

A report on the effects of Covid and Brexit on Airfreight in the UK in 2020.

On the 11th June 2021 the Secretary of State put out a further call for reasons as follows:

"Re-determination of the Application by RiverOak Strategic Partners Limited ("the Applicant") for an Order granting Development Consent for the reopening and development of Manston Airport in Kent."

He has asked that these reasons be limited to the following areas:

"2. I am therefore writing in accordance with rule 20(2) of the Infrastructure Planning (Examination Procedure) Rules 2010 to set out to you, as an Interested Party to the above application, the following matters which the Secretary of State invites further representations for the purposes of his re-determination of the application. These matters are:

• the extent to which current national or local policies (including any changes since 9 July 2020 such as, but not limited to, the re-instatement of the ANPS) inform the level of need for the services that the Development would provide and the benefits that would be achieved from the Development;

• whether the quantitative need for the Development has been affected by any changes since 9 July 2019, and if so, a description of any such changes and the impacts on the level of need from those changes (such as, but not limited to, changes in demand for air freight, changes of capacity at other airports, locational requirements for air freight and the effects of Brexit and/or Covid)

• the extent to which the Secretary of State should, in his re-determination of the application, have regard to the sixth carbon budget (covering the years between 2033 – 2037) which will include emissions from international aviation; and

• any other matters arising since 9 July 2019 which Interested Parties consider are material for the Secretary of State to take into account in his re-determination of the application."

This issue has arisen because the people of Ramsgate rallied support to challenge the SoS (Secretary of State) as he issued a determination letter overruling the 6 months of examination which came to the conclusion there was no need for a freight Hub at Manston.

Because of the fund raising by a group of Ramsgate residents the decision by the SoS was challenged in the High Court and in February the DCO was quashed.

"The High Court's order dated 15 February 2021 quashed the decision of the Secretary of State for Transport dated 9 July 2020 to grant the application by RiverOak Strategic Partners Limited ("the Applicant") for development consent for the proposed development and reopening of Manston Airport in Thanet, Kent ("the Development"). Following that order, the Secretary of State must now re-determine that application".

It is worth remembering the conclusion that the 4 Inspectors came to in their determination of the Development Consent Order (DCO) and their 1097 page report. This can be found here https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-005347-TR020002%20Final%20Recommendation%20Report%20to%20DfT.pdf

I am reproducing the conclusion in its entirety lest the SoS has forgotten. (pages 787-789)

"1. SUMMARY OF FINDINGS

AND CONCLUSIONS

11.1. INTRODUCTION

11.1.1. The ExA has examined this application under s105 of the PA2008 as there is no National Policy Statement that has effect in this case.

11.1.2. However, in doing so it has had regard to the ANPS as being both an important and relevant consideration.

11.1.3. It has also had regard to the NPSNN, the NPPF and to both the saved and emerging policies in Local Plans prepared, or in the course of preparation, by TDC.

11.1.4. In reaching its recommendation, full regard has been given to the LIRs submitted and all other matters raised and representations made have been taken into account.

11.1.5. In reaching its recommendations, the ExA has had proper regard to the provisions of the HRA1998) and, in particular, Article 6 – Right to fair trial; Article 8 - Right to respect for private and family life; and Article 1 of the First Protocol - Protection of property.

11.1.6. In considering these matters the ExA has found no relevant matters of such importance that they would individually or collectively lead to a different recommendation to that set out below.

11.1.7. In reaching its recommendations the ExA has considered and taken full account of the several mitigations and restrictions inserted into the dDCO by the Applicant and by the ExA during the course of the Examination and make these recommendations on the basis of the provisions in the rdDCO appended to this report at Appendix D.

11.2. CONSIDERATION OF FINDINGS AND CONCLUSIONS

11.2.1. We consider that the application fulfils the relevant legal requirements including the UK Government's relevant international obligations.

11.2.2. Following Regulation 63(5) of the Conservation of Habitats and Species Regulations 2017, the ExA concludes that it is ***required to recommend refusal*** *to the Secretary of State as the competent authority for the decision as to whether to grant development consent.*

11.2.3. The ExA concludes that the Applicant ***has failed to demonstrate sufficient need for the Proposed Development, additional to (or different from) the need which is met by the provision of existing airports, and this weighs against making the proposed Order.***

11.2.4. The ExA concludes that there are impacts of the Proposed Development in terms of air quality which are neutral in any consideration of making the proposed Order. MANSTON AIRPORT: TR020002 REPORT TO THE SECRETARY OF STATE FOR TRANSPORT: 18 OCTOBER 2019 788

11.2.5. The ExA concludes that there are impacts of the Proposed Development in terms of biodiversity which are neutral in any consideration of making the proposed Order.

11.2.6. The ExA concludes that there are impacts of the Proposed Development in terms of climate change which ***weigh against*** *making the proposed Order.*

11.2.7. The ExA concludes that there are impacts of the Proposed Development in terms of ground conditions which are neutral in any consideration of making the proposed Order.

11.2.8. The ExA concludes that there are impacts of the Proposed Development in terms of heritage and archaeological assets which ***weigh against*** *making the proposed Order.*

11.2.9. The ExA concludes that there are impacts of the Proposed Development in terms of landscape and visual impacts which are neutral in any consideration of making the proposed Order.

*11.2.10. The ExA concludes that there are impacts of the Proposed Development in terms of noise impacts which **weigh against** making the proposed Order.*

*11.2.11. The ExA concludes that there are impacts of the Proposed Development in terms of operational issues which **weigh against** making the proposed Order.*

11.2.12. The ExA concludes that there are impacts of the Proposed Development in terms of socio-economic impacts which weigh in favour of making the proposed Order.

