2.5 percent on average per year.

Weekly frequencies of truck flights grew 15.5 percent on average per year between 2008 and 2013, but the growth has paused since 2013. After a long period of stagnation from

[74] (Azimuth Associates, July 2018 a, p. 33)
[75] (Azimuth Associates, July 2018 a, p. 36)
[76] (Boeing, 2018, p. 40)

2013 to 2017, weekly frequencies of truck flights grew 18.9 percent in 2018. Most of the growth occurred in the major hub airports of the carriers, strengthening their air cargo networks.

Truck-flight operations provide regularly scheduled freight service for high-value or work-in-progress goods between manufacturing facilities, especially to and from central and eastern Europe. Scheduled truck operations are often used where demand is too low or infrequent to warrant dedicated freighter airplane service."

146. Similar trends have been identified in North America[77]:

"Truck flights allow combination carriers to offer service comparable to that of pure cargo carriers. Rising fuel costs magnify the inherent cost advantages of ground transport over air transport, and although fuel costs decreased in the 2015–2017 timeframe, ground transport retained its cost advantage over air transport."

[77] (Boeing, 2018, p. 24)

4.4. Summary

147. There have been only some relatively minor changes to content in the updated Azimuth reports from the versions we reviewed as part of our previous report. The arguments put forward by Azimuth are fundamentally unchanged, the unrealistic Manston traffic projections have not been modified and the weaknesses we had previously identified have not been addressed

148. The new Azimuth reports contain some new material. This new material can be broadly characterised as:

- Extrapolation from the (temporary) strong global cargo demand in late 2017/early 2018 to support the long-term case for Manston.
- New references in support of its arguments for the potential of Manston. However, the conclusions drawn from these references are typically inappropriate. A deeper analysis of the new material highlights either limited applicability for Manston or that the new material is not supportive of the case made by Azimuth.
- Additional background material which is not directly relevant to the case for Manston.

149. Therefore, our conclusions from our original report remain valid. These are summarised below.

- Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. It is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions.
- We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected – there is no overall shortage of freight capacity in the UK or South East specifically, cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands), there has been a strong trend towards bellyhold freight (with the role of dedicated freighters diminishing) and trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained.
- We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular, historic performance is ignored, there is a heavy reliance on qualitative techniques (with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share) and many of the references from published studies are too generic to be meaningful or are taken out of context.

150. Overall, the Azimuth forecasts and report do not provide any meaningful evidence that a reopened Manston Airport would be remotely viable.

- The arguments put forward by Azimuth run contrary to well established industry trends.
- The projections put forward have negligible quantitative justification, relying on a range of potential operators which either are unlikely to be interested in Manston or are no longer active in the freighter segment[78].
- There is no convincing reasoning why a reopened Manston would be more successful than other airports with similar characteristics, or that improvements on historic performance could be achieved.

[78] (York Aviation, 2019, p. 23)

5. UK Regional Airport Financial Performance and Debt Funding Characteristics

5.1. Introduction

151. This section provides an overview of UK regional airport financial performance, with particular focus on lower throughput regional airports (similar to the Manston Airport proposal).

152. RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

153. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

154. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis.

155. This section highlights the key components and characteristics of the airport business that the providers of debt (or equity) are likely to focus on when evaluating credit worthiness of the asset in relation to a potential debt and/or equity raising process.

156. This analysis is referenced in the following sections when considering the potential performance of a reopened Manston Airport, and its likely ability to raise debt and/or equity on the commercial market.

5.2. Altitude Aviation Experience of the Airport Debt and Equity Market

157. The Altitude team has advised on many airport debt transactions relating to UK and international airports over a long period. Examples of our recent airport debt transaction experience on processes that have reached financial close is set out below.

Airport	Debt Amount	Closing Date
Leeds Bradford Airport	Ca. £80m	2019
London Luton Airport	Ca. £390m	2017
Budapest Airport	Ca. €1.3bn	2017
Bristol Airport	Ca. £279m	2015
Glasgow, Aberdeen and Southampton airports	Ca. £500m	2014
Edinburgh Airport	Ca. £500m	2014

158. Our experience from these successful debt processes is that lenders will only provide funds where they have confidence that the request is supported by a detailed and sustainable business plan that can withstand a high level of stress testing. We have not seen any detailed information from RSP that would support a successful request for debt funding of the proposed business.

159. The Altitude team has also advised on many airport equity transactions relating to UK and international airports over a long period. Examples of recent airport equity transaction experience that have reached financial close is set out below.

Airport	Description
2018	
London Gatwick (UK)	Due diligence support for Vinci Airport's acquisition of a 50.01% equity stake in Gatwick Airport (reported price £2.9 billion). The project is due to reach financial close in June 2019.
Airports Worldwide (UK, Sweden, USA, Costa Rica)	Due diligence support for Vinci Airport's acquisition of Airports Worldwide (sale agreed, price undisclosed). The transaction comprised equity in five airports (Belfast International, Stockholm Skavsta, Orlando Sanford, San Jose (Costa Rica) and Liberia (Costa Rica), and four US airport management contracts.
Luton Airport (UK)	Vendor due diligence support for sale of Ardian's 49% stake in London Luton Airport Operations Limited to AMP Capital (sale agreed, price undisclosed).
Belgrade Airport (Serbia)	Due diligence support for Vinci Airport's successful bid for a 25 year concession to develop and operate Belgrade Airport (Vinci announced as preferred bidder in January 2018 with a bid of €501m initial payment, investment of €732m over the concession period and annual payments of €4.3m to €16m). The project reached financial close in December 2018.
2017	
Copenhagen Airport (Denmark)	Vendor due diligence support for minority equity disposal by Macquarie European Infrastructure Fund 3 of its 46.6% shareholding in Kastrup Airport Parents ApS, a holding company which indirectly holds a 57.7% ownership in Copenhagen Airports A/S. The indirect 26.9% shareholding in Copenhagen Airport had an implied enterprise value of €1.6bn (ca. 20x EBITDA multiple).
Birmingham / Bristol airports (UK)	Vendor due diligence support for minority equity disposal by Ontario Teachers' Pension Plan (undisclosed but reported to reflect ca. 22x EBITDA multiple).
Leeds Bradford Airport (UK)	Due diligence support for 100% acquisition for ca. £220m by AMP Capital (ca. 29x EBITDA multiple).
Previous Years	
Tirana Airport (Albania)	Due diligence for China Everbright and Friedmann Pacific joint venture, Keen Dynamics Limited acquisition from AviAlliance (undisclosed, 2016).
London City Airport (UK)	Vendor due diligence for equity disposal by GIP and Oaktree Capital (ca. £2.0bn, 2016).
Toronto City Centre Terminal (Canada)	Commercial support for the disposal of City Centre Terminal Corp. Porter completed the sale of its passenger terminal concession to Nieuport Aviation Infrastructure Partners in January 2015.
Glasgow, Aberdeen and Southampton airports (UK)	Due diligence for Ferrovial Aeropuertos and Macquarie European Infrastructure Fund acquisition of 100% equity (£1.05bn, 2014).

160. As with successful debt funding, our experience from UK and global airport equity transactions that have reached financial close is that equity providers require very detailed business plan information before they will consider an investment. As with debt providers, equity providers will expect detailed business plan stress testing to ensure equity returns are reasonable across a range of potential business outcomes. RSP has not presented any detailed business plan information for the proposed business which would allow the assumptions to be tested in the context of the UK regional airport sector financial performance.

5.3. Airport Sector Key Features

161. The global airport sector has a broadly consistent set of key features that flow to operational and financial performance.

162. The level and type of demand is the key feature that drives all aspects of operational and financial performance. Credible short, medium, and long-term traffic forecasts are essential to inform business and capital development plans.

- Debt providers expect to be presented with a detailed business plan that includes traffic, business plan, and capital investment forecasts for at least 10 years. The required forecast period can be significantly longer and is normally aligned with the term of debt requested with some allowance for potential extension of the debt repayment period.
- Equity providers would typically expect business plan forecasts for up to 30 years to reflect the longer-term return period.
- In their application documents, RSP advised that they need to raise all the funds required for capital investment (i.e. they do not currently appear to have shareholder funding available for this requirement). Our experience from equity investors is that they would require as much information as debt providers to critically examine the business case to ensure they have a clear idea of how they could make an acceptable risk-adjusted return across a range of potential outcomes.

163. Based on our experience of many airport debt and equity processes, the table below highlights the key airport characteristics, and supporting analysis and detailed outputs that debt and/or equity providers would expect to be provided for each key area of the particular airport business.

164. RSP has not presented any detailed business plan information that would support either debt and/or equity raising processes.

165. A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

Key Characteristic	Main Features	Comment	Material Typically Provided to Debt Provider
Demand	Catchment and consumer choice (airlines, destinations, cargo operators, etc.)	• Long run demand linked to GDP, disposable income, affordability, airline economics, etc. • Structural features e.g. hub, inbound tourism, cargo demand, etc.	• Detailed traffic forecast to include passenger segmentation (domestic, short haul, long haul, low cost carrier, etc.), cargo demand (bellyhold, freighter, expeditor), and other (business jet, general aviation, etc.). • Traffic report which covers all aspects of traffic demand including air transport movements (ATMs), aircraft stand demand, runway and terminal busy hour rates, etc.
Competition	Competing airports' features, capacity, etc.	• Detailed assessment of airport competition, and why users choose a particular airport. • Modal substitution options.	• Debt providers would expect the traffic report to include detail of the airport's competition, including discussion on competing airport characteristics.
Revenue	Diverse revenue streams	• Detailed outline of all airline, passenger, and non-aviation related revenues. • Clear rationale for forecast assumptions (airline contracts, concession contracts, property leases, etc.). • Detailed performance benchmarking analysis.	• Business plan to include a detailed build up of all revenue categories over the forecast horizon. • Business plan report should include detailed analysis of historic performance vs. forecast performance, and outcomes vs. sample benchmark airports.
Operating Costs	Operating leverage	• Lower unit costs as volumes increase driven by high fixed costs. • Detailed analysis of fixed and variable costs including staff costs by functional department, and non-staff costs by main outsourced categories.	• Operating cost forecast to include analysis vs. historic performance and regional airport recent trends. • Operating cost forecast to be driven by the appropriate drivers and assumptions clearly explained to debt providers.
Profitability	Profitability driven by airport size and passenger profile	• Operating expenditure consumes a high share of revenue at lower throughput airports. • Operational leverage is difficult to achieve at lower throughput airports.	• Detailed financial model to include debt provisions and below EBITDA operating costs (depreciation, dividends, etc.). • Downside demand / cost scenarios to demonstrate resilience of the business case – what happens if forecast are not achieved? • Detailed financial model to demonstrate debt covenants can be met under a range of scenarios throughout the forecast period.
Investment	Infrastructure leverage / investment flexibility	• High investment cost for lower throughput airports. • More efficient use of infrastructure as throughput increases. • Flexibility on incremental capacity investment.	• Detailed process capacity assessment. • Investment plan to achieve approvals to commence operations. • Investment in capacity and asset renewals over the forecast period.

Figure 5 - Airport Market Key Characteristics (source: Altitude)

5.4. Airport Business Model Components

166. An airport's business model typically comprises the demand, revenue, cost and investment categories illustrated below. The structure and components tend to be broadly consistent across all airports with the main performance variables being driven by volume and traffic segmentation.

Traffic	Passengers	Cargo	Business / General Aviation / Other
Airline Customers	Full Service	Bellyhold	Corporate
	Low Cost	Cargo Operators	Medical
	Charter	Integrators	Govt., etc.
Customer Segmentation	Business	Airborne	
	Leisure	Trucked	
	Charter		
Revenue	Aeronautical		
	Non-aeronautical		
Operating Cost	Staff		
	Non-staff		
EBITDA	Per pax / Margin %		
Capex	Aero Growth	Aero Repex	
	Non-aero Growth	Non-aero Repex	

Figure 6 – Summary Airport Business Model (source: Altitude)

167. Airport financial performance improvement is driven by each of the categories included in Figure 6, to varying degrees.

168. The primary driver for any airport is the traffic forecast (passengers, freight, etc.), as this is the main source of revenue, operating costs, and capital investment.

169. The airport sector benefits from diverse revenue streams which can be allocated into the two high-level categories of:

- Aeronautical revenue (revenue relating to the movement of passenger and / or freight, including aircraft landing and parking fees, passenger terminal use fees, security charges, etc.).
- Non-aeronautical revenue (retail, car parking, advertising, property rentals, etc.).

170. Aeronautical revenue would be expected to increase as traffic throughput increases. UK regional airports such as Manston Airport would not be subject to formal economic regulation and are free to set aeronautical charges without reference to an aeronautical regulator as long as the charges are (i) transparent, and (ii) non-discriminatory between airline users.

- Targeted incentives are used to support traffic growth with the airport providing financial incentives for carriers to become established and to add capacity.

- However, low cost carriers tend to require a high level of financial incentives through low (or no) aeronautical charges and / or marketing financial support for carriers to launch services and add capacity.
- We would also expect cargo operators to also be heavily incentivised to commence and develop services at a reopened Manston Airport.
- The requirement to incentivise passenger and cargo airlines would be expected to lead to low aeronautical revenue, particularly in the early years. This is likely to be a material issue for external debt and / or equity providers who would expect to see clear evidence of the airport's ability to meet financing costs.

171. We note that Azimuth Volume 4 paragraph 2.2.10 claims its forecast take into account the costs of integrators and freight forwarders switching airports:

> *"Additionally, the costs of switching airports have been taken into account when considering the likelihood of integrators and freight forwarders moving to Manston Airport. These include (CAA, 2013, p. 26):*
>
> *The cost of physical relocation.*
>
> *Cancellation of long-term contracts.*
>
> *Loss of economies of scale, although if an entire operation is switched, economies of scale would be gained at the new airport.*
>
> *Market effects such as marketing new routes and a potential loss of custom in the early years following the switch.*
>
> *Network effects lost by switching to a smaller airport.*
>
> *Capacity constraints at other airports, particularly in slot allocations.*
>
> *Sunk costs such as an airline's investment in the airport from which they are switching."*

172. We would have expected RSP to provide detailed financial forecast information to support the Azimuth assertions which could then be tested in the context of actual performance of the UK smaller throughput airport sector.

173. However, RSP has not presented any detailed financial or business plan information that would allow any debt and/or equity providers to make an informed funding decision

174. Non-aeronautical revenue is largely driven by traffic throughput.

- Passenger throughput drives terminal retail, food and beverage, and currency exchange revenues. It also drives car parking and car rental revenues.
- A number of non-aeronautical revenue categories are not directly driven by passenger throughput including property rentals, advertising, etc).
- Property revenue at a reopened Manston Airport is likely to be driven by cargo throughput generating demand for cargo processing facilities rather than passenger throughput. Passenger airlines, particularly low-cost carriers seek to minimise direct costs at an airport and avoid renting property space wherever possible.
- Other property demand can come from non-aviation related businesses which does not need to be located at an airport.

175. Operating costs tend to be driven by underlying fixed costs and subsequent passenger and terminal space growth rather than cargo throughput.

- Airports have a high level of fixed cost, irrespective of the level of throughput, to meet regulatory requirements e.g. perimeter and passenger related security, airfield operations, air traffic control, fire and rescue, along with core head office management and commercial functions.
- The impact of these high fixed costs has a disproportionate impact on the profitability of lower throughput airports with lower revenue generating capability.
- Once revenue has exceeded fixed operating costs, passenger growth typically increases at a faster rate than incremental operating costs resulting in declining unit cost (operating cost per passenger or tonne of freight). This is a major challenge for smaller throughput airports to increase revenue to materially exceed the structural fixed costs of the airport sector to then be in a position of sustained profitability.

176. Analysis in the next section will illustrate the challenging financial performance of lower throughput UK regional airports (passengers and / or cargo throughput below 3 million work load units[79] (WLUs) per annum) which tends to be driven by the high fixed costs.

- Note that the RSP's forecasts equate to demand of 3.1m WLUs in Year 10.

177. EBITDA as a measure of cash generated from the operating business to fund debt and capital investment, and EBITDA margin are driven by the revenue and operating cost performance of the airport. Small UK regional airports are typically operating with negative EBITDA and / or low EBITDA and EBITDA margins. This means they cannot generate sufficient cash to service debt service debt or capital investment.

178. Capital expenditure is driven by (i) meeting the regulatory and licencing requirements to operate, (ii) traffic throughput, and (iii) asset condition which impacts replacement capital investment levels. Whilst airports can defer some element of asset replacement, it is a major component of the operating licence to demonstrate the airport can fund the required capital investment to meet the statutory requirements.

5.5. UK Airport Benchmarking Group

179. This section focuses on the financial performance of a set of lower throughput UK regional airports (annual throughput below 3 million WLUs) that provide a good comparison with the Year 10 forecast for a reopened Manston Airport. The selected airports are set out below.

Airport	Airport Code	Financial Year	Pax	WLU
Belfast City	BHD	31-Dec-17	2.6m	2.6m
Southampton	SOU	31-Dec-17	2.1m	2.1m
Cardiff	CWL	31-Mar-18	1.5m	1.5m
Doncaster Sheffield	DSA*	31-Mar-17	1.2m	1.3m
Southend	SEN	28-Feb-18	1.1m	1.1m
Exeter	EXE	31-Mar-18	0.9m	0.9m
Prestwick	PIK	31-Mar-18	0.7m	0.8m
Bournemouth	BOH*	31-Mar-17	0.7m	0.7m
Norwich	NWI	31-Mar-18	0.5m	0.5m
Newquay	NQY	31-Mar-18	0.5m	0.5m
Humberside	HUY	31-Mar-18	0.2m	0.2m
Durham Tees Valley	MME*	31-Mar-17	0.1m	0.1m

Table 2 – UK Benchmark Airports 2017 Data (source: company reports)

180. The airports included in the benchmark analysis have an annual throughput of up to 3 million passengers and 3 million WLUs. Note that the most recently available financial data has been used (note that airports with an * refers to financial data for the year ending March 2017).

[79] A work load unit (WLU) is defined as one passenger or 100 kg of cargo.

181. The sample set provides a good range of smaller throughput airport businesses to reflect the proposed rate of development for a reopened Manston over the initial ten-year period.

182. The detailed analysis highlights just how challenging the market is for these airports and the low of negative levels of profitability consistently achieved.

183. We also highlight below that three of the benchmark airports have had to be taken over by the public sector in recent years when experienced private sector airport operators could not develop the airports to achieve sustainable financial performance.

5.6. Airports Rescued by the Public Sector

184. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis:

- **Glasgow Prestwick Airport**: purchased by Scottish Government for a reported £1 in 2013. Since taking ownership, the Scottish Government has provided loans of ca. £38m. The business reported a post-tax loss of £7.6m in the year to 31st March 2018. We also note that Infratil was a previous owner of Manston Airport and, despite having airport experience from its 66% ownership of Wellington Airport in New Zealand (with 6.3m passengers in 2018), was unable to develop either Prestwick or Manston into sustainable businesses.
- **Cardiff Airport**: purchased by the Welsh Government for a reported £52m in 2013. Since taking ownership, the Welsh Government has provided loans of ca. £14m. The business reported a post-tax loss of £5.6m in the year to 31st March 2018. The previous owner, Abertis, was an experienced operator of Belfast International and Luton airports in the UK and a number of international airports. Despite this, passenger numbers declined from ca. 2m in 2007 to just over 1.0m in 2012.
- **Durham Tees Valley Airport**: purchase announced in January 2019 by Tees Valley Combined Authority for a reported £40m. The business reported a post-tax loss of £2.4m in the year to 31st March 2017. Current owner, Peel Group, is an experienced operator of Liverpool and Doncaster Sheffield airports.

5.7. P&L Performance

185. Lower throughput UK regional airports can achieve high revenue yield (total revenue / Work Load Unit) as non-passenger related revenue can be a high share when the traffic throughput is low.

- This is evident in the chart below which illustrates that the two smallest airports in the study (Durham Tees Valley and Humberside) achieve the highest total revenue yield / WLU. However, both airports have KLM service to Amsterdam as virtually the only commercial airline customer paying historically high charges – a situation that is highly unlikely to be replicated at Manston.
- However, it would be expected that this yield reduces as the airport grows and the relatively fixed revenues (e.g. property rentals) are diluted as passenger and cargo throughput increases. The larger airports in our study are mostly on the right side of the chart with lower revenue yields.
- A start-up at Manston would be expected to achieve low yields due to the need to highly incentivise both passenger and cargo operators to set up and commence operations at the airport.

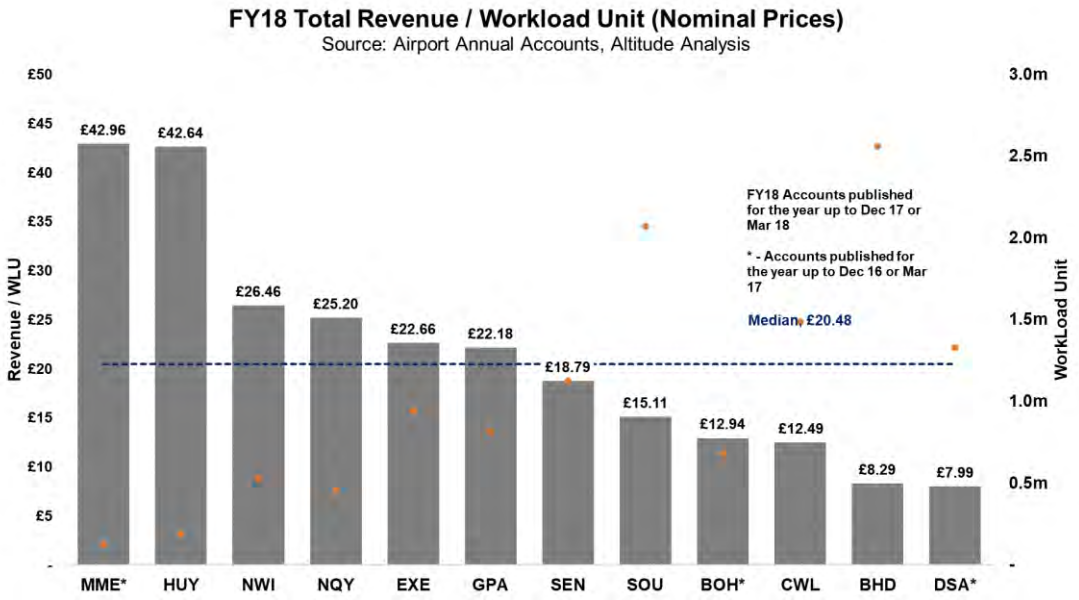


Figure 7 - Total Revenue Yield / WLU

186. As previously outlined, airports have high fixed costs. This results in higher unit cost (total operating expenditure / WLU) at smaller airports. The operational efficiency of the airport improves as the airport grows and fixed costs are spread over a higher level of throughput. This operational leverage is an important feature of the airport sector's financial performance.

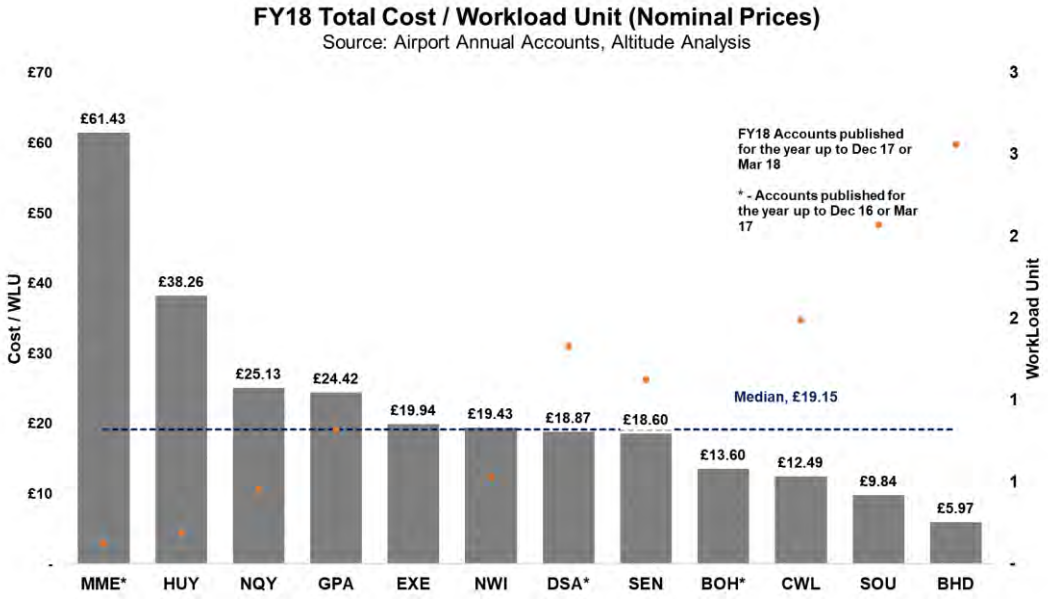


Figure 8 - Total Unit Cost

187. We would expect a start-up Manston to have high unit costs for a number of years. However, we have not seen detailed financial information from RSP to test the reasonableness of their assumptions.

188. As outlined, EBITDA is a measure of the airport's ability to generate cash to finance the business, including servicing debt and funding capital investment.

189. The EBITDA / WLU chart clearly illustrates the requirement for airports to achieve critical mass of throughput before being able to generate positive EBITDA.

190. This can be challenging with seven of the twelve airports in the study having negligible or negative EBITDA performance which means no cash to service debt or fund capital investment.

191. This highlights the difficulties for any potential future operator of Manston Airport to generate sufficient throughput and revenue to offset the high fixed costs of a UK regional airport.

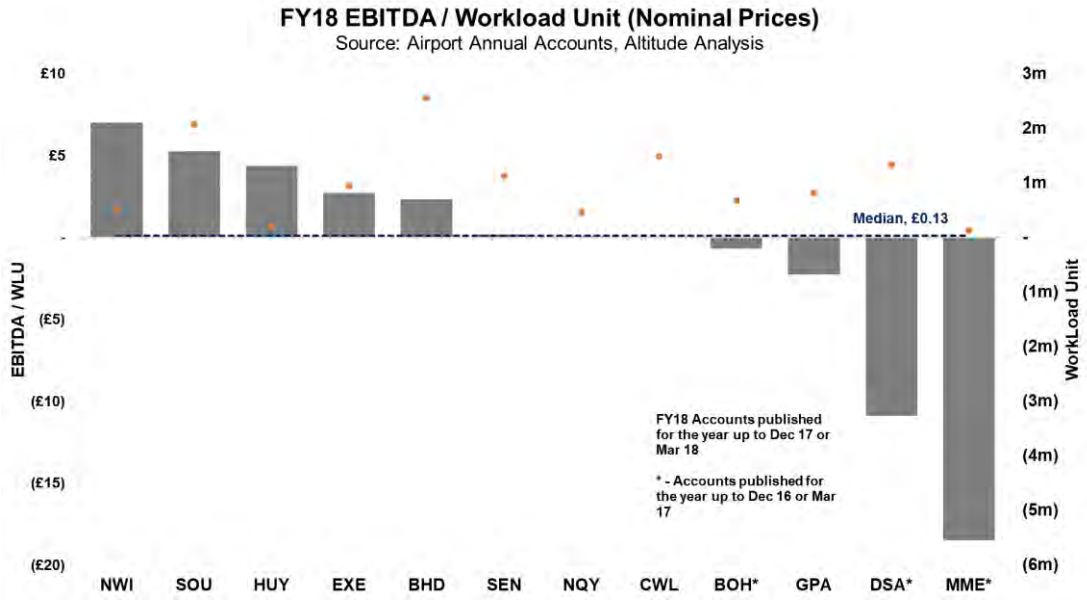


Figure 9 - EBITDA / Pax

192. Larger regional airports such as Southampton and Belfast City have a positive EBITDA / WLU, whilst smaller airports such as Durham Tees Valley, Doncaster Sheffield, Prestwick and Bournemouth generate negative EBITDA / WLU.

- Southampton and Belfast City airports both serve city catchments and do not have material levels of low cost carrier traffic. They consequently enjoy higher profitability than the other airports. Manston would not be able to replicate a similar business model as the local market characteristics do not exist to support to support such a model.
- By contrast, airports with higher levels of throughput such as Cardiff and Doncaster Sheffield generate negligible or negative EBITDA which we assume is a consequence of having to highly incentivise passenger and/or cargo airlines to use the airport. We would expect this to be the case at a reopened Manston which implies no or limited cash to service debt and capital investment.

193. Based on our experience and the financial performance at UK regional airports, we would expect high levels of incentivisation of future commercial operations to be a feature of the financial performance of a reopened Manston Airport, particularly in the early years.

- This will have a material negative impact of the ability of the business to raise external debt or equity on a standalone basis without having a parent company guarantee (from an entity of sufficient financial standing) or other assurances in place.
- This would clearly have a material impact on the viability of RSP's proposals. However, we are unable to assess this due to lack of detailed business plan information to support the application.

194. Analysis of net profit after tax illustrates the ability of the business to reward equity shareholders, generate cash reserves, and to finance capital investment.

- It also gives debt providers an indication of the resilience of the business to withstand any downturns in demand e.g. economic shocks, airline withdrawal / scale reduction / failure.
- For the RSP proposal, the requirement to generate positive cashflow is amplified by the requirement to fund and repay the significant initial investment to reopen the airport, as well as future incremental capital investments.

- The evidence from our analysis of the benchmark sample airports is that the ability to generate positive post-tax cash flows is very challenging for existing businesses and is likely to be even more challenging for the start-up business proposed by RSP.

195. The figure illustrates that UK regional airports with low levels of throughput struggle to generate positive net profit after tax.

- Only 3 airports produced a positive result, indicating the difficulty to maintain a viable business at low levels of throughput.
- The chart also illustrates the challenges faced by smaller airports to withstand declines in demand, which will be a major concern for both debt and equity providers.

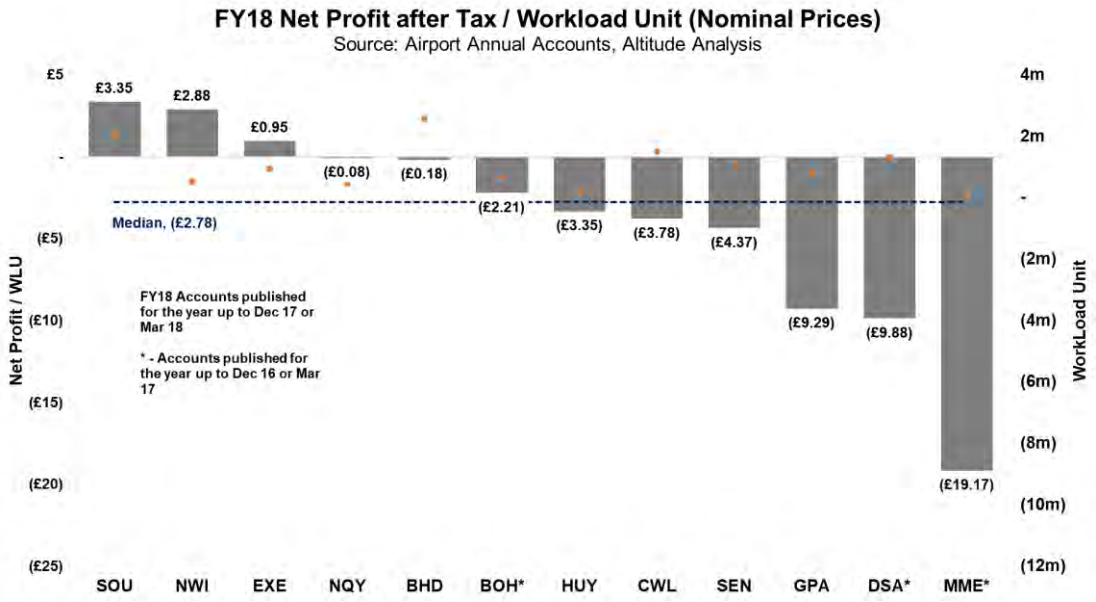


Figure 10 - Net Profit / Pax

196. To summarise the selected UK regional airport performance, we have combined revenue, EBITDA and net profit after tax into a single chart to illustrate the challenges faced by lower throughput airports.

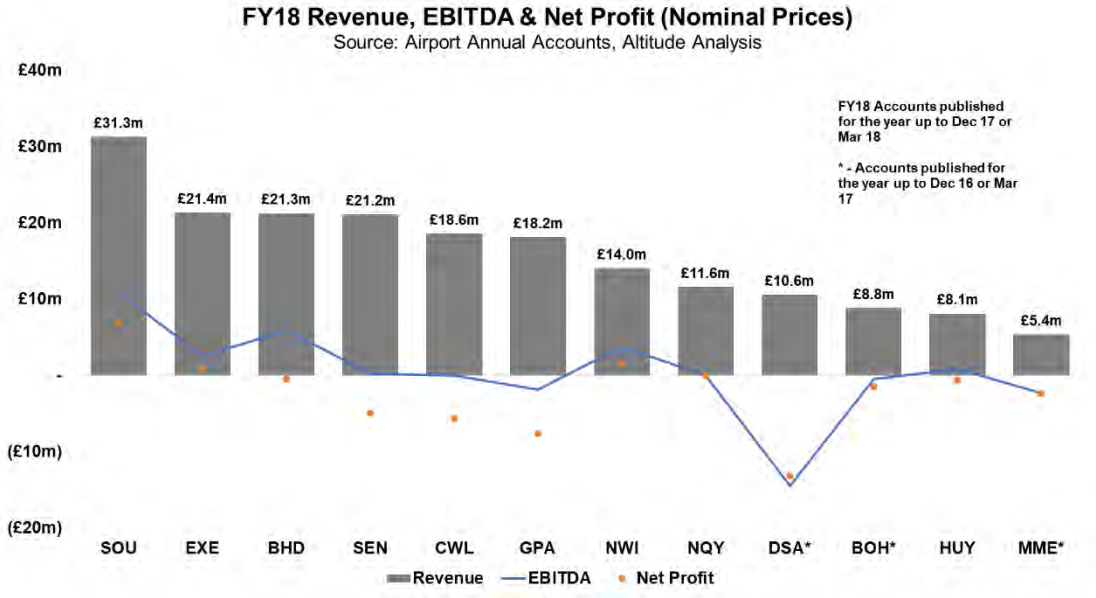


Figure 11 - Revenue, EBITDA & Net Profit

197. A summary of the benchmarking airports' financial performance is outlined in the table below.

Airport	Airport Code	Pax	WLU	Revenue	Opex	EBITDA	Net Profit after Tax
Belfast City	**BHD**	2.6m	2.6m	£21.3m	£15.3m	£6.0m	(£0.5m)
Southampton	**SOU**	2.1m	2.1m	£31.3m	£20.4m	£10.9m	£6.9m
Cardiff	**CWL**	1.5m	1.5m	£18.6m	£18.6m	£0.0m	(£5.6m)
Doncaster Sheffield	**DSA***	1.2m	1.3m	£10.6m	£25.1m	(£14.5m)	(£13.1m)
Southend	**SEN**	1.1m	1.1m	£21.2m	£20.9m	£0.2m	(£4.9m)
Exeter	**EXE**	0.9m	0.9m	£21.4m	£18.8m	£2.6m	£0.9m
Prestwick	**PIK**	0.7m	0.8m	£15.9m	£21.0m	(£5.2m)	(£6.2m)
Bournemouth	**BOH***	0.7m	0.7m	£8.8m	£9.3m	(£0.5m)	(£1.6m)
Norwich	**NWI**	0.5m	0.5m	£14.0m	£10.3m	£3.7m	£1.5m
Newquay	**NQY**	0.5m	0.5m	£11.6m	£11.6m	(£0.0m)	(£0.0m)
Humberside	**HUY**	0.2m	0.2m	£8.1m	£7.8m	£0.3m	(£0.6m)
Durham Tees Valley	**MME***	0.1m	0.1m	£5.4m	£7.7m	(£2.3m)	(£2.4m)

*Table 2 – UK Benchmark Airport 2017 Financial Data (source: company reports, * refers to financial data for the year ending March 2017)*

198. As expected, the larger airports produce more revenue which in turn leads to positive EBITDA. However, only three airports generate positive net profit after tax.

199. This is driven by the highly fixed operating costs at smaller airports outweighing their ability to generate revenue, which leads to negative EBITDA and negative net profit after tax.

200. Based on the detailed analysis of the lower throughput UK airport sector presented above and with the absence of detailed financial forecasts from RSP, we are of the opinion that the business would face severe challenges to become commercially viable even if RSP delivered on its highly optimistic forecasts. This is further highlighted by the historic loss-making performance of the airport when it previously operated by experienced owners.

5.8. Debt Level Analysis

201. This section provides analysis of the level of debt financing of the benchmark airports. This provides some insights on the level of debt at the airports and the ability of the airports to service the debt.

202. The table below provides a summary of the latest available operational characteristics and debt levels.

Airport	Airport Code	Financial Year	Pax	WLU	Revenue	Opex	EBITDA	Debt	Net Profit after Tax	Debt / EBITDA	Debt / Revenue
Belfast City	**BHD**	**31-Dec-17**	2.6m	2.6m	£21.3m	£15.3m	£6.0m	£26.6m	(£0.5m)	4.5x	1.3x
Southampton	**SOU**	**31-Dec-17**	2.1m	2.1m	£31.3m	£20.4m	£10.9m	£25.0m	£6.9m	2.3x	0.8x
Cardiff	**CWL**	**31-Mar-18**	1.5m	1.5m	£18.6m	£18.6m	£0.0m	£37.2m	(£5.6m)	6,207.0x	2.0x
Doncaster Sheffield	**DSA***	**31-Mar-17**	1.2m	1.3m	£10.6m	£25.1m	(£14.5m)	£39.9m	(£13.1m)	(2.8x)	3.8x
Southend	**SEN**	**28-Feb-18**	1.1m	1.1m	£21.2m	£20.9m	£0.2m	£159.8m	(£4.9m)	742.3x	7.6x
Exeter	**EXE**	**31-Mar-18**	0.9m	0.9m	£21.4m	£18.8m	£2.6m	£8.9m	£0.9m	3.5x	0.4x
Prestwick	**PIK**	**31-Mar-18**	0.7m	0.8m	£18.2m	£20.0m	(£1.8m)	£43.4m	(£7.6m)	(23.7x)	2.4x
Bournemouth	**BOH***	**31-Mar-17**	0.7m	0.7m	£8.8m	£9.3m	(£0.5m)	£53.8m	(£1.5m)	(118.7x)	6.1x
Norwich	**NWI**	**31-Mar-18**	0.5m	0.5m	£14.0m	£10.3m	£3.7m	£12.4m	£1.5m	3.3x	0.9x
Newquay	**NQY**	**31-Mar-18**	0.5m	0.5m	£11.6m	£11.5m	£0.0m	£2.5m	(£0.0m)	82.9x	0.2x
Humberside	**HUY**	**31-Mar-18**	0.2m	0.2m	£8.1m	£7.3m	£0.8m	£4.3m	(£0.6m)	5.1x	0.5x
Durham Tees Valley	**MME***	**31-Mar-17**	0.1m	0.1m	£5.4m	£7.7m	(£2.3m)	£19.0m	(£2.4m)	(8.2x)	3.5x

Table 3 – Operational and Debt Summary (source: company reports)

203. The figure below illustrates the level of debt for each of the benchmark airports.

204. It should be noted that the debt levels quoted in the table are not commercial debt facilities that would typically be provided to airports. Each has its own special circumstance, for example:

- Cardiff and Prestwick debt is provided by their respective Welsh and Scottish government owners.
- Southend debt is provided by shareholder loans. Note that Southend Airport has a very large level of shareholder provided debt due to major redevelopment of the airport in the last few years, including a new passenger terminal. This funding is highly unlikely to be available in the commercial debt market.
- Doncaster Sheffield and Durham Tees Valley (until the sale to the public sector is completed later in 2019) debt is funded by shareholder loans from the Peel Group.
- Exeter, Bournemouth and Norwich are funded by the Rigby Group shareholder.
- Durham Tees Valley and Doncaster are related to Peel Group (with minority local authority shareholding).

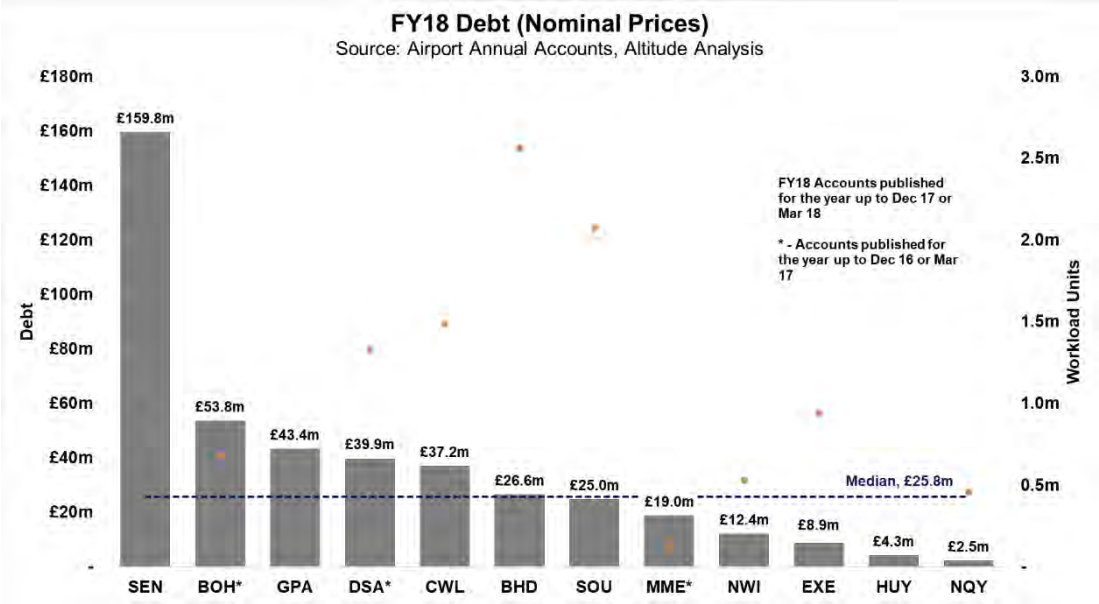


Figure 12 – Debt Levels

205. Larger throughput airports tend to have more debt due to higher capital expenditure requirements, e.g. capacity expansion and maintenance of runways and terminals, compared to the smaller throughput airport.

206. The debt / revenue ratio evaluates the airport's ability to generate revenue relative to its level of debt and throughput. The figure below illustrates this ratio for the benchmark airports.

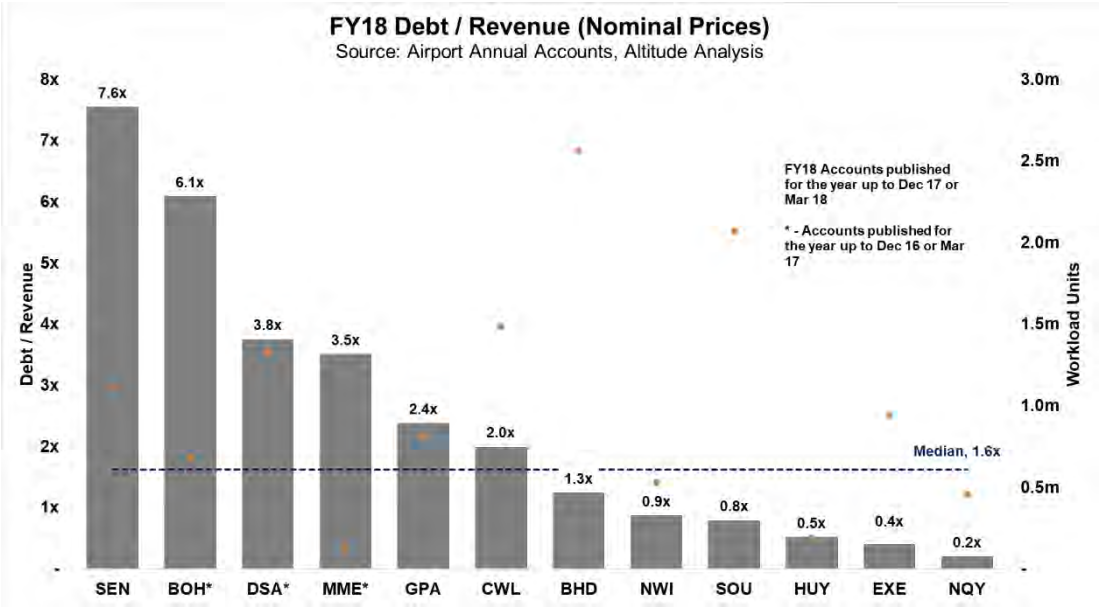


Figure 8 - Debt / Revenue Ratio

207. As outlined, Southend has significantly upgraded its infrastructure in recent years to accommodate passenger growth including a new terminal, primarily funded by debt (provided by way of shareholder loans). This has led to the airport having the highest debt / revenue ratio in the sample.

208. Excluding Southend, the larger throughput airports tend to have debt / revenue ratios below the median level (1.6x) whilst smaller airports tend to be well above the median.

209. Whilst the level of debt / revenue is interesting, analysis of the debt / EBITDA ratio provides a view of the ability of the business to generate sufficient operating cashflow to service the debt. Note that not all airports appear on the chart due to the scale of ratios. A full summary of these ratios is included in Table 3 above.

210. Debt / EBITDA ratio illustrates the ability of an airport to service its debt. The figure illustrates that small airports range between very high (e.g. Southend, Cardiff) and negative debt / EBITDA ratios which is driven by the challenging EBITDA performance environment set out in the financial performance section.

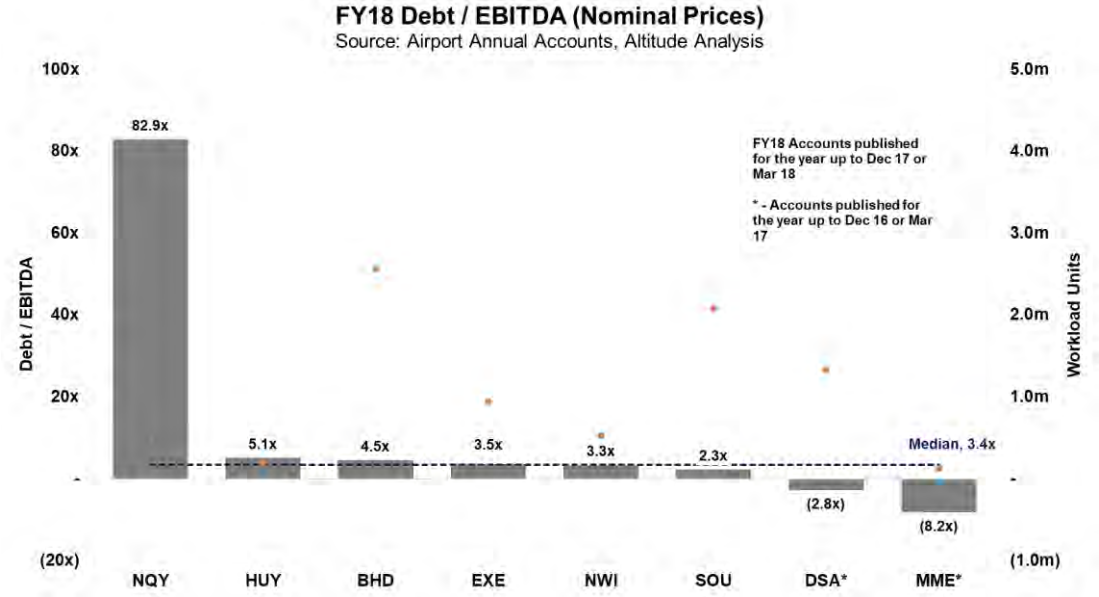


Figure 9 - Debt / EBITDA Ratio

211. Debt providers in the UK airport sector have tended to provide lending levels fluctuating around the range of 4x to 8x debt / EBITDA levels, depending on the external financing environment and particular characteristics of the airport.

- This range reflects larger throughput airports than the benchmark airports and have a lower perceived risk profile for debt providers due to the higher throughput levels and longer history of profitable performance.
- As part of their evaluation of the particular risks associated with an airport, lenders will assess the counterparty risk which we would expect to result in a material difference between experienced operators such as the Peel Group and RSP with no track record in the sector. The higher risk profile would be expected to result in no or less debt being provided and at higher cost than for experienced operators.

212. The chart illustrates that a number of the airports are in the 2x to 5x debt / EBITDA range, with the two largest throughput airports (Southampton and Belfast City) having relatively conservative debt / EBITDA ratio of 2.3x and 4.5x respectively.

- Our experience supports the view that the low levels of debt for those airports with positive EBITDA reflects the inherent risks for debt providers and places a ceiling on the level of commercial debt available for lower throughput airports.
- We would expect the perceived risks for debt providers to be higher for a reopened Manston Airport without strong support from a parent company or underpinned with firm revenue and volume commitments from passenger and cargo airlines reflected in executed contracts. Our experience is that it would be highly unusual for airlines to enter into such binding contractual commitments a number of years before an airport becomes operational.

213. For the other benchmark airports, the very high or negative debt / EBITDA ratios would make it extremely difficult to attract commercial debt providers and / or at reasonable interest rates.