*11.2.13. The ExA concludes that there are impacts of the Proposed Development in terms of transport which **weigh against** making the proposed Order.*

11.2.14. The ExA concludes that there are impacts of the Proposed Development in terms of water quality which are neutral in any consideration of making the proposed Order. It concludes that there is no conflict with the Water Framework Directive.

*11.2.15. **The ExA concludes, therefore, that on balance the benefits of this proposal would not outweigh its impacts**.*

11.2.16. The ExA has considered the requests for powers to compulsorily acquire land and rights which formed part of the application. The ExA concludes that the requests for powers do not meet all the tests set out in statute and in guidance.

11.2.17. In reaching this conclusion the ExA has had regard to the HRA1998 and consider that the interference with rights is not proportionate and in the public interest. MANSTON AIRPORT: TR020002 REPORT TO THE SECRETARY OF STATE FOR TRANSPORT: 18 OCTOBER 2019 789

11.2.18. On the request for CA, the ExA concludes that it cannot be satisfied that there is a compelling case in the public interest for the land and rights over land to be acquired compulsorily.

11.2.19. In reaching this conclusion the ExA has had regard to the HRA1998 and considers that the interference with rights is not proportionate and not in the public interest.

11.2.20. The ExA has considered whether plots defined as open space satisfy the relevant conditions under s132 of the PA2008 and concludes, taking account of all the evidence that was submitted, that the Order Land, when burdened with the Order right, will be no less advantageous than it was before.

11.2.21. In respect to Crown Land, the ExA concludes that in the absence of any statement submitted to the Examination that the appropriate Crown Authority consents to the acquisition, the request for CA in respect of four Crown Authorities be refused and that any provisions relating to these Crown Authorities should not be included in any final DCO should it be made.

11.3. RECOMMENDATION

11.3.1. For all of the above reasons and in the light of its findings and conclusions on important and relevant matters set out in this report, the ExA, under the procedures set down in the PA2008, recommend that the SoS should not grant development consent.

11.3.2. In the event that the SoS reaches different conclusions and decides to grant the Order in the form attached, the ExA recommends that the SoS considers the list of recommended actions at Annex E to this report; all of which are consolidated from the main text of this report"

To summarise the ExA voted against granting this DCO because:

11.2.2. Following Regulation 63(5) of the Conservation of Habitats and Species Regulations 2017, the ExA concludes that it is required to recommend refusal to the Secretary of State as the competent authority for the decision as to whether to grant development consent.

11.2.3. The ExA concludes that the Applicant has failed to demonstrate sufficient need for the Proposed Development, additional to (or different from) the need which is met by the provision of existing airports, and this weighs against making the proposed Order (my bold)

11.2.6. The ExA concludes that there are impacts of the Proposed Development in terms of climate change which weigh against making the proposed Order

11.2.8. The ExA concludes that there are impacts of the Proposed Development in terms of heritage and archaeological assets which weigh against making the proposed Order

11.2.10. The ExA concludes that there are impacts of the Proposed Development in terms of noise impacts which weigh against making the proposed Order.

11.2.11. The ExA concludes that there are impacts of the Proposed Development in terms of operational issues which weigh against making the proposed Order

11.2.13. The ExA concludes that there are impacts of the Proposed Development in terms of transport which weigh against making the proposed Order.

Each of the points above are damning in their own way however 11.2.3 makes it clear that the developer had failed to establish a need for an Airfreight Hub in East Kent and that the developer had not sufficiently taken into account the job losses at alternate airports such as the East Midlands or Stanstead who both handle freight both bellyhold and pure freighters.

<u>Current situation</u>

Since the conclusion of the Examination and the determination of the SoS's decision this country has left the EU and in March 2020 the effects of the Covid Pandemic has changed temporarily the whole complexion of airfreight. Some airports have benefitted and some have done worse.

This is the CAA's short report on airfreight

"19 March, 2021

68.5 million Passengers were carried by all operators in/out of UK in 2020, down 75% on 2019.

Air transport movements were down 63% compared to 2019.

The UK saw 1,348,044 tonnes of freight on cargo dedicated aircraft in 2020, up 56.8% on 2019.

The UK Civil Aviation Authority has published data today which illustrates the significant effects of the coronavirus pandemic on the aviation sector in 2020. The data shows that passenger numbers in and out of the UK fell by 75.3% to 68.5 million across 2020, with overall air transport movements down by 63.4%. However, freight cargo saw an increase of 56.8% compared to 2019.

Prior to the Covid-19 pandemic, the UK had seen an increasing number of passengers year-on-year for some time. However, 2020 got off to a slow start even prior to the pandemic as February saw poor weather conditions causing many cancellations. Along with the emerging news around Covid-19 beginning to dampen demand, this contributed to a 1.8% decline in passengers on February 2019.

From March 2020, Covid-19 had a rapid effect on passenger numbers passing through UK airports. April and May saw passenger numbers fall by almost 98% on 2019 figures, with only 700,000 passengers travelling through UK airports across these usually busy months.

A partial recovery occurred during the summer as travel restrictions were eased. Despite this, only 11.1 million passengers flew in and out of the UK from July through to September, down 82% on the same timeframe in 2019.

Due to an increase in coronavirus cases in autumn, further restrictions came into place for international travel, which reduced demand. National lockdowns and travel restrictions throughout winter saw holiday plans cancelled, with December passenger numbers falling by 87.9% from December 2019.

Despite passenger numbers falling in 2020, aviation played a vital role bringing much needed cargo and medical supplies to the UK from overseas. Cargo operations increased by 42.7% in 2020, with traditionally commercial passenger airlines operating dedicated cargo flights across the globe. The UK saw 1,348,044 tonnes of freight on cargo dedicated aircraft in 2020, an increase of 56.8% from the previous year."

Weblink : https://www.caa.co.uk/News/Aviation-2020--Data-summary/

To break this down from the individual airports shows some stark differences from 2019 and I reproduce these figures.

	2020				Bellyhold	% change from 2019	Pure Freight	% change from 2019
Airport	Total Freight in Tonnes	% of UK freight	% change on 2019					
Heathrow	1146310	57.25%	-28%		679754	-55%	1503730	457%
East Midlands	381954	19.08%	14%		11	1000%	381942	14%
Stanstead	254573	12.71%	14%		3263	-53%	251310	16%
Manchester	48938	2.44%	-55%		44449	-58%	4489	20%
Luton	31155	1.56%	-13%		74	-79%	31082	-12%
Belfast	27946	1.40%	11%		126	641%	27820	11%
Gatwick	26063	1.30%	-76%		24707	-78%	1356	208%
Doncaster	22573	1.13%	28%		1	-88%	22572	28%
	1939512	96.87%	-21%		752385	-57%	2224301	60%
Total UK	2002187	100.00%			766149		1236037	

So to interpret these figures overall the tonnage flown is down 21% over the figures from 2019. Some of this decrease is down to a lower Gross Domestic product (GDP) caused from lower consumer spending due to lockdown and some of this is down to leaving the EU (Brexit). The Covid

Pandemic effect is likely to be temporary. Most experts believe the economy will be back to normal by 2024 however the Brexit Effect is much harder to determine.

The other major change albeit temporary is the bellyhold to Pure Freighters used to fly in cargo to UK airports. This has come about because the number of passengers flying has dropped sharply across all airports. This has led to freight forwarders using the surplus slots at airports to fly in cargo albeit at vastly increased costs. This is unlikely to be a permanent change owing to those increased costs being passed onto the customer. Bellyhold cargo is up to 4X as expensive as a pure freighter and also more expensive than HGVs and shipping.

Looking at the figures over the last 10 years airfreight has grown by around 10% overall with 62% landing via Heathrow and of that 95% travelled in the belly of Long Haul passenger aircraft.

In 2020 57% of freight came thru Heathrow (a small drop) however 41% (instead of 5%) came in as pure freight a massive change albeit temporary until passenger numbers increase.

Overall the same effect is noticeable across all airports however with 97% of all freight accounted for by just 8 airports and 90% with just Heathrow, East Midlands and Stanstead. These 3 airports are part of the Golden Triangle covered by Motorway, Rail and much of the infrastructure support for freight in the UK. It is said the whole of the UK is reachable in 4 hours by HGV's.

Conclusion

The SoS asked for further information to enable a re-determination of the DCO

• ***whether the quantitative need for the Development has been affected by any changes since 9 July 2019, and if so, a description of any such changes and the impacts on the level of need from those changes (such as, but not limited to, changes in demand for air freight, changes of capacity at other airports, locational requirements for air freight and the effects of Brexit and/or Covid)***

The ExA concluded

11.2.3. The ExA concludes that the Applicant has failed to demonstrate sufficient need for the Proposed Development, additional to (or different from) the need which is met by the provision of existing airports, and this weighs against making the proposed Order (my bold)

Baring the temporary effect of Covid very little has changed since 2019 most airfreight still comes through 3 airports Heathrow, East Midlands and Stanstead. Airfreight is still more expensive than HGVs and shipping and all three methods have reduced due to the impact of Brexit.

For a new Cargo airport to grow from scratch it must have a unique selling point which sadly Manston is sadly bereft.

"*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*." Further it was stated "*However, paragraph 1.42 of the ANPS states that* ***the Government accepts that it may well be possible for existing airports to demonstrate sufficient need for their proposals****, additional to (or different from) the need which is met by the provision of the Northwest Runway at Heathrow*"

The ExA concludes

Given all the above evidence, the ExA concludes that the levels of freight that the Proposed Development could expect to handle are modest and could be catered for at existing airports

(Heathrow, Stansted, EMA, and others if the demand existed). The ExA considers that Manston appears to offer no obvious advantages to outweigh the strong competition that such airports offer. The ExA therefore concludes that the Applicant has failed to demonstrate sufficient need for the Proposed Development, additional to (or different from) the need which is met by the provision of existing airports

This is described in detail on pages 54-103 in their examination report so I won't repeat all the views.

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-005347-TR020002%20Final%20Recommendation%20Report%20to%20DfT.pdf

Previous submissions

Viability https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-003812-Barry%20James%20-%20Viability.pdf

Viability transcript https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-003816-Barry%20James%20-%20Sally%20Dixon%20Transcripty.pdf

Nationally Insignificant https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-002993-Barry%20James%20-%20Written%20Representation.pdf

Comparison between the 3 main cargo airports and Manston with reference to the annual figures produced by Sally Dixon

Introduction

There is little point in regurgitating the main facts so I will borrow from a report written by Alan Stratford & Associates which can be found here:

https://www.alanstratford.co.uk/aviation-insights/manston-airport-dco-promises-of-over-23000-new-jobs-are-flawed/?fbclid=IwAR36lHjfUKRmJBpJV3fYP9DsVOJ7WCzdTzcdSYeCIJi_chN_Mt_xIleUyKs

"***Location is too remote***

In terms of freight, the key disadvantage of Manston is its location at the extreme SE corner of the UK and its poor surface access. Historic traffic levels at the airport have generally been modest and it has never been to compete with East Midlands and Stansted – the UK's two largest airports for dedicated freighter traffic, which account for some 71.7% of all cargo handled by dedicated freighter aircraft. The increased onward distribution times at Manston are particularly relevant for perishable goods which comprise a significant proportion of all dedicated freighter cargo. In addition, the inability to offer night flights at the airport, which is a condition of the DCO, will be a significant constraint for the development of a freight hub, particularly for main international freight package couriers such as Fedex, UPS and DHL. Similar considerations apply for passenger traffic as the catchment area population is relatively small. This is unlikely to increase significantly beyond perhaps a handful of UK domestic and European routes even with a new rail station at Thanet Parkway, located some 3/4 miles from the airport. The conclusion that the proposed development of Manston would not be commercially viable is also made in reports by two other aviation consultants, York Aviation and AviaSolutions."