- As outlined, many of the benchmark airports have debt provided through shareholder loans as commercial debt would not be available for these marginal and / or loss-making airports.

5.9. Summary

214. As outlined in the introduction, RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

215. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

216. The RSP forecasts equate to demand of 3.1m WLUs in Year 10. The performance benchmarking illustrates the difficulty that smaller throughput airports up to ca. 3m WLUs per annum have to generate sufficient revenue and profitability to be commercially viable.

217. There has also been a trend for smaller throughput UK regional airports being rescued by the public sector after experienced private sectors could not operate these airports on a viable commercial basis. RSP is not an experienced airport operator and does not have a track record of successfully developing or operating a commercially viable airport.

218. This context is important for the proposed reopening of Manston Airport as the analysis illustrates:

- A significant level of throughput is required to generate sufficient revenue to result in positive EBITDA[80] to service debt and / or capital investment – London Southend and Cardiff with 1.1m and 1.5m WLUs respectively achieved marginally positive EBITDA but posted large post-tax losses.
- Commercial lenders and equity providers will expect a track record of EBITDA generation to support funding of the business. A reopened Manston Airport would be a start-up business with a material capital investment requirement and no history of profitability.
- Our experience is that commercial debt and equity providers would be unlikely to provide funding to a reopened Manston Airport on a standalone basis without (i) parent company guarantees (from an entity of sufficient financial standing), and (ii) strong evidence of clear contractual volume and revenue commitments from airline users.
- The benchmarking indicates that a significant proportion (or all) of the funding would need to be provided by way of shareholder loans, as the required levels would not be available from debt providers.
- Based on the analysis of lower throughput UK regional airports and our experience of the UK airport debt market, we would expect a reopened Manston Airport to struggle to secure material levels of debt in the commercial lending market. As equity funders would also require detailed business plan information to inform their investment decisions, we would expect RSP to struggle to secure material equity investment given the loss-making history of the business over many years.
- RSP's application documents do not provide the most basic information that would allow any funder (debt or equity) to assess the financial viability of a reopened airport.
- Without a detailed business plan and supporting financial forecasts with detailed cost and revenue assumptions and supporting information that can be assessed and tested, there is little prospect of RSP raising any debt and / or investor finance from parties that would ordinarily fund UK airports.
- With RSP stating that construction will be underway in 2020, it is surprising that this information is not available and been shared with the Examination.
- The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports being taken over by the public sector. Where new airports across Europe

[80] EBITDA is earnings before interest, tax, depreciation and amortisation

have been developed or airports reopened, it is highly unusual that the public sector has not made a material financial contribution to the viability of the proposals. The potential wider economic benefits to the region are usually cited to justify public sector investment (as was the case for the Cardiff and Prestwick airport investments by the public sector).

- No public sector investment is proposed by RSP which is likely to make funding of the proposal even more challenging on a commercial basis.
- Notwithstanding this, based on our experience and taking into account the very high-level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its highly optimistic forecasts.
- Our expertise of supporting many institutional investors in the UK and international airport sector confirms that they would have the same issues and challenges as a debt provider with the lack of financial information related to the deliverability and viability of the RSP proposals.
- A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

6. References

Air Cargo World. (2016, April 18). *Frankfurt-Hahn dismisses rumors of Amazon bid*. Retrieved from https://aircargoworld.com/allposts/frankfurt-hahn-dismisses-rumors-of-amazon-bid/

Airports Commission. (2015). *Final Report.*

Altitude Aviation Advisory. (2018). *Analysis of the Freight Market Potential of a Reopened Manston Airport.*

AviaSolutions. (2016). *Commercial Viability of Manston Airport.*

AviaSolutions. (2017). *Review of Azimuth & Northpoint Forecast for Manston Airport – FINAL REPORT.*

Azimuth Associates. (2017 a). *Manston Airport - a Regional and National Asset, Volume I, Demand in the south east of the UK.*

Azimuth Associates. (2017 b). *Manston Airport - a Regional and National Asset, Volume II, A qualititive study of potential demand.*

Azimuth Associates. (2017 c). *Manston Airport - a Regional and National Asset, Volume III, The Forecast.*

Azimuth Associates. (January 2018 a). *Manston Airport - a Regional and National Asset, Volume I, Demand in the south east of the UK.*

Azimuth Associates. (January 2018 b). *Manston Airport - a Regional and National Asset, Volume II, A qualitative study of potential demand.*

Azimuth Associates. (January 2018 c). *Manston Airport - a Regional and National Asset, Volume III, The forecast.*

Azimuth Associates. (July 2018 a). *Manston Airport - a Regional and National Asset, Volume I, Demand in the south east of the UK.*

Azimuth Associates. (July 2018 b). *Manston Airport - a Regional and National Asset, Volume II, A qualitative study of potential demand.*

Azimuth Associates. (July 2018 c). *Manston Airport - a Regional and National Asset, Volume III, The forecast.*

Boeing. (2018). *World Air Cargo Forecast 2018-37.*

Gatwick Airport. (2018 a, January 12). *Gatwick's busiest ever December closes record-breaking year as 45.6m passengers travel through in 2017*. Retrieved from http://mediacentre.gatwickairport.com/press-releases/2018/gatwicks-busiest-ever-december.aspx

Gatwick Airport. (2018 b). *Draft Master Plan 2018.*

Gatwick Airport. (2019, January 16). *Gatwick long-haul traffic grows in December as 46.1m passengers travel through in 2018*. Retrieved from http://www.mediacentre.gatwickairport.com/press-releases/2019/2019-01-16-gatwick-long-haul-traffic-grows-in-december.aspx

Heathrow Airport. (2014). *The Promise of Heathrow - Heathrow's Vision for Growth.*

Heathrow Airport. (2019 a, January 11). *Heathrow reaches record 80 million milestone in 2018 as airport takes big steps towards expansion.* Retrieved from http://mediacentre.heathrow.com/pressrelease/details/81/Corporate-operational-24/10479

Heathrow Airport. (2019 b). *Airspace and Future Operations Consultation, Making Better Use Of Our Existing Runways.*

House of Commons Library. (2015). *BRIEFING PAPER Number 01942, Manufacturing: statistics and policy.*

IATA. (2018, January 31). *Air Freight Demand up 9% in 2017, Strongest Growth Since 2010.* Retrieved from https://www.iata.org/pressroom/pr/Pages/2018-01-31-01.aspx

IATA. (2019, February 9). *Air Freight Demand Ends Year Up 3.5%, Despite Softening Late 2018.* Retrieved from https://www.iata.org/pressroom/pr/Pages/2019-02-06-01.aspx

London Luton Airport Limited. (December 2017). *Vision for Sustainable Growth 2020-2050.*

Northpoint Aviation Services. (n.d.). *The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston.*

Schiphol. (2019, January). *Traffic and transport figures per month*.

Stansted Airport. (2018 a). *35+ Planning Application, Planning Statement.*

Stansted Airport. (2018 b, November 14). *London Stansted gets the go ahead to boost the region's economic growth and create 5,000 new jobs*. Retrieved from https://mediacentre.stanstedairport.com/london-stansted-gets-the-go-ahead-to-boost-the-regions-economic-growth-and-create-5000-new-jobs/

The Load Star. (2016, April 28). *Could an e-commerce boom and 'the Amazon effect' be the saving of smaller cargo airports?* Retrieved from https://theloadstar.co.uk/e-commerce-boom-amazon-effect-saving-smaller-cargo-airports/

UK Department for Transport. (2017). *UK Aviation Forecasts - Moving Britain Ahead.*

UK Department for Transport. (June 2018). *Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England.*

Wiggins Group plc. (2002). *Annual Report.*

York Aviation. (2017). *Summary Report Analysing use of York Aviation Material by Riveroak Strategic Partners Limited and Assessment of Capability of Manston Airport.*

York Aviation. (2019). *Updated critique of assessment of the need and justification for the development of Manston Airport as an air freight hub.*

7. Annex – Altitude Report from January 2018

Analysis of the Freight Market Potential of a Reopened Manston Airport

Issued: January 2018

(Analysis completed in October 2017)

Scope of the Report and Limitation of Liability

- This report contains the results of our analysis in relation to potential air cargo demand at the former Manston Airport site (the "Work"). It has been prepared for Stone Hill Park Limited ("SHP") in connection with the proposed application for a Development Consent Order by RiverOak Strategic Partners Limited and for no other purpose. The proposed application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). The proposed application would also, we understand, seek to compulsorily acquire the whole of the former Manston Airport site from SHP.
- We do not accept a duty of care to any person other than SHP in respect of this report.

ALTITUDE AVIATION ADVISORY LIMITED

January 2018

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1. Introduction

1.1. Objectives of the Study

1. This report has been commissioned by Stone Hill Park Limited ("SHP"), the owners of the former Manston Airport site. The site is currently subject to a proposed application for a Development Consent Order ("DCO") under the Planning Act 2008 currently promoted by RiverOak Strategic Partners Limited ("RSP"). The proposed application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). RSP contends that the Project is a Nationally Significant Infrastructure Project for airport development for air freight and hence, should fall within the Planning Act 2008. RSP's proposed application could also seek powers of compulsory acquisition over the site, allowing RSP to compel the purchase of the site from SHP's ownership to RSP's ownership. The report has been developed in this context.

2. To date, RSP has generated a range of submissions as part of the DCO pre-application process. These include reports commissioned from Azimuth Associates ("Azimuth")[1] and Northpoint Aviation Services ("Northpoint")[2].

3. The objective of this report is to provide a review of the Azimuth and Northpoint reports. We also review other relevant documents, including two AviaSolutions reports[3] commissioned by Thanet District Council.

4. The Azimuth and Northpoint submissions are notable for making major assertions as fact without providing relevant supporting evidence. While we have drawn on our own extensive experience in the UK and international airport sector, we have utilised published material to support our analysis. As such, we have made efforts to limit the extent to which we rely on our own opinions, assumptions and/or calculations.

5. The focus of our analysis is the air cargo sector. We provide an evidence based assessment of key issues impacting the future development of air cargo in the UK. This comprises of:

    - Review of key historic and likely future trends in the air cargo sector.
    - Assessment of the ability of existing airports to meet future freighter and bellyhold cargo demand in the UK.
    - Appraisal of the ability of the Manston Airport site (if re-opened) to support the future development of the UK air cargo sector. Specifically, we investigate whether the site has the potential to meet the objectives specified by RSP in its proposed DCO application.

6. In this report, we do not, at this stage, undertake an in-depth review of air passenger related issues.

[1] (Azimuth Associates, 2017 a), (Azimuth Associates, 2017 b), (Azimuth Associates, 2017 c)
[2] (Northpoint Aviation Services)
[3] (AviaSolutions, 2016), (AviaSolutions, 2017)

1.2. Structure of the Report

7. Later in this section (Section 1.3), we provide an overview of the air cargo sector for the general reader. This includes an explanation of some key terms used in our report and an overview of important market dynamics. In the appendices (sections 10 and 11), a fuller description is provided.

8. A brief overview of Altitude Aviation Advisory is presented in Section 1.4.

9. The next section of the report (Section 2) is the Executive Summary.

10. In Section 3, we review the introductory section of the Azimuth suite of reports. In particular, we review the stated aims of the Azimuth reports, and comment on whether the questions put forward by Azimuth are appropriate and sufficiently targeted to adequately support the proposed DCO application.

11. In sections 4 to 7, we present our own analysis of the UK and global cargo market, including historic trends and outlook. This is then referenced later in the report when we critique the Azimuth freight forecasts.

    - Section 4 – We provide an analysis of how the UK cargo sector has developed, and focus on individual airports that are relevant in the consideration of the future potential for Manston. We also provide a summary of Manston's historic performance.
    - Section 5 – We investigate if there is an overall shortage of airport freight capacity in the UK, or if shortages are restricted to Heathrow only.
    - Section 6 – We provide a review of published capacity expansion plans from existing airports. This allows us to build up a picture of freight capacity at UK airports in the period to 2050.
    - Section 7 – Our forecast for UK freight demand is presented in this section. Our forecasts are compared with other published projections. We also assess whether there is likely to be any overall imbalances between demand and supply in the period to 2050.

12. In Section 8, we provide a comprehensive review of the Azimuth freight forecasts for Manston. This includes a critique of the methodology as well as the forecast projections themselves.

13. In the appendices, background material on the air freight segment and recent trends is included. There is also a case study of two major European freighter airports and further supporting analysis for some of the material in the main body of the report. We also review other related reports by Northpoint (on behalf of RSP) and AviaSolutions (on behalf of Thanet District Council).

14. Finally, a list of figures and a list of references are included at the end of the document.

1.3. Introduction to the Air Cargo Sector

15. Generally, products that make use of air transportation are high value and/or time critical, and can be easily packaged.

16. Whilst there are many different types of *air cargo*, at a high level, most can be categorised as either *freight*[4] or *mail*. Most freight can then be defined as either *general* or *express*.

    - Mail is typically letters and parcels, delivered to final destination by the postal service of a given country.
    - Express freight is typically "next-day" shipments that are collected from the shipper by close of business and are required by the consignee by close of business the following day.
    - General freight is everything else (this category is very broad, and also includes several types of low-volume specialist products such as hazardous, valuable and live animal cargo).

[4] In this report, we concentrate on the freight segment (which is more relevant in the context of Manston). Where it is not meaningful to distinguish between freight and mail, we provide analysis of the air cargo segment overall.

17. Air cargo can be carried either in a dedicated aircraft (a *freighter* or *cargo only aircraft*), or in the hold of commercial passenger aircraft (when it is known as *bellyhold cargo*).

18. A freighter aircraft will be able to carry more cargo than can be carried in the bellyhold of a similarly sized passenger aircraft. Furthermore, freighter aircraft are able to handle larger individual pieces of cargo than can be loaded in the bellyhold of passenger aircraft.

19. With this exception, there is typically no aircraft driven preference from the customer as to whether cargo is shipped in a freighter or in the bellyhold of a passenger aircraft. Other sources of preference include:

    - Freighters may be the only option if there are no passenger flights offering bellyhold capacity (the number of unserved destinations has shrunk as the number of passenger flights has grown).
    - From an origin with both bellyhold and freighter capacity, a larger number of frequencies and destinations may be available via bellyhold, due to the generally more extensive schedules of passenger airlines than cargo airlines.
    - Bellyhold capacity on passenger aircraft is often significantly cheaper to provide than freighter capacity, as many of the largest fixed costs are assigned to the passenger business (e.g. aircraft operation, landing fees, fuel needed to fly the aircraft[5]).

20. In recent years, bellyhold has been capturing an increasing share of the overall air cargo market. This is a global development, primarily due to faster growth in passenger demand than cargo demand. Therefore, bellyhold cargo capacity has been growing ahead of cargo demand, diminishing the need for dedicated freighter aircraft.

21. The air transport of air freight is typically carried out by one of three types of operator:

    - *Cargo only airlines* (using freighters), such as Cargolux.
    - *Passenger airlines* (using bellyhold space on passenger aircraft), such as British Airways. Some passenger airlines also operate a number of freight-only aircraft (a relatively small number compared to the number of passenger aircraft they operate).
    - *Integrators*, such as DHL, use a mix of their own freighter aircraft and purchased space on passenger aircraft. A large majority of the cargo handled by integrators is express freight. Integrators have a wider role than purely air transportation; they transport freight from door-to-door using a network of vans and trucks, as well as aircraft when necessary.

22. All carriers make extensive use of trucking in order to get freight to/from an airport. *Road feeder services* use trucks to bring freight to an airport from consolidation points across the catchment region.

23. Additionally, trucks will replace flights where it makes economic sense to do so.

    - For express freight, where next day delivery is required, this typically includes destinations within ca. 500km of the airport.
    - For general freight (i.e. without next day delivery requirement), trucks may be the more economic option for any intra-regional route. Replacement of flights with trucks has become more prevalent in Europe, to the extent that Airbus comments on it in their most recent forecast.

24. In this report, we refer to the concepts of *passenger hub* and *cargo hub* airports. These are terms that can be used somewhat loosely, and on occasion can simply be used to signify a large airport. For clarity, we define here precisely what we mean by these terms.

25. First, it is useful to present the Airports Commission[6] definition of a passenger hub:

[5] Incremental fuel needed for the uplift of cargo will typically be charged to the cargo business.
[6] (Airports Commission, 2015, p. 13)

> *"Airlines and alliances route their traffic through one or more key airports ('hubs'), with feeder traffic from other airports in the network (the 'spokes') supplementing local origin and destination traffic at the hub. For passengers, the hub-and-spoke model maximises the choice of direct destinations at the hub airport and offers potential to travel to a very wide variety of destinations on one ticket."*

26. Although the UK has several large airports, Heathrow is the only major passenger hub in the UK. A significant proportion of its passengers are transfer or connecting passengers (changing flights at Heathrow). In contrast, Gatwick is not a major passenger hub, despite being the 8th largest airport in Europe in 2016. Its traffic primarily consists of passengers starting or finishing their air journey at Gatwick.

27. The concept of a cargo hub is similar to a passenger hub. Cargo is fed into the hub from a wide geographic area. This can be through cargo feeder flights generating *transhipment cargo* (cargo which is transferred from one aircraft to another at the cargo hub). The other source of cargo that feeds into a cargo hub is from road feeder services. These trucking routes play a similar role to flights in bringing freight from a large catchment into the airport, which is then transferred to a flight (or even onto another trucking service).

28. Major passenger hubs are frequently also acting as cargo hubs (due to the significant amount of bellyhold capacity available, the schedule connectivity, and the economies of scale). Heathrow is the UK's largest cargo hub, despite having a relatively small number of dedicated freighter services. Frankfurt is a leading example of a major passenger hub that also has an extensive range of freighter flights.

29. The other two cargo hubs in the UK are East Midlands and Stansted. Neither airport is a passenger hub. In both cases, cargo is almost exclusively carried on dedicated freighter aircraft. *Dedicated freighter hubs* (cargo hubs at non-passenger hub airports) typically have fairly unrestricted operating conditions (e.g. 24-hour operations, slot availability) and are centrally located. Integrators usually account for a substantial share of cargo at dedicated freighter hubs.

30. These definitions are important in the context of Manston. The location of Manston on a peninsula prevents its development as a cargo hub[7]. Even if the airport was to successfully attract high cargo tonnage in the future (which we consider unlikely), it would merely become a large cargo airport rather than a cargo hub.

31. The final term to introduce is *freight forwarders*. These are firms specialising in arranging storage and shipping of merchandise. Freight forwarders typically provide warehousing, negotiate and book aircraft cargo space, prepare documentation, arrange insurance and track progress of freight. They also consolidate cargo, where several smaller shipments are assembled and shipped together to avail of better freight rates and security of cargo[8]. Freight forwarder activity is usually concentrated at major cargo hubs (whether bellyhold or dedicated freighter hubs). This is due to economies of scale benefits.

[7] True cargo hubs are at the centre of their catchment area, with 360-degree connectivity (i.e. receiving road feeder services from all spokes of the wheel). Due to its location, Manston could only receive road feed from the west of the airport.
[8] www.businessdirectory.com

1.5. About Altitude Aviation Advisory

32. Altitude was formed in May 2013, and brings together a wide range of experience gained within the aviation sector. The two principals have worked in the aviation sector for a combined total of more than 50 years.

33. Team members have been involved in a diverse mix of strategic and commercial projects for a wide range of clients including airports, airlines, investors, debt providers, government and regulatory bodies. Our main service areas are airport transactions, business optimisation, traffic forecasting, route development and economic regulation.

34. Since 2013, we have worked directly for 10 different UK airports on a range of strategic, business planning and traffic forecast assignments. We have also provided due diligence support for various UK airport transactions covering 8 airports (all to financial close). In total, we have undertaken multiple projects across 13 different UK airports, either directly and/or as part of a transaction.

35. While the UK is our home market, the company has a global footprint. Our team experience encompasses over 150 airports worldwide. In 2017 alone, we have undertaken projects in Australia, Italy, USA, Russia, Denmark, Turkey, Belgium, Ireland, Serbia, Iceland, Hungary, Cyprus, and Portugal.

36. The Altitude team has considerable cargo experience. This includes previous employment working in the cargo division of a major airline and consultancy experience leading stand-alone cargo strategy projects in geographies as diverse as the UK, Eastern Europe, Middle East, and North America.

2. Executive Summary

2.1. Overview

37. We have undertaken an in-depth review of the Azimuth reports, and developed our own analysis of the future potential for freight at a reopened Manston Airport.

38. Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. This is in contrast to Azimuth. Azimuth's forecasts show the airport more than doubling its previous annual freight record in the first year of freight traffic returning. By year 18 of Azimuth's forecast, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK). This is simply not credible or likely.

39. We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected:

- There is no overall shortage of freight capacity in the UK or South East specifically. While Heathrow is constrained, there is significant spare freight capacity at the established dedicated freighter hubs at Stansted and East Midlands.
- Cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands). All three of these airports have plans to significantly expand cargo capacity, and they forecast strong growth in cargo tonnage. Furthermore, other established passenger airports have the capability of handling much higher cargo volumes if demand existed.
- There has been a strong trend towards bellyhold freight, with the role of dedicated freighters diminishing. The most recent (2017) Department for Transport ("DfT") forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[9].
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK.
- Manston is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions. These factors have limited Manston's role to that of a niche freight airport.

40. We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular:

- Historic performance is ignored (both at Manston or more generally across the UK market – the Azimuth growth forecast for Manston would be unprecedented in a UK context).
- There is a heavy reliance on qualitative techniques, with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share.
- Many of the references from published studies are too generic to be meaningful or are taken out of context.
- In making the case for Manston, Azimuth seeks to rely on reports prepared by York Aviation in 2013 and 2015. We share York Aviation's view, as set out in a parallel report commissioned by SHP, that these reports do not support Azimuth's conclusion that there would be a substantive role for Manston in the UK air freight industry.

41. Finally, we also view the Azimuth cargo air transport movement ("ATM") projections for Manston to be very optimistic and again unlikely. The projected average freight loads per flight are much lower than historic levels, and also lower than typically seen at cargo airports specialising in general freight (i.e. with

[9] (Department for Transport, 2017a, p. 33)

limited integrator presence). Even if the freight forecasts were achieved (which we consider very unlikely), we would anticipate significantly lower numbers of cargo air transport movements.

2.2. Introduction

42. Azimuth has published four reports in support of RSP's proposed DCO application. Volume 1[10] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

43. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question, and are not relevant to RSP's proposals for Manston.

44. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[11] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[12]".
- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in its revised draft Airports National Policy Statement ("ANPS"), published in October 2017. The ANPS[13] stated that "*The Heathrow Northwest Runway scheme delivers the greatest support for freight. The plans for the scheme include a doubling of freight capacity at the airport*." The draft ANPS, once ratified by Parliament, will settle the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

45. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

46. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[14]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[15]*"*

[10] (Azimuth Associates, 2017 a, p. I)
[11] (Airports Commission, 2015, p. 37)
[12] (Airports Commission, 2015, p. 4)
[13] (Department for Transport, 2017b, p. 31)
[14] (Airports Commission, 2015, p. 238)
[15] (Airports Commission, 2015, p. 245)

47. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises ca. 70% of UK freight (see Figure 4), a proportion that has been growing since 2004 (see Figure 5). Azimuth's freight forecasts do not assume any bellyhold freight[16]. We agree with this Azimuth assumption, and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth's forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[17]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2016 passenger traffic at London airports.

48. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

49. In the rest of the Executive Summary, we address each of the sub-questions above in turn.

2.3. Need for Further Airport Capacity in the UK for Dedicated Freighters

Current Situation

50. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest freighter hubs, East Midlands and Stansted, can accommodate significantly more freighter services than they currently operate (see Section 5.3).

51. The UK does lack available dedicated freighter capacity at its major passenger hub airport, Heathrow.

- Heathrow is also the UK's largest freight airport with ca. 65% of the UK's overall throughput (see paragraph 109).
- Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity.
- At Heathrow, only ca. 5% of freight is carried on dedicated freighters (see Figure 4). A lack of available runway slots restricts freighter activity. In the absence of operating constraints, major passenger hubs tend to also play a role as key hubs for freighter aircraft (e.g. Frankfurt). Freighter services complement the connectively provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity at a hub airport.

52. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

- Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
- Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).

[16] (Azimuth Associates, 2017 c, p. 11)
[17] (Azimuth Associates, 2017 c, p. 16)

- Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by road truck.
- Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

53. Azimuth asserts that UK air freight has been constrained since 2000[18]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[19]").

54. We consider that these conclusions are highly simplistic:

- As discussed above, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
- Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow hub capacity rather than a more general lack of capacity.
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK (see Figure 32). We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
- In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

Future Requirement

55. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

- Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand (see Figure 37).
- This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines (see paragraph 425). Airbus forecasts growth of just 42 freighters in European fleets by 2036[20]. In the UK, freight tonnes carried on all-freighter aircraft peaked in 2004, and has fallen from 37% of the total air freight to 30% by 2016 (see Figure 5). The most recent Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[21].
- There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs[22]. In the UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall UK air freight tonnes on dedicated freighter services – from 41% in 1990 to 86% in 2016 (see Figure 7). The UK bellyhold market is even more consolidated,

[18] (Azimuth Associates, 2017 a, p. 8)
[19] (Azimuth Associates, 2017 a, p. 19)
[20] (Airbus, 2017a, p. 105)
[21] (Department for Transport, 2017a, p. 33)
[22] See Paragraph 24 onwards for our definition of passenger and cargo hubs. Note that the location of Manston on a peninsula prevents its development as a cargo hub. Even if the airport was to successfully attract high cargo tonnage in the future, it would merely become a large cargo airport rather than a cargo hub.

with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996 (see Figure 11).

56. These fundamental market trends have not been recognised or have been ignored by Azimuth in its assessment of the potential for a re-opened Manston.

57. We have developed a forecast of UK air freight demand to 2050, linked to UK economic growth (see Section 7.1). We forecast a compound annual growth rate ("CAGR") 2016-40 of 2.4%, much higher than recent growth rates (e.g. CAGR 2010-16 of 0.4%, CAGR 2000-2016 of 0.2%). This results in ca. 4.2m tonnes of demand in 2040.

58. Based on published expansion plans and various prudent assumptions (see Section 6.4), we estimate that the available air freight capacity at the leading 5 UK airports alone will be around 5m tonnes per year in 2040. This is comfortably higher than the envisaged demand levels. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is significantly above our bellyhold demand forecast.

59. Furthermore, we do not envisage overall capacity shortages in the shorter term. Only towards 2050 could capacity start to become constrained, assuming no further development of capacity from 2040 onwards. Therefore, any business that Manston could capture would primarily be at the expense of other UK airports.

Conclusion

60. The UK currently has sufficient overall airport capacity for air freight, albeit capacity at Heathrow is constrained.

61. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, or possibly 2050.

62. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK.

2.4. South East Requirement for Additional Dedicated Freighter Capacity

63. Cargo is less time sensitive than passengers. Therefore, an airport's cargo catchment area is typically many times larger than its passenger catchment. This is one of the key factors that leads to the high degree of consolidation seen for air cargo.

- For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius (see Figure 38), while Liege sees its catchment as all areas within access of a full day trucking (see Figure 39).
- East Midlands serves the whole of England and Wales, exploiting its central location in England.
- Similarly, the extensive network of long haul flights from Heathrow means it attracts freight from the whole of Great Britain.

64. Mainly due to the hub strength of Heathrow, 78% of 2016 UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 7% market share respectively.

65. Much of the UK's high value manufacturing is located outside London and the South East[23]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[24]. Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

66. We do not see a need for new air freight capacity to be located in the South East specifically. New capacity would be most usefully concentrated at existing major air freight hubs, whether in the South East

[23] (Heathrow Airport, 2014, p. 19)
[24] (House of Commons Library, 2015, p. 7)

(Heathrow, Stansted) or outside (East Midlands). This would enable the air freight industry to continue to benefit from the economies of scale and scope flowing from market consolidation.

67. The Airports Commission negatively assessed the freight potential of Gatwick due to its location. It stated, "*Gatwick's position to the south of London limits its effectiveness as a national freight hub*[25]." This is consistent with our view that locations which can be accessed from a wide national catchment (whether in the South East or not) are more advantageous than locations in less accessible parts of the South East. We would also consider Gatwick to be a more accessible location than Manston.

2.5. Market Position of a Reopened Manston

68. We have argued above that there is no requirement for additional air freighter capacity in the South East, over and above developments already in the pipeline (being consented or planned) at existing airports.

69. However, even if our assessment is incorrect and further capacity is needed in the future, Manston would not be an effective solution.

70. While a re-opened Manston would contribute to overall UK freighter capacity, it clearly would not provide "hub" capacity of the type that is constrained at Heathrow.

- The inability of Manston to achieve more than 43,000 tonnes[26] in any single year in the period from 2000 until its 2014 closure highlights that the capacity provided at Manston was not a suitable substitute for Heathrow freighter capacity.
- In the same way, many other UK airports have material underutilised freighter capacity despite Heathrow constraints.

71. Manston's geographical location severely restricts its ability to develop into a national dedicated freighter hub. Were Manston airport to be re-opened at some point in future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

72. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3-hour drive, only the South East & East of England, and a small part of the Midlands, are accessible (see Figure 17).
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig, as well as the strong growth of cargo at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

73. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe have been shown to be extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time[27].

74. Secondly, there is a consensus[28] in the air freight industry that the ability to handle night flights is critical for many types of air cargo (in particular for express freight, but also for other types of cargo).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.

[25] (Airports Commission, 2015, p. 24)
[26] Average ca. 28,000 tonnes/year for the period 2000-2013 (last full year of operation). Source: CAA airport statistics.
[27] For example, East Midlands Airport is within 3 miles of the M1 motorway. Similarly, Stansted is less than 3 miles of the M11 motorway. The Heathrow Cargo Centre is within 3 miles of the M4, ca. 5 miles from the M25 and ca. 8 miles from the M3.
[28] For a typical industry comment on this issue, see paragraph 446

- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success.
- It is unclear (in the context of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air cargo potential at the airport.

75. Finally, as noted previously, there is a clear move towards consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

76. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed in both geographic and potential operational terms to service such a requirement. Other airports are in a much better position to exploit any such future opportunities.

2.6. Other Potential Options for New Dedicated Freight Capacity

77. Azimuth concludes that "*Manston is the only real choice for the location of a freight-focused airport in the South East of England*[29]". As discussed above, we dispute the need for a new freight-focussed airport, or that any such airport would need to be located in the South East. If new capacity was needed in the South East, a more central location than Manston's position on a peninsula would be desirable.

78. Bournemouth Airport is dismissed by Azimuth on account of its location and distance from the motorway network. We agree that these are significant disadvantages but similar issues apply to Manston (with its location arguably even more compromised than Bournemouth).

- From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston.[30]
- Bournemouth Airport[31] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."*

79. As discussed, the South East is not necessarily the best location for new freighter capacity. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[32]":

> *At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster-Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."*

[29] (Azimuth Associates, 2017 a, p. 19)
[30] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[31] www.bournemouthairport.com/about-us/doing-business-together/cargo/
[32] www.therouteshop.com/profiles/doncaster-sheffield-airport/

80. Both these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

81. Furthermore, Birmingham and Doncaster Sheffield have longer runways than Manston, with spare capacity to develop freighter activity. Both have superior locations than Manston.

2.7. Conclusion

82. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

83. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

84. We consider the forecasts to be extremely optimistic, not credible or likely, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance.
- As discussed previously, we do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[33] per annum). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight.

85. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported, we would not expect freight volumes to be materially above historic levels, and considerably below the volumes forecast by Azimuth.

86. Finally, the forecast of freighter ATMs is simply not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.

[33] (Wiggins Group plc, 2002, p. 16)

- This represents one-third of current UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the DfT, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels[34].

87. In particular, we note that York Aviation's professional opinion[35] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This capacity is more than enough to accommodate any potential a re-opened Manston Airport may have.

88. In paragraph 48, we put forward four questions in relation to RSP's proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[36]. The answers to our questions have been developed over the course of the Executive Summary of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 1 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

89. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts.

[34] (Department for Transport, 2017a, p. 33)
[35] (York Aviation, 2017)
[36] (Azimuth Associates, 2017 a, p. I)

3. Review of Azimuth Reports - Context

3.1. Aims of Azimuth Report

90. This section reviews the first Azimuth report, titled "*Manston Airport: A National and Regional Aviation Asset, Volume I, Demand in the south east of the UK, March 2017*".

91. The first Azimuth report[37] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

92. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question, and are not relevant to RSP's proposals for Manston.

93. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[38] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[39]".
- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in its revised draft Airports National Policy Statement ("ANPS"), published in October 2017. The ANPS[40] stated that "*The Heathrow Northwest Runway scheme delivers the greatest support for freight. The plans for the scheme include a doubling of freight capacity at the airport*." The draft ANPS, once ratified by Parliament, will settle the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

94. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

95. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[41]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[42]*"*

[37] (Azimuth Associates, 2017 a, p. I)
[38] (Airports Commission, 2015, p. 37)
[39] (Airports Commission, 2015, p. 4)
[40] (Department for Transport, 2017b, p. 31)
[41] (Airports Commission, 2015, p. 238)
[42] (Airports Commission, 2015, p. 245)

96. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises ca. 70% of UK freight (see Figure 4), a proportion that has been growing in recent years (see Figure 5). The Azimuth freight forecasts do not assume any bellyhold freight[43]. We agree with this Azimuth assumption, and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[44]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2016 passenger traffic at London airports.

97. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

98. Over the course of this report, we address each of the sub-questions above in turn (an overview of our analysis is included in the Executive Summary).

3.2. Aviation Economic Contribution

99. Azimuth[45] refers to a study by the Centre for Economics and Business Research on the impact on trade of airport capacity shortages. Given the distinctions between different types of airport capacity[46], general references to the economic impacts of airport capacity shortages have limited relevance. More relevant is whether there is or will be a shortage of airport capacity for dedicated freighter aircraft. In Section 5, we address this issue directly.

100. On a similar basis, references to a European shortage of runway capacity[47] in Paragraph 2.2.2 are too general to be meaningful in the context of Manston Airport. Additional capacity can only contribute to alleviating shortages if it is the right type of capacity and in the right location.

3.3. RSP Vision for Manston Airport

101. The RSP vision for Manston Airport[48] also creates misconceptions. The Azimuth report states the vision is "*To revive Manston as a successful freight-focused airport*". This implies Manston was previously a successful freight airport. In analysing this, the following points are particularly relevant:

- Its throughput has never exceeded ca. 43,000 tonnes or more than 2.0% UK market share in a single year.
- The airport was also chronically loss making, with major operating losses each year from 2006 until its closure (period of data availability).

[43] (Azimuth Associates, 2017 c, p. 11)
[44] (Azimuth Associates, 2017 c, p. 16)
[45] (Azimuth Associates, 2017 a, p. 5)
[46] Passenger hub capacity, other hub capacity, freighter hub capacity, other freighter capacity, geographic location of capacity relative to demand etc.
[47] (Azimuth Associates, 2017 a, p. 5)
[48] (Azimuth Associates, 2017 a, p. 1)

- The historic volumes and financial performance clearly indicates that Manston Airport was not a viable financial proposition, despite considerable investment in freight capacity.

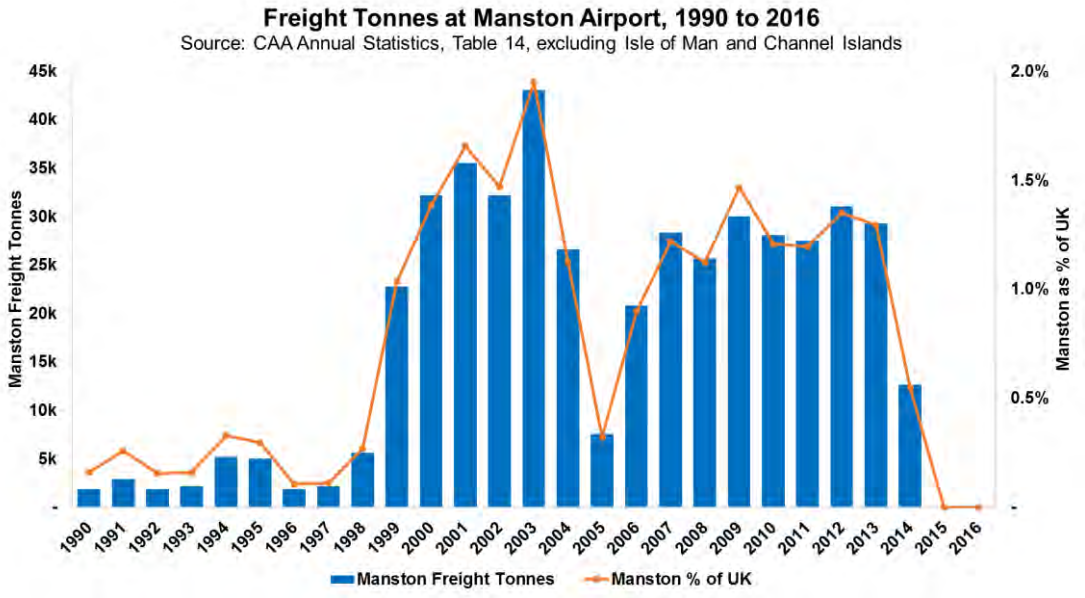


Figure 1 - Manston Airport Freight Tonnes 1990-2016

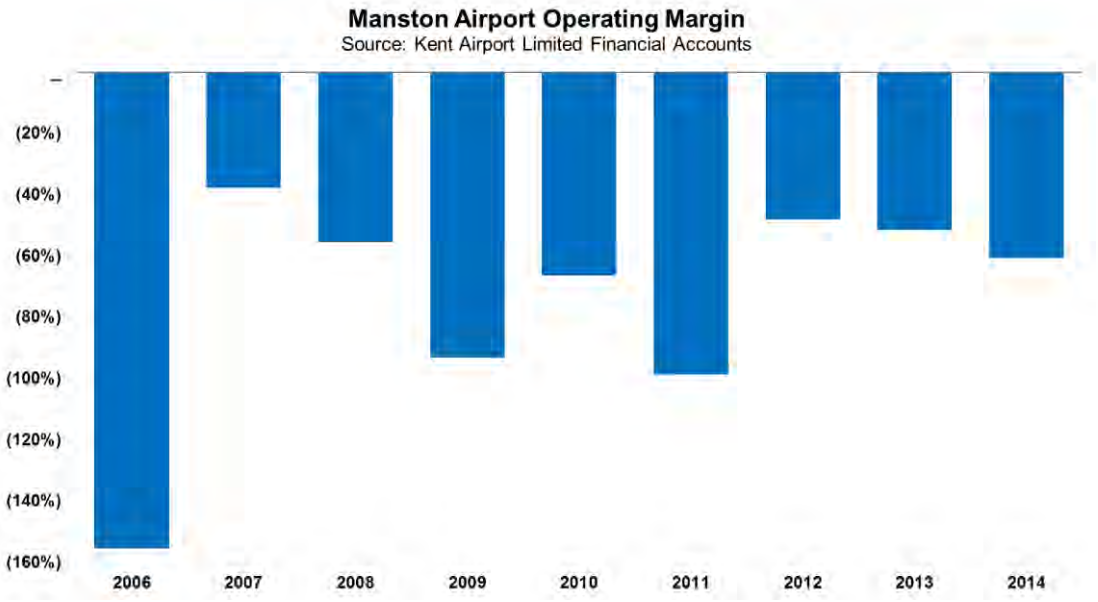


Figure 2 - Manston Airport Operating Margin (Operating Profit / Revenue) 2006-2014

102. As part of the RSP vision, it is stated that "*The only cargo hubs in the UK are East Midlands and Stansted airports, both of which focus on the integrator market. The UK needs a new hub for dedicated freighters, providing them with rapid turnaround times and the specialist security clearing ability that is currently absent at other UK airports.*"

- This description ignores Heathrow, which accounted for ca. 65% of all UK freight in 2016. It also implies, without foundation, that the focus on integrators at East Midlands and Stansted is incompatible with dedicated freighter provision.
- Furthermore, no evidence is presented to support the assertion that other UK airports are unable (either now or in the future) to support rapid turnaround times or possess specialist security clearing ability.

103. The reported vision also comments that "*The ideal location for this is close to the main market in the South East. RiverOak's long-term plan is to integrate Manston into the UK's airport network, effectively providing Heathrow with its fourth runway primarily dedicated to freighter cargo*."

- We highlight in paragraph 219 that the surface catchment area for freight is very wide, and there is no requirement for additional airport capacity for freight to be located in the South East specifically.
- The comment about Manston acting as a fourth runway for Heathrow is evidently untenable. Manston is ca. 100 miles from Heathrow, a similar distance as Birmingham Airport. Heathrow's existing two runways recorded ca. 473,000 air transport movements in 2016[49] (ca. 236,500 per runway), whereas Manston has never achieved more than 5,000 commercial air transport flights (passenger, cargo, air taxi combined) in a single year in the period since 2000.

[49] CAA Airport Statistics

4. Development of the UK Air Cargo Industry

4.1. Introduction

104. This section provides an overview of the development of the air cargo sector in the UK. The aim of this section is to highlight the key trends and the characteristics of the main airport players.

105. This analysis is then referenced in the following sections when considering the future outlook for the sector, and the role a reopened Manston could conceivably play.

4.2. UK Air Freight Development Since 1990

106. Since 1990, the UK air freight market can be divided into two distinct periods based on the growth trends seen. The period 1990-2000 was generally one of strong growth, with CAGR of 6.9% and positive annual growth in 9 of 10 years. In contrast, the period since then (2000-2016) has been one of stagnation (CAGR 0.2%, positive annual growth in only 8 of 16 years).

107. The 11th September terrorist attack in 2001, and the global financial crisis in 2008-09 coincided with particularly poor years for the UK air freight market.

108. In 2016, 2.4m tonnes of freight tonnes was handled at UK airports. This is the first year the previous 2004 peak was (slightly) exceeded.

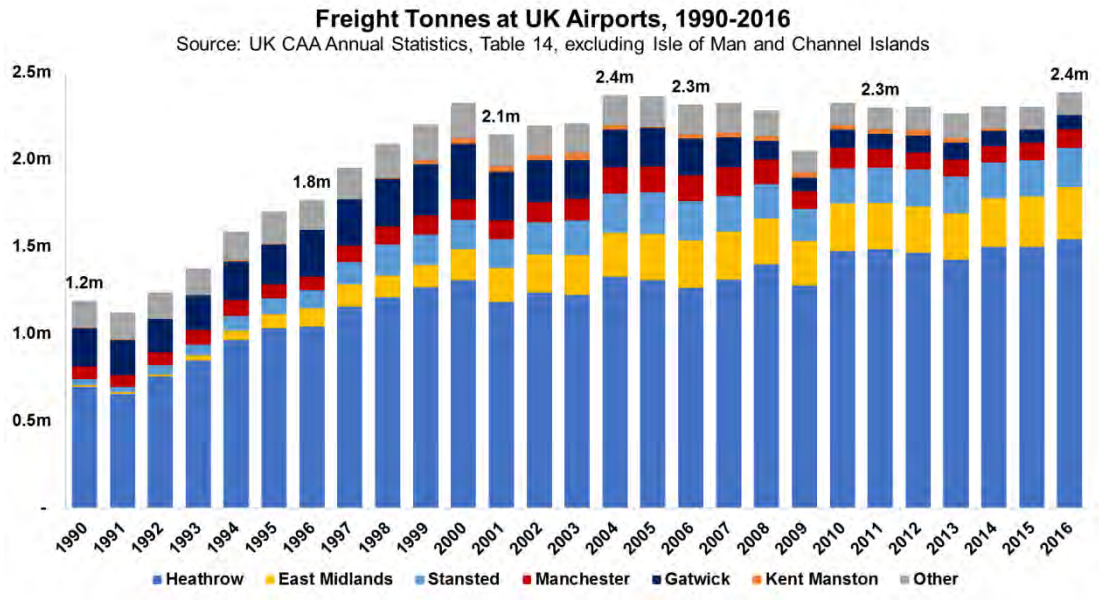


Figure 3 – Timeseries of UK freight tonnage

109. Heathrow is the airport in the UK that handles the most air freight. It has occupied this position through the entirety of the period 1990-2016. This is despite having constrained capacity (on the number of aircraft movements) through much of the period. In 2016 the airport achieved a market share of 64.6%.

110. East Midlands and Stansted are now the second and third largest airports for air freight in the UK. It has taken these airports 20+ years to reach this level, having grown from a very low market share in 1990. They had a 2016 market share of 12.6% and 9.4% respectively.

111. Manchester is the fourth largest UK airport for air freight. Note that it has grown very slowly, and continues to do so (1990-2016 CAGR of 1.6%, compared to 2.8% for UK airports excluding Manchester; 2011-2016 CAGR of 0.25%, compared to 0.77% for UK airports excluding Manchester).

112. In 2016 Gatwick was only the 5th largest UK air freight airport, having been clearly second-largest until ca. 2000.

113. Between them, these 5 airports accounted for ca. 95% of all UK air freight handled in 2016 (up from 87% in 1990).

114. Note that at no time in the period since 1990 has Manston played a significant part in the UK air freight market. Its share peaked at 2.0% in 2003, and in the 5 full years prior to its closure in 2014 (2009-13), it had an average share of 1.3%. The number of cargo ATMs only exceeded 1,000/year on a single occasion since 2000 (1,081 in 2003), averaging 462/year in the 2009-13 period (see Section 4.11).

4.3. UK Freighter versus Bellyhold Mix

115. At the top 5 airports in the UK, there are two distinctly different models of freight operation in place. At East Midlands and Stansted, virtually all freight is carried on cargo only aircraft (the low-cost carriers that operate passenger flights from these airports do not currently handle freight).

116. In contrast, at Heathrow, Manchester and Gatwick, less than 10% of freight is carried on cargo only aircraft (5.4%, 9.2% and 0.0% respectively).

- Overall, 29.7% of UK air freight in 2016 was carried on cargo only aircraft, with 70.3% carried in the bellyhold of passenger aircraft.

117. Despite Heathrow's low *proportion* of freight carried on cargo only aircraft, it continues to handle a significant share of the total UK freight carried on cargo aircraft[50].

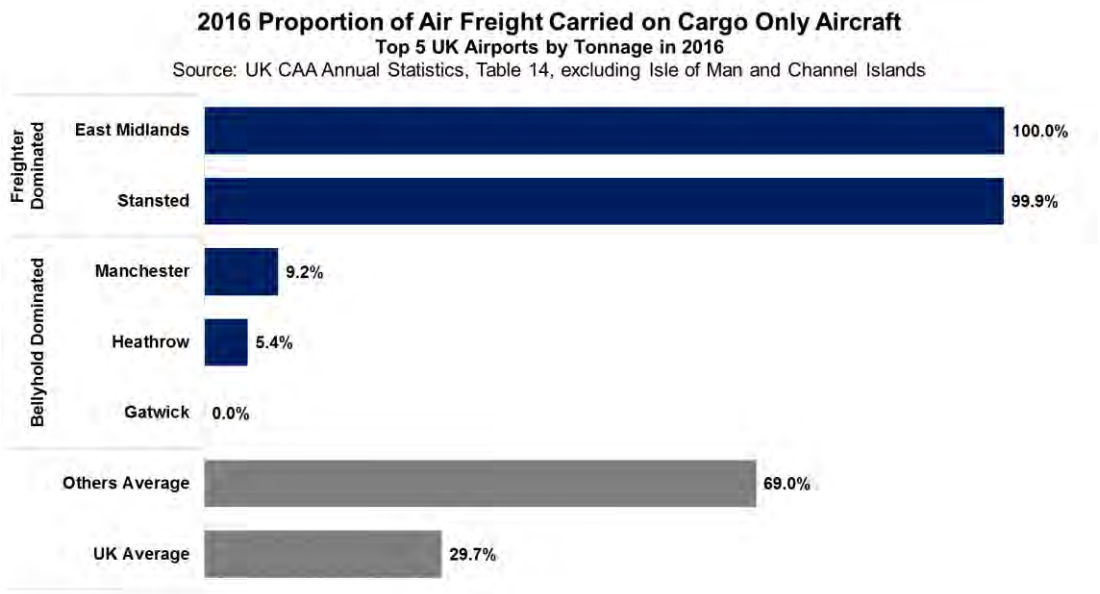


Figure 4 – Freighter/Bellyhold split at selected UK airports

[50] In 2016, Heathrow handled 12% of all UK freight carried on cargo only aircraft (a share it has broadly maintained since 2003).

118. Freight carried on all-cargo aircraft peaked in 2004, and has fallen significantly since while bellyhold freight has generally been growing. This is consistent with global trends highlighted in the appendix (Section 11.3) of this report.