"*It might be argued that the UK air freight market will grow substantially over the coming decades. Prior to Covid-19, Boeing forecasted that the global air freight market would grow by some 4.2% pa over the next 20 years. However much of the growth will be in passenger bellyhold rather than dedicated freighter cargo (bellyhold currently accounts for 70% of all UK air cargo) and, in practice, the dedicated freighter market in the UK is highly fragmented and has shown relatively little growth in the past decade. Apart from the international freight couriers, the all-cargo airlines operating in the UK, such as Cargolux and AirBridgeCargo, are already well-established at other airports and will be reluctant to move to Manston. This also applies to the freight subsidiaries of the passenger airlines, several of which operate dedicated freighter aircraft. The UK's only all-cargo airline, CargoLogicAir, which leases two B747F aircraft, temporarily suspended operations in February this year due to a lack of demand, although these have recently recommenced following the Covid-19 pandemic. This may however, be short-term as any growth of the UK air freight market is likely to be impacted by the aftermath of the pandemic, Brexit and a potential economic recession*."

Cargo ATM's										
	Azimuth			Infratil						
	ATM	Cargo tonnes	average	ATM	Cargo Tonnes	Average	ATM's if historical average is used			
year 2	5252	96553	18.38	444	28371	63.90	**1511**			
year 5	9936	173741	17.49	389	27495	70.68	**2458**			
year 10 (7)	11600	212351	18.31	511	29306	57.35	**3703**			
Year 10 is year 7 under Infratil as the airport closed in 2014										

Infratil wanted to create a profitable Cargo business however they failed because Manston is in the wrong geographical location and could only attract a marginal amount of business mainly from the

African Continent. They have left a very small footprint to measure against the projections from Sally Dixon but what is available is very telling.

Sally Dixon is proposing that the average tonnage per ATM measured at year 2, 5 and 10 years (7 with Infratil due to closure) are measured @ 18.38, 17.49 and 18.31 and this is a massive difference from the actual loads arriving at Manston in Infratil's time which were 63.90, 70.67, and 57.35 (this was normally full loads of veggies arriving and the freighter leaving empty.

What Sally is estimating is more akin to the business arriving at Stanstead or the East Midlands see below

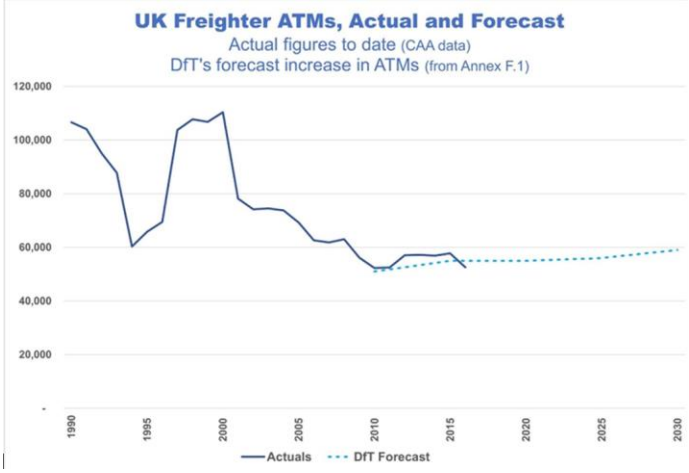
	2019	2020
Stanstead		
Tonnes	217265	251310
cargo atm	10208	10406
avg	21.28	24.15
EMA		
Tonnes	359947	381942
cargo atm	23202	25932
avg	15.51	14.73

However without knowing the business mix it is difficult to assess how Ms Dixon has computed the average tonnage.

There are several things wrong with her computations

Firstly RSP state they will go from a standing start of zero in year 1 to 96553 tonnes in year 2. This without the infrastructure to create the need nor indeed what market she is targeting, Ms. Dixon then assumes tonnage in year 4 of 167092. So this, in reality would mean from a standing start they would capture 6.59% of 2019's cargo business. All this without a track record, infrastructure, freight forwarders and ancillary business. To compound this vision by year 20 Sally Dixon envisages capturing 13.44% of all UK cargo. Currently East Midlands Airport has (2019) 13.25% of the UK market.

In a buoyant, expanding market this may of course be possible however the pure freighter market isn't buoyant nor is it expanding as figures from the DfT show.



This shows that Cargo ATM's have shrunk from just over 100000 in 2000 down to just over 57000 in 2019. (2020 was different as pure freighter ATMs increased by 50% due to far less Bellyhold cargo as PAX shrank by 90%). Once Covid is over and PAX returns to some sort of normality experts expect pure freighter traffic will revert back to pre-covid levels. This is purely because offsetting passenger income against cargo costs make costs for cargo 4x cheaper than pure freight.

Secondly RSP have speculated that growth in their forecasts will exceed 13% annually, growing by 252% over 20 years.