Figure 5 – Split of UK air freight between bellyhold and dedicated freighter aircraft

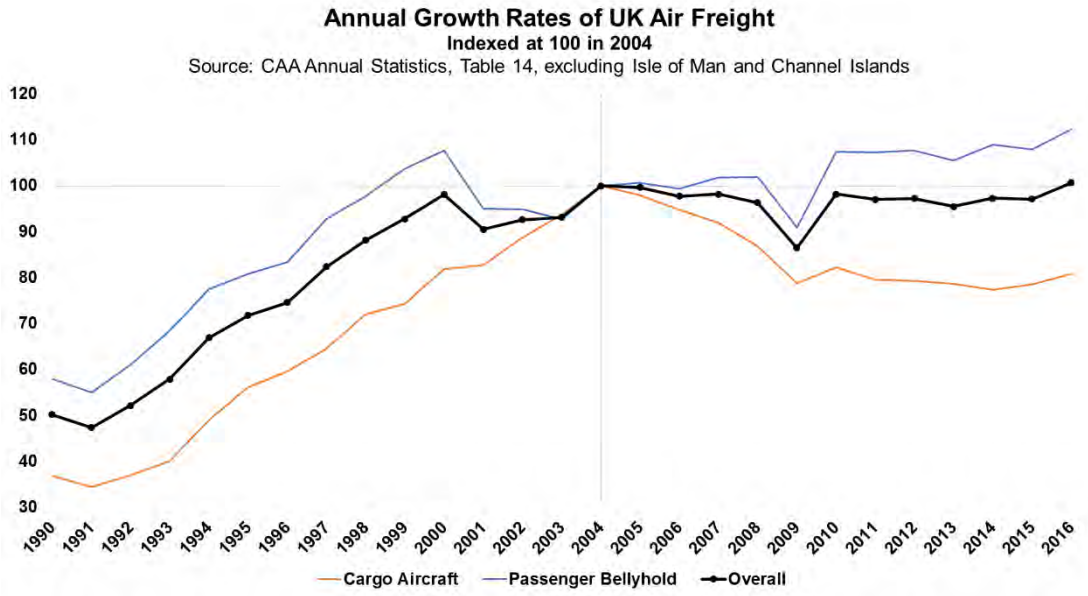


Figure 6 – Annual growth rates of UK freight

4.4. UK Freight on Cargo Only Aircraft

Airport Consolidation

119. In 1990, there were many UK airports from which carriers operated cargo only flights. Since then, there has been a very clear trend to consolidate cargo only operations at a few airports. In 2016, the three largest airports for freight (carried on cargo only aircraft) accounted for 86% of this UK market, up from 41% in 1990.

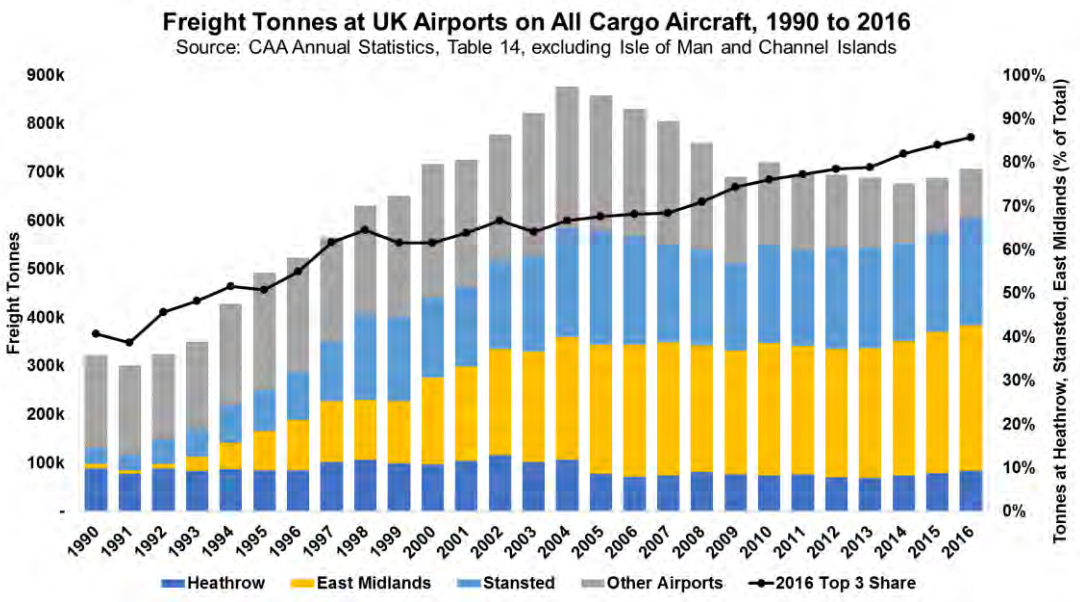


Figure 7 – Timeseries of UK freight on cargo-only aircraft

120. Historically, the following four airports have all been highly ranked in the UK for freight on cargo aircraft:

- Liverpool #5 in 1996 (peak tonnage in 1995, ca. 30,000 tonnes).
- Belfast International #4 in 2015 (ca. 38,000 tonnes in 2006).
- Prestwick #4 in 2001 (ca. 43,000 tonnes in 2001).
- Manston #4 in 2013 (ca. 43,000 tonnes in 2003).

121. However, by 2016 total freight on cargo aircraft across these airports was less than 20,000 tonnes (with Manston having shut completely).

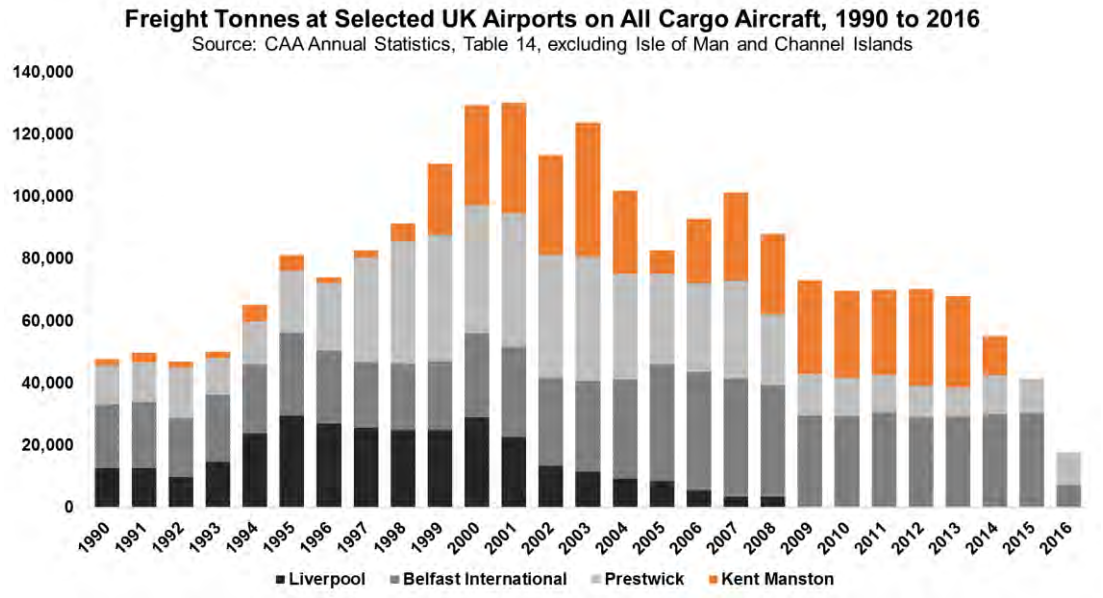


Figure 8 – Reduction of freight on cargo-only aircraft at selected airports

122. Note that none of the airports above has material capacity constraints. The trend towards consolidation of freight at a few airports is driven by cost efficiencies. It has resulted in airports which previously had significant freight volumes on all-cargo aircraft seeing their share of the market shrink/disappear.

123. In fact, of the 16 airports with more than 1,000 tonnes of freight on cargo aircraft in 1990, only 3 had higher equivalent freight volumes by 2016 (East Midlands: +290,000 tonnes, Stansted: +191,000, Luton: +4,000 tonnes, other 13 airports combined: -134,000 tonnes).

124. A similar trend can be seen when analysing the number of cargo aircraft movements; there is a sharp reduction in freighter flights from airports outside the "big three" of Heathrow, Stansted and East Midlands.

- Total freighter flights from other airports fell by almost 75% between 2000 and 2016 (from ca. 74,000 to ca. 19,000). Birmingham is the only significant cargo airport in this category that managed any meaningful growth in cargo ATMs (from 497 in 2000 to 1,184 in 2016).
- The number of freighter flights from the top 3 airports (Heathrow, East Midlands and Stansted) has varied relatively little over the same period.

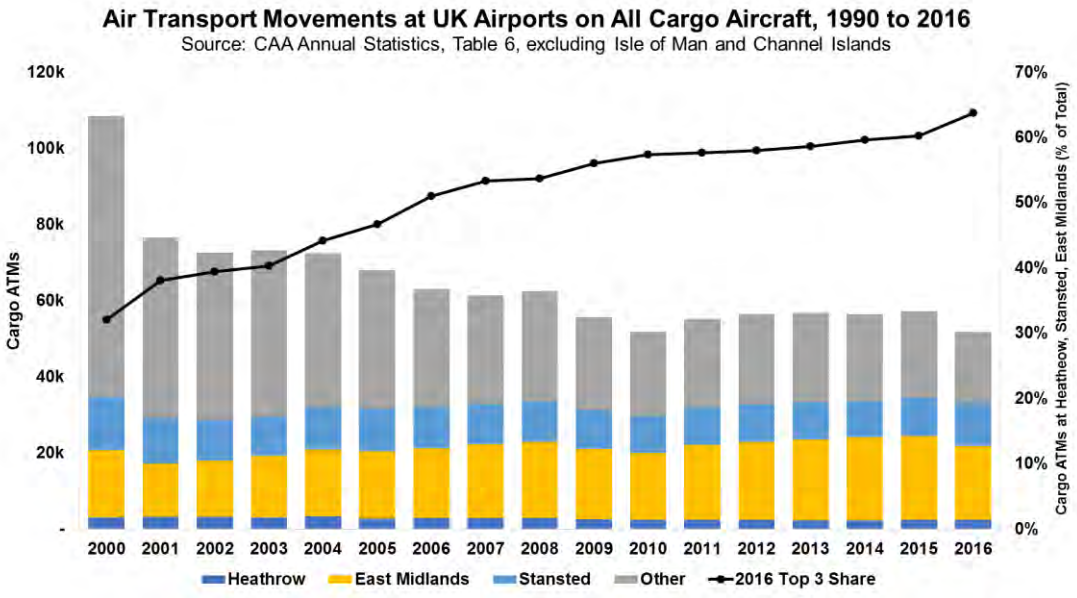


Figure 9 – Consolidation of freight on cargo-only aircraft at Heathrow, East Midlands and Stansted

125. Note that the decline in freighter movements has generally occurred at airports with limited infrastructure constraints. This indicates that airport capacity issues are not the main driver for the reduction in freighter flights at UK airports.

126. The Azimuth cargo ATM forecasts for Manston exceed 17,000 by year 20 (see Figure 25). This forecast should be seen in the following context:

- The most recent (2017) Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[51].
- The Manston cargo ATM forecast is equivalent to 33% of the 2016 UK cargo ATM total, and over 80% of 2016 UK cargo ATMs if the two dedicated freighter hubs (East Midlands and Stansted) are excluded.
- After East Midlands and Stansted, Edinburgh is the next largest UK airport in terms of cargo ATMs, with 5,195 flights in 2016 (less than one-third of the projected Manston level in year 20).
- Since 2001, East Midlands and Stansted are the only UK airports to surpass 10,000 cargo ATMS in any single year.

[51] (Department for Transport, 2017a, p. 33)

Cargo-only Growth at a Regional Level

127. The change over time in the volume of freight carried on cargo only aircraft differs significantly by UK region. This is at least partially due to the locations of the larger airports at which freight has tended to consolidate since 2003.

128. For example, freight on dedicated cargo aircraft has grown substantially in the Midlands region, where East Midlands Airport has steadily developed into a major base for cargo only operations (in particular, express cargo). In contrast, freight on dedicated cargo aircraft has fallen in recent years in both the South East & East of England region and the Other UK regions.

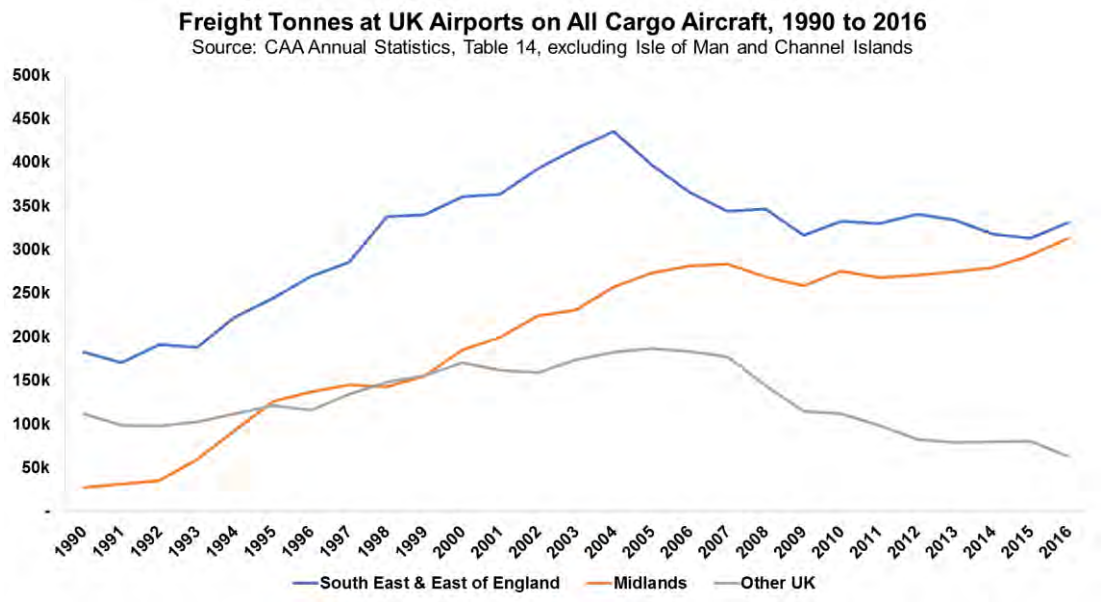


Figure 10 – Breakdown of UK freight on cargo-only aircraft, by region.

129. This reduction in freight on dedicated cargo aircraft in the South East & East region is sometimes attributed to shortage of suitable airport capacity. However, this does not explain the similar decline seen in the Other UK regions. Nor does it explain why this decline has not continued at the South East & East of England region airports through the period 2009-16 (through which the same constraints existed, and the decline continued at Other UK regional airports).

4.5. UK Bellyhold Freight

130. Heathrow handled 87% of all UK bellyhold freight in 2016. Manchester and Gatwick are the only other airports with significant bellyhold freight; in 2016, they had bellyhold market share of 5.9% and 4.7% respectively. These three airports have been the largest three airports for bellyhold freight since 1990, and have held a bellyhold market share of 96-98% over this period.

131. Heathrow dominates this segment as a result of its extensive long-haul network operated by wide body aircraft, which have significant cargo capacity. Freight tonnage on passenger aircraft has continued to grow at Heathrow (CAGR 2006-16 2.0%) despite the airport effectively operating at full runway capacity.

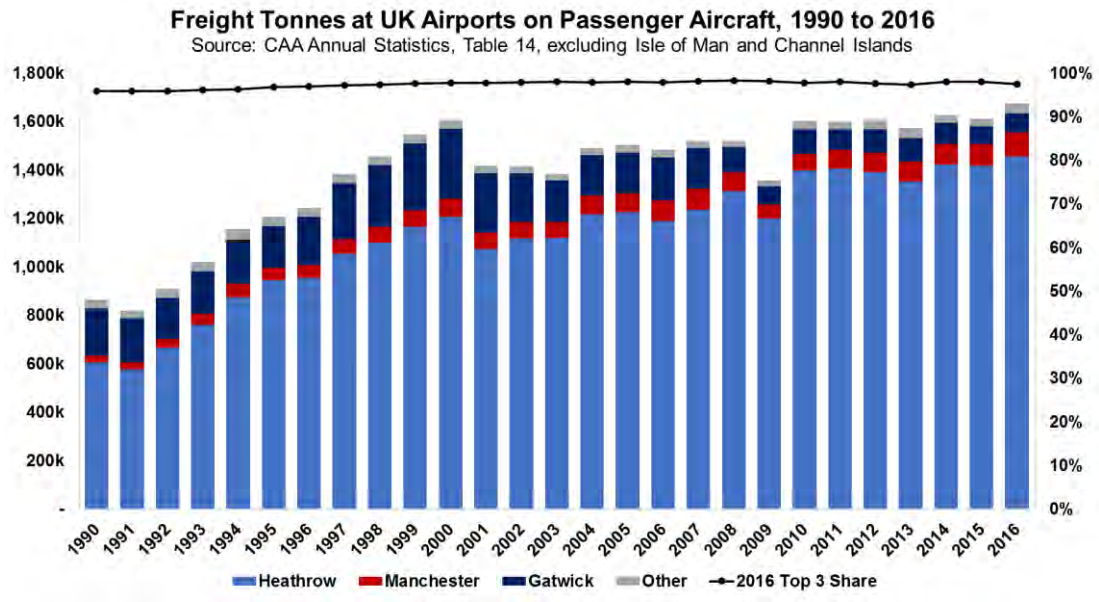


Figure 11 - Timeseries of UK freight on passenger aircraft

4.6. UK Air Mail

132. Mail is a relatively minor component of overall UK air cargo (ca. 200,000 tonnes in 2016 compared to 2.4m tonnes of air freight). For completeness, we include a brief overview of the UK air mail sector.

133. While volumes have fluctuated year on year, there has been no sign of sustained growth since the turn of the century (consistent with the widespread adoption of electronic communications).

134. As with air freight, air mail is concentrated on a small number of airports (Heathrow, East Midlands, Stansted, Edinburgh), with similar consolidation trends. Royal Mail has focussed on a small number of airports for night mail flights.

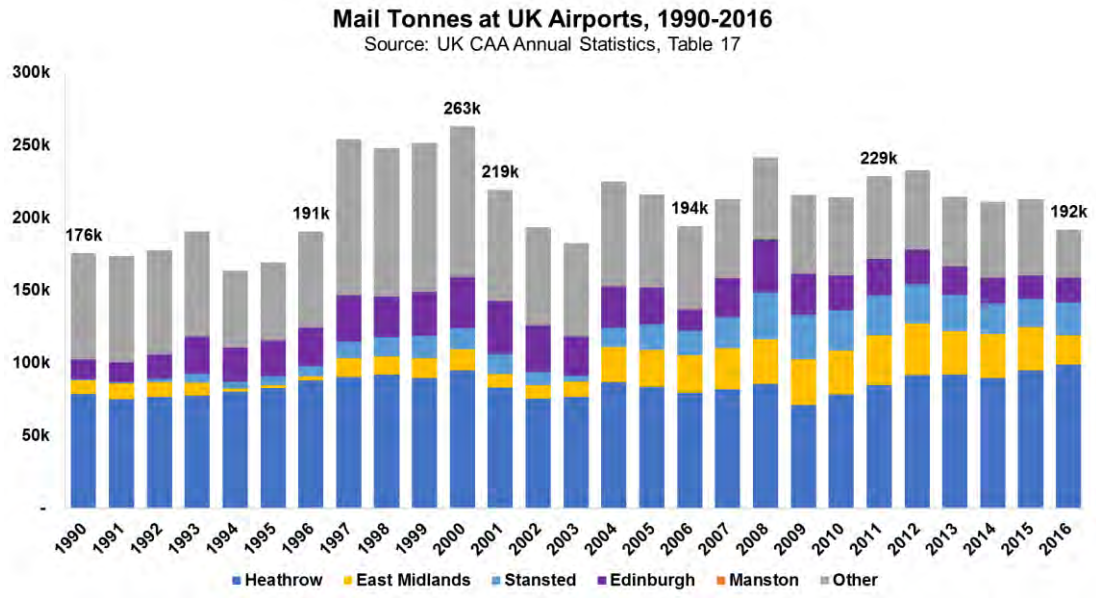


Figure 12 – Timeseries of UK Mail tonnage

4.7. Heathrow

135. As previously noted, Heathrow is the largest freight airport in the UK by some margin (as well as the largest passenger airport and only major passenger hub). It dominates the UK bellyhold segment and has a significant share of UK freight carried on dedicated freighters[52].

136. Despite operating very close to its air transport movement (ATM) limit for a number of years, Heathrow has managed to grow the volume of freight it handles faster than the overall UK market. It has had a higher annual growth rate than the average of other airports in the UK in 7 of 11 years over the period 2006-16, and also has a higher CAGR over that period (+2.0% compared to -2.2% at other UK airports).

137. It is likely that Heathrow cargo capacity has also been increasing through the adjustment of its mix of aircraft. There are two aspects to this:

- An increase in the proportion of ATMs allocated to widebody long haul flights, instead of narrow-body short-haul flights;
- The tendency for new long haul aircraft types (with the notable exception of the A380) to have more space for cargo than previous models.

138. We analyse each of the above factors in turn in the following paragraphs.

Widebody Share of Overall Flights

139. Data from OAG shows that the widebody share of Heathrow annual ATMs has risen from 34.0% in 2007 to 38.8% in 2017. Only two years in the ten-year period 2007-17 have seen this proportion fall. The airport stated in 2016 that "*fleet size at Heathrow has not fully matured and there is further potential to upsize / densify*"[53].

Cargo Capacity for Newer Aircraft Types

140. In general, older aircraft types have a lower cargo capacity than their newer equivalents. Of the older aircraft, the B747-400 is the most common in the UK. Likely replacements for this aircraft all have significantly higher cargo volume (given the payload available, volume is likely to be the constraining factor in the majority of markets to/from the UK). For example, the B777-9X has indicative cargo capacity of 109m^3 compared to just 71m^3 for the B747-400.

141. Further, industry sources reinforce the view that newer aircraft have a beneficial impact on cargo capacity. For example, American Airlines has commented:

> *"The introduction of the 787-9 brings another more fuel-efficient aircraft type with even greater cargo capacity into the American Airlines fleet…. On routes where we operate the aircraft, our cargo customers will see notable capacity improvements"*[54]

142. An exception to the trend for newer aircraft to have more cargo capacity is the A380, which has less cargo capacity than a B747. However, there are no indications that there will be any material increase in the prevalence of this aircraft in the UK[55].

143. Further analysis is provided in the appendices (see Section 13.1).

[52] The number of cargo ATMs operated at Heathrow is fairly low (ca. 2,500 in 2016) but average loads are high.
[53] (Heathrow Airport, 2016a, p. 8)
[54] (Vance, 2016)
[55] See Section 13.2 in appendix

144. The following charts, based on UK CAA data, shows that Heathrow has generally been successful at increasing its average freight tonnage per ATM, helping to maintain growth despite operating near its ATM limit.

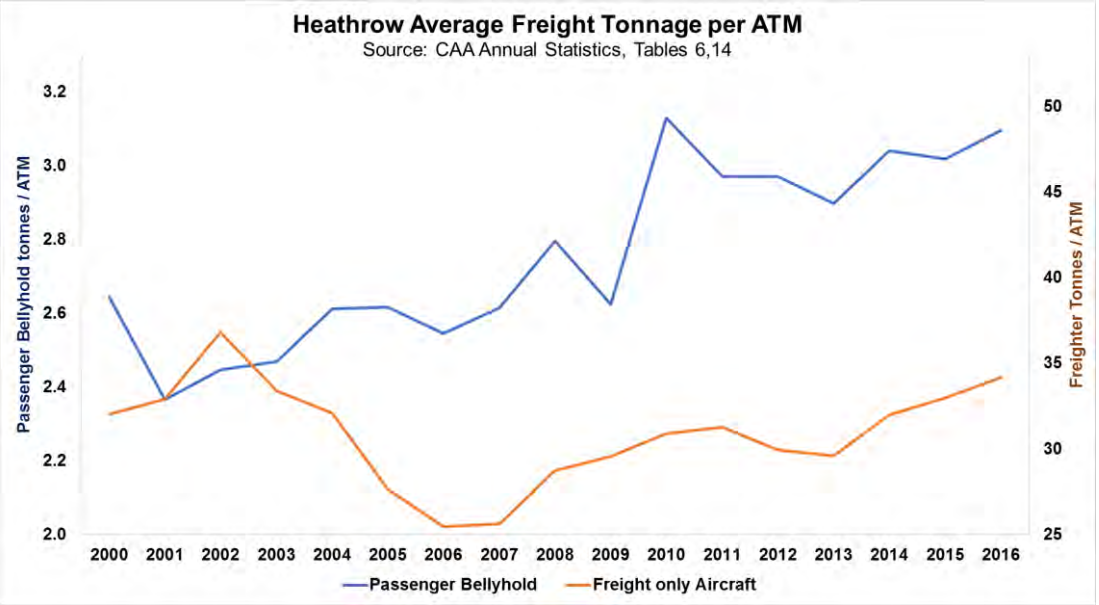


Figure 13 – Change over time of average tonnage per ATM at Heathrow

4.8. East Midlands

145. East Midlands Airport has a significant freighter operation. Since 2000, it has been the largest airport in the UK for cargo-only operations by tonnage handled (circa 300,000 tonnes of freight and ca. 20,000 tonnes of mail in 2016). The number of cargo ATMs in 2016 was ca. 19,000.

146. Almost all the freight handled by the airport is carried on cargo-only aircraft[56]. Bellyhold freight represents a tiny minority of tonnage at the airport, as most passenger flights are operated by low-cost carriers, which do not currently carry freight.

147. The type of freight handled at East Midlands Airport is predominately express cargo, a sector of the air freight market that has shown strong growth over the past decade. East Midlands is also a significant mail handling airport in the UK[57]. The airport states:

> *"DHL is the largest operator with services to key hubs in the USA and in Europe. UPS also link to their hubs in the USA and Europe and TNT have a smaller operation with a link to Europe"*[56]

148. Several of these integrators have invested significantly in operations at East Midlands Airport. For example, DHL invested £90m on infrastructure at East Midlands Airport in 2014[58].

149. The appeal of East Midlands Airport to the integrators is linked to the airport's location in the centre of England, where it is well placed to serve the whole of the UK. The ability to operate night flights is a key advantage. The airport states:

> *"The express freight operators provide an international next-day delivery service. This relies on the excellent surface access connectivity (90% of England and Wales is within a 4*

[56] (East Midlands Airport, 2015, p. 57)
[57] (East Midlands Airport, 2015, p. 16)
[58] (DHL, 2014)

hour (55mph) truck drive away from East Midlands Airport) along with the ability to operate aircraft at night"[57]

150. For express freight in particular, it is important to minimise trucking time between the shipper/consignee and the airport. As such, the location of an airport relative to warehouse locations is important. The map below highlights locations of large warehouse facilities in the UK[59]. A large number are seen to be near to East Midlands Airport, or on the motorway network with quick access to East Midlands Airport.

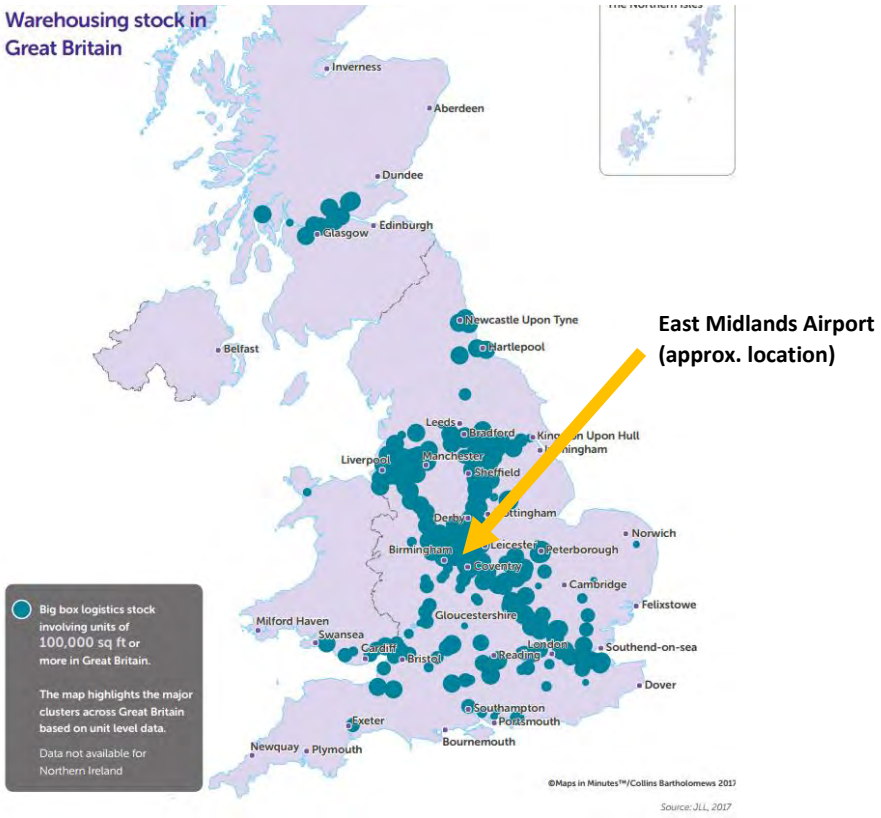


Figure 14 – Locations of large warehousing units in the UK, Source: Freight Transport Association

151. Regarding accessibility of the airport, East Midlands Airport states:

"There are in the region of 500 HGV movements to and from East Midlands Airport every day. However because of the nature of the freight hubs at East Midlands Airport, with pure-freight aircraft flying overnight, the vast majority of these vehicle movements take place very late at night (normally after 9pm) and very early in the morning (between 2am and 5am) and as such have no impact on peak motorway traffic levels"[57]

152. This pattern of utilisation fits with the airport's traffic being weighted heavily toward express freight. By implication, we can say that the vast majority of truck movements to/from East Midlands are not impacted by peak motorway traffic levels (as they are not using the motorway network at these times).

153. The "*East Midlands Gateway*", a project consisting of new warehousing and a rail freight station, is currently in development at a site next to East Midlands Airport. It is planned that the first warehouses will be occupied by September 2018. Construction of the rail station is due to begin after December 2019[60].

[59] (Freight Transport Association, 2017, p. 74)
[60] http://slp-emg.com/wp-content/uploads/2017/05/New-branding-A3.pdf

154. The importance of night flights to express freight has been stated before in this document, and is emphasised again by the breakdown of East Midlands ATMs, showing that ca. 64% of cargo ATMs in 2014 were at night (17,029 of 26,681)[61].

4.9. Stansted

155. Stansted has developed to become the main airport in South East & East region for freight on all cargo aircraft. It handled ca. 223,000 tonnes of freight in 2016, with further ca. 23,000 tonnes of mail (the number of cargo ATMs in 2016 was ca. 11,000). Amongst the London airports, it handled the highest volume of dedicated freighter traffic, and was also "*the most significant hub for express freight"*[62].

156. On express freight, the airport adds: *"The airport's express freight market, anchored by key operators such as FedEx and UPS, is the second biggest in the UK"*[62] (behind East Midlands Airport). TNT and around ten other companies also operate weekly services from the airport.

4.10. Others (excluding Manston)

157. Other airports that are significant for freight in the UK are Manchester, Gatwick and Birmingham. Together with the three airports discussed above, they accounted for 96% of UK air freight (by tonnage) in 2016. As an airport in the south of the country, Gatwick is worthy of more detailed examination.

Gatwick

158. In 2016, Gatwick handled 3% of the UK's air freight (ca. 80,000 tonnes). This was all in the bellyhold of passenger aircraft. However, it has previously had a share of the UK market as large as 18.5% (in 1990).

159. The proportion of Gatwick freight carried on cargo-only aircraft was between 6% and 25% over 1990-2006. In 2007, freighter share at Gatwick dropped to 1.4%, before falling close to 0% from 2012 onwards.

160. In 2008, a revised air traffic rights agreement between the UK and the USA meant that a significant number of long-haul UK-US operations switched from Gatwick to Heathrow. The loss of widebody capacity at Gatwick saw bellyhold freight fall by ca. 40% in 2008. It remained around the 2008 level in 2016.

161. Gatwick is operating reasonably close to its ATM capacity. This limits the growth potential for freight through additional passenger or freighter flights.

162. As of 2017, fewer than 10% of existing ATMs at Gatwick are used by widebody aircraft[63]. Thus, there is significant scope for Gatwick to increase its cargo capacity by increasing the share of widebody aircraft using the airport. To some extent this will happen naturally as passenger demand increases. Widebody share has risen in every year since 2014 (from 7.3% in 2014, to 9.4% in 2017[63]).

163. On routes where widebody capacity is in place at Gatwick, there is every indication that demand for freight is at least as strong as its closest competitor Heathrow; Gatwick Airport cites examples such as Emirates, Continental and Delta achieving *higher* freight tonnage per ATM at Gatwick than at Heathrow[64].

164. Freight volumes at Gatwick have grown strongly in 2016 and 2017 so far. This is driven by the rapid expansion of long haul routes by a number of airlines, including Norwegian, British Airways, Cathay Pacific and WestJet. We would expect this trend to continue as more slots are deployed for long haul flights, increasing bellyhold freight capacity.

[61] (East Midlands Airport, 2015, p. 111)
[62] (Stansted Airport, 2015b, p. 6)
[63] (OAG)
[64] (Gatwick Airport, 2015)

4.11. Manston

Historic Freight

165. Freight at Manston has accounted for an average of 0.8% of the UK total in the period 1990-2014 (prior to closure). Its peak share of the UK market occurred in 2003, when it reached 2.0%.

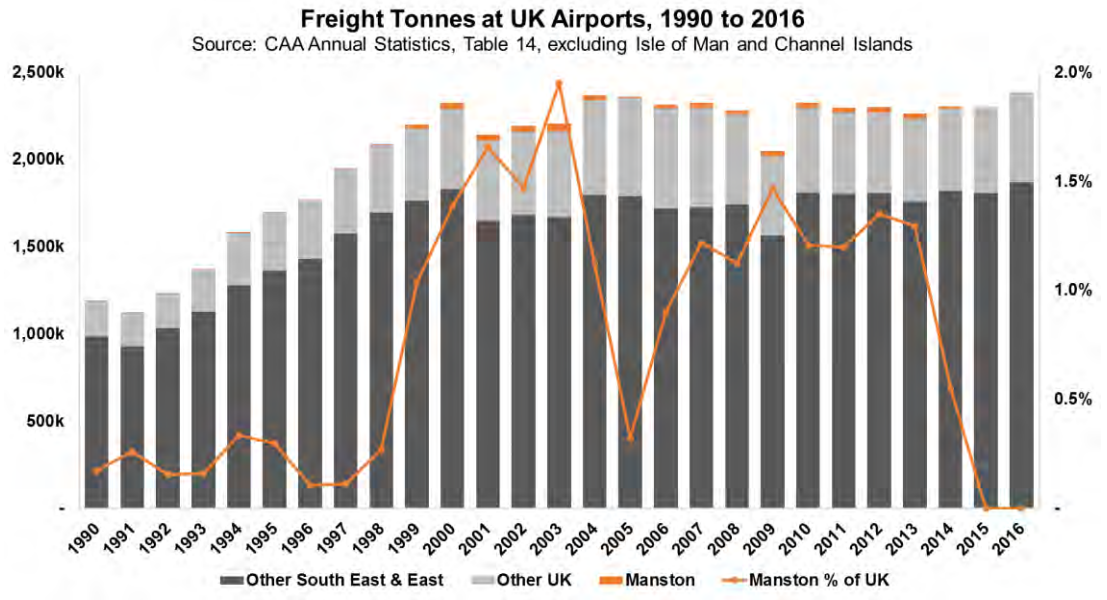


Figure 15 – Timeseries of UK freight, including that handled at Manston

166. The total number of cargo air transport movements at Manston averaged ca. 550 per year in the period 2000-14. This is equivalent to less than one aircraft rotation per day on average (peak year in 2003 was 1.5 rotations per day). Manston's share of UK cargo ATMs briefly peaked at 1.5% in 2003. In every year since 2005, Manston cargo ATMs have accounted for less than 1% of the UK total.

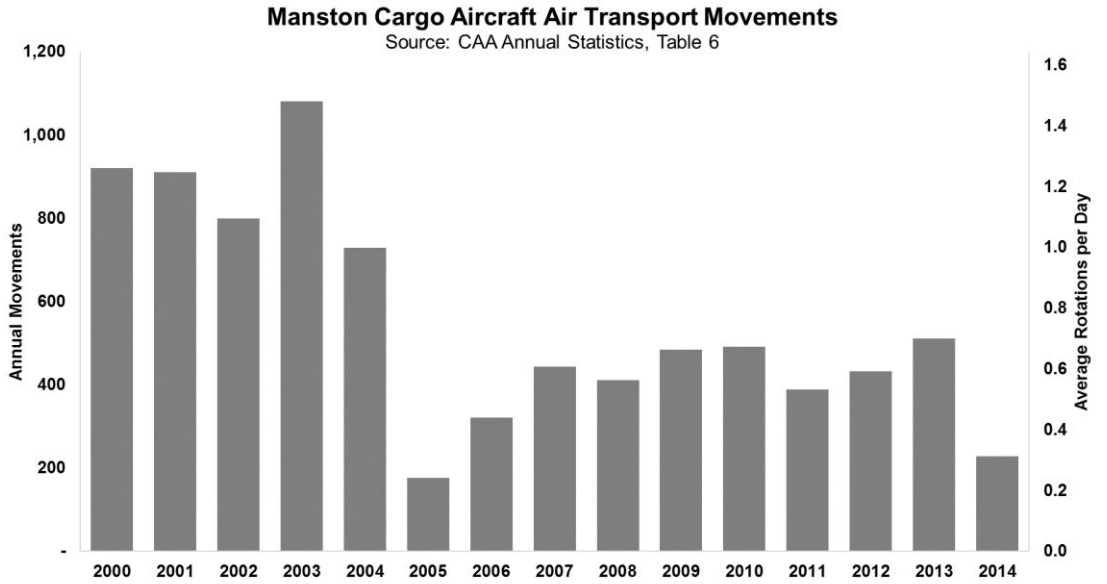


Figure 16 – Manston cargo-only aircraft movements

167. The hypothesis has been put forward that Manston previously was unsuccessful as it lacked the infrastructure to handle additional flights. However, with a peak of 1.5 rotations[65] per day, it seems certain that higher numbers of flights per day could have been handled if market demand was there.

168. As noted previously, the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[66]

Competitiveness of a Reopened Manston

169. Were Manston airport to be re-opened at some point in the future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

170. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3 hour drive, only the South East & East of England, and a small part of the Midlands, are accessible.
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig (Section 12), as well as the strong growth of freight at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

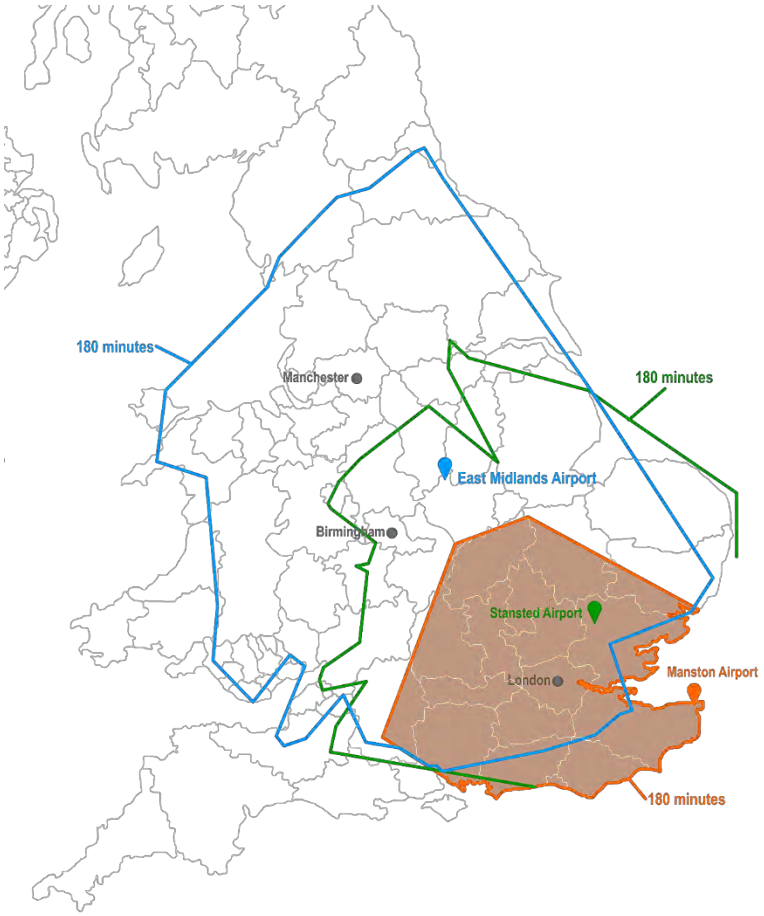


Figure 17 – 3-hr catchment region of Manston in comparison with those of East Midlands and Stansted
Source: Altitude analysis, Google Maps (truck speed set at 55 miles per hour)

[65] A rotation is an aircraft turnaround at an airport, representing an arrival and a departure flight.
[66] (Wiggins Group plc, 2002, p. 16)

171. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe are extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time.

172. Secondly, there is consensus in the air freight industry that the ability to handle night flights is critical for many types of air freight (in particular for express freight, but also for other types of freight).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.
- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success (see appendices, Section 12).

173. It is unclear (in the light of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air freight potential at the airport. Observations at other freight hubs such as East Midlands, a significant volume of freight activity takes place during night time hours, including onward (or inward) road haulage taking advantage of road capacity overnight to move freight outside of peak traffic periods. Manston's local road network is not ideally placed to accommodate large volumes of HGV traffic arriving in quiet hours

174. Finally, as noted previously, there is a clear move towards market consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

175. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed to service such a requirement and better existing operational alternatives are available.

5. Current Freight Demand vs Supply at UK Airports

5.1. Context

176. Azimuth asserts that UK air freight has been constrained since 2000[67]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[68]").

177. We consider that these conclusions are highly simplistic. They do not recognise the operational needs and behaviours that underpin the freight market:

- As discussed below, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
- Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow capacity rather than a more general lack of capacity.
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services (see Figure 32) is due to cost efficiencies and is not restricted to the UK. We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
- In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

178. In the remainder of this section of our report, we provide an analysis of current UK airport capacity for freight, and whether this has constrained demand. In the following section (Section 6), we investigate the outlook for future airport capacity for freight at UK airports.

5.2. Literature Review

179. As noted above (see paragraph 176), Azimuth asserts that UK air freight has been constrained since 2000. Its case for Manston relies heavily on this assertion, yet no evidentially supported and reasoned justification is provided. Three references are provided.

180. The first document cited is the Air Transport White Paper from the Department for Transport[69]. We have not found references to air freight being constrained in this document, which in any case dates from 2003.

181. The second document is by Oxford Economics[70]. This report is a technical note which examines how increased airport capacity (or conversely the lack of additional new capacity) could affect air freight and the economy. The study was undertaken for Transport for London / Mayor of London, promoters of the new Thames Estuary hub airport scheme.

[67] (Azimuth Associates, 2017 a, p. 8)
[68] (Azimuth Associates, 2017 a, p. 19)
[69] (Department for Transport, 2003)
[70] (Oxford Economics, 2013)

182. References in the Oxford Economics report to existing capacity constraints focus on Heathrow, and its forward-looking analysis is primarily in the context of the potential benefits of the proposed new hub airport. For example, on Page 8:

> *"Capacity constraints at Heathrow, however, set in as early as 2005 and future cargo growth is threatened by the inability of London area airports to keep up with demand. A new hub airport for London, with enough capacity to meet demand for the next 30 to 40 years, would be particularly important for the growth of bellyhold cargo."*

183. The Oxford Economics report also notes the divergent trends between short haul and long haul cargo in the UK. On Page 14, the factors that could explain the decline in short haul air cargo are explored.

> *"In all likelihood, short-haul cargo may have fallen due to both capacity constraints at Heathrow and freight forwarders substituting road or rail transport for short-haul destinations. In addition, the cost of air cargo is higher on short-haul routes because a larger portion of the trip is spent on the ground and more time in the air is spent climbing and descending. Lastly, the lack of widebody planes on short-haul journeys make bellyhold cargo less attractive at those distances to begin with."*

184. On Page 16, the Oxford Economics report goes on to state:

> *"The fact that volumes have fallen so dramatically could be due to both capacity constraints at Heathrow and also to the substitution of air cargo on short-haul distances with rail or truck transport. Which phenomenon is more important? The opening of the Channel Tunnel in 1994 between the UK and France has made it faster and cheaper to transport cargo by road between continental Europe and the UK. In terms of truck transport, it is estimated that 97,000 tonnes of air freight actually crosses the English Channel by truck per year, as compared to 87,000 tonnes flown on bellyhold. In fact, the volume of short-haul cargo peaked around the time the Channel Tunnel opened and has declined ever since. Therefore, this hints that much of the decrease in short-haul volumes may be due to the relatively lower cost of truck transport to continental Europe rather than capacity constraints at London area airports. In other words, the generalised cost of surface transport (relative to air transport) has decreased, spurring a modal shift on short-haul routes."*

185. The final reference is to rankings of European Union countries for the quality of air transport infrastructure[71]. This appears to relate to overall air transport infrastructure, and is not specific to freight. In any case, the UK is ranked reasonably highly in the most recent results (#7 out of 28 EU countries for 2015/16).

186. To summarise, the three studies quoted by Azimuth do not provide any meaningful support for the assertion that UK airport capacity for freight has been constrained for many years. The Oxford Economics study identifies constraints at Heathrow and hub capacity specifically but also highlights other factors for recent freight trends. The 2003 Air Transport White Paper and the European Union infrastructure ranking study do not address the issue directly.

187. In the next subsection of our report, we show that there is no overall shortage in UK airport capacity for dedicated freighter operations (the type of capacity a reopened Manston would potentially provide as identified by RSP).

188. In paragraph 235, as part of our review of the Azimuth forecasts for Manston, we highlight how results from a York Aviation study have been applied incorrectly.

[71] https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/quality-airports-infrastructure_en#2015-2016

5.3. Analysis of Current Freight Demand vs Supply at UK Airports

189. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest airports, East Midlands and Stansted, can accommodate more freighter services than currently operating (sufficient to meet demand). Many other airports in the UK have spare capacity for freighter services.

190. In this sub-section of our report, we examine the current freight capacity at UK airports. In the following section (Section 6), we analyse future UK airport freight capacity.

East Midlands Airport

191. East Midlands Airport does not require slot coordination[72]. It is designated as a Level 2 airport, with the UK slot coordinator (Airport Coordination Limited) only providing data collection services[73]. IATA[74] defines a Level 2 airport as one "*where there is potential for congestion during some periods of the day, week or season, which can be resolved by schedule adjustments mutually agreed between the airlines and facilitator*". In other words, the airport cannot be considered as facing significant capacity constraints.

192. The airport does not appear to have any limit on the number of overnight ATMs it can operate. Note that it *does* have limits on the amount of noise any given aircraft can make at night. There is a limit on the land area that is exposed to noise above a certain threshold, as well as a rule preventing operation of the noisiest aircraft types between 23:00 and 07:00 (as per many other UK airports including Heathrow, Gatwick, Stansted).

193. The airport appears to have established a common position with the local authority which supports operation of the airport. For example:

> *"The Council will provide for the operational growth of East Midlands Airport whilst having regard to its impact on local communities and the wider environment…. Noise-sensitive development, particularly housing, will be resisted where it can be demonstrated that the noise levels associated with the airport would be detrimental to the occupiers or users of any such development"*[75]

194. The airport's runway[76] is long enough to handle the typical large cargo aircraft flying today, including the B747-400, B747-8F and the AN-225. It can also handle the A380, which could be relevant if older examples of that model are converted to a cargo aircraft in future[77].

Stansted Airport

195. Stansted is designated as a Level 3 coordinated airport. A process of slot allocation is required whereby it is necessary for all airlines to have a slot allocated by a coordinator. Therefore, Stansted is facing some capacity constraints in peak periods.

196. Nevertheless, there remains significant capacity available at most times of day, as shown below for the Summer 2017 scheduling season.

[72] Allocation of airport "slots" to airlines by an independent body. A slot provides permission for an airline to arrive or depart an airport for a specific time at a specific weekday and for a specific period applied for.
[73] https://www.acl-uk.org/faqs/
[74] (IATA, 2017c, p. 22)
[75] (East Midlands Airport, 2015, p. 69)
[76] East Midlands Airport runway length is 2,893m, compared to ca. 2,750m for Manston Airport.
[77] (East Midlands Airport, 2015, p. 73)

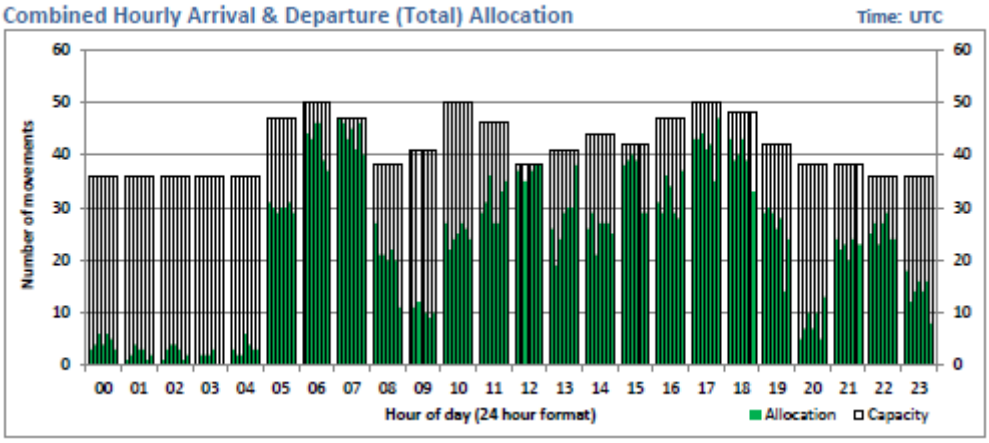


Figure 18 - Peak Week, Hourly Runway Allocation, Stansted Airport, Summer 2017. Source Airport Coordination Limited[78]

197. The number of cargo ATMs grew by ca. 13% in 2016 (source: Altitude analysis of CAA data), indicating that capacity constraints are not severe for freighters.