Revenue	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Freight tonnes	0	96553	108553	167092	173471	181436	192908	200673	216765	212351	222377	234508	244690	256989	270579	283904	296594	312344	324838	340758
ATM	0	5252	5894	9700	9936	10144	10872	11184	11391	11600	12064	12547	13048	13570	14113	14678	15269	15875	16510	17170
avg	0	18.38	18.42	17.23	17.46	17.89	17.74	17.94	19.03	18.31	18.43	18.69	18.75	18.94	19.17	19.34	19.42	19.68	19.68	19.85
% growth			12.43%	53.93%	3.82%	4.59%	6.32%	4.03%	8.02%	-2.04%	4.72%	5.46%	4.34%	5.03%	5.29%	4.92%	4.47%	5.31%	4.00%	4.90%

As you can see there are two anomalies at year 2 and 4 with the rest of the annual growth averaging circa 4% however the reality of the rest of the UK shows growth at Heathrow for the last 10 years at 7.7%, East Midlands @ 22.74% and Stanstead @ 10.83% and total UK tonnage growing by just 9% over 10 years, a rate that is less than 1% PA. Even though pure freighter traffic and tonnage has increased in 2020 due to a considerable drop in PAX overall UK tonnage actually dropped by 21% overall.

These 3 airports (Heathrow, Stanstead, and East Midlands) were chosen as comparators as between then they carry, on average, 85% of all UK cargo in the UK and would be direct competitors to any growth Manston might achieve.

Last 10 years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Growth	discounting 2020 due to covid
Heathrow	1472988	1484351	1464390	1422903	1498906	1496537	1541029	1698461	1699663	1587486	1146310	114498	
% annual total	**63.36%**	**64.60%**	**63.60%**	**62.89%**	**65.04%**	**65.09%**	**64.61%**	**64.77%**	**64.24%**	**62.61%**	**57.25%**	**7.77%**	
Stanstead	202238	202580	214160	211952	204725	207996	223203	236892	226198	224139	254573	21901	
% annual total	**8.70%**	**8.82%**	**9.30%**	**9.37%**	**8.88%**	**9.05%**	**9.36%**	**9.03%**	**8.55%**	**8.84%**	**12.71%**	**10.83%**	
EMA	273699	264595	264292	266968	277413	291689	300101	324216	334536	335948	381954	62249	
% annual total	**11.77%**	**11.52%**	**11.48%**	**11.80%**	**12.04%**	**12.69%**	**12.58%**	**12.36%**	**12.64%**	**13.25%**	**19.08%**	**22.74%**	
Annual tonnage	2324822	2297588	2302327	2262348	2304484	2299328	2385262	2622495	2645710	2535422	2002187	210600	
combined %	**83.83%**	**84.94%**	**84.39%**	**84.06%**	**85.96%**	**86.82%**	**86.55%**	**86.16%**	**85.44%**	**84.70%**	**89.04%**	**9.06%**	

One other issue to consider when looking at aircargo, either bellyhold or pure freighter, is that compared to the volume of cargo arriving and departing the UK aircargo amounts to just ½ of 1% of the total. This is a pretty insignificant tonnage and even Stanstead only utilizes 2/3rds of the cargo atms agreed within their local council. East Midlands has also spare capacity as currently does Heathrow (this may change as the effects of covid ease).

In conclusion Ms. Dixon's forecasts are suspect, not based on the UK reality and no thought has been given to the viability of rebuilding Manston which, if the figures are possible, would create a construction debt of £300m which would have to be repaid from profits all the time they would be in completion with 3 airports that currently between then handle 85% of UK cargo and would have a vested interest in continuing the status quo.

Barry James

Lest we forget

Over the course of the last 10 years much has been written about Manston by the experts. From Infratil's attempts to get the agreement with TDC changed so they could run Cargo freighters at night through to Louise Congdon's appearance at the Oral Examinations in 2019.

They have all been united in stating aviation at Manston will not work mainly due to the geography of where it was situated.

So why does RSP believe pumping an alleged £300million will change the geography is the real question.

In fact the one and only aviation "expert" RSP could find (Dr Sally Dixon "DSD") who claims in her Opus that Manston will achieve in 20 years a cargo tonnage that it has singularly failed to achieve since cargo freighters 1st landed at Manston in 1959.

More on DSD later but now I will list the aviation reports written on Manston.

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Date (appendix)	Report author	Title
09/2010 (A)	Bickerdike Allen Partners	Aircraft Night Noise Assessment Report
08/2011 (B)	York Aviation	ECONOMIC IMPACT OF NIGHT FLYING POLICY
03/2015 (C)	Kent County Council	Manston Airport under private ownership: The story to date and the future prospects
2015 (D)	Falcon Consulting	PROSPECTS FOR THE VIABLE DEVELOPMENT OF MANSTON AIRPORT
10/2016 (E)	Avia Solutions	Commercial Viability of Manston Airport
08/2017 (F)	Avia Solutions	Local Plan Representations –TDC
11/2017 (G)	York Aviation	ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT
11/2017 (H)	York Aviation	Summary
01/2018 (I)	Altitude Aviation	Analysis of the Freight Market Potential of a Reopened Manston Airport
02/2019 (J)	Altitude Aviation	Analysis of the Freight Market Potential of a Reopened Manston Airport - Addendum

Appendix A was produced by Infratil who were proposing a change to the Night Flight Regime agreed in 2000 (under Wiggins later Planestation) which at the time was for ZERO night flights however during the course of their research Infratil had regularly breached this S106 agreed to the tune of 2 night time arrivals a week. Further at appendix B York Aviation were asked to describe the consequences to TDC of not allowing Night Flights. This was York's conclusion

"Importantly, ***the Airport has identified that the night noise policy needs to be put in place at this time as attracting additional regular air freight services, some of which will need to operate at night, is critical to improving the financial viability of the Airport****. Without such operations, and the revenue which they bring,*

Lest we forget

there is a risk that the Airport will not be in a position to sustain its operations and attract additional passenger services over the medium to long term. The growth in forecast passenger numbers over time will also help the viability of the Airport, but whilst such services may reduce the dependency on airfreight overall, ***the Airport is unlikely to be financially viable without the forecast mix of both traffic types as set out in the Airport's Master Plan****." Their conclusion was:-*

*"****5.1 Our analysis of the economic impact of the Night Flying Policy proposed by MSE shows that without the policy, or with stringent night flying restrictions or a ban, the Airport is unlikely to be able to achieve the forecast proposed in the Master Plan****.*

5.2 The nature of the Airport, and the types of traffic it can serve, means that restricted night time operations may reduce potential passenger numbers in 2018 by 55% over those projected in the Master Plan and could reduce the quality of the network which the Airport can support. This impact would occur despite only a small number of the daily services needing to fall within the night time period as night restrictions would remove the flexibility for based operators such that the full benefits of based aircraft would not be achieved.