198. The airport is more tightly regulated than East Midlands Airport. Stansted's annual number of ATMs is limited. Currently, these limits stand at 243,500 passenger aircraft ATMs and 20,500 cargo aircraft ATMs[79]. These limits compare to 2016 movements of ca. 153,000 passenger ATMs and ca. 11,000 cargo ATMs. The airport considers the ultimate capacity of the runway to be 285,000 ATMs[80].

199. Separately, there is a quota on the overall number of ATMs allowed between the hours of 23:30-06:00 (7,000 ATMs in the summer season and 5,000 in the winter season). In 2013, the airport reports there were ca. 9,300 night ATMs in total, and that cargo aircraft ATMs take up a "*sizeable proportion*" of the quota[80].

Heathrow Airport

200. The UK does lack available dedicated freighter capacity at its only major passenger hub airport, Heathrow.

- Heathrow is also the UK's largest freight airport with ca. 65% of the UK's overall throughput (see paragraph 109).

201. Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity to a wide range of destinations.

202. At Heathrow, only ca. 5% of freight is carried on dedicated freighters (see Figure 4).

- If more capacity for freighter services existed at Heathrow, we would anticipate much greater levels of dedicated freighter activity.
- In the absence of operating constraints, major passenger hubs tend to also play a role as key dedicated freighter hubs (e.g. Frankfurt). Freighter services complement the connectivity provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity.

203. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

[78] (Airport Coordination Limited, 2017, p. 11)
[79] (Stansted Airport, 2015a, p. 9)
[80] (Stansted Airport, 2015b, p. 29)

- Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
- Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).
- Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by truck.
- Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

204. The capacity constraints at Heathrow also limit the number of passenger flights that can be operated. This in turn will have an impact on the bellyhold capacity that is available. However, it is not clear whether this is a substantial issue in relation to potential freight volumes.

- Heathrow continues to dominate the long haul passenger segment (72% of UK passengers in 2016[81]).
- Where demand is available, it is typically more economic to use constrained Heathrow slots for long haul flights (compared to short haul). Heathrow's share of overall UK long haul passengers has actually grown since 2002 (from 70% to 72% in 2016). In comparison, its share of short haul passengers has dropped from 24% to 17%. This indicates that short haul services are being squeezed out of Heathrow to accommodate long haul growth (due to current capacity constraints)[82].
- Air freight is focussed on long haul markets. Less than 10% of Heathrow freight in 2016 was to/from UK and Europe[83], despite accounting for 62% of passenger flights[84].
- Therefore, the extent to which constraints on Heathrow passenger flights are limiting bellyhold freight at Heathrow is difficult to establish from current publicly reported information.

205. Note that AviaSolutions[85] has undertaken analysis that suggests that average cargo loads at Heathrow are markedly lower than average cargo capacity.

> *"At Heathrow with a significant number of wide-bodied aircraft (35%), we estimate the average belly-hold freight capacity to be 7 tonnes per ATM at LHR (2015), significantly higher than the actual freight per ATM of 3 tonnes".*

206. This indicates there is excess bellyhold capacity at Heathrow. However, capacity may nevertheless be insufficient for demand on certain routes, directions of travel or at particular times of year, etc.

Other Airports

207. In addition to spare capacity at East Midlands and Stansted, other South East and regional airports could also accommodate significant freight volumes if the demand was there. This is true for both freight on dedicated freighter aircraft or bellyhold freight.

208. Bournemouth Airport[86] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with*

[81] Source CAA airport statistics, Altitude calculations
[82] Source CAA airport statistics, Altitude calculations.
[83] (Heathrow Airport, 2017, p. 5)
[84] CAA airport statistics
[85] (AviaSolutions, 2016, p. 31)
[86] www.bournemouthairport.com/about-us/doing-business-together/cargo/

no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."

209. Bournemouth Airport has some disadvantages due to its coastal location and distance from the motorway network. However, similar issues apply to Manston (with its location arguably even more compromised than Bournemouth, given its position on a peninsula). From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston[87].

210. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[88]":

"At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster- Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."

211. Both of these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

212. Finally, there are a range of other UK airports (currently in use) that previously carried significant volumes of freight, and would be able to do so again if demand returned.

- Prestwick handled ca. 42,000 tonnes of freight in 2001, compared to only ca. 11,000 in 2016. We are not aware of any reasons why Prestwick would be unable to handle similar or higher volumes in the future (assuming demand existed).
- Similarly, Liverpool had negligible freight throughput in 2016 but has handled as high as ca. 30,000 tonnes in 1995. Again, we would assume the airport has the capacity to accommodate similar or higher volumes in the future.
- Gatwick bellyhold freight volumes have been as high as ca. 290,000 tonnes in the past, compared to ca. 80,000 tonnes in 2016. As more long haul routes are added at the airport, freight throughput is once again growing. In the 12 months ending September 2017, Gatwick added ca. 15,000 tonnes of cargo (+20.3%)[89].

213. Taking all UK airports combined, the difference between peak year and 2016 freight tonnes was ca. 225,000 tonnes (freight on dedicated freighters only)[90].

- This excludes airports which have closed (e.g. Manston, Plymouth), where commercial activities have been downsized (e.g. Blackpool, Coventry) and London airports (where pressure on slots may reduce the ability to recover to historic volumes should dedicated freight demand return).

[87] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[88] www.therouteshop.com/profiles/doncaster-sheffield-airport/
[89] http://www.mediacentre.gatwickairport.com/press-releases/2017/booming-global-connections-drive-gatwick-to-record-september.aspx
[90] CAA airport statistics.

5.4. Conclusion

214. We conclude that there is no overall shortage of freight capacity at UK airports, whether for dedicated freighters or bellyhold freight.

- The two largest dedicated freight airports have spare capacity.
- There is significant excess capacity at a range of other UK airports that are currently in use. These airports have seen demand reduce due to trends towards consolidation at major airports and switch to trucking.

215. We acknowledge that there is a shortage of freighter capacity at Heathrow. Slot constraints could also be having some impact on the bellyhold market, although the impact may be relatively moderate.

216. However, it is important not to conflate Heathrow constraints with the wider capacity situation. We see no evidence to support the assertion that there is a long-standing shortage of overall UK airport capacity for freight. Indeed, the evidence is to the contrary, given the reductions in freight throughput experienced by many UK airports.

217. There would be substantial benefits to adding freight capacity at Heathrow, the UK's only major passenger hub airport. It can also be argued that freight capacity at a proposed new hub airport in the Thames Estuary would also generate strong benefits if it could be delivered. This option, though, was emphatically ruled out by the Airports Commission.

218. Therefore, it is difficult to see what benefit would accrue from adding freight capacity at non-hub airports, as there is already sufficient supply at advantageous geographic locations. In particular, freight volume at Manston has never exceeded ca. 43,000 tonnes in any single year. This is despite the supposed shortage of UK airport freight capacity and despite a previous owner investing to increase Manston's capacity to 200,000 tonnes per annum.

219. From a freight perspective, we do not consider it meaningful to focus on the South East alone as a separate market. Freight is less time sensitive than passengers. Therefore, for major airports, the freight catchment area is typically many times larger than the passenger catchment area. This is one of the key factors that leads to the high degree of market consolidation seen for air freight.

- East Midlands serves the whole of England and Wales, exploiting its central location in the UK.
- Similarly, the extensive network of long haul flights from Heathrow and its hub operation means it attracts freight from the whole of Great Britain.
- For Europe's major freight hubs, the catchment can be even wider. For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius (see Figure 38), while Liege sees its catchment as all areas within access of a full day trucking (see Figure 39). The catchment areas for these two airports are particularly wide, as a result of their wide range of air services.

220. Mainly due to the hub strength of Heathrow, 78% of 2016 UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 7% market share respectively.

- Much of the UK's high value manufacturing is located outside London and the South East[91]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[92].
- Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

221. More important is the type of airport capacity. Freight has consolidated around the three major air freight airports (Heathrow for bellyhold, while freighter activity is concentrated on East Midlands, Stansted and

[91] (Heathrow Airport, 2014, p. 19)
[92] (House of Commons Library, 2015, p. 7)

Heathrow). This enables the air freight industry to benefit from the economies of scale and scope flowing from consolidation. These cost efficiency pressures are unlikely to reverse.

6. UK Capacity Outlook

6.1. Context

222. In the previous section, we demonstrated that there is currently no overall shortage of freight capacity at UK airports.

223. In this section of the report, we analyse the scope for developing freight capacity at existing airports, in order to meet future demand.

- We focus on the published expansion plans of the three major freight airports.
- We consider the spot years of 2029 (prior to assumed new runway opening at Heathrow in 2030), 2040 (medium term planning horizon) and 2050 (long term planning horizon).

224. We also review comments in the Azimuth report in relation to the future role of individual airports.

6.2. Review of Individual South East Airports

Heathrow Airport

225. In its final report, the Airports Commission[93] "*unanimously concluded that the proposal for a new Northwest Runway at Heathrow Airport… presents the strongest case*." Heathrow is working on a timeline of a 2025 opening[94]. However, we consider that an assumed opening date of 2030 is more prudent, given the complexity of the planning and construction process. This aligns with the Airports Commission's stated need for one additional runway to be in operation in the South East of England by 2030.

226. Heathrow is developing its infrastructure to increase its cargo handling capability. The airport states:

> *"We are developing proposals for a complete overhaul of our cargo facilities as part of our expansion plans for an additional runway. Redevelopment of the airfield will provide an opportunity for the first time to expand the site and create new efficiencies*[95]

227. The airport has commented on the factors that currently reduce its competitiveness for cargo, and has developed a strategy to address these issues:

> *"Our customers have told us about the bottlenecks caused by some of the infrastructure, inefficient facilities and processes that are slower and more arduous than those of our European competitors. Our stakeholders rate us as poor for our facilities and value for money"*[96]

228. In its 2016 document 'Heathrow Cargo Strategy', Heathrow states:

> *"Our cargo strategy will lift freight volumes to 3 million tonnes a year by 2040"*[97]

229. Based on UK CAA data for 2016, this represents CAGR of 2.7% over 2016-40. Documentation from the airport indicates that growth is likely to come from additional bellyhold capacity rather than freighter ATMs:

> *"This will provide capacity at Heathrow for freight and cargo to be carried in the belly hold of passenger flights"*[98]

[93] (Airports Commission, 2015, p. 9)
[94] https://www.heathrowexpansion.com/local-community/important-dates-information/ (retrieved 19th October 2017).
[95] (Heathrow Airport, 2014, p. 20)
[96] (Heathrow Airport, 2016b, p. 2)
[97] (Heathrow Airport, 2016b, p. 2)
[98] (Heathrow Airport, 2014, p. 20)

230. Azimuth[99] discusses Heathrow in its first report.

231. Azimuth states that "*Indeed, more than 99% of air freight at Heathrow is carried in the bellyhold of passenger aircraft*". This is incorrect. Since 2010, the proportion of bellyhold freight at Heathrow has consistently been around 95%. A CAA report seems to be incorrectly attributed by Azimuth as a source for this figure.

232. It is also suggested that:

> *"The addition of a third runway at Heathrow is unlikely to resolve the capacity issues for dedicated freighters. Since Heathrow's passenger market has been constrained for some years, it is likely that the new runway will be used to meet this pent-up demand".*

- This is a pessimistic viewpoint. Heathrow's runway capacity in 2016 was 99% utilised[100]. With ca. 50% additional capacity on opening of a third runway, we would envisage some opportunities for additional freighter flights. Despite severe slot constraints, the number of freighter movements at Heathrow has remained stable since 2010[101].
- Therefore, there is some prospect of more freighter traffic at Heathrow after the opening of the third runway. Nevertheless, we do not dispute that there will be ongoing constraints on freighter activity at Heathrow, especially in the very long term.
- Of course, the major expansion of passenger flights following the new runway opening will lead to a substantive uplift in bellyhold capacity. As previously discussed, for most types of general freight, there is no inherent market preference for bellyhold or freighter carriage (with cost often the key deciding factor, which generally favours bellyhold). Therefore, the new Heathrow runway will add a significant amount of new cargo capacity into the UK market.

233. The Azimuth report also speculates that:

> *"Should Low Cost Carriers, who do not carry belly-freight for operational reasons, fill much of the additional runway capacity, Heathrow's freight handling, in terms of tonnes per year, is unlikely to increase substantially."*

- We view the references to low cost carriers as not relevant. Even if low cost carriers switch to Heathrow (which may depend on the level of airport charges after the new runway opens), this will have limited impact on bellyhold capacity.
- The full service short haul carriers operating at Heathrow currently contribute very little in terms of freight tonnage. Less than 10% of Heathrow freight is to/from UK and Europe[102], compared to 62% of passenger flights[103].
- There are several factors that cause this. In general, air freight is less competitive than trucking for shorter distances. Furthermore, the cargo carrying capacity of short haul aircraft (typically narrowbody types) is limited. Finally, air freight that is flying short distances tends to be express cargo, which is more likely to use dedicated freighter aircraft.
- Therefore, whether low cost carriers operate a significant proportion of Heathrow short haul services in the future will not have a significant impact on bellyhold availability. Similarly for long haul low cost, as these airlines typically carry bellyhold cargo (e.g. Norwegian).

[99] (Azimuth Associates, 2017 a, pp. 15-16)
[100] 474,963 ATMs compared to cap of 480,000 (source CAA airport statistics).
[101] Cargo ATMS at Heathrow since 2010 were 2010: 2,414; 2011: 2,456; 2012: 2,378; 2013: 2,347; 2014: 2,332; 2015: 2,388; 2016: 2,452; (source: CAA airport statistics).
[102] (Heathrow Airport, 2017, p. 5)
[103] In 2016 Heathrow handled 477,614 aircraft movements. 295,605 of these flew Domestic or European routes [source: CAA airport statistics, Altitude analysis].

234. Azimuth also compares Heathrow processing times unfavourably to Manston Airport. We noted above (see paragraph 227) that Heathrow has a strategy to improve its process efficiency. However, the broader point is that this is not a meaningful comparison.

- Using a dedicated freighter at an unconstrained airport should nearly always be the fastest way of transporting air freight, assuming equivalent trucking time to reach the airport[104].
- However, for the majority of general cargo, the time-sensitivity is in the order of days rather than hours. A bellyhold freight consignment through a major hub will typically be much cheaper. Freight can be consolidated with other freight consignments. The incremental cost of carriage for bellyhold is relatively low, meaning that rates charged are typically much more competitive than for freighters – especially if there is not enough volume to fully utilise freighter capacity.

235. Finally, Azimuth[105] refers to a York Aviation study, in the context of Heathrow:

> *"York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050".*

- This is an incorrect reading of the York report, which York Aviation rebut in detail in its November 2017 report commissioned by SHP[106].

236. In summary, the Azimuth analysis substantially underplays the potential for freight growth at Heathrow.

Stansted Airport

237. The airport has outlined infrastructure improvements to facilitate cargo traffic growth, including the potential for more cargo handling facilities to be built, and increasing the number of stands for cargo aircraft from 16 to 24[107].

238. Stansted Airport also published a 'Sustainable Development Plan' document in 2015 detailing the future demand it expects to handle:

> *"There is potential for cargo goods volume at the airport to increase on the single runway, potentially doubling the current throughput of cargo on dedicated aircraft to around 400,000 tonnes per annum….. Further growth can be expected from belly hold cargo as the range of airlines and destinations operating from the airport increases. The current modest amount carried in the belly hold of passenger aircraft could increase to around 60,000 tonnes a year"*[108]
>
> *"There is potential that cargo movements could rise to make full use of the current movement limit, however this needs to be considered against growth in passenger movements and the night quota. For planning purposes we have assumed that the number of cargo movements will be in the range of 15,000 and 18,000 per annum…. The majority of the cargo movements are expected to operate during the late evening and at night. Cargo aircraft will continue to operate during the off-peak periods between passenger movement peaks"* [109]

239. Note, the document is vague regarding the timescales relating to its forecast; it never states the year in which it expects demand to reach the forecast level. An assumption that the figure of 460,000 tonnes per annum is achievable by 2040 results in a CAGR of 2.7%[110].

[104] Although for most parts of the UK, trucking time to Heathrow will be significantly shorter than to Manston.
[105] (Azimuth Associates, 2017 a, p. 16)
[106] (York Aviation, 2017)
[107] (Stansted Airport, 2015b, p. 36)
[108] (Stansted Airport, 2015b, p. 26)
[109] (Stansted Airport, 2015b, p. 29)
[110] We believe this is a reasonable assumption, as both Stansted and East Midlands forecast are owned by MAG; MAG produced both forecast documents in the same year and using the same formatting and template; 2040 is the stated forecast year for East Midlands.

240. A plan for 15,000-18,000 cargo ATMs, when there is currently a limit of 12,000 overnight ATMs in total, possibly indicates growth of general cargo is expected.

241. Azimuth[111] argues that freighter services at Stansted will be forced out by passenger services.

> *"However, the airport is under pressure from Ryanair to increase the number of passenger flights. Ryanair is the dominant carrier at Stansted Airport and, since the LCC model is based on fast turnarounds, the airline will not tolerate interference from cargo handling. Ryanair is increasing their offering to more distant destinations including Turkey, North Africa, Cyprus and the Middle East. For the airline to maintain four rotations per day to maximise the profitability of each aircraft, late evening and night time slots will be required. Freight carriers have traditionally used these night slots."*

242. Azimuth continues:

> *"Since the airport also has a limit on total movements, this may mean Stansted has to choose between increasing passenger movements or retaining its freight. In this case, it seems likely that Stansted's management will preference passenger movements."*

243. There is no foundation for a number of the points raised above. Taking the various points in turn:

- No supporting evidence is provided for the statement that Ryanair is applying pressure on the airport to increase passenger flights (especially the implication that this would be at the expense of cargo flights). The Summer 2017 peak week runway profile (Figure 18) clearly indicates significant capacity for Ryanair to expand operations.
- We do not see any reason why handling freight from dedicated freighters would have any impact on the turnaround time of Ryanair aircraft.
- Azimuth appears to have limited understanding of the low cost carrier sector. We estimate that Ryanair averaged less than 2.5 rotations per aircraft per day across its network in FY17 (based on an analysis of its financial accounts).
- Ryanair operate from airports with night curfews or with night restrictions. Across 2017, an analysis of OAG schedule data for Stansted suggests that less than 3% of Ryanair flights operate in the night time period. Stansted Airport expects that cargo aircraft will continue to operate during the off-peak periods between passenger movement peaks (see paragraph 238).
- Stansted Airport has a separate movement cap for cargo and passenger ATMs. There is also an overall ATM cap[112], which is the sum of the separate passenger and cargo ATM caps. Therefore, the suggestion that Stansted will need to prioritise passenger flights over cargo flights is misplaced.
- Finally, no acknowledgement seems to have been made by Azimuth that Stansted Airport has stated that it is planning to grow freight tonnage alongside developing the passenger business (see paragraph 238).

Gatwick Airport

244. As discussed in paragraph 212, Gatwick has previously carried bellyhold volumes of ca. 290,000 tonnes (ca. 210,000 higher than the 2016 outturn). Gatwick had lost freight volumes as traffic mix has changed, in particular following the loss of long haul services after changes to traffic distribution rules in 2008.

245. Freight volumes have been growing rapidly since 2015, helped by the recent expansion of long haul services (many by low cost carriers). As more long haul services are added at the airport, we would expect continued growth.

[111] (Azimuth Associates, 2017 a, pp. 14-15)

[112] www.acl-uk.org/wp-content/uploads/2017/07/STN-Local-Rule-4-1.pdf . Note that the airport also has an overall movement cap, which comprises of passenger ATMs + cargo ATMs + 10,000 other movements.

246. Azimuth[113] only comments briefly on Gatwick:

- "*It has increased its annual tonnage from only 3,000 in 2014 to 73,000 tonnes in 2015*." This is a somewhat surprising statement. Growth of this scale would merit more than a passing mention. However, the true freight tonnage in 2014 was ca. 89,000 tonnes, not 3,000 tonnes (source: CAA airport statistics).
- "*Gatwick is not a serious competitor in the freight market*." We note that current freight throughput (year ending September 2017) was almost 90,000 tonnes, more than double the peak annual value achieved by Manston in its entire existence. It was the 5th largest UK freight airport in 2016.

Other South East Airports

247. Azimuth[114] discusses the potential of other South East airports. As noted previously, we do not believe there is requirement for new freight capacity in the South East specifically. Therefore, we only briefly comment on the potential of other airfields.

- Bournemouth is only fleetingly considered by Azimuth. As highlighted in paragraph 208, we consider there to be some potential for freight development from this airport, a view shared by the airport itself.
- We also note that in its analysis of Southampton, Azimuth wrongly states that it handled 185,000 tonnes in 2015 (the correct figure is 185,000 kilogrammes or 185 tonnes). The short runway at Southampton constrains its ability to serve the freight market.

6.3. Review of Individual Regional Airports

East Midlands Airport

248. East Midlands is the UK's leading airport for dedicated freighter activity. Its central location enables it to serve a wide catchment, encompassing England, Wales and Scotland.

249. This is acknowledged by Azimuth[115]. However, it argues that the airport is not in a good position to serve the South East.

> *"At present the airport serves a wide catchment area as shown in Figure 2. However, surface access to these geographically distant businesses, of which many are concentrated in the South East, is hampered by congestion on the UK's road network. Therefore, total time taken to deliver from origin to final destination increases, particularly around the bottlenecks on some of the major motorways. Figure 2 clearly shows the number of businesses located in the South East, within the Manston catchment area.*

250. Earlier in the report (see paragraph 170 onwards), we provide a comparative analysis of the accessibility of East Midlands versus Manston. Given the wide catchments areas for cargo (see paragraph 219), we consider that the East Midlands is very accessible for the South East market. The M25 orbital motorway can be reached in just over 1.5 hours.

251. East Midlands Airport notes that the vast majority of vehicle movements to/from the airport take place very late at night or very early in the morning (see paragraph 151). Therefore, motorway bottlenecks alluded to by Azimuth should have a limited impact, as journeys will not be taking place during peak hours. In any case, congestion on the UK motorway system will affect all UK airports (including a reopened Manston).

[113] (Azimuth Associates, 2017 a, p. 16)
[114] (Azimuth Associates, 2017 a, pp. 18-19)
[115] (Azimuth Associates, 2017 a, pp. 17-18)

252. East Midlands has a benign planning environment (see paragraph 192 onwards). Despite the relatively low level of restrictions, the airport acknowledges sensitivity to developments that will impact on night time noise:

> *"Any further consideration or development at the airport related to night flights will require the application of stringent controls over night-time noise."*[116]

253. East Midlands Airport has land available for development of additional cargo facilities in order to support growth:

> *"The DHL Hub building opened in 2000 and it was always intended that the site would be developed in phases. Land continues to available for phased development on the western side of the building"*[117]

> *"Land will be reserved for the development of an integrator hub at Cargo East on land between the Pegasus Business Park and the runway/taxiway. This will enable the development of additional apron to serve the new hub operation. The building will be of a significant scale and will provide for the sortation systems required by the integrated carriers and also landside vehicle access for vans and for HGV's"*[117]

> *"Opportunities will be identified for incremental redevelopment and improvements to the existing Transit Sheds in Cargo East. A site for new cargo development, to the east of the current Royal Mail hub, will also be reserved. These development schemes will be made on a case by case basis and in response to operators' requirements"*[118]

254. As noted in paragraph 153, a rail interchange adjacent to the airport is in development, further strengthening its market position.

255. In the 'Sustainable Development Plan' document referenced previously, East Midlands Airport also publishes a demand forecast for the airport.

256. This forecast assumes that freight at East Midlands continues to be carried on freight-only aircraft, and that the type of freight carried by integrators (primarily express) will grow faster than that carried by other types of carrier.

> *"The forecast for future cargo tonnage is for some 618,000 tonnes in 2035 and some 700,000 tonnes in 2040…. by 2040, the number of cargo movements could grow to around 42,600. This reflects the growth of the integrated carriers and that the average freight load per cargo aircraft movement is predicted to increase from 14.4 tonnes in 2012 to 17.9 tonnes at 2040"* [119]

> *"The future split of day and night movements is expected to be similar to that of today"*[120]

257. Note that the airport does not include in its forecast any significant growth of mail (as it expects "*structural changes to the mail market. This is as a result of the shift from letters to parcels*"[119]).

258. In addition to stating its forecast demand, East Midlands Airport made clear statements on its future capacity in its 'Sustainable Development Plan' document. It does not believe it will be constrained by 2040:

> *"There are therefore no plans for the development of a second runway within the planning horizon covered by this Master Plan (2040) …. The capacity of the East Midlands Airport*

[116] (East Midlands Airport, 2015, p. 69)
[117] (East Midlands Airport, 2015, p. 79)
[118] (East Midlands Airport, 2015, p. 80)
[119] (East Midlands Airport, 2015, p. 61)
[120] (East Midlands Airport, 2015, p. 111)

runway is estimated to be between 34-36 runway movements per hour. This provides the airport with sufficient runway capacity for the foreseeable future and will be more than sufficient to accommodate an airport of a scale to handle 10 million passengers and 1.2 million tonnes of cargo annually" [121]

"the Land Use Plan identifies the land, the uses and the facilities required to support the operation of an airport capable of handling 10 million passengers annually and 1.2 million tonnes of cargo"[122]

"there will need to be a minimum of seven additional cargo stands provided including the ability to regularly park aircraft up to Code F (Boeing 747-8F) size"[123]

Other Regional Airports

259. There are a range of other regional airports with spare freight capacity which could play a larger role in the future.

- Doncaster Sheffield (see paragraph 210).
- Manchester Airport is the largest passenger airport outside the South East. It operates a two-runway system (the only UK airport with two runways except Heathrow). It has previously handled substantially more freight than currently handled.
- Similarly, Liverpool and Prestwick have previously handled much higher freight volumes than currently. Both airports have significant spare runway capacity and a large site to develop cargo infrastructure (Prestwick already has the facilities to handle specialist cargo). While Prestwick may be too far north to effectively serve the South East market, it could relieve pressure on other UK airports by capturing a larger share of freight demand to/from Scotland and the North of England. Liverpool is well connected to the UK motorway network, and the airport is owned by the operators of Liverpool Port.

6.4. Overall Capacity Outlook to 2040

260. We have projected the overall airport capacity for freight in 2040. For the three largest freight airports, future capacity has been sourced from the published plans described in the previous sub-section.

- While Heathrow and Stansted do not explicitly state their maximum expected future cargo capacity, we can assume each airport will have at least enough capacity to serve its predicted demand[124].
- The Heathrow figure assumes the opening of the planned third runway.

261. For other airports, we assume the following:

- Gatwick has handled ca. 0.2m annual tonnes of freight as recently as 2006. We assume it has the capability (demand permitting) to handle similar volumes in the future.
- Manchester handled ca. 0.17m annual tonnes of freight in 2007, and in its 2006 Masterplan, the airport forecast cargo tonnage of 0.25m tonnes by 2015[125]. We assume that the airport will be able to accommodate freight up to its masterplan forecast (0.25m tonnes).

[121] (East Midlands Airport, 2015, p. 73)
[122] (East Midlands Airport, 2015, p. 9)
[123] (East Midlands Airport, 2015, p. 75)
[124] Documentation from these airports indicates they have identified and made provision for developments of ground facilities (warehouses, stands etc…) to accommodate the forecast demand. Only Heathrow requires development of runway capacity.
[125] (Manchester Airport, p. 29)

- We assume that the remaining UK commercial airports (which are still fully operating) can handle freight tonnage at the level of previous peak year throughputs. This provides an assumed capacity of ca. 0.3m tonnes.
- Finally, we assume that by 2040, an additional 0.1m tonnes could be handled at airports with large sites but limited historic freight throughout (e.g. Doncaster Sheffield). This is likely to be a conservative assumption.

262. Total UK air freight capacity in 2040 is estimated to be ca. 5.4m tonnes per annum (including the impact of a new Heathrow runway). Of this, ca. 65% could be bellyhold capacity, with ca. 35% from freighters. Capacity at the three main cargo airports (Heathrow, East Midlands and Stansted) is estimated to be ca. 4.6m tonnes.

Airport	Estimated 2040 Capacity (m tonnes)	Possible Utilisation	
		Freighter	Bellyhold
Heathrow	**3.00**	0.09	2.91
East Midlands	**1.10**	1.08	0.03
Stansted	**0.46**	0.40	0.06
Manchester	**0.25**	0.03	0.23
Gatwick	**0.20**	0.00	0.20
Other UK	**0.39**	0.30	0.09
Total UK	**5.40**	**1.89**	**3.51**

Table 2 – Summary of estimated 2040 air freight capacity at UK airports
Source: Heathrow Airport, East Midlands Airport, Stansted Airport, Manchester Airport, UK CAA, Altitude analysis and assumptions

6.5. Capacity Outlook Prior to New Runway at Heathrow (2029)

263. We have also considered the potential capacity available prior to the third runway at Heathrow (assumed to open in 2030). There is limited information on the phasing of future capacity developments in the period to 2040, so this estimate has a greater reliance on our assumptions.

264. We have modelled the potential UK air freight capacity in 2029 at ca. 3.6m tonnes. This is based on the following prudent assumptions:

- No additional passenger or cargo ATMs at Heathrow compared to 2016. We assume that the airport will be able to accommodate freight growth at half the achieved annual growth rate for bellyhold tonnes/ATM recorded from 2006-16.
- We assume that the current Stansted and East Midlands capacity is at least 20% above 2016 freight outturn. We then model that the incremental capacity to be added by 2040 will be brought onstream at a constant rate.
- We model that Manchester is able to handle freight that was forecast for 2015 in its 2006 masterplan (same as 2040 assumption).
- For all other existing commercial UK airports, we assume the airports can handle historic peak values.

265. This is a deliberately cautious approach. Neither Stansted nor (especially) East Midlands face substantial freight constraints currently, and should be able to handle much higher freight volumes in the coming years.

6.6. Post 2040 Capacity Outlook

266. In the long term, there is the possibility of additional runway capacity in the South East. The Airports Commission stated in its final report:

> *"Even with a third runway at Heathrow, capacity in the London and South East system could be highly constrained by the 2040s and, as the Commission noted in its Interim*

Report, there would be likely to be sufficient demand to justify a second additional runway by 2050 or, in some scenarios, earlier"[126]

267. The regulatory environment, particularly with regard to noise and night flying, looks likely to be a key determinant as to the overall capacity that might be available for cargo movements post-2040.

[126] (Airports Commission, 2015, p. 334)

7. UK Demand vs Supply Outlook

7.1. Our Forecast for the UK Market

Context

268. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

- Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand (see Figure 37).
- This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines (see paragraph 425). As of Q4 2016, 15% of widebody freighter capacity globally was in storage (see Figure 36). Airbus forecasts growth of just 42 freighters in European fleets by 2036[127]. In the UK, freight tonnes carried on all-freighter aircraft peaked in 2004. Since 2004, its share of total air freight has fallen from 37% (ca. 876,000 tonnes) to 30% by 2016 (ca. 708,000 tonnes, see Figure 5).
- There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs. In the UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall UK air freight tonnes on dedicated freighter services – from 41% in 1990 to 86% in 2016 (see Figure 7). The UK bellyhold market is even more consolidated, with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996 (see Figure 11).
- Cargo ATMs across UK airports have contracted, from ca. 108,000 in 2000 to ca. 52,000 in 2016. The most recent (2017) Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[128].

269. We expect these trends to continue into the long term. These fundamental market developments do not appear to have been recognised by Azimuth, or have been ignored, in its assessment of the potential for a re-opened Manston.

Forecast Approach

270. Air cargo forecasting is complex, with a wide variety of factors influencing long-term demand. These include:

- High-level economic factors (such as overall GDP growth of the producer and consumer countries, and exchange rates) as well as low-level economic factors (e.g. business rates and import/export taxes).
- The state of global relations and the proliferation of protectionist trade measures.
- The mix of products being traded (remembering that generally only high-value items are suitable for air freight).
- The rate of product miniaturisation (which reduces air cargo volumes/tonnages).
- Development of entirely new products (e.g. iPhone and the global uptick in air freight when a new model is released).
- Technological advances enabling mode shift to or from air freight.

[127] (Airbus, 2017a, p. 105)
[128] (Department for Transport, 2017a, p. 33)

- Fuel prices impacting the competitiveness of air freight relative to other modes (while some products must travel by air, for others this is a preference, which is influenced by price).

271. It is also reasonable to suggest that there is less of a global focus on air cargo forecasts than, for example, air passenger forecasts. As such, there is less detailed, less well-defined, and less-robust data available upon which to base air cargo forecasts.

272. In the interests of simplicity and transparency, we have adopted a very high level econometric approach.

- Future freight growth has been linked to projections of future UK GDP growth.
- We use the UK Office for Budgetary Responsibility long term predictions of UK GDP[129]. In real terms, UK GDP is anticipated to grow by CAGR 2.2% in the period 2016-40 (CAGR 2016-29: 2.2%, 2029-40: 2.3%) with CAGR of 2.4% for period 2040 to 2050.

Forecast Results – Base Case

273. We project the size of the UK air freight market in 2040 to be ca. 4.2m tonnes per annum. This breaks down as ca. 3.1m tonnes of bellyhold demand and ca. 1.1m tonnes of freighter demand. We also project that:

- 2029: ca. 3.3m tonnes (of which ca. 0.9m tonnes of freighter demand).
- 2050: ca. 5.1m tonnes (of which ca. 1.2m tonnes of freighter demand).

274. Key assumptions made in generating our base case forecast include:

- Low growth experienced in the last decade will not continue, with future demand elasticities only slightly below historic long-term observed ratios.
- Future demand elasticities will decline slightly with time (also due to increasing market maturity).

275. We forecast the 2016-40 growth rate to be 2.4% CAGR. This is slightly behind the level of growth seen in the long-term historic data (between 1990 and 2016, CAGR was 2.7% CAGR). Nevertheless, we view our forecast as relatively optimistic. Our forecast growth rate is well ahead of the level of growth seen in more recent years (e.g. 2010-16 CAGR of 0.4%).

276. Our forecast growth rate is behind global forecast growth by Airbus (CAGR 2016-36 of 3.8%). This is not unexpected given that the UK is a relatively mature market, and that our forecast is for a longer period. Note also that our forecast is for tonnage, compared to flown tonne-kilometres for Airbus (as such, changes in the average sector length would influence the Airbus forecasts).

Forecast Results – Scenario with lower demand elasticity

277. We have also produced a scenario in which we lower our forecast demand elasticities to be in line with observed ratios from the four most recent historic years (i.e. 2013-16, over which UK air freight tonnage has grown at 1.8% CAGR). GDP growth in this scenario is as per our base case.

278. This scenario results in a UK demand of 3.6m tonnes of air freight in 2040 – significantly lower than our base case forecast (see Figure 19). This highlights the strength of the market recovery we are assuming in our base case.

[129] (Office for Budget Responsibility, 2017, January)

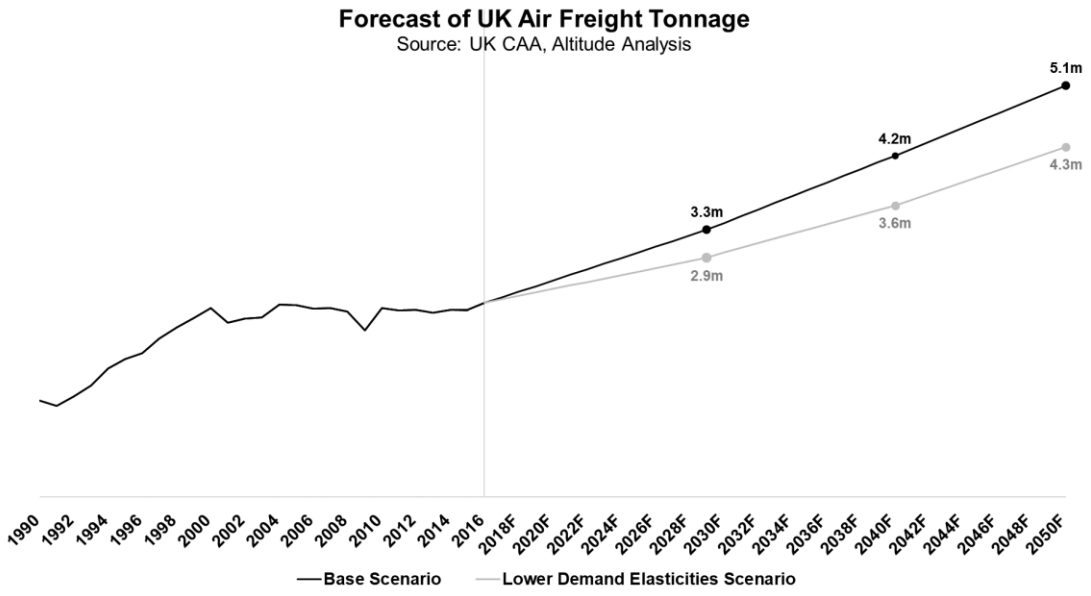


Figure 19 – Altitude forecast of UK air freight demand to 2050

7.2. Other UK Market Forecasts

East Midlands Airport UK Market Forecast

279. In its 2015 'Sustainable Development Plan' document, East Midlands Airport has published its assumptions for the size of the UK market in 2040. It predicts total demand of 4.4m tonnes per annum:

> *"A review of the airport's cargo forecasts has also been carried out. This assumes growth in the UK's total air freight demand, doubling from 2012 levels (2.3 million tonnes) to 4.4 million tonnes by 2040 (combined annual growth rate of 2.3%)"*[130]

280. This gives an average growth rate that is similar to our forecast but from a starting point of 2014 rather than 2016. Growth in the period 2014-16 was significantly lower than 2.3%, explaining the minor differences in the 2040 projections.

York Aviation London Airports Forecast

281. York Aviation published a report in 2015 for the Freight Transport Association and Transport for London. The report included a prediction of the volume of air freight demand in London in 2050. Note the final year of outturn data upon which this forecast is based appears to be 2013.

282. York Aviation's forecast air freight demand at London airports is 4.2m tonnes per annum by 2050[131]. Using the report's stated figure for 2013 freight tonnage at London airports (1.8m tonnes), the forecast CAGR 2013-50 is 2.3%.

283. However, while the growth rate is similar to our UK wide forecast growth, there are again differences in the starting point (achieved growth in the period 2013-2016 was lower than the average growth rate of the whole forecast period).

[130] (East Midlands Airport, 2015, p. 16)
[131] (York Aviation, 2015, p. 19)

7.3. Future Requirement for Freight Capacity at UK Airports

284. As indicated previously, we have compared our forecast demand with our assumed airport capacity for three spot years:

- Prior to new Heathrow runway (2029, last year before assumed new runway opening).
- Medium term planning horizon (2040).
- Long term planning horizon (2050).

285. For the period to 2040, the potential air freight airport capacity in the UK is comfortably higher than the volume of demand we forecast for the UK as a whole.

- In 2029, we forecast base case demand of 3.3m tonnes, compared to a conservatively modelled airport capacity of 3.6m tonnes. In practice we would anticipate that both Stansted and East Midlands capacity could be significantly higher than we have assumed. Therefore, we do not see any overall capacity shortage prior to the third runway at Heathrow.
- By 2040, we forecast demand of 4.2m tonnes, compared to assumed airport capacity of ca. 5.4m tonnes.

286. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is also ahead of our bellyhold demand forecast.

287. By 2050, if there is no further capacity development, demand levels are projected to approach capacity provision. This may lead to capacity constraints at preferred airports for the freight sector.

288. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, and possibly not until 2050.

289. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK (other than that already in the pipeline or at operational airports with identified potential future capacity).

8. Review of Azimuth Freight Forecasts

8.1. Context

290. In this section, we assess the Azimuth freight forecasts for Manston. As part of this assessment, we review in turn:

- Arguments put forward by Azimuth in Volume 1 in relation to the future potential of Manston. These arguments are then deployed later on in the Azimuth study in support of its freight forecasts.
- The discussion of forecasting approaches put forward by Azimuth in Volume II.
- The research Azimuth undertook (interviews) and their findings and conclusions (Volume II).
- The methodology adopted by Azimuth in its freight forecasts for Manston Airport, set out in Volume III.
- The Manston freights forecasts that have been developed by Azimuth (Volume III).

291. Note that there is a degree of repetition across the various Azimuth reports. To avoid excessive duplication, we review similar points only once.

8.2. Supporting Arguments (Volume I)

292. In this sub-section, we review the key arguments for Manston that Azimuth[132] deploy in Volume I of its report. We critique these points in the same order as they appear in the Azimuth report.

General

293. In Table 2 (P11), Azimuth outlines the leading European airports for freighter movements. In relation to the table, on Page 10 it comments that:

> *"The figures highlight the reliance on belly-freight at most of the UK's airports…. As the UK progresses with negotiations to exit the EU, the Country will find it advantageous to have sufficient capacity at airports that can handle dedicated freighters, without the need to truck to airports in mainland Europe."*

294. We make a couple of observations:

- By Year 5 of the Azimuth[133] forecasts, the predicted freight throughput of Manston is already ahead of the 2014 volumes of some of the leading European airports in the table (Dublin, Rome, Frankfurt Hahn). This highlights the scale and speed of the freight growth that is forecast for Manston by Azimuth.
- The non-UK airports in the table are predominantly major passenger hubs or large passenger airports (typically primary capital city airports). The only exceptions to this are the major integrator hubs at Leipzig and Liege, and Frankfurt Hahn (one of the smaller freight airports in the sample, with lower throughput than envisaged for Manston in Year 4 of the forecasts). This illustrates the importance of "hub" capacity for freighter operations, where wide body long haul passenger flights complement dedicated freighter operations. Manston would not provide this type of capacity.

295. Azimuth also quotes Oxford Economics, Transport for London and York Aviation studies highlighting freight capacity shortages (Volume I, P1-13). We reiterate our previous comments that we do not believe there is an overall shortage of freight capacity. Azimuth ignores the context of these studies, and does not distinguish between hub capacity and freighter capacity at other airports. We refer to the November

[132] (Azimuth Associates, 2017 a)
[133] (Azimuth Associates, 2017 c, p. I)

2017 report by York Aviation[134] which clearly explains how Azimuth misrepresents the studies relied upon to the extent that York Aviation make clear that *" the York Aviation work relied upon by RSP does not, and cannot be taken to, support RSP's proposed alteration to Manston Airport and, therefore, cannot be relied upon by RSP, the Planning Inspectorate, the Secretary of State and any future appointed Examining Authority (should RSP submit the application and the Secretary of State accepts the application)".*

296. Therefore, it does not follow, as stated on Page 13, that "*It is clear from the figures presented here that the capacity available at Manston Airport is vital to the continued competitiveness of the UK.*"

297. Azimuth acknowledges the importance of integrators and freight forwarders on Page 14:

> *"The RiverOak vision is to encourage integrators and freight forwarders to locate in the Manston area, have a competitive pricing structure, and build on the previous excellent cargo handling service provided by the airport."*

298. However, both integrators and freight forwarders consolidate activity at major hubs. It is not clear why they would relocate to the peripheral location of Manston. Heathrow is the major consolidation point in the South East. Even under the highly optimistic Azimuth forecasts, Manston freight throughput would remain a fraction of the Heathrow outturn volumes.

299. Page 14 of the Azimuth report outlines various advantages that Manston apparently benefits from. However, these stated advantages were insufficient to enable the airport to be viable when it was operational.

300. Page 22 raises concerns about the number of destinations served from Heathrow.

> *"The Aviation Policy Framework indicates the Government's concerns over the falling number of destinations served by Heathrow Airport and the impact on connectivity. Profitable routes are operated at higher frequencies, reducing the number of destinations served (DfT, 2013, p. 28). This reduces the possibility of using bellyfreight to those destinations no longer served from Heathrow and indicates the need for dedicated freighters on those routes."*

- It is not clear that the number of destinations served from Heathrow is falling (recent trend is inconclusive).
- As discussed in paragraph 204, capacity constraints have primarily impacted short haul routes, which are less relevant for bellyhold freight. The freight tonnage per flight has been increasing at Heathrow in recent years (see Figure 13).

BREXIT and Security Issues

301. Section 5.2 (P22-23) discusses the potential effect of BREXIT on UK aviation. We agree with the comment that "*There are many unknowns at this stage*". However, only positive outcomes (in relation to Manston) are considered. Some major assertions are made that are based on conjecture and lack logic.

302. For example, on Page 23, it is speculated that:

> *"Friction at the borders between EU countries and the UK, particularly at the Channel ports, is likely to increase to meet the demands of security checks and ensuring tariffs are paid where necessary. This may serve to switch transport away from trucking to air freight, avoiding congestion at the Channel Crossings."*

[134] (York Aviation, 2017, p. 9)

303. Two major assumptions are made. Firstly, that any border issues will be significant and of a permanent nature. However, this will not necessarily be the case. A news report in the Guardian[135] interviewed the chief executive of the Belgian port of Zeebrugge.

> *"Gridlock at the border, vast motorway car parks and jobs lost: British ports have been vocal about the risks of a hard Brexit. In case Conservative MPs missed the message, the Port of Dover advertised at the party conference, warning that an extra two minutes on lorry inspections could lead to queues of 17 miles at Dover and similar "chaos in Calais and Dunkerque".*
>
> *Across the North Sea, continental ports are worried about the great unknowns of Brexit. One of the most exposed is the Belgian port of Zeebrugge, which does 45% of its trade with the UK. "We are vulnerable if something happens to the trade from the UK to the continent," said port chief executive Joachim Coens. "So what I mainly hope is that we could continue having a good trade relationship with the UK… as we have been doing for centuries."*
>
> *However, Zeebrugge is less concerned about the resumption of customs checks – "I think we can handle that," says Coens. The Belgian port could even take business from Calais, he suggests, because it specialises in people-free freight – "roll on, roll off" in industry jargon – removing problems about drivers having to clear UK border controls.*
>
> *Meanwhile, Zeebrugge is fast-tracking the development of apps and scanners to further reduce paperwork. It is developing a UK-specific programme for every stage of the logistics chain, which would allow goods to clear customs even when lorries are miles from the port."*

304. The second major assumption is that customs checks would not have a similar impact on processing times for air freight. As air freight is much more time sensitive than trucked freight, the addition of an hour (say) to processing time would have a much greater impact on air freight than trucking.

305. Even if BREXIT was to negatively impact trucked freight from Europe into the UK, it could equally impact trucked freight in the other direction. Therefore, there could be less flown freight into the UK for onward trucking distribution to other parts of Europe.

306. Azimuth continues:

> *"It is also likely that increased trade will occur between Britain and more geographically distant countries. Trucking of goods to these countries will not be an option thus increasing the need for air freight, making the capacity Manston can provide nationally significant to the Nation's airport infrastructure*".

- This outcome is a possibility.
- It is also plausible that the UK could lose trade with other parts of the world. For example, if Japanese car manufacturers relocated assembly plants from the UK to locations within the single market, this would have a negative impact on trade and freight.

307. In summary, the impact of BREXIT is essentially unknown. No business decision or planning application can be made based on such an unknown.

308. Also on Page 23, Azimuth speculates on the impact of increasing passenger security at airports, following terrorism attacks at Brussels and Istanbul airports.

[135] https://www.theguardian.com/politics/2017/oct/07/zeebrugge-brexit-braced-for-tariffs-trade-loss

> *"Airports are not designed to security check all visitors as they enter the airport. If required, it will cause huge delays and require passengers to arrive many hours (almost certainly at least three) before their flight. These delays impact belly-freight, making a switch to dedicated freighters more likely."*

309. We do not see the logic in this assertion. If passengers need to arrive at the airport earlier, this will not impact aircraft turnarounds or the loading or unloading of freight. These are independent processes. Therefore, it is difficult to see how such a development would have any impact on bellyhold freight.

310. The potential positive impact of e-commerce development is discussed on Page 24. The analysis of the opportunity is anecdotal. No consideration is given to how e-commerce may be replacing other types of freight.

Previous Manston Performance

311. Finally, on Page 26, there is some discussion on why Manston was unsuccessful, despite an efficient cargo product:

> *"Manston established a reputation for speedy handling of perishable cargo, with unloading and throughput times much faster than competitor airports."*

312. Azimuth goes on to state:

> *"Since Manston suffered from a severe lack of investment, and constraints on the ground are likely to have resulted in capacity restrictions that prevented growth past the figures for cargo shown in Table 4. With only one cargo stand, aircraft were unable to exit to the runway if another aircraft taxied into the cargo area behind it. The airport had limited storage, had not invested in up-to-date handling equipment, and closed their Border Inspection Post. In spite of the lack of investment, there was considerable growth in Manston's cargo market from 2010 until 2013. This growth strongly indicates that Manston, with the investment required would have a strong future."*

313. We understand that there was significant investment from previous owners. In 2002, it was reported that £7m had been invested on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[136]). It seems unlikely that the low level of freighter activity was due to lack of capacity.