5.3 The importance of freight, both now and in future, must also be considered. It plays a valuable role in providing revenue to the Airport as well as supporting the local economy. The future scope for the Airport to become profitable will continue to be reliant on air freight which means this sector must be encouraged to grow. The Night Flying Policy proposed by the Airport would create the circumstances which would allow this growth, by offering the greatest flexibility to carriers, even if, as with passenger services, the majority of flights may still take place during the day time period.

5.4 The combined impact of night time restrictions is not only a measurable loss of 1,450 jobs and £30.3m from the regional economy, but also the risk that the full wider economic benefits of having an airport are not realised, taking away the attractiveness for wider business growth associated with air travel access. Furthermore, the risk may be greater in that if the Airport cannot be made profitable with the restricted operations, then its long term future may be put in jeopardy, along with all the jobs and GVA created by it locally."

Clearly even back in 2011 the future of the airport depended on attracting Night Flights, and clearly as Night Flights were refused due to local opposition in Ramsgate mainly York were completely correct as the airport was put up for sale in 2012 by Infratil and despite Price, Waterhouse Coopers best endeavours there were no takers for 22 months until Ann Gloag took it and its debts in 2013.

In March 2015 Kent County Council published their report (appendix C) and their conclusion:-

"*The truth is that Manston has failed over a prolonged period of time to run as a commercially successful airport.*

Kent County Council gave strong support to various investors but ***the reality of commercial aviation at Manston Airport led to very significant losses. In fact, in the 16 years since it was taken into privately ownership it has incurred losses by those who have tried to operate it in excess of £100 million****.*

The objective now must therefore be to make sure that we have owners who want to do exciting things on the site and that the land is not left abandoned.

Bristow Group had chosen Manston as its location for the regional search and rescue base; when the airport closed the company decided to locate that base at Lydd. Kent County Council is pleased that this vital service will still be located in Kent. Lydd Airport is also starting a substantial investment programme to extend its runway and construct new aviation facilities.

Surely it is now time to look at a B Plan for Manston.

The driver must be to seize the best opportunity to create a significant number of new jobs and bring prosperity into East Kent.

Lest we forget

RiverOak has not managed to convince Thanet District Council that there is a viable business plan. We believe the new owners have got a credible plan and the financial ability to create substantial numbers of new jobs which will bring prosperity and economic growth to East Kent." Not exactly a ringing endorsement.

Thanet District Council then embarked on a search for an indemnity partner and requested an aviation report from Falcon Consultancy (appendix D) which concluded:-

"Manston would find it difficult to grow both Cargo and Passenger Services without considerable investment including a rail service and an aviation city." (ed note paraphrased)

As TDC couldn't find a suitable CPO partner they tried again. This time commissioning a different aviation expert Avia Solutions. In September 2016 they concluded:-

"*AviaSolutions has discussed the re-opening of Manston Airport with a number of organisations and individuals, and carried out a detailed assessment of the air transport market and the potential finances of a re-opened Manston Airport. On this basis of this work, we have concluded that it is most unlikely that Manston Airport would represent a viable investment opportunity even in the longer term (post 2040), and certainly not during the period of the Local Plan to 2031*." Further they add:-

"*It should be noted that these conclusions are based on a set of assumptions that favour Manston Airport at all times, with examples including above market aeronautical yield, aggressive cost reduction projections and minimal acquisition costs, which, while in our opinion are achievable, would nonetheless require some significant management attention. This attention would be focused on two aspects, securing new business at advantageous aeronautical revenue per passengers from LCC's and structuring the business to take advantage of unit cost reduction through scale. . These would not be assumptions which AviaSolutions would suggest are presented as a Base Case to an Investment Committee considering the proposition, but rather ones describing a potential upside scenario. In our experience, it is likely that an Investment Committee would not consider investing on this basis"* In other words anyone taking on Manston as an investment opportunity would have to be bonkers

During the protracted DCO examination two further reports were commissioned. One by the land owner (at the time) Stonehill Park and the other on behalf of TDC completed by Altitude Aviation.

The first was published in November 2017 by York Aviation appendix G) and concluded:-

"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."

The second was published by Altitude Aviation (appendix I) in January 2018

"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.

Lest we forget

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 levels9.

• 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 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."

When you read every single aviation report almost without exception they conclude Manston is in the wrong place, unprofitable and a small niche player in the aircargo market.

The only exception to this is the report commissioned by Riveroak Strategic Partners and published to support the DCO application. Other than the examination of Azimuth's report by various experts there is one glaring omission which was discussed at the Oral Examination on Thursday 21st March 2019. This clearly shows that DSD was asked to produce a report which "proved" that a DCO application was the right way to get planning permission granted. The problem as the transcript shows is that she was never required by Riveroak to prove her plan was profitable and therefore sustainable in the long run.

The only conclusion that could be drawn from this fudging of her report was that the government planning laws were being manipulated and clearly the 4 Government inspectors weren't fooled as they concluded that:-

Lest we forget

Given all the above evidence, **the ExA concludes that the levels of freight that the Proposed Development could expect to handle are modest and could be catered for at existing airports (Heathrow, Stansted, EMA, and others if the demand existed). The ExA considers that Manston appears to offer no obvious advantages to outweigh the strong competition that such airports offer. The ExA therefore concludes that the Applicant has failed to demonstrate sufficient need for the Proposed Development, additional to (or different from) the need which is met by the provision of existing airports.**

Sally Dixon Transcript reproduced in full as appendix K

Transcript of SHP and Dr. Sally Dixon Thursday 21st March 2019

Preamble

Dr. Sally Dixon of Azimuth Associates (DSD). Azimuth is DSD.

James Strawn Barrister for SHP (JS)

At any change of speaker each state who they are so for the sake of brevity I will use their initials

JS starts off by confirming he will direct his questions directly to DSD alone as the author of the Azimuth report which underpins the entire DCO

Transcript

JS "The needs case, we are told, for this DCO, is to be found in the Azimuth report. I have just read the references and paragraph 9.35 identifies that the Azimuth Report considers whether the reopening of the Manston airport in the way intended would be viable. Have you seen that document?"

Mumble

JS "Paragraph 9.35 of the planning statement tells the reader the Azimuth report considers whether reopening Manston Airport in the way intended by Riveroak is viable? That's what it says."

*DSD "**I'm not going to disagree with you**"*

JS "Right so. The Azimuth report tells the examining Authority and us whether or not reopening Manston Airport in the way intended is viable."

DSD "The Azimuth Report sets out the full" (break in sound)

JS "I'll try it a different way. You have produced a forecast for the applicant to demonstrate both a need and the viability of that need. Haven't you?"

DSD "No I have produced a forecast and the viability was done separately"

JS "It is essential, isn't it, for a forecast to be forecast to understand whether it is going to occur and consequently whether it's viable? Correct?"

DSD "That is correct"

JS "Are you saying Dr. Dixon that the Azimuth Report doesn't do that exercise?"

Lest we forget

DSD "As I've said the report provides the forecast the viability was assessed separately, I wasn't asked to come up with a forecast which showed viability or not. I was asked to produce a forecast, whether it was viable or not was not in my hands"

JS "Dr Dixon I'm struggling to understand your answers. A forecast is a prediction of what will happen at Manston Airport and therefore for you to be telling the Examining Authority that this will happen or likely to happen you must think it viable mustn't you?"

DSD "I disagree. I was asked to produce a forecast in terms of ATMs and tonnage. ***Whether that was viable is not part of the Azimuth Report."***

JS "So if the Examining Authority wanted to know if your report is likely to come about they will hunt in vain for that in the Azimuth Report? Is that correct?"

DSD "That is correct"

JS "That is helpful, Dr. Dixon, in one sense because we know not to look for that material in your report. Despite what is said in the planning report. Where is that assessment of what you have predicted is viable?"

A period of discussion occurs on the applicant's table

JS "I'm asking you Dr Dixon, because you are the one who wrote the Azimuth Report, and I'm told you are the one to explain the need for this proposal and the need to take all of my client's land. That's where I'm told everything is explained. In fact I'm told your report is explained as the business plan in the Environmental statement. Isn't it?"

DSD "I'm trying very much to help you in that what I have in the Azimuth Report is quite clearly a need case in that there is a need in the SE of the UK for a capacity for dedicated freighters"

JS "That's not helping me and particularly as I have limited time. My question to you was "Your report was described as the business plan in the environment statement. We have established that what you predicted is viable. My question to you is where do I find an assessment of whether what you are suggesting is indeed viable?"

DSD "It is not…er….The business plan….er my forecast could not be described as a business plan"

JS "We are going over things I know, can you please answer my question Dr. Dixon. You talked about how important this is in need terms. Where does anyone find an assessment of what you are predicting as a likely occurrence could occur viably?"

DSD "I suggest that is found in a different document"

JS "Where?

DSD "I have not been involved in the production of the business plan" "I cannot tell you the answer to that question"

*JS "****It's clear it isn't in the summary of the business model for the reasons we discussed yesterday. That doesn't tell you for example how the £306M is financed, the interest on it, what you are going to charge cargo Freighters in order to come from wherever they may be****. None of that is contained in that material is it?"*

DSD "That material has been obviously produced. But what I'm saying it hasn't been produced by me and my certainty is that material would be commercially sensitive"

JS "Is the short answer is that there is nothing in the material in front of us that demonstrates the viability of Manston airport?"

DSD "there is nothing in front of us at this time as we discussed yesterday"

Lest we forget

JS "And we recognise at para 9.35 that viability is important. It clearly is Dr. Dixon, as you could produce a report with anything you like as theory but if you cannot deliver in viably it's not going to happen. So it's clearly vital isn't it?

DSD "Of course that's intrinsic to the case, and that the applicant would not be putting a non-viable proposition before the examining authority"

JS "That assertion we say aren't viable in figures we have demonstrated it isn't viable, if we wanted to find where you have explained to the examining authority we are going to attract 17170 cargo freighters to this airport, we are going to spend £306M the way we are going to charge them will cover our costs we aren't going to find any of that information in the materials before us. If it does exist we need to know where it is, Will we find it is any of the material?"

DSD paraphrase "I cannot help you"

The discussion then confirms that DSD cannot confirm that the azimuth report has been costed nor that the forecast is viable.

Conclusion

Clearly Dr. Dixon has plucked figures from the ether to come up with her forecast of ATMs which was easily demonstrated when her freight forecast divided by ATMs equates to half the historic actual tonnage per ATM. It seems there are forecasts and fairy stories.

It is also clear that DSD was unable to even justify her own forecasting ability but then elsewhere she did concede she has no direct experience in airfreight.