- The report states that Manston had 2,073 ATMs in 2013, its last full year of operation. This was also the busiest year for ATMs since 2005. However, CAA data indicates that only 511 fights were cargo related.
- This is equivalent to an average of less than 1 rotation per day in its final full year. If demand was there, we would expect that the airport should have been able to handle much greater levels of freight activity.

314. The Azimuth conclusion (see above) that a reopened Manston would have a strong future is based on the "*considerable growth in Manston's cargo market from 2010 until 2013*". The actual growth was 1,203 tonnes (CAGR 1.4%). In fact the airport did not achieve significant growth at any stage in the last decade of operations, with the 2013 outturn only 2,680 tonnes ahead of the 2004 value.

[136] (Wiggins Group plc, 2002, p. 16)

8.3. Approach to Forecasting (Volume II)

315. In Volume II of its reports, Azimuth[137] discusses at some length air freight forecasting literature and its own research methodology.

316. In the interests of brevity, we do not provide detailed comment on Azimuth's literature review. In general, we find the review is very broad, with much of the material of limited relevance (e.g. use of game theory). The approach is also somewhat academic, with minimal practical application.

317. Azimuth[138] concludes that:

> *"…in the case of Manston Airport, closed for several years and lacking investment for many more, this approach is not appropriate. Any attempt to build an econometric model would have to establish criteria whereby a proportion of the total predicted UK air freight traffic was 'diverted' to Manston. However, deciding upon the proportion to divert to Manston raises significant problems.*
>
> *Therefore, instead of providing a mathematical forecasting model, this review of the literature suggests a qualitative approach that aims to predict human and organisational behaviour. Indeed, the DfT (2014, p. 3) place a heavy reliance on an understanding of human behaviour in achieving realistic outputs. A qualitative approach that gathers the opinions of industry experts would allow areas of potential demand for Manston Airport to be identified. It is this type of approach that has been selected in the case of Manston Airport."*

318. We disagree with the conclusion that a purely qualitative methodology is appropriate. While qualitative approaches can be useful, they are most robust as a complement to a quantitative approach. Furthermore, qualitative approaches are typically only adopted for relatively short term forecasts.

319. The issues with a purely qualitative approach in the context of Manston Airport are:

- Assumptions are subject to bias, lack transparency and are impossible to independently verify.
- Does not identify current market size for relevant segments.
- Forecasts do not reflect historic traffic patterns.

320. In particular, we would have expected some attempt at quantification of the overall UK market size for the different freight segments assumed in the Azimuth forecasts. Otherwise, it is extremely difficult to gauge what level of market share for Manston is implied in each freight niche.

321. In describing its research methodology, Azimuth[139] state that:

> *"It should be noted that a comparative case study approach was not deemed possible, as no airports in sufficiently similar circumstances were identified."*

[137] (Azimuth Associates, 2017 b, pp. 6-25)
[138] (Azimuth Associates, 2017 b, p. 20)
[139] (Azimuth Associates, 2017 b, p. 22)

322. While no two airports are exactly alike, there are various airports with similar characteristics to Manston prior to its closure. For example, Prestwick Airport is an airport with modest passenger volumes that also accommodates dedicated freighter flights. Its peak annual freight tonnage was ca. 43,000 tonnes, almost identical to the equivalent value for Manston (source: CAA airport statistics).

- Prestwick Airport[140] has "*the ability to handle large pieces of specialist cargo*".
- It has invested in the "*latest security screening technology which ensures even long and heavy pieces of cargo can be processed quickly and securely*".
- A dedicated sales team has been established, "*targeting high yielding and specialist areas, whilst still delivering a high quality and cost effective service to routine loads". Furthermore, the "management team also continues to promote the airport as a major UK cargo hub at key global events and trade shows and is doing significant work on evaluating the potential for the airport to become a handling consolidation point for Scotland's perishable export industry and the local aerospace industry*".

323. Despite this investment, the airport's current freight throughput is well below historic levels (ca. 11,000 tonnes in 2016, source: CAA airport statistics). The airport identifies the following challenges:

- "*… the dedicated freighter only aircraft market that the Company has specialised in has been in global decline*".
- "*However, income per tonne has remained static over the last 3 years primarily because of the static market, increasing belly hold capacity and the overall competitive nature of the business*".

324. We note there are many similarities to Manston. The proposed strategy for a reopened Manston has some notable areas of commonality with the current Prestwick strategy. Prestwick incurs substantial financial losses, as did Manston for many years before its closure.

325. Clearly there are some differences. The demand in Scotland will not be as strong as in the South East. However, the level of airport competition is much stronger in the South East.

326. It should also be noted that Azimuth[141] is forecasting ca. 341,000 tonnes of freight on dedicated freighters within 20 years of reopening. This is higher than current freighter tonnage at any UK airport. Therefore, clearly there is no equivalent case study that supports the Azimuth growth forecasts.

[140] (Glasgow Prestwick Airport Limited, 2016)
[141] (Azimuth Associates, 2017 c, pp. 11-12)

8.4. Expert Interviews and Discussion (Volume II)

327. The qualitative forecasts by Azimuth[142] were informed by interviews with 24 different parties.

- Only a minority of the parties interviewed appear to be airlines or freight forwarders. Many of the interviewees seem to be of limited direct relevance.
- It is not clear how much air cargo to/from the UK is transported by interviewees. With the notable exceptions of DHL and FedEx, most operators interviewed appear to be relatively small. Azimuth[143] comment that "*there was a wide range between 90 tonnes and 20,000 tonnes per year for the smaller shippers to vast amounts for the integrators.*"
- There is limited visibility on how much cargo these operators used to fly through Manston when it was open.

328. There is also a lack of information on the following points:

- Which airports would a re-opened Manston be capturing cargo from?
- Why do operators not use East Midlands or Stansted, given stated concerns with Heathrow?
- What are the relative economics of using Manston versus bellyhold freight at Heathrow, freighters at alternative UK airports or trucking?

329. Not all the comments support the RSP case for Manston:

- Page 30: *"… it's not going to work if you can only fly between 10.00 and 21.00".* This suggests the airport would need to accommodate night flights to be viable.
- Page 41: "*Integrators monopolise the freight-friendly airports such as East Midlands (DHL) and are reluctant to change their operations, preferring to cope with slot restrictions at Heathrow rather than moving to other more cost effective airports (DHL, FedEx). The explanation for this is the focus on associated fixed costs and the resources involved to make a move to another airport (FedEx)*". This confirms that integrators (and associated high freight tonnage) will be unlikely to move to Manston. The remaining opportunities discussed are mainly in niche areas.

330. We question some of the responses from interviewees:

- On Page 42, Frankfurt is highlighted as an example of a successful cargo airport which does not have 24 hour operations. This is not a relevant comparison in the context of Manston. Frankfurt is one of Europe's leading passenger hubs (over 60m passengers in 2016), with dedicated freighter flights complementing bellyhold provision.
- On Pages 43/44, it is hypothesised that "*With London being a major economy and with scant landing slots available for cargo, a portion of Frankfurt cargo is likely being transported from Frankfurt to London by truck. Manston could readily handle this business in a more cost effective and timely manner, with less environmental impact than trucking from Frankfurt to the UK.*". There is simply no supporting evidence for this assertion, or consideration of the possibility that trucking may be more cost effective (and environmentally friendlier) than flying.
- On Page 46, there is speculation of the impact of Brexit. "*With the UK's exit from the EU, more stringent border control procedures can be expected… Given increased friction at the border crossings, this market is more likely to consider moving to airfreight*". We address this issue from paragraph 302 onwards.

[142] (Azimuth Associates, 2017 b, pp. 25-46)
[143] (Azimuth Associates, 2017 b, p. 26)

331. In the discussion section of the Azimuth[144] report, a range of market opportunities for Manston are put forward. We have commented on many of these areas in depth earlier in our report. On Page 58, Azimuth discusses how future preferences may shift away from bellyhold freight.

> *"Whilst the UK air freight market is currently dominated by belly-hold rather than dedicated freighters, this is the reverse of the situation in the rest of Europe. Several factors may contribute to a change to this dominant model. These include reduced capacity on aircraft such as the A380, the LCC model, which generally focuses on rapid turnarounds, which preclude the carriage of freight. In addition, many interviewees talked of freight being bumped from passenger aircraft and the negative impact this has on their business. If the market was to move away from belly-freight and towards the use of more dedicated freighters, Manston would be well placed to attract this growing market".*

332. We disagree with this assessment:

- Trends in the UK and globally have been strongly towards bellyhold (due to passenger demand and hence belly hold capacity outstripping air cargo demand, see Appendix Section 11.3).
- The A380 is the exception. In general, newer widebody aircraft types have more bellyhold capacity than predecessors (see paragraph 140 onwards).
- There is limited freight uplift from full service passenger airlines operating short haul routes. Therefore, increased penetration of low cost carriers in this segment will not have a major impact (see paragraph 233).

333. On Page 64 of the Azimuth report, it is speculated that Manston could act as a base for Amazon, including the development of a drone hub. No supporting evidence is provided. For the locational reasons highlighted previously, Manston does not seem an obvious choice to host such activity.

[144] (Azimuth Associates, 2017 b, pp. 56-66)

8.5. Methodology Used in Manston Forecasts (Volume III)

334. Volume III of the Azimuth[145] report provides freight forecasts for the first 20 years of Manston Airport (after assumed reopening).

335. In the preamble, Azimuth once again seeks to justify its qualitative approach (Page 3).

> *"The second option was to take a qualitative approach focused on collecting market data. This allows base data to be derived from a method that takes account of how commodities are currently transported and how they are likely to be transported in the near future. This approach is particularly applicable in the Manston case since the airport is not currently operational. Indeed, in the short-term, any useful forecast needs to be built from the likely behaviour of potential airport users.*
>
> *This method is confirmed by the ACI-North America, who represents local, regional and state governing bodies that own and operate commercial airports in the United States and Canada, and recommends deriving customised inputs from a detailed market assessment. This assessment should be informed by carriers, their business partners and other supporting entities in the air freight community (ACI-NA, 2013, p. 3)."*

336. We do not believe that the ACI[146] study provides sufficient rationale for the Azimuth forecast approach. The same ACI study states on Pages 46/47:

> *"The best source of customized inputs in a forecast derives from a detailed market assessment. Carriers, their business partners, and all of the supporting entities in the air cargo community can provide meaningful input to ensure that the forecast is anchored in reality and adds clarity to the planning requirements."*
>
> *"Use the most reliable and current data – A correct and solid traffic basis is essential. If not available, different data sources should be consulted to establish the best possible estimates."*
>
> *"Typically, at least two forecast scenarios are developed to provide a range of potential future activity levels. The baseline forecast represents a continuation of the airport's current role in the region and in the national transportation system. The baseline forecast represents the most likely scenario and will be used for future planning. An alternative scenario(s) can be used as a sensitivity analysis to assess the ability of the airport to respond to optimistic demand factors that depart from the baseline forecast."*

337. Therefore, ACI is not advocating a completely qualitative approach.

- The Azimuth study does not provide a detailed market assessment (rather, anecdotal evidence about the size of selected niches).
- Interviews only covered a small selection of current UK operators.
- No attempt has been made to establish a solid traffic base (from which Manston could seek to capture market share).
- The ACI study suggests that historic traffic performance should inform baseline projections, rather than be disregarded. Alternative scenarios are more appropriate for the types of optimistic demand factors incorporated in the Azimuth forecasts.

[145] (Azimuth Associates, 2017 c)
[146] (Airports Council International - North America, 2013)

338. The ACI study (Page 50) goes on to highlight the different demand data that should be considered, including segmenting tonnage by origin/destination, commodity, desired level of service[147] and shipment size.

339. Key factors to consider are summarised on Page 52, including regional demographics, regional employment and production, regional industrial location patterns, shifts in commodity demand and shifts in distribution practices and patterns.

340. A more balanced assessment of the ACI guidelines is that both qualitative and quantitative methods play an important role in the development of air cargo forecasts. It is not our reading that ACI proposes that a purely qualitative approach is sufficient.

341. On Page 3 of its report, Azimuth makes reference to the Airport Commission:

> *"The Airports Commission also recommends using the Delphi Method, pointing out that relying on, "a single, central-point forecast would be a risky approach" (Airports Commission, 2013, p. 8)."*

- The Airports Commission developed multiple scenarios in its traffic forecasts.
- However, despite this, only one scenario is presented in the Azimuth projection.

342. Volume III also refers to York Aviation and Transport for London analysis (Page 1). As highlighted previously and as supported by York Aviation themselves (see paragraph 235), Azimuth makes incorrect interpretations from the studies.

343. Azimuth also quotes selected secondary data in support of its forecasts. On Page 4, it quotes a one month snap shot of global freight volume growth from November 2016. In the context of long term forecasts for Manston, this is meaningless.

344. Boeing and Airbus freight forecasts are also highlighted.

- Boeing and Airbus are both leading industry bodies which regularly publish air cargo forecasts.
- Boeing on a bi-annual basis (most recent in 2016).
- Airbus, annually (most recent in 2017).
- Note that both forecasts are in units of flown tonne-km – a combination of the tonnage of cargo flown and the distance it is flown for (as such, changes in the average sector length would affect the forecasts). The tonne-km forecasts include both bellyhold and cargo carried on dedicated freighters (though these are not separated in the projections).

345. Global Airbus projections are then used as the source for a simplistic annual growth for Manston for years 11-20 of the Azimuth forecast.

- There are obvious difficulties in comparing growth rates for tonnage at a UK airport (in a mature market) with global freight tonne-km projections (which include forecast growth in faster growing economies).

346. We have undertaken a more in-depth review, outlined in the paragraphs below.

347. In its latest forecast, Boeing predicts air cargo growth of 4.2% CAGR over the period 2015-35[148]. The most recent Airbus forecast, for the period 2016-36, gives a CAGR of 3.8%[149].

[147] Trade-off between the cost and the quality of service as determined by transit time, reliability and security, often compared to the same characteristics for available surface options.
[148] (Boeing, 2016, p. 2)
[149] (Airbus, 2017a, p. 101)

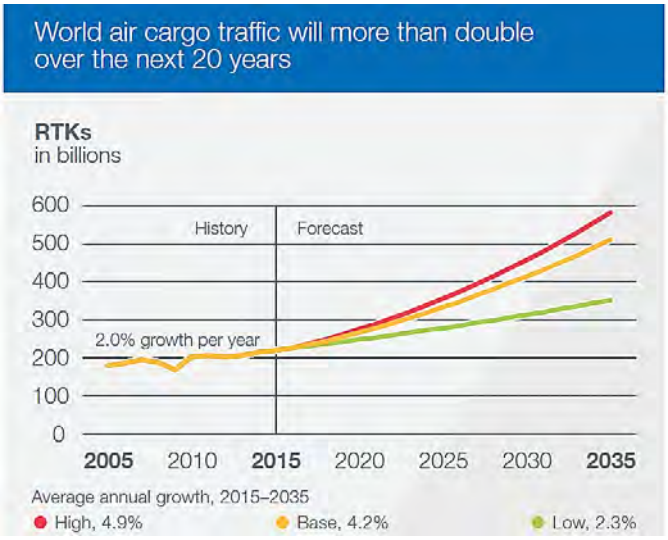


Figure 20 – Global 20-year air cargo forecast - timeseries of high, base and low forecasts

Source: Boeing

348. Boeing also provides a regional breakdown of expected growth rates[150]. For the flows involving Europe, most are below the global average CAGR. Growth of intra-Europe air cargo is forecast to be the lowest of any regional flow shown (2.2%). This indicates global growth projections need to be treated with caution in the context of the UK market.

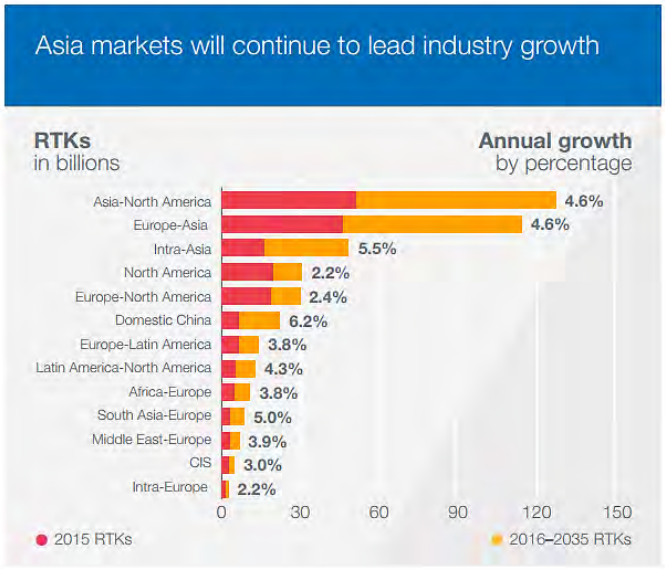


Figure 21 –Global 20-year air cargo forecast – size, and growth rates, of key flows

Source: Boeing

349. While Airbus and Boeing forecast strong growth in tonne-km in future years, it should be noted that only limited growth in freighter aircraft is envisaged for European based airlines. Airbus forecasts growth of just 42 freighters in European fleets by 2036[151] (Boeing does not appear to provide an equivalent number).

350. History shows that Airbus and Boeing forecasts tend to be optimistic. Boeing has reduced its 20-year forecast of growth in every iteration since at least 2010/11, while Airbus has reduced forecast growth in

[150] (Boeing, 2016, p. 16)
[151] (Airbus, 2017a, p. 105)

every iteration since at least 2012. This has resulted in lower tonne-km at the end of each forecast e.g. the 2017 version forecasts lower tonne-km for 2036 than the 2015 version forecast for 2034.

351. Similarly, the number of dedicated freighter aircraft Airbus expects to be in operation by the end of its 20-year forecast has been reduced by around one third, from ca 3,000 (based on the 2012 forecast[152]) to ca, 2,000 (based on the 2017 forecast[149]). We note this downgrading of freighter outlook has not been mentioned in the Azimuth reports, notwithstanding its use of Airbus cargo projections.

- Note the drop of one third in the number of freighters expected to be operating in future is greater than the drop in its cargo tonne-km CAGR forecast, implying increasing dependence on bellyhold capacity to meet air cargo demand. This is consistent with historic trends, highlighted previously in this report.

352. Alongside the figures discussed above, Boeing publishes high and low forecasts. These show global air cargo CAGRs of 4.9% and 2.3% respectively. Notice that the downside (-1.9ppts) is significantly larger than the upside (+0.7ppts). Notwithstanding the differences in geography and forecast units highlighted previously, our projections for the UK sit within this range (CAGR 2.5% for same time period as Boeing projection).

353. Both the consistent reductions of the forecast numbers with each new iteration, and the large potential downside (relative to upside), indicate some uncertainty for the sector in the future.

8.6. Manston Air Freight Forecasts (Volume III)

354. Given the lack of transparency in the Azimuth forecasts, it is not possible to undertake a detailed critique of the forecast building blocks / assumptions. The only breakdown provided is by imports and exports. There is no segmentation by carrier type, commodity type etc.

355. The freight forecasts for Manston are summarised in the chart below.

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

[152] (Airbus, 2012, p. 137)

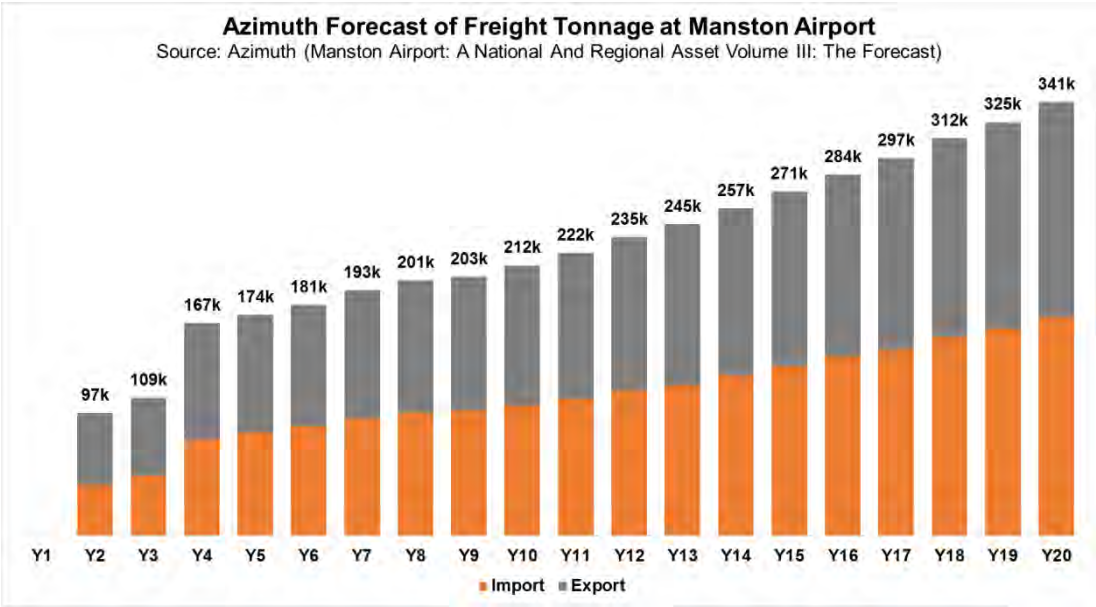


Figure 22- Azimuth Forecast of Freight Tonnage at Manston Airport

356. We have contrasted the projected air freight growth with historic Manston growth, historic UK growth and our base case demand projections for the UK.

- By year 20 of the Azimuth forecasts (assumed to be 2039), Manston freight throughput is forecast to have grown by almost 12 times the 2013 outturn (the last full year of operations). The equivalent CAGR from 2013 is 9.9%.
- This compares to our projected demand growth for the UK market of 2.3% over the same period.

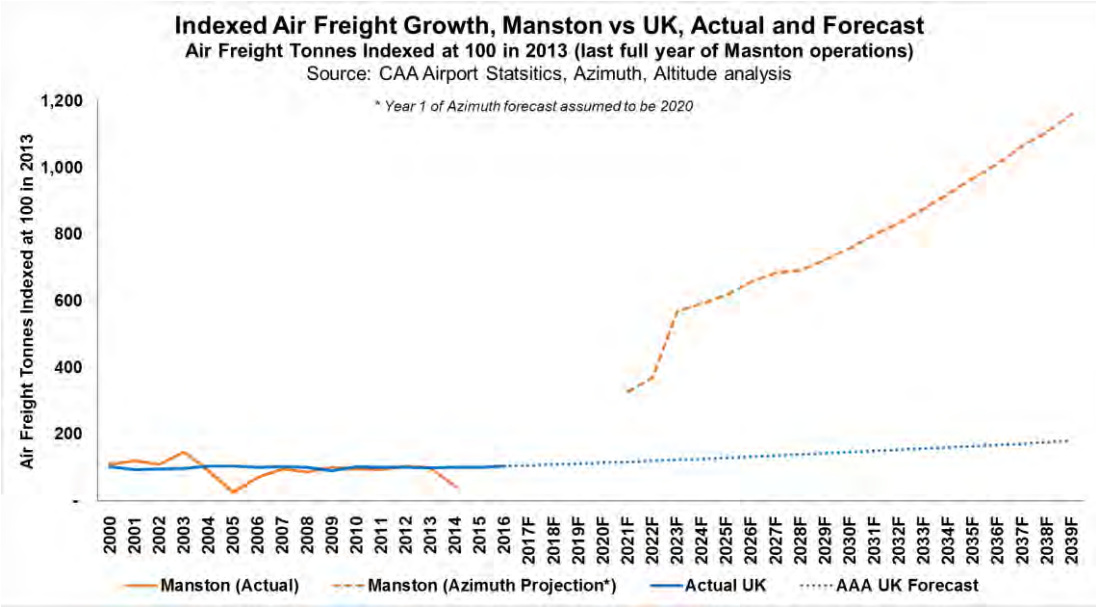


Figure 23- Azimuth Forecast Compared to Historic Growth and UK Forecast

357. We have also compared the Azimuth projections for Manston to the 2016 performance at the leading air freight airports in the European Union.

- The projected volumes for Manston by year 5 would see it comfortably within the top 20 EU airports in 2016.
- By year 20, Manston's projected volumes would be higher than all but the 12 largest EU airports in 2016.
- 19 of the airports in the top 20 are either major/large passenger hubs or major integrator hubs. The one exception is Luxembourg, the home base of Cargolux, which is one of the largest all cargo airlines in the world with a fleet of 27 freighter aircraft[153]. Given that Manston is not expected to develop into either a passenger or an integrator hub, this shows the level of ambition in the Azimuth projections.

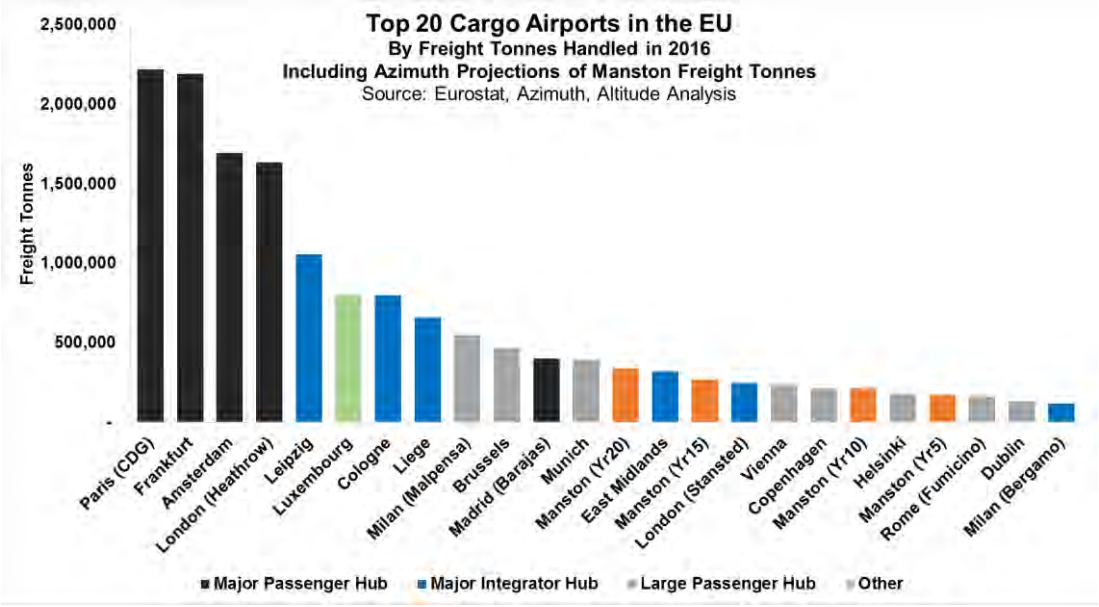


Figure 24- Azimuth Forecast Compared to EU Air Freight Benchmarks

358. Not surprisingly, we consider the forecasts to be not credible, given their extreme optimism and the negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance at Manston.
- We do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak at best. There is no evidence that bellyhold will not continue to dominate the UK market. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in the airport. Lack of capacity was not a material factor.
- As well as the forecasts ignoring historic performance, it also does not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight airports have seen volumes fall.

[153] Ranked the 9th largest cargo airline in the world in 2016 (source: aircargonews). Source for Cargolux fleet is the Cargolux website.

359. There also seems to be a discrepancy between the methodology description and the long term forecast results. On Page 7 it is stated:

> *"Therefore, from Years 11 to 20 an annual percentage growth has been applied to the figures derived for Year 10."*
>
> *"However, to be conservative, and in line with the Airbus forecast, a 4% uplift on the Year 10 figures has been applied to extrapolate the long-term forecast for Manston Airport. "*

360. We therefore expected that long term growth for Manston (Year 11 onwards) would be 4%. The Year 10 to Year 20 CAGR is 4.8% (adding ca. 25,000 tonnes by Year 20, compared to a 4.0% CAGR).

361. As highlighted previously, there are significant issues with using a simplistic annual growth uplift based on global manufacturer forecasts for global tonne-km. Further issues are:

- The manufacturer forecasts have a track record of optimism, and have consistently been revised down in later iterations.
- The Airbus forecast referenced has since been updated, with growth of CAGR 3.8% (lower than the forecast used by Azimuth).
- There is significant variation in growth rates for different parts of the world, with the European market more mature than average. Within the European context, the UK is one of the more mature markets. Therefore, use of a global figure is likely to significantly overstate demand growth in the UK and is not an appropriate tool for looking at demand in the UK market.
- While Airbus and Boeing forecast strong growth in tonne-km in future years, it should be noted that only limited growth in freighter aircraft is envisaged for European based airlines. Airbus forecasts growth of just 42 freighters in European fleets by 2036[154] (Boeing does not appear to provide an equivalent number). Therefore, demand in the most relevant segment for Manston is likely to be lower than the overall average.

362. We are also surprised to see imports and exports almost entirely balanced in the Azimuth forecasts.

- Exports were a minority of overall freight before Manston was closed. Exports accounted for between 6.0% (2010/11) and 24.3% (2004/05) in the last 11 years of operation. The average export percentage in the period 2002/03 to 2013/14 was 12.6%.
- The UK is generally an import rather than an export market for goods. HMRC[155] data indicates that exports accounted for 37.5% of total UK air freight to/from non-EU countries by weight in 2016.
- Therefore, the assumption that flights will be equally loaded for both inbound and outbound operations seems very optimistic.

[154] (Airbus, 2017a, p. 105)
[155] www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx

8.7. Manston Cargo ATM Forecasts (Volume III)

363. The Azimuth forecasts also include freighter ATM projections, summarised below.

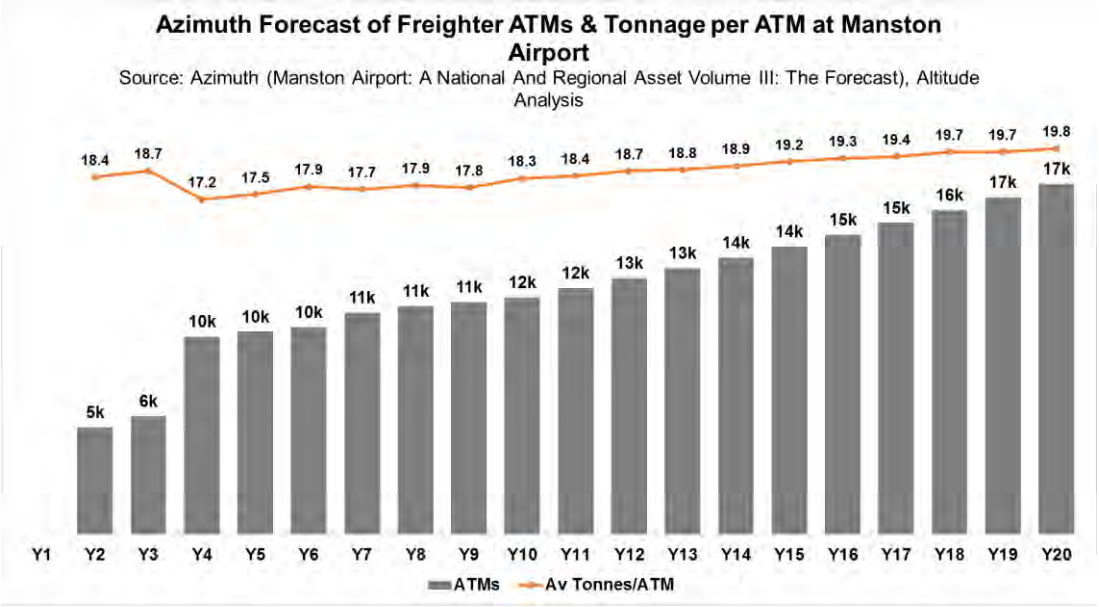


Figure 25- Azimuth Forecast of Freighter ATMs & Tonnage per ATM at Manston Airport

364. The tonnes per ATM forecast figure (ca. 17-20 tonnes) is very low compared to historic levels at Manston. In the last full 5 years of operation, the airport recorded an average of 63 tonnes per cargo ATM.

- The low figure is driven by an assumption that the most predominant cargo aircraft at Manston will be smaller Code C and Code D aircraft. We understand that this differs to the historic pattern, explaining the difference in average loads.
- The projected average load is slightly above current Stansted levels. However, given the lack of integrator operations at Manston, we would have expected the average load figure to be higher.
- As an illustration, if the average load in Year 20 was consistent with historic levels, the same forecast freight tonnage (340,000 tonnes) could be handled by ca. 5,400 cargo flights.

365. We note that York Aviation's professional opinion[156] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This figure is higher than the Azimuth's Year 20 freighter ATM forecast for Manston.

- This is despite very optimistic cargo tonnage projections and average cargo per ATM assumptions that are much lower than historic values.

[156] (York Aviation, 2017)

366. The cargo ATM forecasts have also been compared to leading European airports. This emphasises the extremely challenging nature of the Azimuth forecasts. By year 20, the projected cargo ATMs at Manston are higher than achieved by all but 6 EU airports in 2016. Again, it is noticeable that the leading EU airports for cargo ATMS are either major/large passenger hubs or major integrator hubs, which are not the business models proposed (or that would be realistically achievable) for Manston.

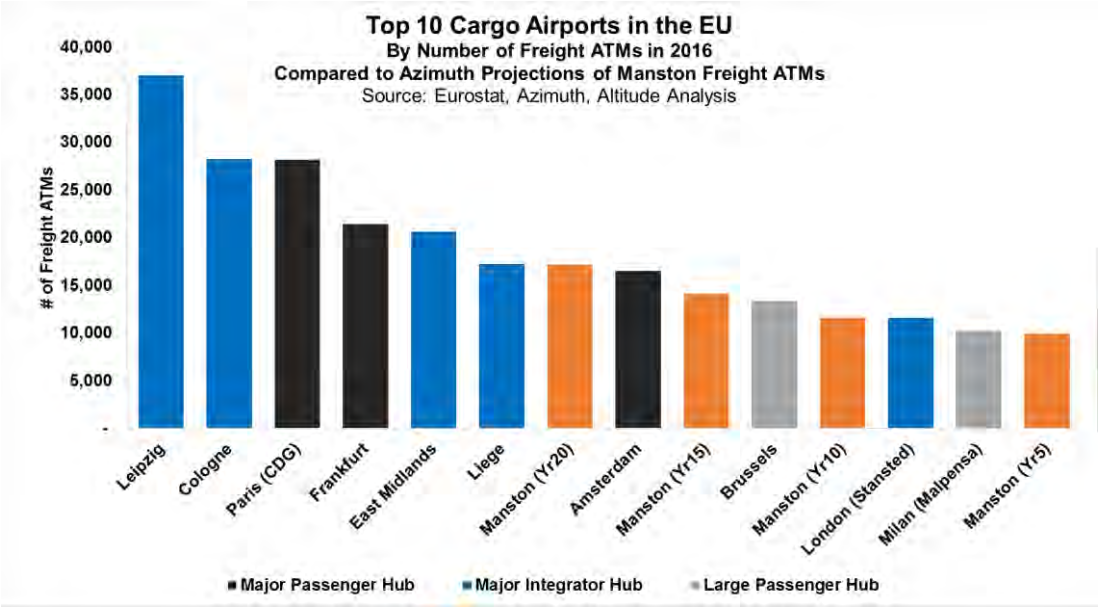


Figure 26- Azimuth Forecast Compared to EU Freighter ATM Benchmarks

367. Finally, we also compare the average air freight tonnes per cargo ATM projected for Manston with leading EU benchmarks. Note that the air freight total includes bellyhold as well as freighter cargo.

368. The projections for Manston indicate low average loads compared to the leading EU airports, with the exception of some integrator hubs (which have a higher proportion of smaller aircraft for short haul flights, reflecting the nature of the express market). This sheds further doubt on the validity of the Azimuth projections for cargo ATMs. If the average loads were higher, this would result in lower cargo ATMs for the same air freight tonnage.

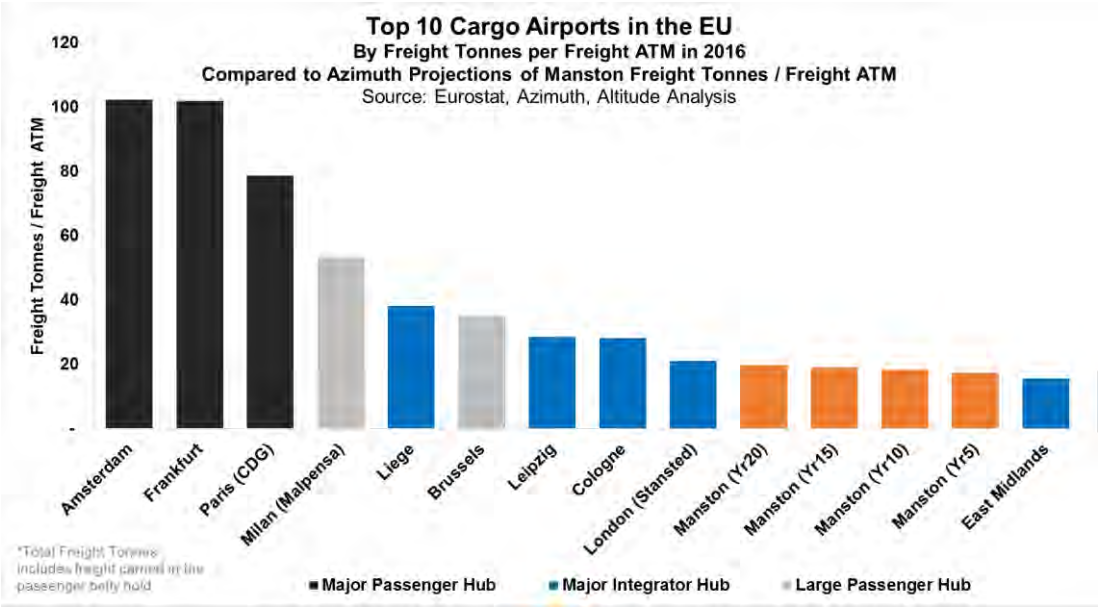


Figure 27- Azimuth Forecast Compared to EU Air Freight Tonnes per Freighter ATM Benchmarks

8.8. Conclusion

369. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity (beyond that identified specifically at Heathrow), and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

370. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential.

371. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts. We see no realistic prospect that Manston could ever develop to reach the threshold required of a Nationally Significant Infrastructure Project, namely to increase cargo ATMs by at least 10,000/year compared to the existing capability.

9. Overall Conclusion

372. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

373. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

374. We consider the forecasts to be extremely optimistic and not credible, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance at Manston.
- We do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[157]). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight.

375. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported we would not expect freight volumes to be materially above historic levels, and nowhere close to the volumes forecast by Azimuth.

376. Finally, the forecast of freighter ATMs is not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.
- This represents one-third of current UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the Department for Transport, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels [158].

377. In particular, we note that York Aviation's professional opinion is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. We would envisage that freighter ATMs at Manston would

[157] (Wiggins Group plc, 2002, p. 16)
[158] (Department for Transport, 2017a, p. 33)

be only a fraction of the level required under Section 23 of the Planning Act of 2003 (being at least 10,000 ATMs/year above the existing capability).

378. In paragraph 48, we put forward four questions in relation to the RSP proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[159]. The answers to our questions have been developed over the course of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 3 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

379. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts. We see no realistic prospect that Manston could ever develop to reach the threshold required of a Nationally Significant Infrastructure Project, namely to increase cargo ATMs by at least 10,000/year compared to the existing capability.

[159] (Azimuth Associates, 2017 a, p. I)

10. Appendix - Overview of the Cargo Industry

10.1. Modes of Transport for Transportation of Cargo

380. Air cargo makes up only a small proportion of global cargo (by tonnage). Seabury estimated that in 2016, air cargo had a share of just 1.5% of containerised air and sea trade[160]. For international transit in particular, sea is the dominant mode of cargo transport.

381. In many cases, cargo reaches its destination using a mix of modes. Road and rail are commonly used to collect cargo from many different shippers across a large geographic area, and bring it to a central hub for consolidation, before onward shipping by air or sea (with a similar process occurring at the other end of the air/sea journey in order to distribute cargo to consignees).

382. The different modes of transport each have inherently different costs associated with them, usually related to speed of transit and quantity of product being moved. Air (a relatively fast and relatively low-quantity mode) is more expensive than sea (a relatively slow mode capable of moving vast quantities of product at a time). Generally, products that make use of air transportation are high-value and/or time critical, and can be easily packaged.

383. Transportation of high value items by air helps businesses maximise profits by minimising the time for which its inventory is tied up in supply chains. For high value items, the benefits of being able to quickly realise the value of product inventory and reinvest can outweigh the additional cost of air transport. As such, the proportion of global trade that travels by air is much greater when measured by value (ca. 35%[161]), than when measured by tonnage.

384. For time critical products, the trade off between a) the cost of transport, and b) the deterioration in the value of the product with time, can be a key factor in determining what mode (or modes) to use. Products such as flowers, newspapers and some pharmaceuticals have no value if they are not available to consumers a short period after they are shipped. For these products, air is often the only viable mode of transport.

385. The nature of the cargo, or its physical size, may also influence mode choice (for example heavy plant machinery may be too large for air transport, while air transportation of many substances is restricted or prohibited).

[160] (Seabury, 2017, p. 4)
[161] (IATA, 2017a, p. 5)

10.2. Types of Air Cargo

386. Whilst there are many different types of air cargo, at a high level, most can be categorised as one of general freight, express or mail.

- Mail is typically letters and parcels, delivered to final destination by the postal service of a given country.
- Express cargo is typically 'next-day' shipments that are collected from the shipper by close of business and are required by the consignee by close of business the following day.
- General freight is everything else (note that general freight is a very broad category which also includes several types of low volume specialist cargo such as hazardous, valuable and live animal freight).

387. The air cargo market is served by various different business models. These include:

- Cargo-only airlines, such as Cargolux, which operate aircraft carrying only cargo.
- Integrators, such as DHL Express, which facilitate cargo transportation from shipper through to consignee, and typically own/lease and operate the vehicles necessary to achieve this (and which carry only cargo). Integrators tend to have a focus on express cargo.
- Traditional airlines such as British Airways, which carry cargo on their passenger flights (known as bellyhold cargo). These carriers may additionally operate cargo-only flights (in which case they are known as combination carriers).
- Couriers and road hauliers, which move cargo between the shipper/consignee and the airport hubs.
- Freight forwarders, which typically help shippers to organise the transport of freight, but do not take part in actually moving it.

388. Steer Davies Gleave was commissioned by the UK Department for Transport to improve its understanding of the UK air cargo industry. Its report, 'Air Freight: Economic and Environmental Drivers and Impacts' provides a breakdown of the UK air cargo market in 2008, by type of cargo and type of carrier – see below. General cargo and specialist products accounted for 75% of the market, express for 18% and mail for 7% (all by tonnage)[162].

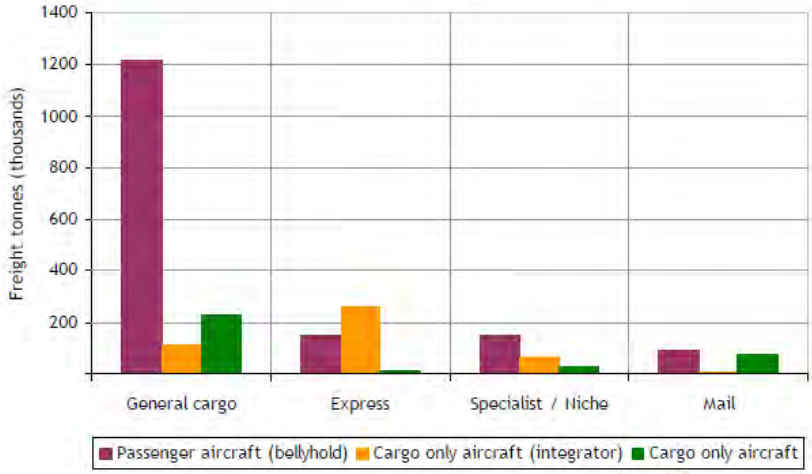


Figure 28 - UK air cargo in 2008 by type of cargo and type of carrier

Source: Steer Davies Gleave [2010], AIR FREIGHT Economic and Environmental Drivers and Impacts

[162] (Steer Davies Gleave, 2010, p. 47)

Bellyhold Cargo

389. A commercial passenger aircraft has a considerable amount of space underneath the passenger cabin, used to store the checked baggage of passengers. The checked baggage generally does not utilise all this space, and some airlines choose to generate additional revenue by filling it with cargo.

390. The routes operated, the aircraft used, and flight timings are typically determined by passenger demand. However, passenger demand does not always align with cargo demand. Some routes may have very little cargo demand, while others may have much more than can be accommodated.

391. The revenue generated from bellyhold cargo can be a significant minority of overall revenue. Furthermore, carrying bellyhold cargo does not substantially increase costs (for example, the aircraft itself and the crew, the landing fees etc are incurred with or without the cargo).

392. Bellyhold cargo can therefore offer an airline a significant revenue upside opportunity, with little downside risk (as long as the airline is careful to price cargo to cover the incremental cost of carriage e.g. increased fuel burn).

393. Loading and unloading cargo from the aircraft can make very short turnaround times impossible to achieve. Therefore short haul low cost operations, which rely on very high aircraft utilisation to achieve profitability, typically do not to carry bellyhold cargo.

394. The capacity available for cargo in the bellyhold of passenger aircraft is difficult to estimate. It depends on many factors, including how many passenger and crew bags there are to accommodate (and how heavy they are, and how efficiently a given airport's staff loads those bags), the volume of fuel needed, the temperature and altitude of the departure airport, the type of engines etc. Many of these factors vary significantly from departure to departure, even if the exact same aircraft hull is used.

395. Complicating matters is that the limiting factor on the amount of cargo that can be uplifted depends on its density. One flight may depart with a bellyhold that is physically full but with spare weight capacity. Another may depart with space available in the bellyhold but not able to carry more weight. Reporting of air cargo load factor typically states only the weight used versus the overall available weight.

Cargo Carried on Cargo Aircraft

396. A cargo aircraft (or freighter) is operated purely for cargo, and carries no commercial passengers. Most of the aircraft used are very similar to commercial passenger aircraft, with the exception that all seats and overhead storage, carpets, toilets, galleys etc. are removed from the space that is normally the passenger cabin; this space is then filled with cargo. Additionally, as there is no checked baggage, all space underneath the passenger cabin is available for cargo. For example, a 747-400 cargo aircraft can carry multiple times more freight than a 747-400 passenger aircraft.

397. As there are no commercial passengers on a freighter aircraft, the size of aircraft operated, the routes and the timings are all chosen to fit cargo demand.

398. IATA highlights the higher average yield from freight carried on cargo-only aircraft in comparison with that carried in the bellyhold of passenger aircraft:

> *"At an aggregate industry level, cargo-only services have exhibited a greater sensitivity to fuel price changes. Cargo only services on average earned a premium of 10% in 2014 over belly hold services"*[163]

399. Note that the yield premium of freighters is not a comparison on a like for like basis. It will include, for example, the impact of freighters serving different markets.

[163] (IATA, 2015, p. 5)

400. The absence of commercial passengers also means that all costs must be covered by the revenue from cargo only. The impact of this on profitability (in comparison with bellyhold cargo profitability) is demonstrated in the following illustrative example (from a 2015 Seabury presentation on air cargo trends).

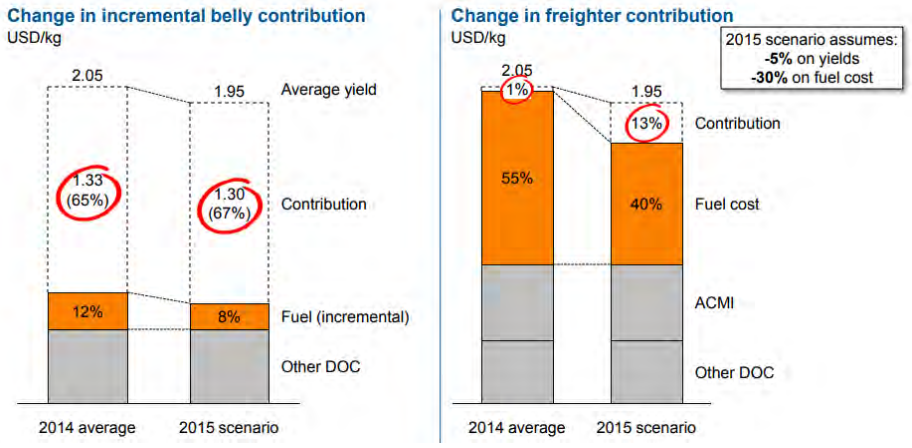


Figure 29 - Freighter vs bellyhold profitability, and impact of fuel price

Source: Seabury [2015], 'Air Cargo 2015: Recent trends and impact on air cargo industry'

401. In 2015, when carrying an item on a freighter, only 13% of revenue goes to profit. Carrying the same item at the same price, but as bellyhold cargo, results in 67% of the revenue going to profit[164].

402. Furthermore, it is seen that freighter profitability is more sensitive to fuel price than bellyhold cargo (fuel price reduced by 30% between 2014 and 2015; illustrative contribution increased by 12 percentage points ("ppts") on the freighter, but only by 2ppts for the bellyhold cargo)[164].

403. Whilst the current low fuel price environment means freighter profitability has increased, it also means future increases in fuel price could significantly reduce the profitability of freighter operations.

404. Another challenge for operators of freighter aircraft is that, unlike passenger demand, cargo demand can be highly directional. A freighter may be full on one sector, and carry very little on the return journey. Long haul freighters may operate circuitous routes with multiple stops (taking them literally all around the world in some cases), in order to minimise flying on sectors with low cargo demand.

405. Freighters may be scheduled (the flight operates regularly to a published timing and route), or charter services (a flight operated on a one off basis to meet irregular/unusually large demand e.g. moving Formula 1 race equipment between one race location and the next).

Trucking

406. The air cargo industry primarily uses trucking in one of two ways. There are road feeder services, operated to move cargo between the shipper/consignee and the airport hub, and there are trucks operated between airport hubs in place of flights.

407. According to Boeing, the use of road feeder services enables carriers to "*extend their networks and add scheduling flexibility*"[165].

408. Integrators generally operate their own road feeder services, while cargo-only and traditional airlines may use third parties (as well as accepting cargo from independent hauliers and couriers).

[164] (Seabury, 2015, p. 7)
[165] (Boeing, 2016, p. 31)

409. The book 'Moving Boxes by Air: The Economics of International Air Cargo' states that trucks operate between airport hubs in place of flights where and when "*the lower unit cost of operating trucks*"[166] makes it sensible to do so. For express freight, this can often be the case on shorter routes, as described by the Steer Davies Gleave report[167]:

> *"for distances of 400 – 500km, cargo will generally go by road. For distances above this, flights will be used, except at weekends, where many packages are only required on the Monday and so can be trucked. The circa 500km cutoff is a function of the integrators next day delivery guarantee."*

410. On such routes, relatively low aircraft utilisation (air transport of express freight is typically required overnight, but not through the day) combined with the lower time benefit of air transport, makes trucks a preferable option in many cases.

411. Regarding less urgent general cargo, the same report states[167]:

> *"Users of air freight with a requirement to send a consignment over 500 kilometres within Europe but without the need for next day delivery, will be likely to purchase a modal option other than air freight".*

412. The lower time benefit of air transport on short routes is derived from the high proportion of the total journey time that is taken up by sorting/handling and ground-based distribution; globally, the average air cargo flight accounts for just 33% of the average air cargo shipment time[168]. On routes with below-average flight times, this percentage falls even lower.

[166] (Morrell, 2011)
[167] (Steer Davies Gleave, 2010, p. 66)
[168] (IATA, 2017a, p. 7)

11. Appendix - Air Cargo Global Market Trends

11.1. Air Cargo Share of Global Cargo

413. While air freight had a share of 1.5% of the world's total air and sea freight in 2016, this share has been dropping during the period since 2000 (when air freight had a share of 2.5% of the global market). This is illustrated in the chart below[169]. Note that over the period 2013-16, air share of the global market has stabilised at ca. 1.5%.

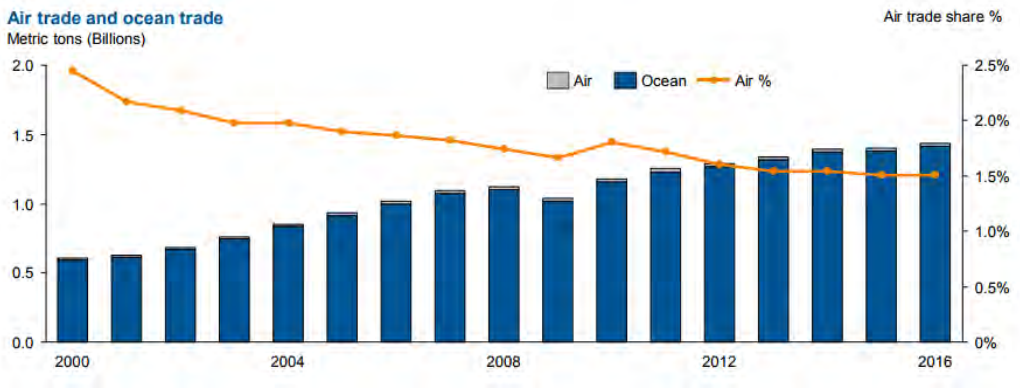


Figure 30 – Evolution of air and ocean freight tonnage with time

Source: Seabury

414. The 2008 financial crisis appears to have marked a shift in the nature of global trade. Before this point, sea and general air freight were growing strongly. In the period since 2008, growth of both has reduced dramatically (sea from 8.9% to 2.5% CAGR, general air freight from 4.3% to 0.9% CAGR). Conversely, the period since 2008 has seen rapid growth of express and mail air freight, as well as China-Europe rail (although these are from a much smaller base, particularly China-Europe rail)[170].

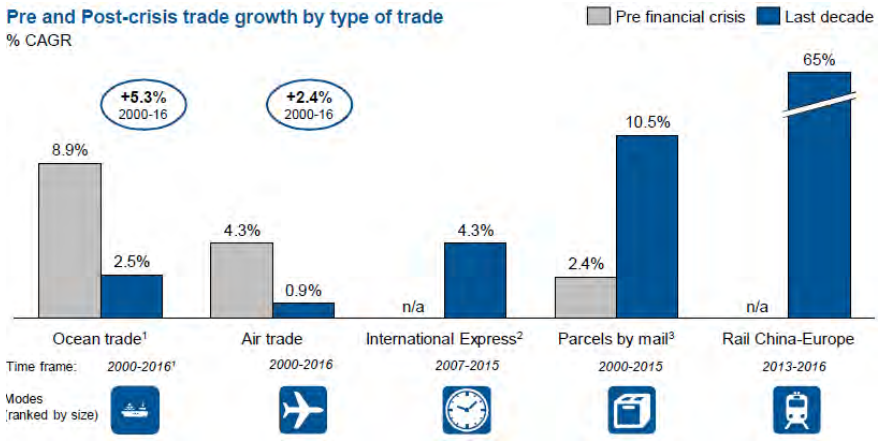


Figure 31 – Cargo growth rates by mode (pre- and post- financial crisis)

Source: Seabury

[169] (Seabury, 2017, p. 4)
[170] (Seabury, 2017, p. 23)

Trucking

415. Within Europe, the past decade has seen an increase in the use of trucking as a substitute for air transport. Referring to Europe, Boeing provides the diagram below, and states[171]:

> *"Since 2006, airport pairs of truck flights grew 3.1 percent on average per year. Weekly frequencies of truck-flights grew 14.3 percent on average per year between 2006 and 2013, but the growth has been at pause since 2013"*



Figure 32 – Example of the growth of trucking within Europe

Source: Boeing

416. The same source also refers to a rise in 'long haul truck-flight operations in Europe', claiming "*their dramatic rise over the past decade has clearly contributed to a decline in growth of scheduled freight carried by air*". Steer Davies Gleave provides data showing a similar trend over the period 2002-07[172]:

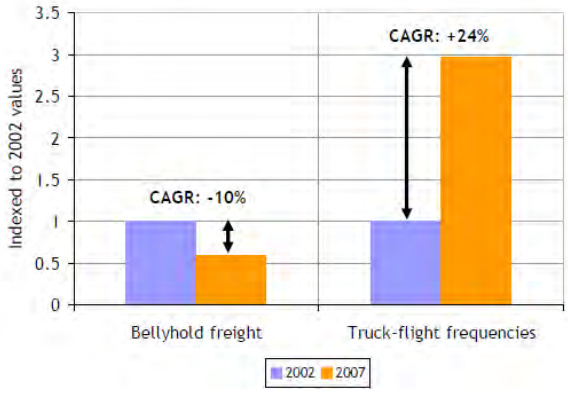


Figure 33 – Comparison of bellyhold airfreight tonnage and truck-flight frequency growth

Source: Steer Davies Gleave (2010), AIR FREIGHT Economic and Environmental Drivers and Impacts

[171] (Boeing, 2016, p. 32)
[172] (Steer Davies Gleave, 2010, p. 7)

11.2. Air Cargo Mix

417. Within air cargo, the low growth of general freight and the rapid growth of express and international mail is shown explicitly in the chart below[173]: Note that a significant proportion of the growth in general freight since 2008 occurred in 2010-11, and that growth of general freight since then has been lower (or even negative).

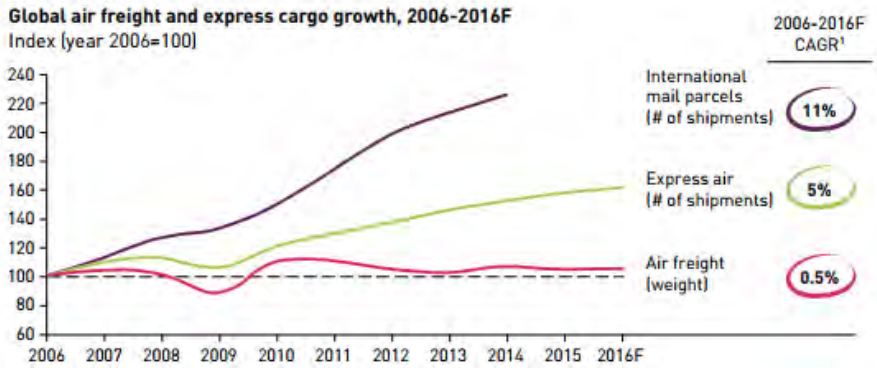


Figure 34 – Air cargo growth rates by type of cargo

Source: Seabury

418. Boeing confirms the relatively fast growth of express cargo[174]:

> *"International express traffic continued to grow faster than the average world air cargo growth rate, expanding 7.2 percent in 2014 and 3.6 percent in 2015".*

419. Within general freight, evolution of certain commodities has hurt air cargo volumes. For example, due to the miniaturisation of electronics, a modern laptop is significantly smaller and lighter than a personal computer from 1995, and so takes less space and weight to ship.

[173] (Seabury, 2016, p. 45)
[174] (Boeing, 2016, p. 7)

11.3. Bellyhold and Freighter Capacity versus Demand

420. In recent years, air cargo capacity has increased dramatically. This has been driven primarily by increased passenger demand resulting in an increase in the number of passenger aircraft (and therefore an increase in bellyhold capacity). Boeing states "*lower-hold capacity increased 27 percent from 2010 to 2015… the number of large freighters in service increased by 8 percent over this same period*"[175]. A similar trend is seen in the chart below from CAPA[176]:

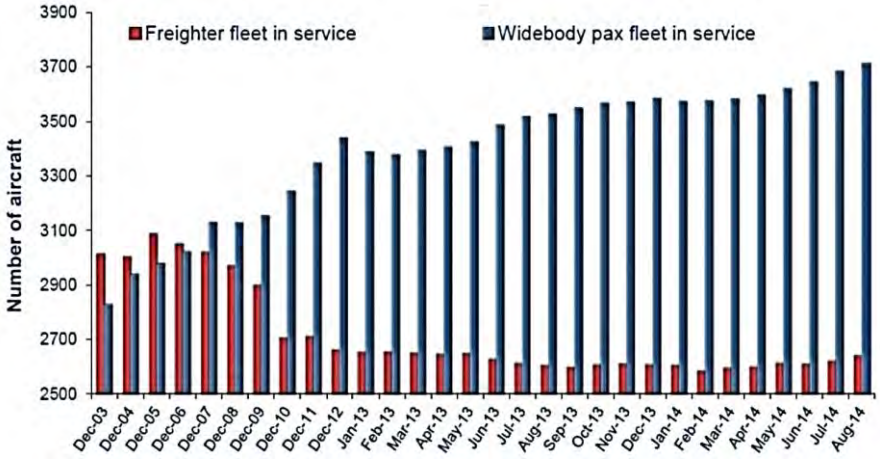


Figure 35 – Number of freighters and widebody passengers aircraft in service globally, Source: CAPA

421. The global financial crisis in 2008 had a significant impact on freighter numbers, while high fuel prices in the period 2011-14 is likely to have been a factor that kept freighter numbers depressed (see paragraph 400).

422. Whilst cargo capacity has been growing rapidly, cargo demand has not kept pace. This is illustrated by the fact that, as of Q4 2016, 15% of widebody freighter capacity globally was in storage[177].

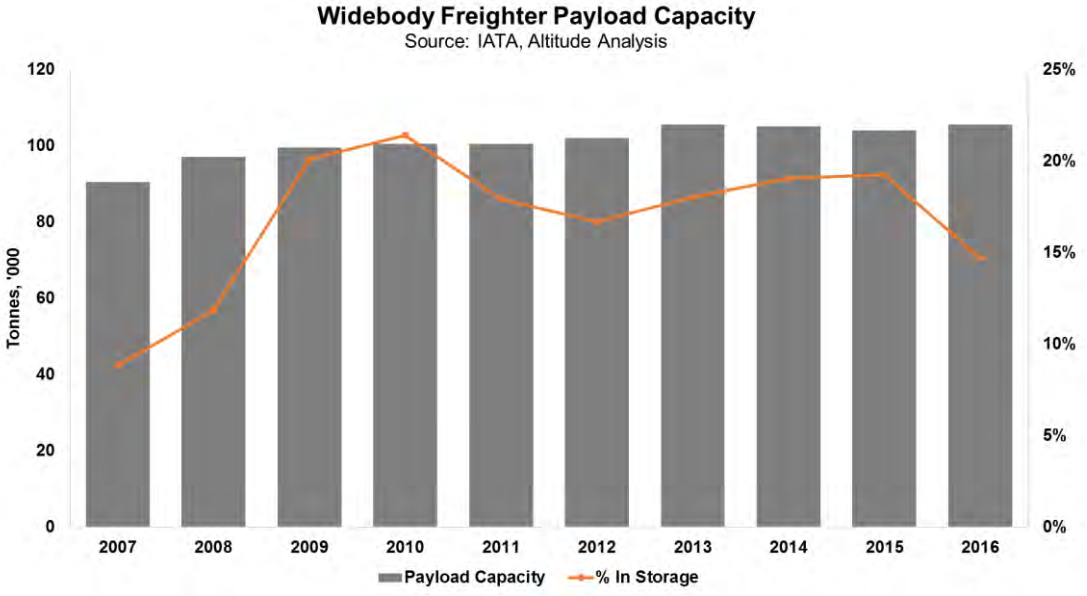


Figure 36 – Change in widebody freighter payload capacity with time

[175] (Boeing, 2016, p. 3)
[176] (CAPA, 2014c)
[177] (IATA, 2016, p. 3)

423. Additionally, the global average load factor achieved by airlines carrying cargo in the first 6 months of 2017 was just 45%[178]. Referring to bellyhold capacity, Airbus states that "*cargo load factors, on average, do not exceed 30 to 40% on international routes*"[179].

424. The chart below from IATA[180] shows the growth of both passenger and freight demand; since 2008, growth of passenger demand has far exceeded growth of cargo demand. This illustrates why growth of bellyhold capacity has outstripped that of freighters, why a number of freighters are being kept in storage, and why there remains significant amounts of unused cargo capacity.

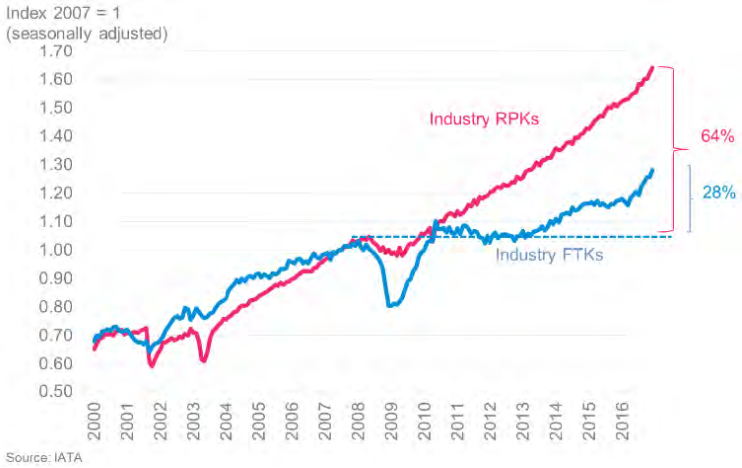


Figure 37 – Passenger growth compared with air freight growth, Source: IATA

11.4. Global Market Outlook

Outlook from Selected Carriers

425. The trend towards a reduced role for dedicated freighter aircraft (see Section 3.3) is reinforced by airline developments. In the text below, we provide selected examples of airlines cutting back on usage of freighter aircraft.

426. Luxembourg based dedicated freighter operator Cargolux (also in the world's top 10 air cargo carriers), acknowledges in its 2016 annual report the challenging operating environment it faces. The annual report also raises the possibility that dedicated freighter operators will not be viable in the future:

> *"There is clearly a current oversupply of capacity in the markets, which makes for a more challenging environment for cargo operators that have to achieve a healthy level of sustainable profitability…. There has been a modal shift from air freight to sea freight over the years whilst rail freight between Asia and Europe is an additional competitive challenge…. I also do not believe that it will be beneficial for shippers and forwarders if dedicated air freight operators were to disappear from the market."*[181]

[178] (IATA, 2017b)
[179] (Airbus, 2014, p. 35)
[180] (IATA, 2016, p. 3)
[181] (Cargolux, 2017, p. 7)

427. In 2014, the largest UK based combination carrier, IAG Cargo, decided to cease long haul flying using its own dedicated freighter aircraft (which had operated from Stansted).

> *"IAG Cargo CEO Steve Gunning said the carrier's dedicated cargo operations "made no profitable contribution" and the end of its freighter services will make the carrier "financially stronger""*[182]

428. Several other leading airlines are cautious about the prospects for the freighter segment. The following quotes are from a selection of combination carriers, all in the world's top 10 carriers of air cargo:

> *"Air France-KLM Martinair Cargo is pursuing its restructuring within a difficult economic environment. Air freight is being impacted by the situation of structural industry overcapacity…. the business is progressively retiring a portion of its full-freighter fleet to refocus most of its activity on the bellies of passenger aircraft. Within the framework of the Perform 2020 plan, this full-freighter fleet will thus be progressively reduced to five aircraft by 2017"*[183]

> *"Air France-KLM said freighters would become a "niche product" as cargo markets face continued overcapacity. Air France-KLM executive VP Erik Varwijk said slowing demand and greater belly capacity on scheduled passenger services made exclusive freighters redundant"*[184]

> *"Emirates VP cargo commercial operations Duncan Watson said the airline does not plan to add more freighter aircraft in the foreseeable future"*[185]

> *"Singapore Airlines Group subsidiary SIA Cargo faces another challenging year as conditions in the cargo market remain unfavourable. SIA Cargo has been unprofitable for seven of the past eight years, with losses further widening in recent quarters. Cargo capacity has been relatively flat since 2009, with additional belly space from passenger aircraft offsetting freighter reductions…. SIA Cargo is cutting its 747-400 freighter fleet in 1QCY2017, to only seven aircraft. At its peak in 2007 SIA Cargo operated 16 747-400 freighters. SIA will need to decide within the next few years whether to cut its freighter operation entirely or start investing in 747 replacements"*[186]

[182] (CAPA, 2014b)
[183] (Air France-KLM Martinair Cargo, 2017)
[184] (CAPA, 2014a)
[185] (CAPA, 2016)
[186] (CAPA, 2017)

12. Appendix - Case Studies of Leading European Cargo Airports

12.1. Context

429. In assessing the future potential of a re-opened Manston Airport, we have undertaken a review of Leipzig and Liege airports. Both are leading airports for all-cargo operations (rather than passenger hubs providing bellyhold capacity).

430. We have identified some of the key attributes that have helped Leipzig and Liege develop major roles within the European air cargo sector.

12.2. Leipzig

431. Leipzig Airport handled more than 1.0m tonnes of cargo in 2016. This throughput made it one of the top 5 cargo airports in Europe[187].

432. Leipzig is located in eastern Germany, ca. 100km from the Czech border and ca. 160km from the Polish border. Regarding its location, the airport states:

> *"[it is] located at the very heart of the central German logistics region…. [it is] an ideally located alternative to enter the growing markets in East Europe and Asia…. Besides outstanding infrastructural connections, the region is characterised by its motivated and qualified workforce and a high level of potential with regard to available space and investment"*[187]



Figure 38 - Trucking isochrones from Leipzig; 6hrs (dotted), 8hrs (solid-medium) and 10hrs (solid-thick)

Source: Leipzig Airport[188]

433. Leipzig Airport markets its proximity to eastern Europe as a benefit due both to the increasing economic power of this region, as well as the reduced flight time to Asia (compared with airports further west).

434. The airport has published a document stating trucking times to locations in eastern and western Europe. Only one of the ten examples given is within the 500km radius often considered as the realistic limit for express cargo. Three of these trucking destinations are over 1000km from Leipzig[189]. This gives some indication as to the possibilities for trucking of general cargo.

[187] (Leipzig Airport, 2017)
[188] (Leipzig Halle Airport)
[189] (Leipzig Halle Airport, 2014, p. 10)

435. Leipzig Airport has direct access to the European motorway network, and also has direct access to the rail network making rail-air transhipment possible.

436. The airport has two 3,600m runways, and operates cargo flights 24 hours a day. It has support from politicians at several levels for 24-hour operations. For example, the President of Saxony has said:

> *"Leipzig is in the second position of all hubs in Germany and this is why the state government and the city of Leipzig are convinced that 24 hours a day air traffic is necessary"*[190]

437. Note that this support appears to have been hard-won; the airport is reported to have spent ca. €100m on a noise control system, and is also said to be in regular communication with relevant stakeholders regarding noise[190].

438. DHL is one of the Leipzig Airport's largest customers. It decided to make the airport its European hub in 2004, began operations there in 2008, and now handles "*an average of 1,600t of cargo every day*"[191]. As of October 2016, DHL's total investment on its Leipzig hub was €655 million[192].

439. DHL Chief Executive Frank Appel said of Leipzig:

> *"It is in an excellent location, strategically positioned in the heart of Europe and is also in an excellent position to reach Asia and that is why we decided to expand our capacities here"*[190]

440. DHL's Leipzig hub manager is reported as adding other reasons for choosing Leipzig, including:

> *"the excellent road and rail connections, unrestricted night flights and a pool of skilled workers"*[190]

441. DHL operations support two of the airport's largest operators of scheduled cargo flights: EAT Leipzig is a wholly-owned subsidiary of DHL (it operates DHL's parcel and express flights, as well as providing adhoc charter services), while AeroLogic is a joint venture between Lufthansa and DHL (primarily operating long haul cargo-only flights for DHL).

442. The airport is also home to Ruslan Salis, a leading air charter company offering heavy lift services for large items of freight. A relatively large number of other carriers also operate charter cargo flights from Leipzig (34 are listed on the Leipzig Airport website). This indicates the airport is able to offer a competitive proposition for a wide range of different types of air cargo.

[190] (Air Cargo News, 2016a)
[191] (Saxony Economic Development Corporation, 2017)
[192] (Cargo Forwarder Global, 2016)

12.3. Liege

443. The airport handled 660,000t of freight in 2016, making it the 8th largest cargo airport in Europe (bigger than both East Midlands and Stansted). The majority of freight was general freight (ca. 56%), with express accounting for ca. 25%. Freight handled at Liege has grown at an average rate of 5.6% CAGR over the 4-year period 2013-16[193].

444. Liege's proximity to major population centres of northern Europe means that there are "*around 400 million consumers*"[193] within easy reach of the airport. This advantageous position means that 66% of all European freight transits through the region[193].

445. It has direct access to the motorway network. The airport states:

> *"Motorway transport is now the solution preferred by major logistics players and those specialised in the transport of goods in Europe…. The Flexport® is less than one day by truck from the largest European cities, thus reaching around 400 million consumers. It offers the advantage of an excellent, uncongested motorway network"[193]*

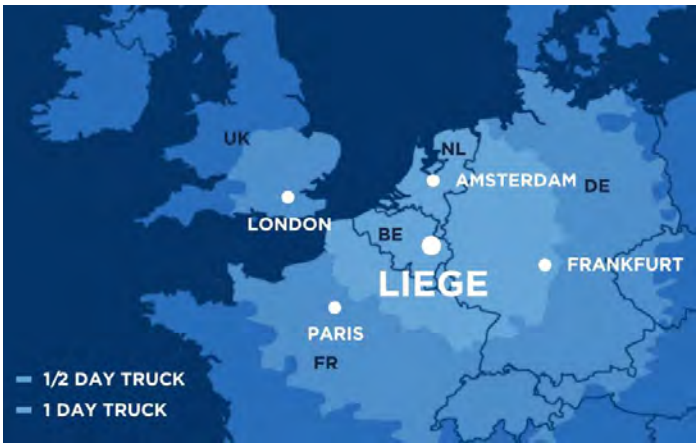


Figure 39 - ½ day & full-day trucking isochrones from Liege airport

Source: Liege Airport[193]

446. Whilst Liege benefits from an advantageous geographic location, the regulatory environment in which it operates is also conducive to air cargo; the airport operates 24-hours per day, 7 days per week:

> *"The other advantage at Liège is genuine 24 hour operations, an increasing rarity in Europe…. This does not just mean that the runway operates through the night but that there are no limits of any kind on the number of night slots that can be offered, and no extra charge for landing then…. This has been guaranteed by local government for 30 years and it is backed up by positive action, including purchasing and demolishing some houses under the flight path and spending heavily on noise insulation for others"[194]*

447. Note that when trying to construct a viable slot pair where one end of the route is a constrained airport, the ability to land at any time of day at the other airport can be particularly valuable. As more and more airports become constrained, 24-hour operation may therefore become increasingly important.

448. TNT is the main customer at Liege. Despite a recent buyout of TNT by FedEx, there appears to have been little loss of traffic to FedEx's handling facilities at other airports. This perhaps indicates that integrators are reluctant to shift location once their infrastructure investment has been made.

[193] (Liege Airport, 2017)
[194] (Air Cargo News, 2016b)

449. Other customers with significant tonnage at the airport include CAL, Ethiopian Cargo, Qatar Cargo, El Al Cargo and Icelandair Cargo. Similar to Leipzig, the diverse customer mix is indicative of the competitive proposition the airport offers.

450. The main runway is 3,690m long meaning many kinds of large cargo aircraft can take off at full capacity[195]. Whilst this is typically not necessary for express cargo carriers operating short-haul flights, it may be a key enabler for some long haul freighter operators.

451. Freight-only carriers also get advantages at Liege that they do not find at many other European airports. VP Commercial Steven Verhasselt said in 2016:

> *"The general trend is towards belly cargo but when you are operating a freighter, you want to fly into an airport dedicated to helping that type of cargo…. If we can save you a block hour from not having to taxi or wait for passenger airlines to land first, than [sic] that is a real cost saving and more important than cheaper landing or parking rates"*[196]

452. TNT and CAL both switched from Cologne to Liege in the 1990's "*attracted by Liege's strategy to focus on air freight in general and on the express business specifically*"[197], and are now amongst the largest of the airports customers.

453. The airport continues to expand its cargo handling facilities, with a new €4 million, 6,000m^2 cargo terminal due to open in 2017. It is also taking a role in the development of the 100+ hectares of land around the airport.

- For example, by forming a partnership – Land In Liege – with the land owner, which aims to "create synergies between the airport development and the development of the areas surrounding it"[198].

12.4. Conclusions

Leipzig and Liege airports are typical – albeit leading – integrator hubs. The airports are structurally different from Manston in many regards. There is no realistic prospect for Manston to develop a similar business model. However, without the cargo volumes associated with an integrator hub (or a major passenger hub), Manston will find it very challenging to generate significantly higher cargo throughput than historically achieved.

Liege / Leipzig Feature	Situation at Manston
Located close to motorway network, maximising catchment size.	Located on an A-road, ca. 40 miles from the motorway network (M20).
Catchment contains many of Europe's largest population centres.	Catchment is limited by the English Channel / North Sea.
24-hour operation.	Not clear but likely to be restricted.
Runway length of at least 3,600m, enabling largest aircraft to take off with full payloads.	2,750m runway, potentially limiting take-off payload for largest aircraft.
Significant investment in noise control measures.	Not clear.
Significant investment in cargo handling facilities.	Not clear.
Support from regional government.	Not clear.

Table 4 – Liege/Leipzig Structural Features vs Manston, Source: Altitude

[195] (Liege Airport, 2017)
[196] (Air Cargo News, 2016b)
[197] (Cargo Forwarder Global, 2017)
[198] (Land In Liege, 2017)

13. Appendix – Supporting Material

13.1. Assumptions made to calculate indicative cargo bellyhold capacity

454. Despite the difficulties in stating a cargo capacity for an aircraft type (see paragraphs 394-395), by making some assumptions[199] it is possible to generate estimated like-for-like comparison of the potential cargo capacity of different aircraft types.

Aircraft	Typical Passenger Capacity (#)	Indicative Cargo Capacity Volume (m^3)	Indicative Cargo Capacity Mass (kg)	2017 ATMs, UK-World (excl Europe)
Newer Aircraft Types				
B777-300	350-400	116	24,000	15,000
A350-1000	350-400	112	25,000	-
B777-9X	350-400	109	30,000	-
B787-10	300-350	105	21,000	-
A350-900	300-350	95	20,000	2,100
B787-9	250-300	91	22,000	12,000
A330-900neo	250-300	84	15,000	-
B787-8	200-250	71	15,000	11,000
A330-800neo	250-300	64	22,000	-
A380	400+	57	34,000	12,000
Older Aircraft Types				
A340-600	350-400	109	26,000	2,000
A330-300	300-350	84	15,000	6,000
B777-200	300-350	77	22,000	3,000
B747-400	400+	71	25,000	12,000
A340-300	300-350	71	15,000	500
A330-200	200-250	64	22,000	6,000
B767-300ER	150-250	46	23,000	9,000

Note there are additional ATMs where the precise aircraft model is not known: B777: 18,000, B787: 2,000, A330: 500
Source: Boeing, Airbus, British Airways, JAL Cargo, Qatar Cargo, Qantas Cargo, OAG, Altitude Analysis

Table 5 – Indicative cargo capacity of selected aircraft types
Source: Boeing, Airbus, British Airways, JAL Cargo, Qatar Cargo, Qantas Cargo, OAG, Altitude Analysis

455. The following set of assumptions are intended to enable comparison of the cargo capacity (weight and volume) of different aircraft types on a basis that is as close to like-for-like as possible.

456. They do not result in a cargo capacity that is directly comparable with airline or manufacturer stated capacities, nor with cargo capacities actually achieved by the aircraft operators in the real world.

- Seat capacity as stated by the aircraft manufacturer. Where more than one configuration is listed, the highest capacity 2- or 3-class version is assumed (single-class configurations are possible but not common for widebody aircraft, and therefore not representative of the likely average configuration).
- Passenger load factor of 100%.
- A passengers to crew ratio as close to 20 as possible (with the number of crew and the number of passengers as whole numbers).
- Passenger and crew average weight of 85kgs per person.
- An average of 1.1 hold bags per premium (F/J/W) class passenger, and 0.8 hold bags per economy (Y) class passenger/crew member.
- Average premium bag weight of 21kgs and average economy bag weight of 20kgs.
- An allowance of 1500kgs for miscellaneous items (e.g. cabin baggage).
- The maximum possible weight available for passengers/crew/bags/misc./cargo is equal to the difference between the Empty Operating Weight and Minimum Zero Fuel Weight stated by the

[199] See Appendix section 13.1 for detail of these assumptions

aircraft manufacturer. Where the manufacturer defines multiple weight variants, the highest MZFW version is used.

- Average bag volume of 0.18m^3.
- LD3 container volume of 4.5m^3, and pallet volume of 11.4m^3 (Source: Boeing).
- Average LD3 packing factor of 95% for passenger/crew baggage.
- Assumption that no LD3 container will contain both F/J passengers bags and W/Y passenger bags (note no similar assumption is made for transfer/OD bags).
- The hold will be configured with enough LD3 containers to fulfil the passenger/crew baggage requirement (and no more), while adhering to the publicly-known allowable hold configurations (Boeing, Airbus, Qantas Cargo, JAL Cargo, SIA and Scoot]). Note: Available cargo volume is mathematically larger if the number of LD3 units in the hold is maximised. However, the LD3 is less useful for cargo than a pallet (it is smaller, so the maximum dimensions of the freight it can hold is lower; it has a small opening through which freight must be loaded; LD3s are smaller than pallets and are not cuboids; hence they have worse volume utilisation than pallets). In our experience, airlines do not typically use a max-LD3 hold configuration, despite the reduced mathematical cargo volume inherent in substituting LD3s for pallets.
- Bulk hold volume is not included in our cargo volume estimate[200].

13.2. Outlook for A380 in the UK Market

457. We do not believe the A380 will significantly increase in prevalence in the UK market, for the following reasons:

- The only UK airline with outstanding orders for the type is Virgin Atlantic (6 aircraft on order). However, Virgin has continually deferred this order (since 2006) and it is widely considered unlikely that deliveries of these aircraft will ever be made (a Forbes article from 2016 states "Virgin Atlantic's ever-deferred order for six is basically dead"[201]).
- The other major UK carrier (British Airways) currently has no outstanding A380 orders.
- There are currently outstanding orders of just 97 aircraft; 46 of these are for a single airline, Emirates, which is not based in the UK (but serves the UK market).
- Additionally, just 2 new orders globally have been made for the aircraft since 2015[202].

[200] The bulk compartment is typically around 10-15m^3, capable of storing loose-loaded items. At IAG Cargo, this space was primarily used for blankets and newspapers for passengers, with around 2-4m^3 typically made available for mail bags/express cargo. Use of this space may vary significantly airline by airline.
[201] (Forbes, 2016)
[202] (Airbus, 2017b)

14. Appendix – Review of AviaSolutions Report

14.1. Introduction

458. AviaSolutions was commissioned by Thanet District Council to investigate the commercial viability of Manston Airport. Its report[203], dated September 2016, is briefly reviewed in this section of the appendix.

459. The AviaSolutions report has a fairly wide scope, including a review of the site development options, analysis of passenger potential, airport financial projections and asset condition reports. Consistent with our overall scope, we focus only on the aspects of the AviaSolutions report addressing cargo potential.

460. Northpoint was subsequently retained by RSP to critique the AviaSolutions report. We review the Northpoint report[204] and the subsequent response from AviaSolutions[205] in the next appendix section (Section 15).

14.2. Potential Development Scenarios

461. AviaSolutions[206] outlines various potential scenarios for cargo activity at Manston. It states that:

> *"In the past, Manston Airport was able to attract a certain level of cargo activity, and a potential future role would be for it to again serve this market. In our assessment, we assume as a minimum that Manston attracts this previous freight, totaling 30,000 tonnes per annum."*

462. Given cargo consolidation trends and competition from more established airports, we consider it possible that a reopened Manston may not be able to achieve historic tonnage. However, as a modelling assumption, we consider this to be reasonable.

463. AviaSolutions then puts forward two possible reasons why the scale of activity in the future could exceed historic levels:

> *"The selection of the East Kent area by a major multinational manufacturing (e.g. an Asian electronics or white goods company) or retail group (e.g. Amazon) as the location of its distribution network. Such location decisions can have a significant impact on freight volumes. However the UK's planned exit from the EU leaves makes this less likely.*
>
> *As a consequence of their lower sensitivity to airport location, freighters are generally amongst the first category of traffic to be 'squeezed' out of busy airports. With the pressure on runway capacity in the South East of England, it is possible that freighters currently operating through the London airport systems might seek to move to an alternative airport."*

464. In relation to the first possible reason, we are not aware of any firm or proposed development that would have a significant impact on freight demand. Therefore, while this a theoretical possibility, the same could apply to any location in the UK. Any future such development would be heavily contested between different UK regions, with more established and more central distribution locations likely to have an advantage.

465. The second reason suggested by AviaSolutions is investigated further in subsequent sections of the AviaSolutions report. We comment on this analysis later in this appendix.

466. AviaSolutions continues, commenting on the potential for integrator services at Manston:

[203] (AviaSolutions, 2016)
[204] (Northpoint Aviation Services)
[205] (AviaSolutions, 2017)
[206] (AviaSolutions, 2016, p. 15)

> *"We also considered the role of integrators in the air freight market. Whilst general cargo traffic tends to be more flexible about the location of the airport it uses than passenger traffic, this does not apply to the major integrated freight operators. The business model of operators such as DHL, FedEx and UPS is based on a hub and spoke principle involving both aircraft and road feeder services: the surface element of the network has a greater requirement for a central location within the market being served. We consider the geographic location of Manston precludes it from being a suitable base airport for an integrator in particular when compared to UK competitors such as East Midlands Airport."*

This assessment of the potential for integrators is consistent with our view.

14.3. Cargo Analysis

467. In Section 6 of the AviaSolutions report, more detailed analysis of the cargo market is undertaken. In assessing the key airport dynamics of the UK market[207], AviaSolutions draws similar conclusions to our analysis:

> *"The busiest airport for freight has consistently been Heathrow, responsible for two thirds of the country's air freight. This position owes much to the very considerable cargo capacity in the holds of the wide-body aircraft providing the many long haul passenger services from the airport. In contrast, East Midlands' position as the second busiest freight airport is due to its role as the centre of the UK distribution network of the integrated cargo carriers, especially DHL but also UPS and Royal Mail. Stansted is preferred by FedEx and is also used by the cargo operations of a number of airlines. These included British Airways before it discontinued its all-freighter operations in April 2014 and switched to the freighter operations of Qatar Airways.*
>
> *It has been argued by, for example, York Aviation on behalf of the Freight Transport Association that the stagnation of growth in UK air freight market since 2000 has been caused by a lack of airport capacity in the London area and specifically at Heathrow. Whilst the lack of ATM growth at Heathrow has undoubtedly hampered the development of the national air freight market, it is also true that over this period there was adequate airport capacity available at both Stansted and Manston to support additional dedicated freighter movements. Freighter movements at Stansted decreased over the period, while Manston closed. This strongly suggests that the stagnation of UK airfreight is not a consequence of capacity constraints given the excess capacity at Stansted and Manston."*

468. In particular, the highlighted distinction between Heathrow freighter capacity and overall UK or South East freight capacity is key. AviaSolutions further explores the dynamics of bellyhold versus freighter:

> *"It is important to note that, in the UK market, only 30% of airfreight is carried on dedicated freight aircraft. This is substantially less than the global average, where approximately 56% of RTK's are transported on freighters. In part, this disparity is due to the excellent belly-hold networks available from UK airports and in particular from Heathrow.*
>
> *As passenger demand increases additional belly-hold capacity will enter the market. This capacity growth is unhooked from the demand scenario for belly-hold cargo and can result in excess capacity in the market. As a result airlines will often sell this belly-hold capacity using a marginal cost pricing structure. This pricing structure does not need to account for the high cost of the aircraft and must only meet the additional marginal cost that each kilogram of cargo incurs. Through the application of this pricing in the key structure, belly-*

[207] (AviaSolutions, 2016, p. 27)

hold cargo often undercuts the minimum price that can be charged on dedicated freighter operations.

As a result of this market dynamic, an airport focused on airfreight carried by dedicated freighters may be overly exposed to a declining or stagnant total market, or at best to a market that is not exposed to strong potential."

469. Again, this view of the market aligns with ours. One area of difference is in relation to the bellyhold capacity of newer aircraft. AviaSolutions asserts that:

"However, there are some elements of the market that appear to be limiting the increase in belly-hold capacity. These include

- *Some of the newer aircraft types have a smaller bellyhold cargo capacity than the aircraft they replace; and*
- *Low Cost Carriers (such as easyJet and Ryanair) are gaining market share but generally ignore the freight market."*

470. As we argue in our report, most newer aircraft types have higher cargo capacity than their predecessors (see paragraph 140). Furthermore, short haul passenger flights contribute a small minority of overall freight, regardless of whether operated by full service or low cost carriers (see paragraph 233).

471. AviaSolutions undertook interviews with freight industry representatives[208]. The list of interviewees was not extensive, with 4 people from the air cargo sector. However, compared to the stakeholders interviewed by Azimuth, there interviews are more relevant for analysing the potential for Manston to play a national role in the UK freight sector.

472. The conclusions from the interviews are summarised below:

"We conclude therefore that there is limited interest from the cargo industry in using a re-opened Manston Airport for air freight. The larger scheduled freighter operators are unlikely to relocate their services to the airport, particularly if the airport does not have a unique product offer. We believe it is more likely that were Manston Airport to re-open, the most likely role would be to serve smaller freight operators and the larger operators on an ad-hoc basis. There is no compelling reason to believe that the airport would be able to generate appreciably more freight activity than previously, other than in the context of a shortage of airport capacity in the London area."

473. This summary is consistent with our assessment of the potential market for Manston.

14.4. Potential Future Freight Operations - Model

474. The next stage of the AviaSolutions report[209] investigates potential demand versus supply imbalances in the South East. Not enough detail of the assumptions/workings is provided to be able to undertake a comprehensive review.

475. The approach differs from ours in some important respects:

- Demand growth rates based on trend analysis rather than linked to GDP.
- Future capacity based on assumed average loads for bellyhold and freighter flights at different airports. Future freight capacity expansion plans for airports do not seem to be explicitly taken into account.

[208] (AviaSolutions, 2016, p. 29)
[209] (AviaSolutions, 2016, p. 30)

- Focus on South East airports rather than national demand/supply.

476. Nevertheless, despite the different methodology, the conclusions are broadly similar to our analysis.

- Demand can be fully accommodated up to 2045 in the Heathrow third runway case.
- In all runway scenarios, demand can be fully accommodated up until 2040.

477. AviaSolutions then provides its modelling assumptions on the potential capture by Manston of unaccommodated demand:

> *"For the purposes of our assessment and in recognition of RiverOak's stated intention to develop Manston as a freight airport, we have assumed that half of the remaining unaccommodated demand is flown via Manston, with the other half going to other UK regional airports, potentially led by East Midlands and Manchester."*

478. We consider this a generous assumption, given the strength of alternative options at established airports or from a highly developed trucking network.

479. Later in the AviaSolutions document (Section 7.3.1), the Manston freight forecasts for the Heathrow third runway scenario are presented. Freight tones are modelled at 30,000 from 2018 to 2045, before growing to 100,00 tonnes in 2050. Appendix C (Section 11.1.1) of the AviaSolutions report provides the Manston freight forecasts for the no new runway scenario (the most favourable for Manston). Again, the forecast is for 30,000 tonnes from 2018 to 2040, but growing to 80,000 tonnes in 2045 and 140,000 tonnes in 2050.

480. These figures look reasonable for the short to medium term, with some potential for modest outperformance in a growing market. In contrast, we consider the forecasts to be on the high side in the long term. Even if South East capacity by 2050 is more heavily constrained than we assume, we consider it likely that centrally located regional airports will benefit to a much greater extent than Manston.

14.5. Conclusions

481. Section 8 of the AviaSolutions report provides its overall conclusions for the freight potential at Manston:

> *"Our freight interviews indicated that the demand to use the airport for freight was very limited. This, in large parts, is due to two factors; the infrastructure investments that have already been made by the industry around Heathrow and Stansted, and the geographical location of the airport. Infrastructure, and the associated knowledge, skill and supporting industry at airports such as Heathrow and Stansted, as well as the major European hubs such as Frankfurt, and Paris, would be almost impossible for Manston to replicate. The geographic location of the airport, tucked into the corner of the UK, cannot compete with airports such as East Midlands for Integrator services that are sold as fast delivery, due to the increases in surface transportation times. The interviews did however indicate that charter services and ad-hoc freighter flights would certainly return, providing some revenue income for the airport. In summary, we conclude that freight would return to the airport in limited quantities, not dissimilar to the tonnage previously processed at the airport."*

482. These conclusions are substantially in line with our conclusions (see Section 2.7).

15. Appendix – Review of Northpoint Report

15.1. Introduction

483. In the main body of our report, we have reviewed the reports issued by Azimuth on the potential for freight development at a reopened Manston. RSP also commissioned Northpoint to review the Azimuth forecasts, the original AviaSolutions report and more generally the RSP proposals. Northpoint's analysis was issued in a report titled *"The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston"*.

484. In this appendix, we briefly review the Northpoint report.

- Where the Northpoint report covers similar ground to the Azimuth reports, we do not repeat our commentary from the main body of our report.
- Furthermore, our focus is on areas of the Northpoint report relating to freight. Other areas, including passenger development and financial viability, are not covered at this stage.
- Finally, we restrict our commentary to the key issues of substance. For example, Northpoint expresses strongly worded opinions on the AviaSolutions approach. While we believe this criticism is misplaced, we have separately reviewed the AviaSolutions report, and do not see the need for further comment in this appendix.

485. Our review of the Northpoint report has been undertaken in chronological order (the same order issues appear in the Northpoint report).

15.2. Manston Airport Benchmarks

486. Northpoint describes the business model for a reopened Manston as a "*mixed use airport offering air cargo, air passenger links and aircraft servicing and recycling*[210]". Northpoint then highlights that this would be:

> *"…in line with the business models of successful benchmark airports such as Alliance Fort Forth in Texas, USA; Hamilton Airport in Ontario, Canada; Bergamo in Italy; Liege in Belgium; and Leipzig in Germany."*

487. There is no explanation of what characteristics these airports may have in common with Manston, or why these airports would be more relevant than UK examples of mixed use airports such as Prestwick.

- See paragraph 322 onwards for a review of Prestwick Airport and similarities to Manston.

488. In the appendices (Section 12), we have provided case studies of Leipzig and Liege airports. The case studies demonstrate very clearly that these airports have very little in common with Manston, and cannot be considered as relevant benchmarks using objective criteria.

489. AviaSolutions[211] subsequently reviewed all the airports put forward by Northpoint and concludes:

> *"There are clearly structural and geographical reasons as to why each of these airports is different to the proposal for Manston Airport. As such, suggesting these are comparable benchmarks is not realistic. In order for Manston Airport to acquire the status of these airports it would need to demonstrate key elements of development, namely; commitments from key express players (DHL / UPS / FedEx / Amazon / Alibaba); an ability to operate night operations with few regulatory restrictions; and geographical advantages from nearby cities, industrial parks, and population centres."*

[210] (Northpoint Aviation Services, p. 1)
[211] (AviaSolutions, 2017, p. 16)

490. We agree with this assessment. The catchment, location and regulatory framework are all much less favourable at Manston, rendering any comparisons between the airports meaningless.

15.3. Air Cargo Forecast Methodology

491. In Section 2 of its report, Northpoint puts forward its approach to air cargo forecasting and critiques the AviaSolutions approach. The Northpoint methodology appears to be similar to the Azimuth approach, which is reviewed in Section 8 of this report. We focus our assessment of the Northpoint approach on selected key points not covered in the Azimuth forecast review.

492. Northpoint[212] downplays the importance of location for freight, stating that *"In order to forecast where future freight capacity might optimally be developed, it is therefore not appropriate to rely on the geography of consignee demand"*. Instead, the importance of supply side issues is stressed:

> *"The effect of this is to push freight forecasting away from typical neo-classical demand/price mechanism models and any use of airport specific progression, towards supply driven modelling particularly requiring transparency about the supply factors that are used. So, for example, freight operations will be attracted either to where there is a large volume of network carriers flying international services or to where there are few night time restrictions because these are important for express freight operations, or in the case of dedicated freighters where there are no restrictions on slot availability and there is sufficient space to create efficient apron based loading and unloading operations alongside specialist handling facilities such as refrigerated storage, bonded warehouses and major logistics sheds."*

493. Northpoint then argues that *"In the south east of England this points to a relatively small number of airports being suitable for any large-scale freight operations."* Northpoint[213] sees this as an opportunity for Manston, stating that *"…there are few alternatives other than for Manston to cater for non-belly freight movements at south-east airports."*

494. There is an inconsistency in this argument. If the geography of demand is of secondary importance, Northpoint's focus on airport capacity in the South East is misplaced. In any case, South East airports already attract a disproportionate share of the UK's freight demand (see Section 2.4).

495. On Pages 4 and 5 of its report, Northpoint makes a number of assertions, in support of its forecasts, which we dispute:

- *"Based on long-term growth trends in the sector, this report contends that freight capacity in the south-east will need to expand by over 100% in the next 25 years."* No further explanation is provided for such a sweeping statement. As we have highlighted, there is spare freight capacity in the South East currently (see Section 5.3). Furthermore, the focus on South East airports only is not justified (see paragraph 219).
- "*… the expansion for Stansted and Luton for passenger services, primarily of a low-cost nature, means that there will be very few spare slots during the day and more importantly at night, that can be used by express freight carriers for dedicated freight operations*." This assertion ignores the plans of Stansted to grow its freight volumes and to expand its freight infrastructure. It also does not consider the separate planning cap for freight flights (see paragraph 237 onwards).
- *"In this context, and keeping in mind the need for basic infrastructure requirements such as a substantive runway, good road connections and sizeable areas available for apron and shed development, there are few alternatives other than for Manston to cater for non-belly freight movements at south-east airports."* As noted previously, we disagree with a narrow focus on the South East market. Even so, there are other options. In addition to the substantial expected freight

[212] (Northpoint Aviation Services, p. 4)
[213] (Northpoint Aviation Services, p. 5)

capacity growth at Heathrow and Stansted, other airports such as Gatwick and Bournemouth could play a larger role in the future.

- *"Indeed, I anticipate existing volumes at Luton, Stansted and Gatwick will continue to fall as slots and space become increasingly valuable."* The implication that volumes are falling at Stansted and Gatwick is incorrect. Both airports have enjoyed strong growth since 2015 (Gatwick especially, see paragraph 212).

496. On Page 5, Northpoint then outlines the perceived benefits of Manston:

> *"Manston, in contrast, will have no foreseeable slot restrictions, an established reputation for efficient handling and if RSP's proposals are approved, a substantial apron capable of handling several large aircraft concurrently all with excellent airside support facilities and access to dual carriageway roads to London, the M25 orbital and in the foreseeable future to a new Dartford crossing improving access to ports in Essex and in East Anglia. It is even well positioned for trans-shipping freight to trucks, which can then use Dover port or the Channel Tunnel to access the near continent."*

497. We disagree with this assessment of the potential for Manston:

- As discussed previously (Section 4.11), Manston's location is poor.
- The infrastructure advantages are not unique to Manston, while the potential night flight restrictions at Manston are not mentioned.
- We are unconvinced by the potential of improved access to ports. For example, Liverpool Airport currently has very limited freight volumes despite common ownership with Liverpool Port.
- Similarly, it is not clear what advantages could accrue from trans-shipping freight to trucks for onward cross-channel travel. The directional flows where this would make economic sense are not articulated.

498. In referring to the Northpoint forecasts, it is stated on Page 5 that *"They nevertheless demonstrate that, under a range of scenarios, Manston is strongly placed to attract surplus demands in the South East by offering an attractive supply side solution to the air freight industry."* As far as we can see, only one (very optimistic) scenario is presented by Northpoint.

499. Northpoint then provides a wide range of comments on the AviaSolutions forecast methodology (Pages 6-7). AviaSolutions[214] refutes many of these in its follow up report. We make the following observations:

- Northpoint promotes the use of global historic trends and manufacturer forecasts in the context of Manston projections. As we also comment in relation to the Azimuth forecasts (see paragraph 361), the simplistic application of global manufacturer projections to a UK airport is problematic. The divergent freight trends in different markets caution against the application of global metric.
- Northpoint appears to suggest that, for Manston, global forecasts are more relevant than national projections. We find this puzzling. While freight is an international business, UK demand characteristics should not be disregarded.
- Northpoint also seems to argue that bellyhold capacity at Heathrow is constrained, and set to diminish due to newer aircraft types having lower bellyhold capacity than predecessors. However, as we show in Section 4.7, the average freight load for both bellyhold and freighter flights at Heathrow has been growing significantly. This suggests that spare capacity exists and/or average capacity per flight is improving. In the same section, we also highlight that – with the exception of the A380[215] – newer passenger aircraft typically have higher bellyhold capacity than legacy aircraft.

[214] (AviaSolutions, 2017)

[215] As at 31st October 2017, 217 A380 aircraft were in operation with outstanding orders for a further 100. This compares to 1,744 A330/A340/A350 family aircraft in operation, plus a further 1,057 outstanding orders (source: Airbus website). In addition, there is a large

500. The Northpoint report then addresses the issue of cross-channel transhipments (Page 7 onwards). Its argument is that lack of airport capacity in the South East has led to a major increase in trucking from the UK to European airports. As we noted previously, there is not (nor has been) any overall shortage of airport capacity for freight in the South East or the UK more generally (Section 5). Furthermore, the increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK (see Figure 32).

501. AviaSolutions[216] also correctly points out that:

> *"It is important though to note that a reverse flow also exists with continental European freight being trucked across the Channel to be flown into and out of UK airports. A lack of verifiable data on these flows hinders quantitative analysis, although the practice has existed for many years and despite this the freight industry chose not to use Manston Airport when it was open."*

502. On Page 9, Northpoint draw inappropriate conclusions from York Aviation studies. Our comments on this in relation to Azimuth also apply here. Similarly, we find Northpoint comments on Brexit impacts speculative and one-sided.

503. Northpoint then devotes Pages 10-14 on *"The Availability of Substitutable Bellyhold Capacity"*. We disagree with the following assertions:

- "*However, Avia adduces no evidence on comparative charging rates between bellyhold and freighter carriers and therefore with Heathrow known to be one of the most expensive airports in the world, we remain sceptical that this is a material factor that would drive the re-allocation of consignments from freighters to bellyhold aircraft."* As we illustrate in Section 4.7, Heathrow has grown its share of the UK freight market despite its relative expense. Despite high airport charges, we understand that the incremental costs of cargo carriage at Heathrow are fairly low. Therefore, where excess bellyhold capacity exists, it makes economic sense for airlines to try to fill that capacity with competitive charges for freight customers.
- *"First, just under 50% global air cargo is shipped bellyhold; the comparative figure in the UK is 70%. Since the economies of the UK's main EU competitors are not materially different from our own, there is no logical explanation for this difference other than the shortage of slots available to integrator aircraft or dedicated freighters …"*. There is available airport capacity for integrators / dedicated freighters (see Section 5). A much more credible explanation for the high proportion of bellyhold in the UK is Heathrow, which is Europe's largest passenger hub airport. Heathrow provides an extensive schedule of widebody passenger flights to many of the world's most important air freight markets. Furthermore, the geographical position and island status of the UK make it a less suitable location for freighter flights serving the wider European market (compared to say, Germany). This is especially true for flows to/from Asia.
- *"Second, there are many types of freight (e.g. time critical, heavy, large or live) for which bellyhold capacity cannot provide an acceptable substitute to dedicated freighters*." It is correct that some types of freight are unsuitable for bellyhold. However, this segment of the market is very small and is accommodated at existing airports such as Stansted.
- *"Third, Heathrow's principal attraction for freight forwarders, namely the range of international destinations it serves directly, is also its potential Achilles heel, because that network may not be sufficiently concentrated on certain 'thick' freight routes to be able to cope with the underlying demand – in other words the more complex the passenger network, the greater the likelihood it may not match the required pattern of freight distribution flows."* We do not follow the logic of this. At any airport, there will be some routes where freight demand exceeds bellyhold supply.

backlog of Boeing widebody orders (ca. 1,200 as at October 2017) in addition to aircraft already in operation. Therefore, the A380 is not overly significant in relation to overall bellyhold capacity.

[216] (AviaSolutions, 2017, p. 18)

This is not a new phenomenon, and we are not aware of any suggestions that there will not be an ongoing role for freighter aircraft in the future. Therefore, it is unclear how this factor will be a negative for Heathrow going forward.

- *"Fourth, new aircraft tend to have less bellyhold capacity than older ones and Heathrow and Stansted are the two airports where these new aircraft are most likely to be introduced."* This point is incorrect and was addressed earlier with regards to Heathrow earlier in this section (paragraph 499). The comment is relation to Stansted is irrelevant, as Stansted bellyhold freight is negligible.
- *"And finally, it is very likely that a sizeable chunk of the available runway capacity at both airports will be taken up by Low Cost Carriers (i.e. Ryanair at Stansted and easyJet at Heathrow), and as with most Low-Cost Carriers, carrying freight does not form part of their business model."* We have previously argued that the airline mix is much less important than the route mix. Short haul full service airlines only generate a small fraction of bellyhold freight, so any differences in airline mix within the short haul sector will have minimal impact (see paragraph 233).
- *"Hence, in the medium to long term it is hard not to see the average freight capacity per aircraft arriving at Heathrow diminishing, even if with the new runway, the total number of aircraft that can operate there increases."* This would require a reversal of historic trends – as discussed above, the average loads per flights have been growing strongly. We would anticipate this trend to continue in the future.

504. We have a very different view of the freight outlook, both generally and specifically for Manston. No credible evidence is presented by Northpoint in support of its assessment. There are major flaws in key lines of argument, with its study exhibiting many of the same fundamental issues as the Azimuth reports.

15.4. Manston Air Freight Forecasts

505. Northpoint present summary air freight forecasts in Appendix A of its report. The forecasts are even more ambitious than the Azimuth forecasts, with 472,000 tonnes projected by 2040. This figure is equivalent to two-thirds of all tonnage on freighter aircraft in the UK in 2016.

506. The building blocks to the forecast are not easy to follow. However, the following assumptions appear highly suspect:

- Stansted to see freight volumes reduce dramatically, in contrast to the airport's own forecasts and expansion plans. It appears all this "spilled" freight is expected to divert to Manston, rather than more established UK competitors.
- Similarly, spill from Gatwick and Heathrow, despite growing long haul services at Gatwick and a new runway at Heathrow. Again, it seems all spill is expected to be captured by Manston.
- There is also a major assumption that a substantial proportion of freight can be "clawed back" from European airports. By 2040, it appears that this factor contributes 100,000 tonnes to Manston in the Northpoint forecasts. The assumption is unfounded and ignores market economic reality.

507. In Section 8.6, we concluded that the Azimuth forecasts were extremely optimistic and therefore not credible. The Northpoint forecasts are even more ambitious. Therefore, we draw similar conclusions in relation to their credibility.

508. As with the Azimuth forecasts, we also note the Northpoint cargo flight projections are high, even taking into account the projected freight tonnage.

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Air Cargo News. (2016a, October 29). *Rapid growth and need for speed fuels DHL's Leipzig investment*. Retrieved from http://www.aircargonews.net/news/single-view/news/rapid-growth-and-need-for-speed-fuels-dhls-leipzig-investment.html

Air Cargo News. (2016b, September 16). *Steven Verhasselt: Liege Airport has room for freighters*. Retrieved from http://www.aircargonews.net/news/single-view/news/acn-interview-liege-airport-has-room-for-freighters.html

Air France-KLM Martinair Cargo. (2017, September 06). Retrieved from http://www.airfranceklm.com/en/air-france-klm-martinair-cargo

Airbus. (2012). *Global Market Forecast 2012-2031.*

Airbus. (2014). *Global Market Forecast 2014 - Freight.*

Airbus. (2017a). *Global Market Forecast 2017/2036.*

Airbus. (2017b, July 31). *Orders & Deliveries.* Retrieved from http://www.aircraft.airbus.com/market/orders-deliveries/

Airport Coordination Limited. (2017). *Stansted Airport, Summer 2017, Start of Season Report.*

Airports Commission. (2015). *Final Report.*

Airports Council International - North America. (2013). *Air Cargo Guide.*

AviaSolutions. (2016). *Commercial Viability of Manston Airport.*

AviaSolutions. (2017). *Review of Azimuth & Northpoint Forecast for Manston Airport – FINAL REPORT.*

Azimuth Associates. (2017 a). *Volume I: Demand in the south east of the UK.*

Azimuth Associates. (2017 b). *Volume II: A qualititive study of potential demand.*

Azimuth Associates. (2017 c). *Volume III: The Forecast.*

Boeing. (2016). *World Air Cargo Forecast 2016-2017.*

CAPA. (2014a, April 23).

CAPA. (2014b, January 20). *IAG Cargo CEO: freighter operations 'made no profitable contribution'*. Retrieved from https://centreforaviation.com/news/iag-cargo-ceo-freighter-operations-made-no-profitable-contribution-300661

CAPA. (2014c, October 22). *Air cargo: few other industries would tolerate its structural overcapacity.* Retrieved from https://centreforaviation.com/insights/analysis/air-cargo-few-other-industries-would-tolerate-its-structural-overcapacity-192139

CAPA. (2016, February 29).

CAPA. (2017, February 03).

Cargo Forwarder Global. (2016, October 13). *DHL Express Pushes Leipzig Further up Front*. Retrieved from https://www.cargoforwarder.eu/2016/10/13/dhl-express-pushes-leipzig-further-up-front/

Cargo Forwarder Global. (2017, January 16). *Liege Airport Strengthens its Position in Cargo*. Retrieved from https://www.cargoforwarder.eu/2017/01/16/liege-airport-strengthens-its-position-in-cargo/

Cargolux. (2017). *Annual Report 2016.*

Department for Transport. (2003). *The Future of Air Transport.*

Department for Transport. (2017a). *UK Aviation forecasts, Moving Britain Ahead.*

Department for Transport. (2017b). *Revised Draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England.*

DHL. (2014, June 30). *Press Release.* Retrieved from http://www.dhl.co.uk/en/press/releases/releases_2014/local/063014.html

East Midlands Airport. (2015). *Sustainable Development Plan.*

Forbes. (2016, June 06). *Airbus A380: The Death Watch Begins.* Retrieved from https://www.forbes.com/sites/richardaboulafia/2016/06/06/airbus-a380-the-final-countdown/#20ca0f5d553d

Freight Transport Association. (2017). *Logistics Report.*

Gatwick Airport. (2015). *A Second Runway for Gatwick - Response to Airports Commission Consultation.*

Glasgow Prestwick Airport Limited. (2016). *Annual Accounts 2015-16.*

Heathrow Airport. (2014). *The Promise of Heathrow - Heathrow's Vision for Growth.*

Heathrow Airport. (2016a). *Passenger Growth within 480k ATM Cap.*

Heathrow Airport. (2016b). *Heathrow's Cargo Strategy.*

Heathrow Airport. (2017). *Our Cargo Strategy.*

House of Commons Library. (2015). *BRIEFING PAPER Number 01942, Manufacturing: statistics and policy.*

IATA. (2015). *Cargo Chartbook 2015 Q2.*

IATA. (2016). *Cargo Chartbook 2016 Q4.*

IATA. (2017a). *Air Cargo Strategy.*

IATA. (2017b, August 02). *Press Release No.: 44*. Retrieved from http://www.iata.org/pressroom/pr/Pages/2017-08-02-01.aspx

IATA. (2017c). *Worldwide Slot Guidelines, 8th Edition.*

Land In Liege. (2017, August 22). Retrieved from http://landinliege.com/en/

Leipzig Airport. (2017, August 22). Retrieved from www.leipzig-halle-airport.de/en/business-and-partners/cargo-173.html

Leipzig Halle Airport. (2014). *Europe's Dynamic Cargo Hub.*

Leipzig Halle Airport. (n.d.). *Logistics Exports. Join Us.*

Liege Airport. (2017, August 22). Retrieved from www.liegeairport.com/flexport/en

Manchester Airport. (n.d.). *Masterplan to 2030.*

Morrell, P. S. (2011). *Moving Boxes by Air: The Economics of International Air Cargo.*

Northpoint Aviation Services. (n.d.). *The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston.*

OAG. (n.d.).

Office for Budget Responsibility. (2017, January). *Fiscal Sustainability Report, Fiscal sustainability report supplementary data series, Table 1.1: Central Projection.*

Oxford Economics. (2013). *Impacts on the Air Freight Industry, Customers and Associated Business Sectors.*

Saxony Economic Development Corporation. (2017, August 22). *Logistics - Cargo Transportation / Freight Forwarding*. Retrieved from https://business-saxony.com/en/industry-sectors/further-sectors/logistics/sector-structure/cargo-transportation-freight-forwarding

Seabury. (2015). *Air Cargo 2015: Recent trends and impact on air cargo industry.*

Seabury. (2016, December). Analysis of 2016. *Airline Cargo Management, 15*(4), pp. 42-47.

Seabury. (2017). *The Future of Sea Freight and its Impact on the Air Cargo Industry.*

Stansted Airport. (2015a). *Sustainable Devlopment Plan - Summary.*

Stansted Airport. (2015b). *Sustainable Development Plan - Land Use Plan.*

Steer Davies Gleave. (2010). *AIR FREIGHT Economic and Environmental Drivers and Impacts.*

UK Department for Transport. (2013). *UK Aviation Forecasts.*

Vance, D. (2016). Vice President of Cargo Operations, American Airlines. (A. C. News, Interviewer)

Wiggins Group plc. (2002). *Annual report.*

York Aviation. (2015). *Implications for the Air Freight Sector of Different Airport Capacity Options.*

York Aviation. (2017). *Summary Report Analysing use of York Aviation Material by Riveroak Strategic Partners Limited and Assessment of Capability of Manston Airport.*

Manston Airport DCO

14th February 2019

1. Instructions

1.1 As of 1st February 2019 GVA Grimley Limited was acquired by and commenced trading as Avison Young.

1.2 Avison Young's integrated team of planning, development, financial consulting and compulsory purchase specialists have been advising Stone Hill Park (SHP) since it acquired Manston Airport in 2014. Avison Young has been providing planning and viability advice to support realisation of SHP's comprehensive redevelopment proposals. More recently the instruction has been extended to incorporate strategic and compensation advice surrounding River Oak Strategic Partner's (RSP') proposed acquisition.

2. Purpose & Summary

2.1 The purpose of this note is to summarise the basis on which compensation (assuming a compulsory acquisition) of the Manston Airport site should be assessed and to identify RSP's material failure to undertake reasonable negotiations.

2.2 Generally speaking the quantum of compensation is not a matter for the DCO Examination, for if the DCO is made and acquisition not agreed, monetary issues will ultimately be determined by Tribunal. However, compensation is relevant to the DCO Examination because:

- *Offers to acquire have been so unreasonably low that the promoter has failed to undertake reasonable efforts to negotiate an acquisition.*
- *The promoter's DCO case claims the site (as an existing airport with an extent permission) holds special value key to the prospect of its scheme being commercially achievable. However, the quantum of its offers to acquire conflict with the wider DCO case by ignoring any claimed value.*
- *The level of compensation which will arise on a compulsory acquisition significantly exceeds the budget identified in RSP's funding statement. Therefore it appears likely that the appropriate level of compensation has not been adopted in any assessment by RSP of whether the scheme represents a commercially viable and deliverable proposition.*

3. RSP's Offer to Acquire and Available Funding

3.1 An offer to acquire, made by RSP's advisers (CBRE) on 10th October, 3 months after the DCO application was made on 17th July 2018, is shown at Appendix 1 together with SHP's response issued by GVA on the 14th December 2018. It can be seen that CBRE has made a number of factual errors in relation to land owned by SHP, and we have some concern this indicates a failure to undertake appropriate land referencing and due diligence. A substantive response to the issues outlined on the 14th December is still awaited.

3.2 RSP's DCO funding statement provides an acquisition budget of £7.5m for all land interests required to deliver the scheme. This budget includes the 742 acre SHP site and other land including the (approx. 4.5 acre) Jentex oil facility, which was recently acquired by RSP for £2.3m.

4. Basis of Compensation

4.1 Compulsory purchase compensation is based on the principle of fairness and equivalence. The principles, legislation and case law surrounding the assessment of compensation is collectively known as the Statutory Compensation Code (The Code). This essentially adopts the overriding principle that it would be unfair to the claimant if compensation is less than the loss incurred, but also unfair for the acquiring authority if the amount paid is greater than the loss. Loss includes property value and also other losses directly attributable to the acquisition.

4.2 In valuing land, the Code essentially seeks to replicate the assumptions the market would generally apply if the promoter's proposal (the Scheme) did not exist. It therefore generally permits a claimant to claim on the basis of the highest use value which would be achievable in the absence of the Scheme.

4.3 The Code requires the positive or negative impacts of the Scheme underlying the acquisition to be disregarded when determining compensation if there is no prospect of that Scheme being delivered other than through statutory powers.

4.4 With this site, a number of different approaches could be adopted to assess the land value element of compensation, all of which provide a materially higher compensation estimate than the offers made by CBRE on behalf of RSP. The key issues associated with these different approaches to calculating compensation are outlined below. The Code permits the claimant to claim on the basis which the market (in the absence of the Scheme) would attribute the greatest value.

5. Airport Value

5.1 The site has a lawful planning use as an airport. The site is in one ownership and capable of use as an airport, albeit potentially requiring some expenditure and upgrade depending on the scale and nature of airport use required.

5.2 RSP's DCO justification is predicated on the airport being viable as a cargo facility. In fact their Statement of Reasons goes into some considerable detail as to why they consider Manston's site specific characteristics offer special value for their promoted freight scheme.[1] Yet the value CBRE is offering on RSP's behalf is based on an assumption that the site holds no or nominal value as an airport. Thus, there is an inherent conflict in RSP's case.

5.3 The scheme proposed by RSP reflects an alteration to an existing airport with a lawful planning use. The Code requires only RSP's DCO scheme to be discounted, not the extant certificate of lawfulness or any other airport potential of the site. Therefore, a comparable scheme could be implemented by the sites owners or any other entity on acquisition of the site from SHP, without recourse to a DCO. SHP has not promoted such

[1] *See Para 2.1 of RSP's Explanatory Memorandum*

a scheme, because they do not consider the site offers potential for a viable commercial aviation operation.

5.4 The special characteristics RSP claims the site holds are characteristics which exist in the absence of their scheme. Thus, if Manston truly represents a viable and attractive commercial airport, because SHP or a successor in title could deliver a similar scheme without a DCO, then such characteristics should hold special value which the market would be expected to reflect in any bids for the site. Any such special value should be reflected in RSP's business case and bids for the site.

5.5 Should the Panel and Secretary of State agree with the promoter's case and conclude that the DCO scheme is commercially achievable on account of the airfields claimed special characteristics, then, by implication they must also conclude that the site as it stands, with its extant certificates of lawfulness constitutes a commercially viable airport with special characteristics the market in general would attribute value to. In such a scenario, the Panel and Secretary of State could only conclude that reasonable attempts to acquire by agreement have occurred if offers to acquire have been made on the basis of the site being a viable airport with special characteristics. On the other hand, if the Panel and Secretary of State conclude it has been reasonable to undertake negotiations which apply no special value to the extent airport use and characteristics, they must also conclude that RSP's scheme proposals are undeliverable. To conclude otherwise would be illogical.

6. Comprehensive Residential Led Redevelopment

6.1 SHP's master planned, residential led, mixed use redevelopment of Manston Airport represents a realistic and deliverable scheme developed in consultation with key stakeholders. The local need for housing and potential of the site is considered in further detail at Avison Young's report: The Case for Housing (February 2019). A viability appraisal was undertaken by GVA (now trading as Avison Young) in July 2018 and has been provided to the Council for independent review. This appraisal provides a land value of £38m.

6.2 SHP acquired the site for £7m in 2014 and has invested considerable resources into the promotion of the site for redevelopment. This has increased the likelihood of delivery, certainty over project costs and significantly enhanced the site value. In the absence of RSP's scheme it is likely that SHP's development would be realised, releasing to SHP a land value based on comprehensive, residential led redevelopment greatly in excess of RSP's funding statement position and CBRE's offers to acquire.

7. Piecemeal Development & Investment Potential

7.1 Manston airport is a significant landholding in a strategic south-east location. Aside from residential development potential the nature and scale of the site presents an attractive long term investment opportunity. Multiple opportunities exist to grow the current rental income, secure additional occupations and release parcels for development.

Investment value of existing occupations alone

7.2 A number of commercial occupations exist on the site which deliver an income. These vary from small scale private commercial occupations to a parking services agreement with the DFT. Adopting a scenario where any comprehensive or major development potential is ignored, it is likely that the value of these interests and occupations would be maximised, with additional occupations secured. If airfield use wholly fell away and redevelopment did not come forward, such space would likely be permitted to be used for a wide range of employment purposes. This would allow rental income from existing and new occupations to be grown, the commercial occupations could then be valued on the basis of capitalising the receivable rents to determine their investment value.

7.3 This is a common strategy at other disused airfields where comprehensive redevelopment is not achievable. The quantum of compensation, assessed on the basis of long term investment potential, significantly exceeds agricultural value and offers made by CBRE. However, this approach also ignores the other long term comprehensive or piecemeal development potential.

Hybrid piecemeal development and investment approach

7.4 Even if the potential for comprehensive redevelopment is wholly ignored, potential would remain for piecemeal development across parts of the site, in particular the previously developed elements. Countless examples of piecemeal employment led uses and redevelopments exist at disused airfields across the UK, for example: Wellesbourne, Witham or Gaydon. Potential ranges from tertiary conversions of existing uses to construction of major distribution type space. The value based on piecemeal development potential is directly related to the level of development assumed to be achievable and the nature of the achievable occupations. Even a base case piecemeal development scenario would deliver a land value significantly greater than agricultural value, CBRE's offer for the site or the position adopted in RSP's funding statement.

7.5 Adopting a piecemeal development scenario where: 1) Employment land lots are disposed of over say a 15 year programme. 2) The investment value of current occupations is maximised, with new occupations secured and 3) Disposal of undeveloped land suitable for cultivation. Taking these assumptions into account, we consider it would not be unreasonable for an investor to attribute a site value in the region of £15-20m to SHP's land ownership.

7.6 If piecemeal development included some residential development, this would grow value further. If we assume potential and permission for say 15 hectares of previously developed land surrounding the terminal come forward as a residential scheme, this could achieve around 500 homes. In such a scenario it is difficult to see that part of the site alone transacting at materially less than the £6.078m Homes England paid for a comparable sized residential site at New Haine Road, Thanet in March 2017.

7.7 We understand that RSP have recently offered to acquire the SHP site for £20m, on the basis that SHP retains the benefit of a restrictive covenant, reserving to SHP any future uplift in value associated with residential redevelopment. Evidently it is only where a site has residential development potential that such a restriction holds value, thereby suggesting RSP accept the principle of greater value arising from residential development.

DFT agreement and Brexit

7.8 The DFT need for Manston arose prior to the 2016 referendum as no other suitable site exists in Kent (see para 7.4 of Appendix 2 and para 7.3 of Appendix 3). The DFT agreement commenced in 2015 and has provided considerable consistent income over a number of years and the DFT need for the site is expected to continue.

7.9 Should the Port of Ramsgate gain greater strategic importance the commercial potential of the SHP land is likely to grow significantly.

Agricultural Value

7.10 Agricultural land in the South East typically transacts at about £8,500-12,500 per acre when it lacks development, hope or pony paddock value. For comparison purposes only, even if the lower end is applied to the whole of SHP's ownership as referenced in RSP's Book of Reference (742 acres) this would equate to around £6.3m rather than the £2m figure adopted by CBRE.

7.11 When land has no use other than agriculture and is no less useful for agriculture than the market average, there is no logical reason why it should transact at a value less than any other comparable agricultural land. Where land is clearly not agricultural, such as the buildings and other previously developed elements of the airport, it is wholly inappropriate to value it on an agricultural basis. Previously developed land at other disused airports which lack wider development potential generally transacts at a premium to agricultural value on account of its developed status, potential for non-agricultural use and redevelopment. When undeveloped/agricultural land has development potential it is also inappropriate to value it as agricultural land.

7.12 Therefore the adoption of discounted agricultural land as the basis of CBRE's offer to acquire fails to reflect market value which would include the site's characteristics and the previously developed nature of much of the site. Furthermore the position adopted by CBRE and RSP's funding statement materially conflicts with RSP's most recent offer to acquire of £20m.

8. Conclusion & Key Issues

8.1 Offers to acquire made by CBRE on RSP's behalf materially fail to discharge the promoter's duty to undertake reasonable negotiations. As identified at para 6.1 SHP's master planned, residential led, mixed use redevelopment of Manston Airport represents a realistic and deliverable scheme developed in consultation with key stakeholders. This or a similar comprehensive residential scheme represents the appropriate basis on which to assess the value of the site.

8.2 The compensation provision made in RSP's funding statement is insufficient to meet the compensation obligations resulting from a made DCO. It is important to note that RSP's most recent offer of £20m excludes any value associated with residential development potential, demonstrating the need for RSP's funding provision and business case to be reassessed to reflect significantly higher compensation liabilities.

Appendix 02

Altitude Aviation
Summary of Oral Submission of Seamus Kealey, Director of Altitude Aviation

Presented at Compulsory Acquisition Hearing on 20th March 2019

APPENDIX CA.10.1

Review of Riveroak Strategic Partners Business Plan: submission of Seamus Kealey, Director of Altitude Aviation Advisory Limited to be presented at the Compulsory Acquisition Hearing on 20th March 2019

Introduction

Riveroak Strategic Partners (RSP) has provided high level financial forecasts for a re-opened Manston Airport as follows:

- A short Financial Analysis paper (Appendix 3) from 2017 in response to the Avia Solutions report for Thanet District Council.
- Single page 2019 Summary Business Model forecast table in Appendix F.1.5. Altitude Aviation Advisory Limited (Altitude) has been asked by Stone Hill Park Limited (SHP) to analyse the financial forecasts provided by RSP in the context of the UK airport market and two leading European freight focused airports (Liege and Leipzig) referenced by RSP as comparable airports.

The Altitude team has deep experience of the airport investment and debt funding market with Directors having 20 years' experience of airport equity and debt funding transactions involving over 200 airports in the UK, Europe and globally.

As well as extensive equity investment experience, Altitude has particular experience in the airport debt financing market with recent transactions including Leeds Bradford (£83m), London Luton (£390m), AGS Airports comprising Glasgow, Aberdeen and Southampton (£500m), Bristol (£346m), Edinburgh (£500m), and Budapest (€1.3bn).

Background

When assessing an airport investment opportunity, our experience is that equity investors or debt providers will normally expect similar levels of detailed information and forecasts to be available to enable them to make an informed investment decision. The minimum requirements would be:

- Detailed traffic and business plan forecasts setting out the competitive landscape.
- Why the particular forecasts should be achievable?
- Airline use agreements in place with carriers to support aeronautical revenue forecasts.
- Detailed non-aeronautical projections for car parking, retail, food and beverage, advertising, property rentals, etc.
- Detailed staff and non-staff cost projections including proposed operating model (insourcing vs. outsourcing activities), organisational structure, resource plan, main outsourced contract details, utilities, insurance, property rates, etc.
- Infrastructure process capacity and detailed capital investment projections.
- Detailed financial model, including sources and uses of funding.
- Detailed benchmark performance to justify the model inputs for each aspect of the business plan.

Much of the expected detail would typically focuses on historic business performance as a basis for supporting the forecast projections. Unfortunately for Manston, the historic business performance has been negative over many years, with operating losses between 2006 and 2014. Lenders would be particularly interested to see the detailed justification of why the future performance would not mirror historic (loss making) performance.

In our opinion, RSP's supporting documents for their Development Consent Order application for the re-opening and development of Manston Airport do not provide even the most basic information that would allow any funder to assess the financial viability of a re-opened airport.

To date we have only seen a short Financial Analysis paper from 2017 in response to the Avia Solutions report for Thanet District Council, and more recent 2019 Summary Business Model forecast in Appendix F.1.5.

We note that the passenger and cargo volumes in the 2017 Financial Analysis paper align with the 2019 Appendix F.1.5 Summary Business Model output.

However, the 2019 forecast revenues are now consistently higher than those in the 2017 Financial Analysis paper. In particular, the revenue and profitability (EBITDA) projections in 2019 are materially higher than both the 2017 forecasts and benchmark airport actual performance which we do not view as being credible.

We set out a comparison of the 2017 and 2019 RSP forecasts later in this section.

RSP Forecast Benchmarking Approach

We have analysed the high level 2019 Appendix F.1.5 - Summary business model forecast outputs provided by RSP.

To provide context for the RSP forecasts, we have compared the revenue and profitability forecasts to actual performance of long established UK airports with similar throughput to the forecast for a re-opened Manston Airport. We have also considered airports with up to 20 million Work Load Units (WLUs) per year, where 1 Work Load Unit is equivalent to 1 passenger or 100kg of cargo.

This dataset includes East Midlands, the UK's leading freighter aircraft airport.

As outlined, we have also compared the forecast performance with two leading European freighter aircraft airports. Liege and Leipzig have a similar profile to the RSP forecasts for Manston Airport (i.e. mainly freight throughput with some passenger volume) and as such should be very close comparators to the forecast Manston financial performance.

We have assumed the 2017 and 2019 forecasts are in constant prices (i.e. excluding inflation), based on the profile of revenues and costs and the following statement in the 2017 Financial Analysis paper (p.2):

> *"However, general inflation has not been applied as the business itself has a natural correlation to growth and inflation which pass through."*

In total, we have analysed actual financial performance across 23 UK airports and the two European Airports. The comparative data is set out in the table below with East Midlands, Liege and Leipzig airports highlighted along with RSP's 2019 Appendix F.1.5 forecast for Manston in Year 3, Year 10, and Year 20 respectively.

Airport	Airport Code	Financial Year	WLU	Aeronautical Revenue	Total Revenue	EBITDA	EBITDA Margin
London Luton	LTN	31-Dec-17	16.0m	£82.8m	£180.2m	£49.1m	27%
Edinburgh	EDI	31-Dec-17	13.8m	£97.6m	£184.9m	£105.2m	57%
Leipzig	**LEJ**	**31-Dec-17**	**13.7m**	**£64.3m**	**£94.3m**	**£15.6m**	**16%**
Birmingham	BHX	31-Mar-18	13.3m	£64.2m	£155.5m	£78.1m	50%
Glasgow	GLA	31-Dec-17	10.1m	-	£131.4m	£41.9m	32%
East Midlands	**EMA**	**31-Mar-18**	**8.4m**	**£23.2m**	**£61.0m**	**£18.5m**	**30%**
Bristol	BRS	31-Dec-17	8.1m	£38.9m	£100.1m	£52.1m	52%
Liege	**LGG**	**31-Dec-17**	**7.4m**	**-**	**£49.9m**	**£6.9m**	**14%**
Newcastle	NCL	31-Dec-17	5.4m	-	£58.0m	£32.5m	56%
Liverpool	LPL	31-Mar-18	4.9m	-	£35.4m	£7.6m	21%
London City	LCY	31-Dec-17	4.5m	-	£112.0m	£43.0m	38%
Leeds Bradford	LBA	31-Mar-18	4.1m	-	£31.5m	£10.5m	33%
Aberdeen	ABZ	31-Dec-17	3.2m	-	£56.2m	£21.4m	38%
Belfast City	BHD	31-Dec-17	2.6m	-	£21.3m	£6.0m	28%
Southampton	SOU	31-Dec-17	2.1m	-	£31.3m	£10.9m	35%
Cardiff	CWL	31-Mar-18	1.5m	£9.6m	£18.6m	£0.0m	0%
Doncaster Sheffield	DSA*	31-Mar-17	1.3m	-	£10.6m	(£14.5m)	(136%)
Southend	SEN	28-Feb-18	1.1m	-	£21.2m	£0.2m	1%
Exeter	EXE	31-Mar-18	0.9m	-	£21.4m	£2.6m	12%
Prestwick	PIK	31-Mar-18	0.8m	£7.0m	£18.2m	(£1.8m)	(10%)
Bournemouth	BOH*	31-Mar-17	0.7m	£3.5m	£8.8m	(£0.5m)	(5%)
Norwich	NWI	31-Mar-18	0.5m	-	£14.0m	£3.7m	27%
Newquay	NQY	31-Mar-18	0.5m	-	£11.6m	£0.0m	0%
Humberside	HUY	31-Mar-18	0.2m	-	£8.1m	£0.8m	10%
Durham Tees Valley	MME*	31-Mar-17	0.1m	-	£5.4m	(£2.3m)	(43%)
Manston Year 3	**MSE Y3**	**Y3**	**1.7m**	**£20.1m**	**£32.5m**	**£7.9m**	**24%**
Manston Year 10	**MSE Y10**	**Y10**	**3.1m**	**£36.4m**	**£62.8m**	**£30.8m**	**49%**
Manston Year 20	**MSE Y20**	**Y20**	**4.8m**	**£54.4m**	**£90.6m**	**£50.3m**	**56%**

RSP Manston Airport Forecasts vs. UK and European Airport Financial Performance (source: RSP, company accounts, Altitude analysis)

In the rest of this document, we assess the credibility of the RSP financial forecasts. While we consider the volume projections for Manston to be completely unrealistic (see earlier reports), in this analysis we focus only on the financial aspects of the projections **i.e. we assume the volume projections are achieved.**

Our analysis demonstrates that even if the unrealistic volume projections are achieved, the financial projections are not credible. The RSP business plan effectively assumes that unprecedented rates of volume growth can be combined with class leading financial performance. This is in complete contrast to the experience at Manston before it was closed, when the airport was chronically loss making (see Section 3.3 of the Altitude January 2018 report).

RSP 2017 and 2019 Forecast Comparison

We have analysed the financial forecast information in the 2017 and 2019 forecasts provided by RSP. The forecast data is set out in the table below, along with the variances between the 2019 and 2017 forecasts.

2017 Forecast	Units	Yr 5	Yr10	Yr15	Yr20	Yr25
Passengers	000s	687	976	1171	1408	1443
Freight Tonnes	000s	174	212	271	341	376
Total ATMs	000s	9,936	11,600	14,113	17,170	18,958
Total WLUs	***000s***	***2,424***	***3,099***	***3,876***	***4,815***	***5,206***
Revenues						
Passenger	£000s	3,000	4,000	5,000	6,000	6,000
Freight	£000s	28,000	35,000	44,000	55,000	60,000
Fuel	£000s	8,700	10,900	12,700	15,100	14,900
Total Revenue	***£000s***	***39,700***	***49,900***	***61,700***	***76,100***	***80,900***
Expenses						
Operating	£000s	20,400	24,800	28,900	33,500	35,600
Overheads	£000s	6,500	6,700	6,900	7,200	7,200
Total Expenses	***£000s***	***26,900***	***31,500***	***35,800***	***40,700***	***42,800***
EBITDA						
EBITDA	***£000s***	***12,800***	***18,300***	***25,800***	***35,500***	***38,100***
2019 Forecast						
Freight Movements	ATMs	9,936	11,600	14,113	17,170	
Passenger Movements	ATMs	5,064	6,754	7,602	9,298	
Total WLUs	***000s***	***2,424***	***3,099***	***3,876***	***4,815***	
Revenues						
Aeronautical	000s	28,532	36,384	44,596	54,373	
Commercial Net Income	000s	2,060	2,927	3,512	4,223	
Other Income	000s	19,398	23,477	27,317	32,024	
Total Revenue	***000s***	***49,990***	***62,788***	***75,425***	***90,620***	
Expenses						
Direct (Operating)	£000s	21,543	23,319	26,928	31,066	
Indirect (Overheads)	£000s	7,824	8,680	8,967	9,257	
Total Expenses	***£000s***	***29,367***	***31,999***	***35,895***	***40,323***	
EBITDA						
EBITDA	***£000s***	***20,623***	***30,789***	***39,530***	***50,297***	
2019 vs. 2017 Variance						
Total WLUs	000s	-	-	-	-	
Total Revenue	£000s	10,290	12,888	13,725	14,520	
% Revenue Variance	***%***	***25.9%***	***25.8%***	***22.2%***	***19.1%***	
Total Expenses	£000s	2,467	499	95	-377	
% Expenses Variance	***%***	***9.2%***	***1.6%***	***0.3%***	***-0.9%***	
EBITDA	£000s	7,823	12,489	13,730	14,797	
% EBITDA Variance	***%***	***61.1%***	***68.2%***	***53.2%***	***41.7%***	

Comparison of RSP 2017 and 2019 Summary Business Model Forecasts (source: RSP, Altitude analysis)

Whilst very limited financial details have been provided by RSP, we note the following:

- 2017 and 2019 passenger and freight volumes are aligned, so any differences in the model outputs are driven by changes in revenue and operating cost (expenses) input assumptions.

- Revenues are consistently higher in the 2019 forecast vs. 2017, ranging from 19% to 26% higher depending on the year. As illustrated in the revenue / WLU benchmarking analysis later in the report, this would require Manston to command a 3x market premium compared to leading airports in the sector which we view as not being credible.
- Operating expenses are broadly aligned in the two forecasts, with the exception Year 5 when costs are forecast to be ca. 9% higher in the 2019 forecast.
- The higher 2019 forecast revenues and broadly flat operating cost expenses leads to materially higher EBITDA vs. 2017, ranging from ca. 42% to 68% higher depending on the year which we view as unrealistic.
- No justification is provided for the higher revenue or EBITDA projections in 2019, which are materially higher than benchmark airport performance.
- Even if the unrealistic volume projections are achieved, the revenue profile in the 2019 forecast would quickly position Manston's total revenue / WLU and EBITDA / WLU significantly above long established and better located freight airports at East Midlands, Liege and Leipzig which any funder would view as not being remotely credible.
- EBITDA forecasts are completely unrealistic, being above Liege in Year 3, significantly above East Midlands and Leipzig by Year 10, and 20% above the current combined EBITDA for Liege, East Midlands and Leipzig by Year 20 (see below for details).

Comparison to Other Freighter Focused Airports

We initially focus on three leading freighter aircraft airports in the benchmark data sample. These airports are amongst the leading all-cargo airports in Europe. In 2016, Leipzig was the largest European Union (EU) airport in terms of freighter ATMs, with East Midlands and Liege ranked 5th and 6th respectively (see Figure 26 of the Altitude January 2018 report).

The chart illustrates a good correlation of actual total revenue to total WLU volumes for Liege, East Midlands, and Leipzig airports. It is noticeable that the forecast Manston performance in each year would be materially above the trend line, which any investor or debt provider would view as being extremely optimistic.

By year 10 of the RSP forecast, Manston revenue is projected to exceed current revenue levels for both Liege and East Midlands. This is despite the projected volume for Manston in Year 10 being less than half the volume at Liege and East Midlands. In fact, the implied revenue / WLU at Manston in Year 10 is almost 3x the currently achieved levels at Liege and East Midlands which we view as not being remotely achievable in a competitive market.

By Year 20, total revenue for Manston is projected to almost reach current Leipzig levels – despite projected volume only just over one-third of current Leipzig levels.

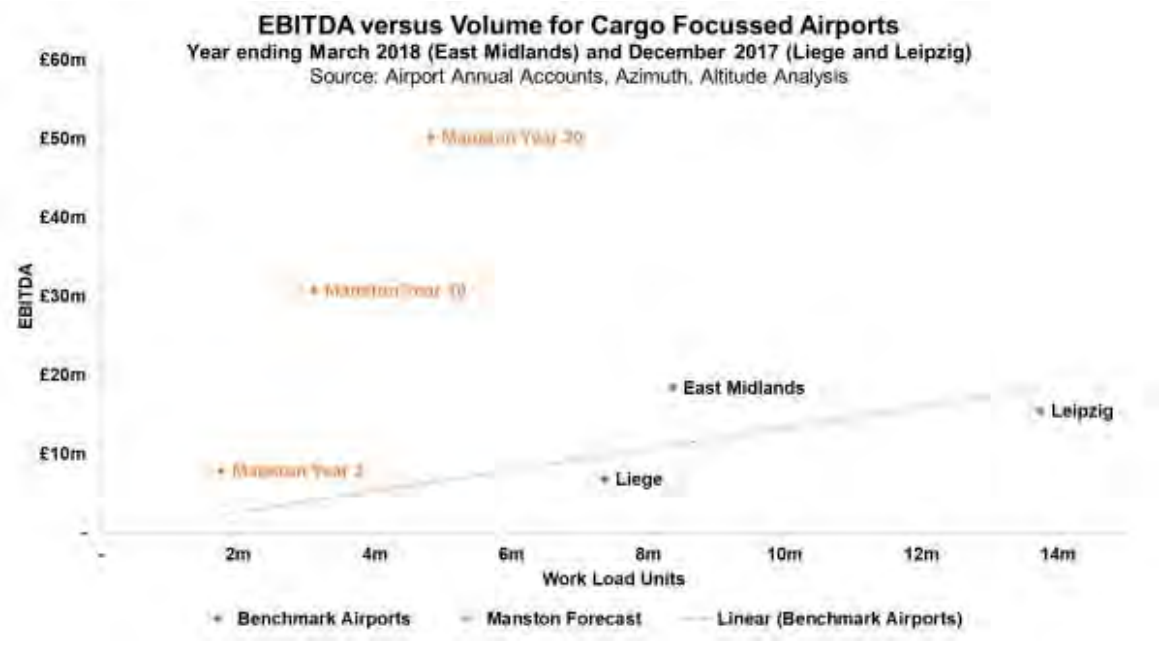


The projected EBITDA performance deviates even further from actual benchmark performance.

- Year 3 (2nd year of operations) EBITDA performance at Manston is forecast to exceed the current Liege outturn.

- Year 10 EBITDA is forecast to be substantially above the level achieved by East Midlands and Leipzig.
- Year 20 EBITDA is forecast to be more than 20% higher than the ***combined*** current EBITDA of Leipzig, East Midlands and Liege (the #1, #5 and #6 EU airports for freighter movements in 2016).

The EBITDA forecasts are not plausible in a competitive market, even if the volume projections could be achieved.



Early Year Projections

The RSP forecast for Manston Airport in the first year of operations (Year 2 in the Summary Business Model) generates more revenue (£26.5m) and a materially higher EBITDA than long established UK airports, with no obvious financial incentives included to stimulate operators to use the airport.

Airport	Year	Work Load Units (m)	Revenue (£m)	EBITDA (£m)
Manston	Year 2	1.0	26.5	6.5
Prestwick	2017	0.8	18.2	(1.8)
Exeter	2017	0.9	21.4	2.6
Southend	2017	1.1	21.2	0.2
Doncaster Sheffield	2017	1.3	10.6	(14.5)
Cardiff	2017	1.5	18.6	0.0

Early Year Performance vs. Similar Throughput UK Airports (source: company reports, Altitude analysis)

- The Year 2 forecast is extremely optimistic in the context of the UK airport market with similar levels of throughput – it suggests, without any justification, that the airport can immediately command a premium over established airports.
- It is surprising that the initial revenue forecast is so high as RSP acknowledges the need to incentivise operators to use Manston in the early years – but there is no obvious allowance for financial incentives to stimulate traffic.
- We note from the FY17 financial accounts that East Midlands Airport, a long-established freight airport, offered £4.254m in rebates and incentives to airlines to support growth. It is inconceivable that Manston Airport would not have to offer significant incentives to attract airlines and traffic, particularly in the early years of the forecast.
- The forecast would be a dramatic improvement on Manston Airport's actual historic business performance which was loss making every year between 2006 (first year of available data) and its closure in 2014 – this further stretches the credibility of the RSP forecast.

Aeronautical Revenue Benchmarking

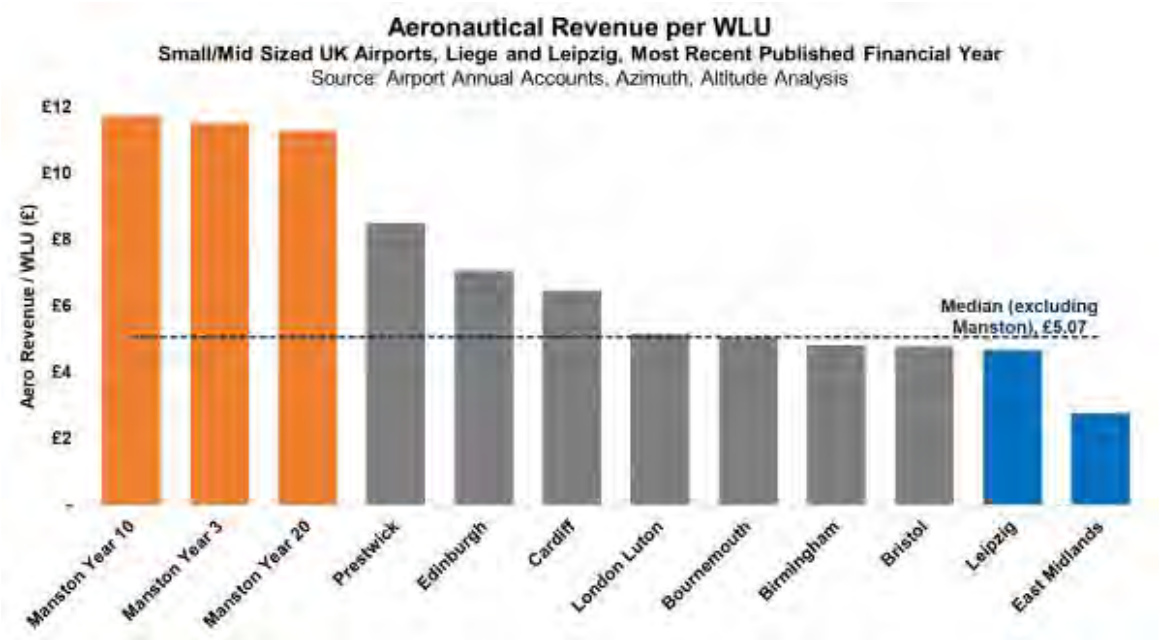
Aeronautical revenue is only reported by a sub-set of the airports in the sample (the other airports report total revenue).

RSP forecasts aeronautical revenue to be significantly higher than East Midlands. This is implausible:

- East Midlands is a leading UK freight airport with a based hub carrier (DHL), other leading cargo operators, and a long-developed operation with spare capacity – there is simply no reason why Manston could command a 4x aeronautical revenue premium over East Midlands, or 2x premium over Leipzig, the leading EU freighter airport.
- Year 3 aero revenue is only 13% lower than East Midlands despite 79% lower throughput.
- Year 10 aero revenue is 57% higher than East Midlands despite 63% lower throughput.
- Year 20 aero revenue is 134% higher than East Midlands despite 42% lower throughput.

More generally, the forecasts for Manston envisage much higher aeronautical yield (aeronautical revenue per WLU) than any of the airports which separately report aeronautical revenue in their annual accounts. This is not credible, especially when compared to those aeronautical yield performance of airports focussing on freight (Leipzig and East Midlands).

RSP make the point that Manston should be compared to freight focused airports. The benchmarking clearly illustrates that the RSP aeronautical revenue projections are heroic and would be significantly above market levels for those airports with a material level of throughput.



Total Revenue Benchmarking

As previously noted, the RSP forecast for Manston total revenue implies much higher yield (total revenue / WLU) than achieved by leading cargo airports (East Midlands, Leipzig and Liege).

When broadening the analysis to the full sample of airports, it can be seen that the projected Manston yield is significantly higher than the overall median performance. By Year 10, the Manston revenue / WLU is forecast at over £20, compared to a median level of below £13.

Most of the airports with higher revenue/WLU are very small airports with WLU levels typically a fraction of the Manston forecast values.

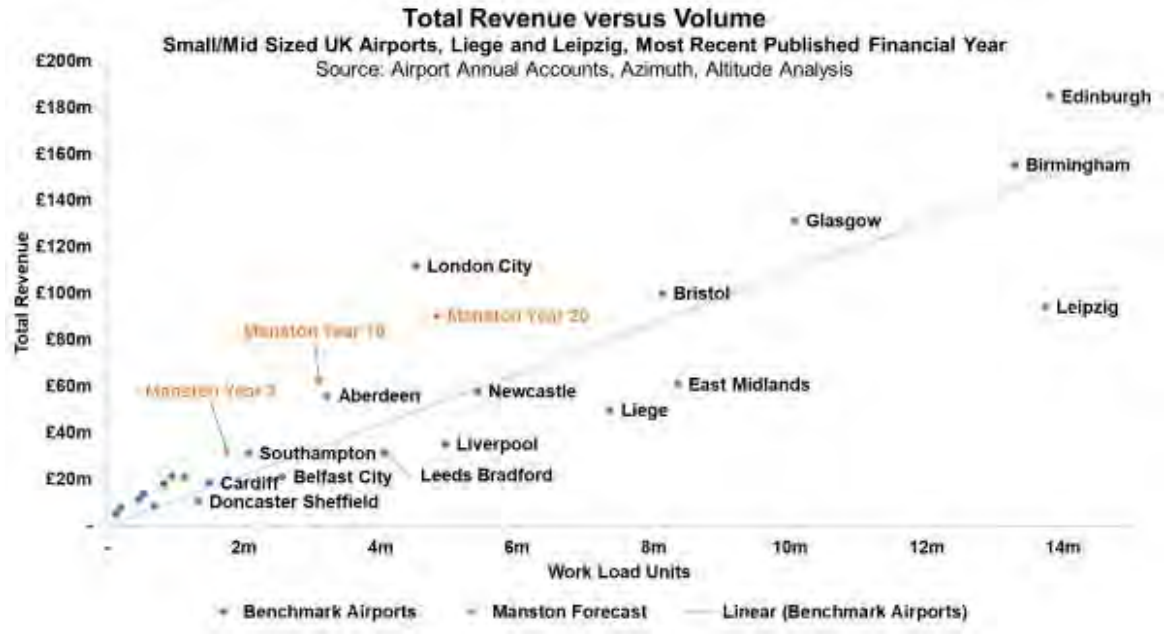
- Durham Tees Valley (4% of Manston Year 10 WLUs), Humberside (6%), Newquay (15%), Norwich (17%), Prestwick (26%), Exeter (30%), and Southend (36%).

Each of the airports above has significant ancillary revenues (e.g. property rentals), which are not directly related to volume throughput. With only small volumes of traffic, these ancillary revenues typically inflate the revenue / WLU metric.

There are 9 airports in the sample with volume broadly similar to the range of Manston projections (Year 3 to Year 20). Seven of these airports have much lower revenue / WLU (Newcastle, Liverpool, Leeds Bradford, Belfast City, Southampton, Cardiff and Doncaster Sheffield). The two exceptions are:

- London City – higher revenue / WLU than Manston projections, due to its status as a premium business airport serving London's financial services sector. The airport also has a large corporate jet centre.
- Aberdeen – slightly lower revenue / WLU, due to its status as "the world's busiest commercial heliport, transporting more than 3.1 million passengers a year in support of the North Sea oil and gas industry." (source: www.ferrovial.com).





The Manston revenue projections are at a level only achieved by premium passenger airports (serving the financial services sector in London or the North Sea oil and gas sector). For an airport focussed on cargo, the revenue forecasts are clearly not credible.

EBITDA Benchmarking

RSP's forecast EBITDA is immediately positive from the first year of operations. This is extremely optimistic, particularly as no material incentives appear to be included in the forecast to attract carriers and / or stimulate traffic growth which is highly unusual. As previously outlined, even established airports like East Midlands have to continue to offer incentives to retain carriers and grow traffic (£4.3m of airline incentives in FY17, source: annual accounts).

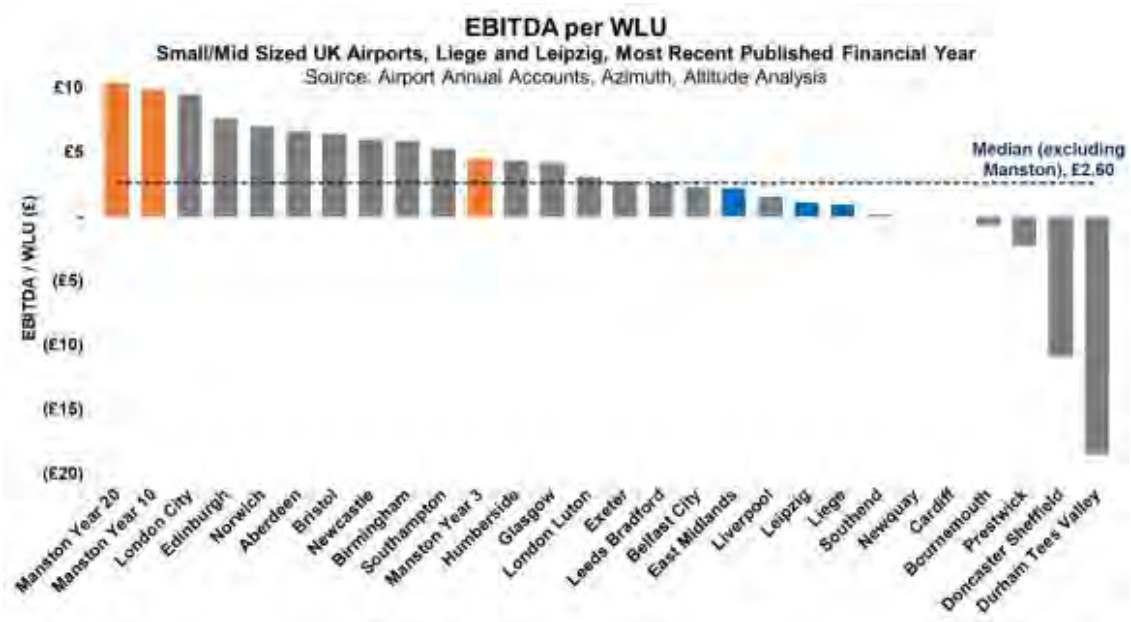
Year 10 EBITDA would be significantly above East Midlands, Leipzig and Liege airports.

RSP does not provide information on why a re-opened Manston Airport would achieve class leading EBITDA compared to long established airports with similar traffic profile.

Year 20 EBITDA would be in line with London Luton Airport, London City Airport and Bristol Airport – some of the most successful mid-sized passenger airports in the UK - which is implausible.



In fact, the EBITDA / WLU is forecast to be best in class from Year 10 onwards i.e. higher than achieved by any other airport in the sample (and higher than all UK airports except Heathrow). This is not remotely realistic.



Conclusion

- RSP's application documents do not provide even the most basic information that would allow any funder to assess the financial viability of a re-opened airport.
- Our experience over 100 transactions involving over 200 airports is that equity or debt providers would require considerable and detailed forecasts, and supporting information to allow proper due diligence to be undertaken.
- This level of due diligence would be required to get the investment approved by the respective investment committees.
- The lack of detailed and substantiated financial forecasts would raise significant questions around the financial viability and fundability of the proposal, and what information has been provided is not credible in an established market context.
- Our analysis demonstrates that even if RSP's unrealistic volume projections are achieved, the financial projections are not credible.
- The summary business model forecasts would position Manston as one of the most profitable airports in the UK, and extremely profitable compared to the similar freight business model airports of Liege and Leipzig.
- This is simply not credible when assessing the traffic and financial characteristics of the best performing UK airports, and the comparator European freight airports.
- Based on our extensive support for equity and debt financing of airports, we are of the opinion that there is little or no prospect that investors would commit to fund the airport based on the lack of information provided, implausible forecasts, and the performance deviation from long run historic actual performance of the other UK and European airports analysed.

Seamus Kealey, Director – Curriculum Vitae



Seamus Kealey has 30 years of experience in the aviation sector. Prior to co-founding Altitude Aviation Advisory in May 2013, he was a founding director of AviaSolutions (2001-2013) leading the airport transaction and infrastructure teams. Seamus has advised on over 200 buy and sell side and refinancing transactions across the world involving a range of transaction and ownership structures.

Previous advisory experience includes 3 years of transport consulting experience at Ernst & Young where he led the Aviation Infrastructure Team on a range of Public Private Partnership transactions and process improvement assignments for airport and transport sector clients.

Prior to entering management consultancy, Seamus had over 10 years of direct airport operations experience working for BAA plc in a number of roles including Senior Project Manager responsible for development and delivery of large infrastructure projects at Heathrow Airport and Stansted Airport.

Seamus specialises in the following areas:

- Airport strategy development and performance optimisation.
- Major airport transactions and refinancing processes.
- Development and review of airport capacity and capital investment plans.
- Development of airport tariff and incentive schemes to reflect market demand and negotiation of airline deal structures.

Transaction and Infrastructure Advisory Experience

Director responsible for airport transactions and infrastructure advisory teams.

Seamus has widespread experience leading airport business plan development and assessment assignments. Recent experience includes:

- Leading buy side vendor due diligence for Vinci Airport £2.9bn acquisition of 50.01% of Gatwick Airport (2019).
- Leading due diligence for Leeds Bradford Airport £83m re-financing process (2019).
- Leading buy side vendor due diligence for Vinci Airport acquisition of Airports Worldwide Group of five airports (Belfast International, Stockholm Skavsta, Orlando Sanford, San Jose (Costa Rica), and Liberia (Costa Rica airports) (2018).
- Leading sell side vendor due diligence for Ardian Infrastructure disposal of 49% equity stakes in London Luton Airport (2018).
- Leading sell side vendor due diligence for Ontario Teachers Pension Plan disposal of equity stakes in Bristol and Birmingham airports (2017).
- Leading buy side acquisition due diligence for AMP Capital's £220m acquisition of Leeds Bradford Airport (2017).
- Leading due diligence for Macquarie Infrastructure Real Asset disposal of 27.2% equity stake in Copenhagen Airport (2017).
- Leading due diligence to support £390m refinancing of London Luton Airport (2017).
- Leading due diligence to support €1.4bn refinancing of Budapest Airport (2017).
- Leading sell side vendor due diligence on behalf of Global Infrastructure Partners and Oaktree Capital for the ca. £2.0bn disposal of London City Airport (2016).
- Leading buy side acquisition due diligence on behalf of China Everbright and Friedmann Pacific in the acquisition of Tirana International Airport, transaction price undisclosed (2016).
- Leading due diligence and business planning support for the £395m refinancing of Bristol Airport (2015).

- Leading sell side vendor commercial support for disposal of Toronto City Airport Terminal by Porter Airlines, transaction price estimated in excess of $1.0bn (Canadian) (2015).
- Leading buy side acquisition due diligence and business planning support for Macquarie / Ferrovial £1.05bn acquisition of Glasgow, Aberdeen and Southampton airports from Heathrow Holdings (2014).
- Leading sell side vendor due diligence and business planning support for Macquarie £330m disposal of 50% Bristol Airport (2014).
- Leading due diligence and business planning support for the £500m refinancing of Edinburgh Airport (2014).

Avia Solutions Limited experience

- Leading due diligence and business planning support for PSP's €1.1bn acquisition of Hochtief AirPort including equity stakes in Hamburg, Dusseldorf, Athens, Budapest, Tirana and Sydney airports (2013).
- Leading due diligence and business planning support for Brussels Airport €1.1bn refinancing (2012 and 2013).
- Leading advisory for bond rating support for Copenhagen Airports Denmark Holdings (2012).
- Leading due diligence and business planning support for Manchester Airports Group / IFM £1.5bn acquisition of London Stansted Airport (2012).
- Leading business plan support for £279m refinancing of Bristol Airport (2012).
- Leading due diligence and business plan support for Global Infrastructure Partners on their £807m acquisition of Edinburgh Airport (2012).
- Leading business planning support for Copenhagen Airport Denmark Holdings €0.7bn refinancing (2011).
- Leading due diligence and business planning support for Ferrovial's disposal of over £1.0bn equity in BAA plc (2011 and 2012).
- Leading due diligence and business planning support for Ferrovial's £1.5bn sale of London Gatwick Airport to Global Infrastructure Partners (2009).
- Providing technical support and production of papers for the Irish Government's Panel assessing the viability of an independent terminal operation at Dublin Airport (2002 and 2003).

Business Optimisation Experience

- Supporting development of long term business plan for European airport handling over 10mppa (2016).
- Review of long term business plan for European hub airport >30mppa. (2015).
- Review of long term business plan for an Asia Pacific airport >20mppa (2013).
- Strategic traffic growth and key airline targets for large European airport (2013).
- Assessment of capacity constraints at Copenhagen Airport and alignment of airport management and shareholders on alternate development strategy (2011 and 2012).
- Financial contribution and consumption analysis by traffic segment for a European Airport handling over 40m passengers per annum (2012).
- Negotiations with airlines on aeronautical charges tariff and long term agreements.
- Support for a number of airports in developing air route development strategies.

Ernst & Young Experience (1998-2001)

Managing consultant leading the Aviation Infrastructure team based in London. Assignments covered the airport, air traffic services, rail and transport regulation sectors. Selected projects included:

- Supporting the Airline Group's PPP acquisition of an equity stake in the UK's National Air Traffic Services.
- Supporting AirTanker consortium's successful bid for the UK Ministry of Defence's Future Strategic Tanker Aircraft (FSTA) programme to provide the RAF with troop air transport, and air to air refuelling capability over a 27-year period (from 2008).
- Review of major (£6bn) rail investment project (West Coast Mainline) for Railtrack / Network Rail (UK rail infrastructure provider).

BAA plc Experience (1988-1998)

Senior Project Manager responsible for development and delivery of large infrastructure projects at Heathrow Airport and Stansted Airport. Selected projects included:

- Led project team in £60m redevelopment of London Heathrow Airport's Terminal 2 (completed 1998) including replacement of HBS baggage system, check-in expansion, increasing concession areas, passenger security screening, and office space.
- Led project teams delivering a range of airfield, terminal, car parking, and commercial developments in operational environments at London's Heathrow Airport.
- Part of the Stansted Airport Development Team delivering £450m new terminal and airfield capacity (completed 1991).

Education and Professional Qualifications

- BSc. Quantity Surveying – University of Ulster (1988)
- Chartered Surveyor – Royal Institution of Chartered Surveyors (1990)
- Masters in Business Administration – London Business School (1998)

Financial Analysis

Introduction

1. In response to the report done by Avia Solutions for the Thanet District Council, RiverOak has undertaken a financial model that uses its own proprietary model to produce outputs (i.e. charts and graphs and other financial measurements) of the type produced by Avia. This report will demonstrate both the flaws in the reasoning used by Avia as well as demonstrate the long term financial viability of RiverOak's plan for Manston

2. RiverOak's plan for Manston Airport is primarily a **Cargo Airport**. Whilst it has projected passenger traffic as a result of specific structural demand its core business model is built on Cargo. Cargo revenue (ex Fuel) is projected to be in excess of 70% of Manston's business with Passenger (ex Fuel) at lower than 8%.

3. Traffic forecasts were established using the forecasting method as detailed in the paper prepared by Dr. Sally Dixon and it is established therein that extrapolation from historic performance and comparison to Passenger-focused Airports is entirely inappropriate for the Cargo activities planned for Manston.

4. A Cargo operation at Manston is accessing demand that is either diverted elsewhere or not functioning due to sub-economics. This exists at a general non-specific level and an idiosyncratic level pertinent to Manston itself. Therefore, Manston as a Cargo operation is, within reason, a **price-setter** rather than a **taker.** The opposite is true in the world of Passenger operations and certainly where Manston would be concerned, at any sizeable operation. It is not surprising to see that profit margins across the board, whether at EBITDA or Net Income, are substantially higher in Manston's Cargo business than in Passenger.

5. Similarly profit margins mean nothing in isolation. The *quid pro quo* for profit margin in the Airport business is Capital Expenditure ("CapEx"). Whilst the market "Wisdom" around an airport EBITDA margin refer to an excess of 40%, this must be qualified by understanding the CapEx requirements, costs and most importantly the CapEx cycle. Passenger Airports require less CapEx at the outset, but thereafter require similar amounts deployed at more frequent intervals than their Cargo relatives.

6. We have used the upper forecast of **GBP 287 Million** for CapEx over the 30 Year period covered in the financial model. This is a major infrastructure investment into the business of Cargo Aviation and significantly higher than external projections based around a Passenger model. Two thirds of that CapEx is required within the first 5 years of operations to ramp up the capacity in line with demand forecasts. A significant element of that initial capacity ramp up CapEx will last for at least 50 years. This can be demonstrated at other Cargo airports that operate on facilities built in the 1960's and are still fit for purpose.

7. This is a long-tail "J-Curve" business, with a proportionately large CapEx investment at a very early stage which can only be rationalised by understanding the demand-led business model, the CapEx replacement cycle and the demand-led business model of Manston as a Cargo Airport.

Assumptions

General

8. The model encompasses 30 years of operations with the ramp up period for the first 20 years and thereafter a flattened growth profile with some margin compression factors as you would expect in any profitable business over time.

9. The analysis has been prepared using a methodology that demonstrates the inherent profitability of the business. For example, CapEx is the significant component of the investment and therefore depreciation should be applied as "True depreciation"; that is the real-world replacement cycle, rather than general accountancy guidelines for assets. This may affect taxation numbers but leaves Net Income as a more realistic and stable measure of profitability and value. An effective tax rate of 20% on Net Income has been used throughout to generate post tax cash flow analysis.

10. All items, where appropriate are scaled over time, to allow for idiosyncratic and relative adjustments. However, general inflation has not been applied as the business itself has a natural correlation to growth and inflation which pass through.

11. The "Base Case" scenario is presented in this document but a range of scenarios have been modelled to provide an expected return profile and distribution of risks.

12. Where appropriate we have utilised the aeronautical term Work Load Unit ("WLU") which is defined as one passenger or 100 Kg of cargo. This enables us to draw comparisons across both business lines.

Revenue

13. The assumptions used in the model are derived from a combination of historical data, market comparisons and discussions with prospective Carrier clients. The revenue model is built "Bottom up" from known inputs around Carriers and demand and checked top-down for outlying outputs.

14. On **Cargo**, Revenue is generated from fees on

i. Movements based on the Aircrafts IATA category and a surcharge for noise and night flights

ii. Freight Handling based on a handling charge per tonne negotiated with Carriers

iii. Margins on the Carrier purchase of Fuel

iv. There is a combination of the above where an Integrator becomes based at the Airport. The Airport swaps a higher margin and more volatile business for a lower margin higher volume and more stable income.

15. On **Passenger** business, Revenue is generated from fees on:

i. A fixed charge per passenger (Arriving and Departing)

ii. A passenger Handling charge based on the service requirements (Low cost carrier vs. Full Service)

iii. Margins on the Carrier purchase of fuel

iv. Commercial Income based around a Passenger's spending at the Airport following through a turnover based rental contract with retailers.

Revenue Outputs

Table 1.

Revenue GBP per Passenger	Y5	Y10	Y15	Y20	Y25
Aeronautical Revenue	2.5	2.5	2.5	2.4	2.4
Commercial Revenue	3.0	3.0	3.0	3.0	3.0
Fuel Revenue	1.2	1.2	1.2	1.2	1.2
Total Revenue	6.7	6.7	6.7	6.6	6.6

Table 2.

Revenue GBP per Tonne	Y5	Y10	Y15	Y20	Y25
Movement	45.7	49.8	47.3	45.7	44.6
Handling	63.1	71.9	70.9	69.1	67.3
Fuel	48.2	42.8	40.4	39.0	34.9
Total	157.0	164.5	158.6	153.8	146.8

16. Normalising to WLU demonstrates the revenue differential between Passenger and Cargo

Table 3.

Revenue GBP WLU Basis	Y5	Y10	Y15	Y20	Y25
Passenger Ex Fuel	5.5	5.5	5.5	5.4	5.5
Passenger Fuel	1.2	1.2	1.2	1.2	1.2
Passenger Total	**6.7**	**6.7**	**6.7**	**6.6**	**6.7**
Cargo Ex Fuel	10.9	12.2	11.8	11.5	11.2
Cargo Fuel	4.8	4.3	4.0	3.9	3.5
Cargo Total	**15.7**	**16.5**	**15.9**	**15.4**	**14.7**

17. Fuel is represented in the model as a Net Margin; that is the differential between cost of purchase and sale to Carriers.

Table 4.

Fuel Margin %	Y5	Y10	Y15	Y20	Y25
Margin	5.61%	5.84%	5.82%	5.82%	5.83%

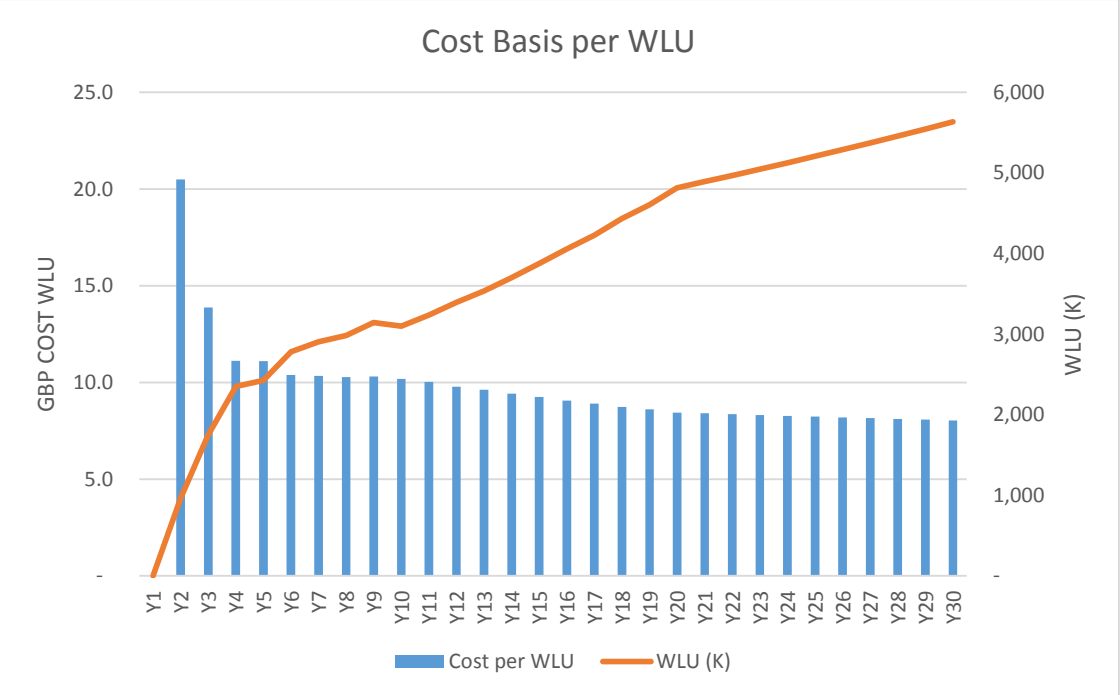
Operating Costs

18. Where appropriate, scalars have been attached to match the growth of the business to reach capacity. The negative correlation of costs to volume match the economies of scale expected in a Cargo business of this capacity.

Table 5.

Costs	Y5	Y10	Y15	Y20	Y25
Operating GBP Millions	20.4	24.8	28.9	33.5	35.6
Overheads GBP Millions	6.5	6.7	6.9	7.2	7.2
Total Costs GBP Millions	**26.9**	**31.6**	**35.9**	**40.6**	**42.8**
Cost per WLU GBP	11.10	10.18	9.25	8.44	8.23

Figure 1.



Capital Expenditure ("CapEx")

19. Our CapEx modelling ranges between GBP 215 Million and GBP 287 Million depending on the extent of work and equipment required, which is yet to be finalised. For the purposes of the model we use the upper boundary. The GBP 287 Million CapEx is distributed across the 30 years as in Figure 2. Various depreciation curves have been used to match the specific CapEx items' replacement cycles on a "True fit for purpose" basis. These range from 10 – 50 years and depreciated book value vs. cumulative CapEx can be seen in Figure 3.

Figure 2.

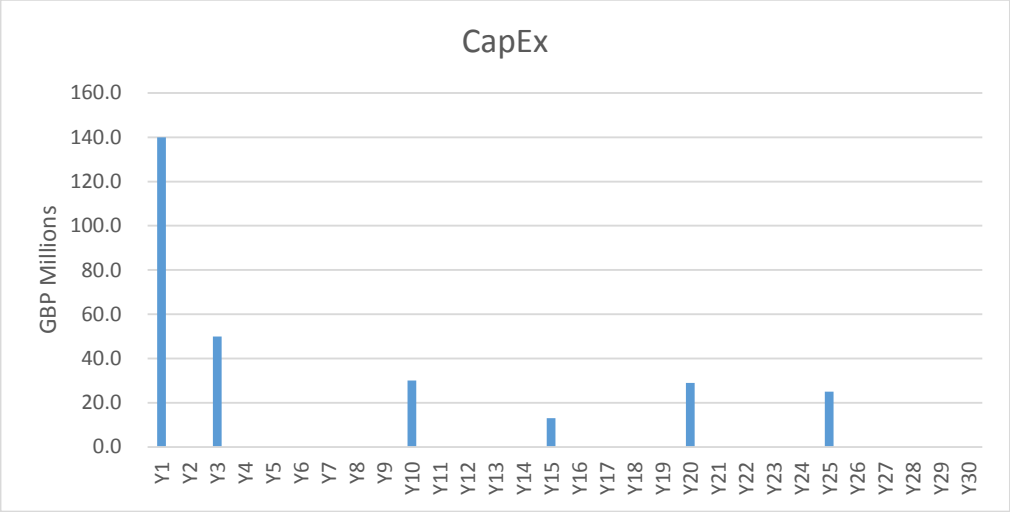
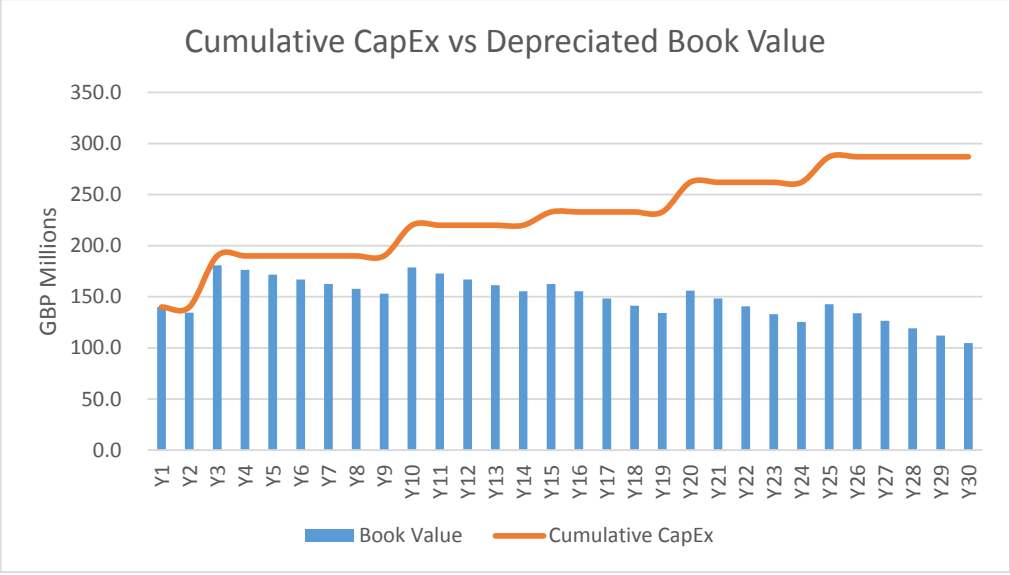


Figure 3.



20. By using true values, we can see that a residual book value of circa GBP 105 Million exists at Year 30 implying future utility benefits beyond the modelled period and demonstrating the long-life element of the CapEx investments in the Cargo business.

Site Acquisition Costs

21. The site acquisition is not considered in the modelling for two reasons

i. The cost of purchase will be reflected in the balance sheet assets. Its depreciation if any will be minimal and therefore is simply a pass-through.

ii. The cost of the purchase is minimal relative to the scale of the investment into the project. Market valuations range from GBP 3 Million based on the form of appraisals that will feature in the DCO through to GBP 10 Million based on a premium purchase view to avoid legal process costs for parties.

Outputs

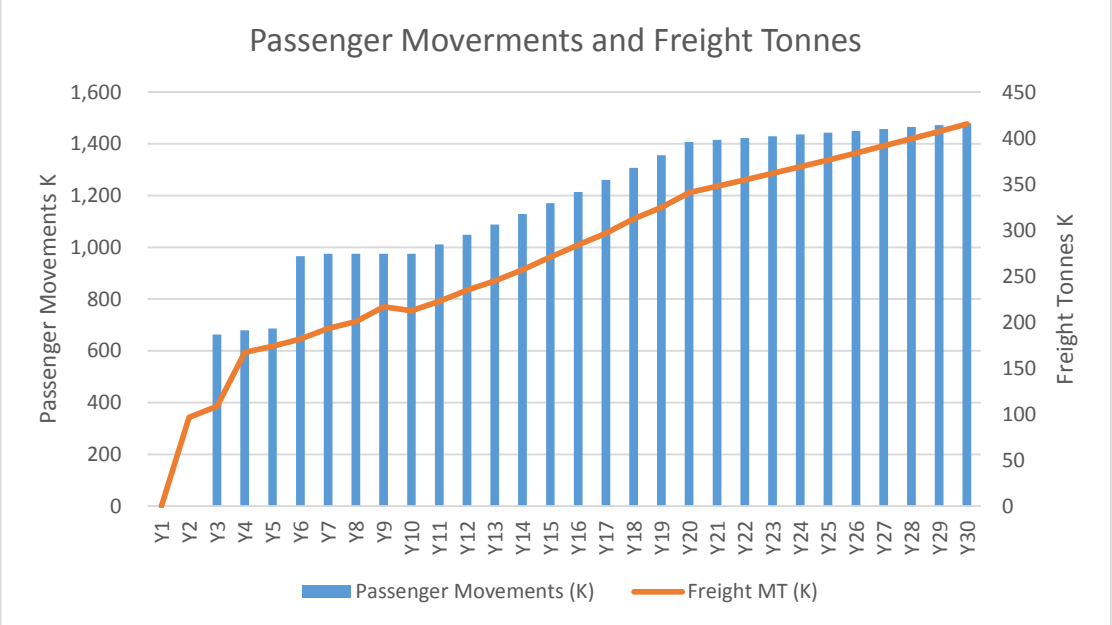
Volume Profile

22. Total movements are projected to exceed 10,000 per annum by Years 5 - 6.

Table 6.

	Y5	Y10	Y15	Y20	Y25
Passenger Movements (K)	687	976	1,171	1,408	1,443
Freight Tonnes (K)	174	212	271	341	376
Total ATM (K)	9,936	11,600	14,113	17,170	18,958
Total WLU (K)	2,424	3,099	3,876	4,815	5,206

Figure 4.



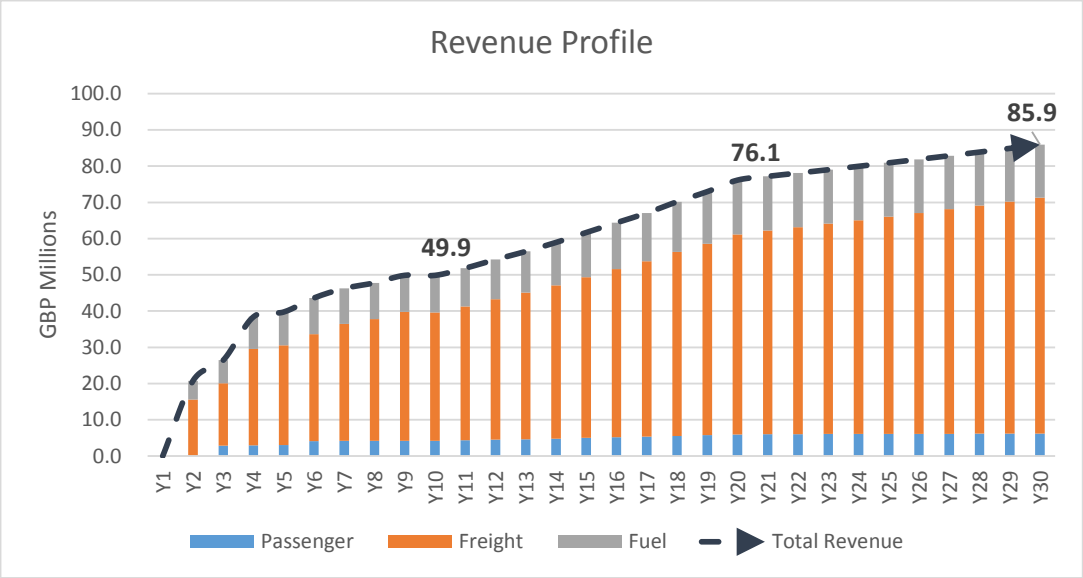
Revenue Profile

23. Revenue is forecast to grow at a compound annual growth rate, "CAGR" of 7.08% up to Year 20 (thereafter we assume minimal growth) reaching revenues of GBP 76 Million at Year 20 and GBP 86 Million by Year 30.

Table 7.

Total Revenue GBP Millions	Y5	Y10	Y15	Y20	Y25
Passenger	3	4	5	6	6
Freight	28	35	44	55	60
Fuel	9	10	12	15	15
Total	39.7	49.9	61.7	76.1	80.9

Figure 5.



Costs Profile

24. The work force exceeds 800 people by Year 9 and reaches 1000 by Year 18 (Figure 7.)

Table 8.

Costs GBP Millions	Y5	Y10	Y15	Y20	Y25
Operating	23.3	28.7	33.8	39.4	42.0
Overheads	6.5	6.7	6.9	7.2	7.2
Total	**29.8**	**35.5**	**40.7**	**46.5**	**49.2**

Figure 6.

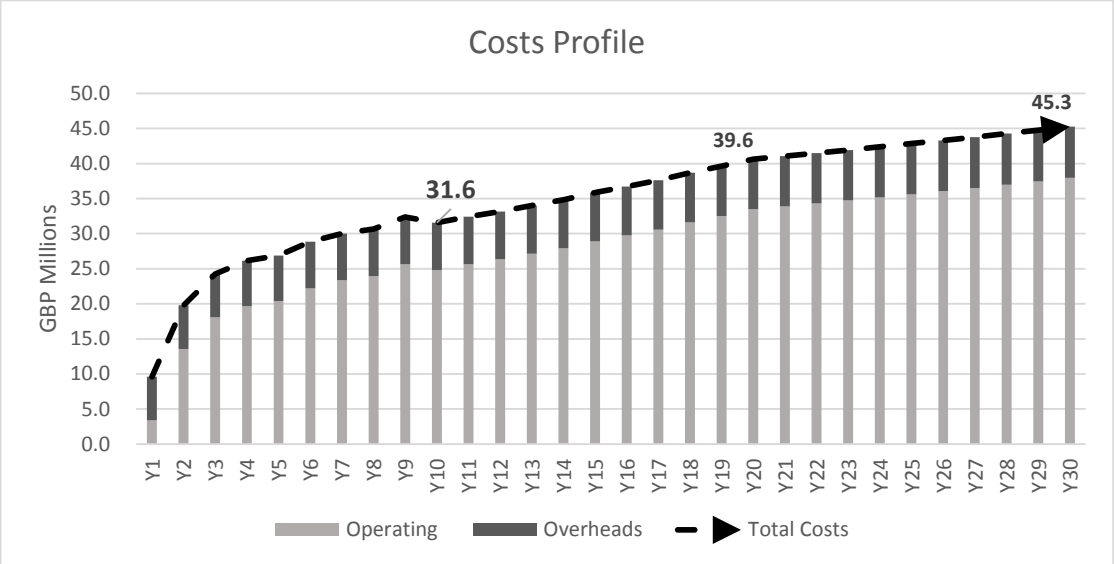
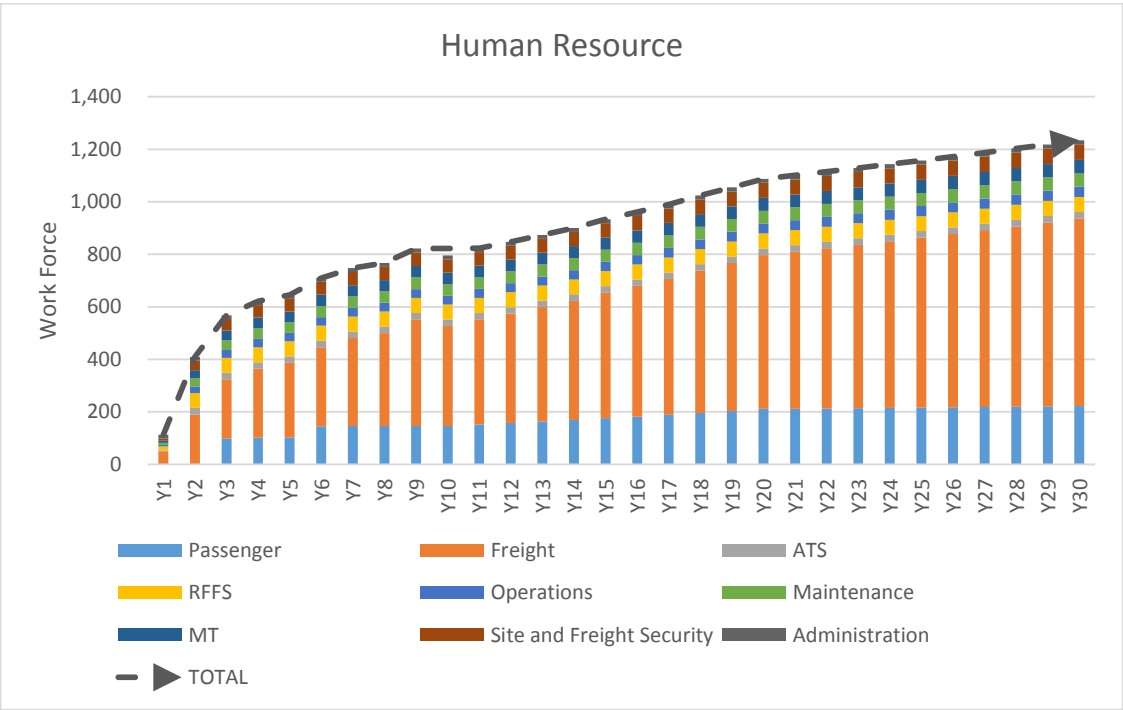


Figure 7.



EBITDA Profile

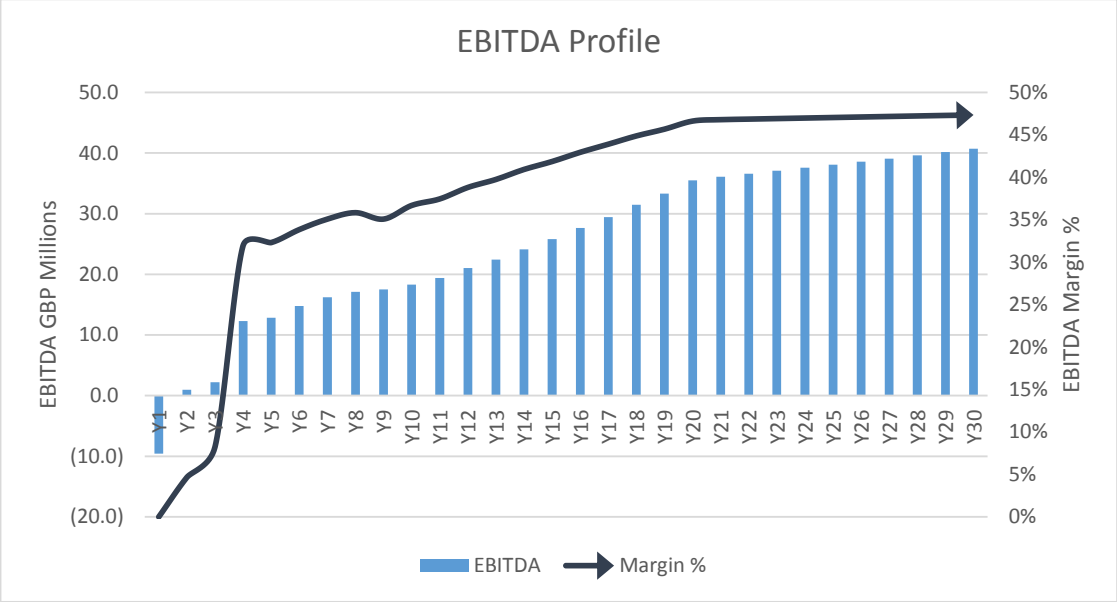
25. Whilst EBITDA demonstrates the profitability of the Cargo business at the operating level, it cannot be viewed as a metric to demonstrate viability for the business of Manston as a Cargo airport. As a result of the intensive CapEx requirements, Depreciation and Tax are numbers that need to be rationalised in order to assess the overall viability of Manston.

26. EBITDA Margins stabilise at between 46% and 47% once capacity has been reached by Year 20.

Table 9.

EBITDA	Y5	Y10	Y15	Y20	Y25
EBITDA	12.8	18.3	25.8	35.5	38.1
Margin %	32.3%	36.7%	41.9%	46.6%	47.0%

Figure 8.



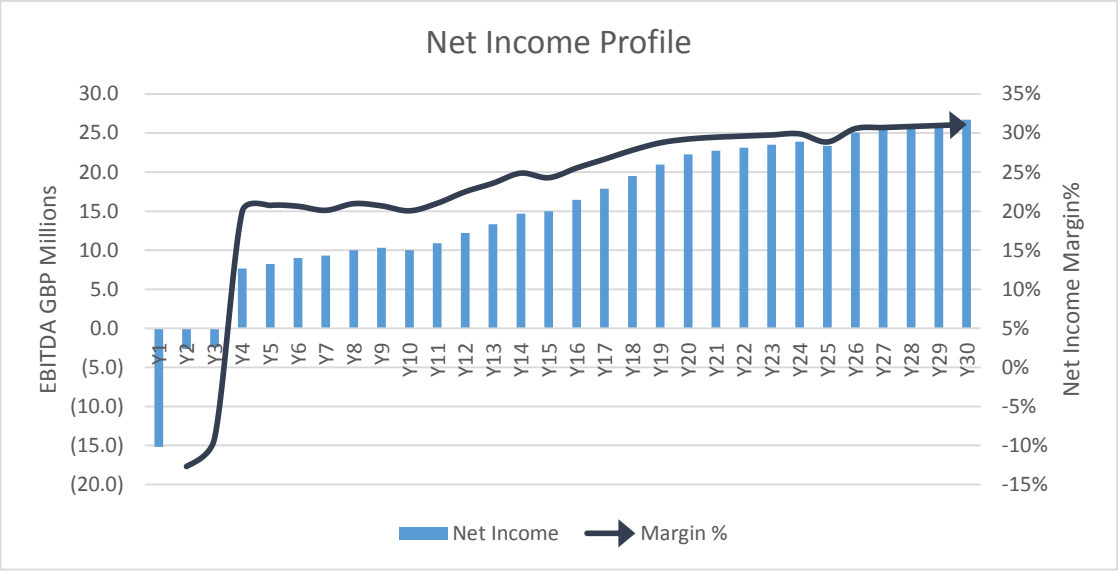
Net Income Profile

27. Net Income is expected to be negative until Year 4 growing to GBP 22 Million by Year 20 when we assume growth to flatten. Net Income is a better guide than EBITDA to the profitability and inherent value of the Cargo business as it includes the normalisation of CapEx through our true depreciation curves. Additionally, any debt capital structure in place must consider the tax considerations before repayment of debt and therefore EBITDA is similarly not appropriate.

Table 10.

Net Income	Y5	Y10	Y15	Y20	Y25
Net Income	8.2	10.0	15.0	22.3	23.3
Margin %	20.7%	20.0%	24.3%	29.2%	28.9%

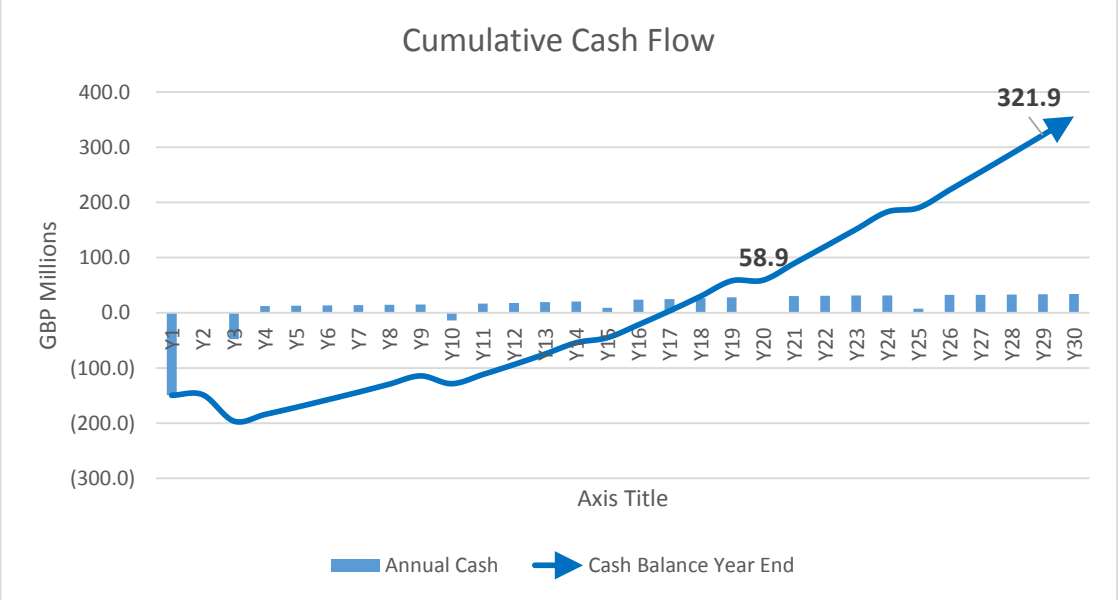
Figure 9.



Cash Flow Profile

28. Post tax cash-flow continues to rise strongly after Year 20 when growth assumptions are flattened demonstrating the CapEx cycle effect.

Figure 10.



Risk Matrix and Returns on Capital

29. Using the ranges of CapEx and a performance slider between +/- 25% the project exhibits a post-tax return of between 4.1% and 12.52%. Removing the low probability tail events, the normal returns range between 7% and 9%.

Table 11.

CapEx 287 Million GBP	Underperformance	Base Case	Outperformance
	-25%	**0%**	**25%**
Project IRR	**4.10%**	**7.12%**	**9.90%**
Total Capex	287,000	287,000	287,000
Total EBITDA	455,101	765,871	1,076,642
Net Cash Total Y30	107,612	355,937	604,262
Max Capital Draw	(204,038)	(196,452)	(196,452)
10k Movements Year	13	5	4
CapEx Breakeven	26	16	14

Table 12.

CapEx 215 Million GBP	Underperformance	Base Case	Outperformance
	-25%	**0%**	**25%**
Project IRR	**5.33%**	**9.02%**	**12.52%**
Total Capex	215,250	215,250	215,250
Total EBITDA	455,101	765,871	1,076,642
Net Cash Total Y30	169,883	418,208	666,533
Max Capital Draw	(156,538)	(148,952)	(141,365)
10k Movements Year	13	5	4
CapEx Breakeven	20	15	12

Conclusion

30. The business model of Manston Airport is a Cargo Airport. The revenue generated from Cargo Model per WLU is twice that generated in the Passenger Model (Table 3) with similar operating and overhead costs per WLU. The differentiating factor in the investment is the CapEx and the replacement cycle. Passenger CapEx is lower at the outset but is replaced more frequently with similar sums repeating. Cargo CapEx is a large initial outlay with smaller expenditure over time and with economies of scale. The large capital outlay for Cargo Airports is a barrier to entry and the long-tail "Balloon" return profile is for sophisticated long term investors who understand infrastructure and CapEx financing.

31. The economics of the Cargo Airport have a convex relationship to GDP growth and most forms of inflation broadening the class of investors and finance providers to include those with long term inflation-linked liabilities

32. Due to the pent-up demand and structural positioning of Manston, the potential market for this business is capacity driven as opposed to passenger traffic driven which, for any scale, becomes price driven.

33. Manston, as a Cargo Airport with this scale of CapEx, generates an unleveraged annualised return between 7% and 9% over a 30-year period making this a highly attractive infrastructure opportunity.