Barry James Thursday, July 1, 2021

Transcript of SHP and Dr. Sally Dixon Thursday 21st March 2019

Preamble

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> 9.35 The Azimuth Associates Report (Volume II) contains a qualitative study of potential demand for Manston Airport as a freighter hub for the South East of the UK with additional passenger and general aviation services. It considers whether reopening Manston Airport in the way intended by RiverOak would be viable. This is an important consideration not only in light of the policy objectives set out in the APF and in demonstrating a need for the proposed development in the absence of any specific promotion through the Airports NPS, but significantly when considering the implications of the DCO proposals on the spatial planning process within Thanet District Council and as part of its new Local Plan. The Council has recently voted and shown its support for continued safeguarding of the Manston Airport site for aviation use and the Azimuth Associates report reinforces that there is a definite need for this in the local, regional and national interest. Consequently, and in light of the Thanet District Council response to the June/July 2017 statutory consultation on the project, it is not considered that there is a general local planning policy conflict when considering the proposals for development.

DSD "I'm not going to disagree with you"

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Bickerdike Allen Partners

MANSTON AIRPORT

Aircraft Night Noise Assessment Report

September 2010

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Figure 3.2 Boeing 737-800 85, 90, 95 dB(A) SEL Noise Footprints, Departure Runway 28

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Figure 5.2 McDonnell Douglas MD-11 85, 90, 95 dB(A) SEL Noise Footprints, Departure Runway 28

APPENDICES

Appendix A Assumptions used in the derivation of Noise Contours and SEL Footprints

1.0 INTRODUCTION

Manston Airport (MSE) is seeking to agree a policy with Thanet District Council to establish a regular schedule of flights into and out of the airport that will occur between the recognised night-time hours of 23.00 and 07.00. It is already acknowledged and accepted that in order for an airport like MSE to function successfully, a degree of flexibility is required to enable aircraft to fly in and out during these night-time hours. At present, these events already take place on an ad-hoc basis.

It is a requirement of the current Section 106 Agreement between Thanet District Council and MSE that prior to the introduction of any regular night flying operations, a Night-time Flying Noise Policy is to have been agreed with the Council.

The Second Schedule to the Section 106 Agreement dated 26th September 2000 sets out requirements for the Night-time Flying Noise Policy and, in August 2009, a draft Night-time flying policy was submitted to the Council for theirs and residents' consideration. The policy is to be based on the Night-time Quota Count System that is successfully deployed at many major UK airports including Gatwick, Heathrow, Stansted, Manchester, Bristol and others.

In recognition of the flexibility required in the scheduling of aircraft, and in the sensitivity of people to noise disturbance at night, the Quota Count System is based around the hours of 23.30 to 06.00 and sets a quota against which each aircraft movement, a departure or a landing, is counted. The count varies according to the noisiness of the aircraft. A count of 4 for example is noisier than a count of 2. The details of this proposal are beyond the scope of this report but MSE have developed forecasts for their expected annual number of required night operations, both during the night-time quota count period (23.30 to 06.00 hours) and also the night-time period of 23.00 to 07.00 hours.

This report considers the likely noise impacts from these forecast operations which are expected to be reached by 2018. This is done by taking the forecast night-time operations and generating noise contours (in terms of the $L_{Aeq,8h}$ index) which depict the average noise levels expected over a typical night period. In addition, noise footprints are presented for the most commonly used aircraft at night that will feature the most in the noise environment. These provide an illustration of the noise produced on the ground during a single aircraft event, rather than an average. Contour areas, dwelling and population counts within contour bands are also presented.

A description is provided of the criteria available for rating the effects of night-time noise in light of research undertaken by various parties and of those set out in recognised guidance documents and standards. Based on this information, criteria are suggested and adopted for rating the impact of regular night operations at MSE.

2.0 SITE DESCRIPTION

Manston Airport is situated in the Isle of Thanet, a few kilometres to the west of Ramsgate town and about six kilometres to the south of Margate. In close proximity to the airport, to the north and south, a number of small villages are located such as Monkton, Minster and Cliffs End to the south, and Manston and Acol to the north. The village of St Nicholas Wade is located about 6 kilometres to the west of the airport.

The density of people located around the airport is therefore by far the most significant to the east of the airport as compared to the west. For this reason, the airport operates a preferred runway usage seeking to ensure aircraft depart on runway 28 to the west and arrive on runway 10 when weather conditions permit such operations in a safe manner.

For aircraft departing on runway 28, a noise abatement route exists which requires operators of jet and large aircraft to make a right turn to the north west at a distance of around 1.5 miles from the centre of the airport runway to avoid overflying Herne Bay, as long as operationally safe to do so.

3.0 AIRCRAFT MOVEMENTS AT NIGHT

3.1 Current Night-time Aircraft Movements

Night-time aircraft movements at Manston currently occur on an ad-hoc basis and involve aircraft of the type that are expected to fly in the future, for example the B747-400. The number of movements that take place currently vary from week to week and month to month but are typically around 2 per week at present.

3.2 Future Night-time Aircraft Movements

Up to the year 2018, MSE have developed forecasts for future night-time aircraft movements that indicate the following number of movements over a calendar year and during a typical night:-

Night-time Aircraft Movements (2018)

	Annual		Typical night	
Hours	Passenger	Freight	Passenger	Freight
23.00 – 23.30	1016	157	2.8	0.4
23.30 – 06.00 (Night-time Quota Period)	610	471	1.7	1.3
06.00 – 07.00	407	157	1.1	0.4
	2033	785	5.6	2.1

A detailed breakdown of the aircraft movement numbers by aircraft type are presented in Appendix A.

For the Night-time Quota Count Period, the quota count sought for the calendar year amounts to 1995.

The above information forecasts that in 2018, an average of 7.7 flights per night will take place with over 60% taking place during what are known as the shoulder periods of 23.00 – 23.30 and 06.00 to 07.00 hours. It is generally accepted that the most sensitive time for people at night is the intervening period and, from recent research, particularly during the hours of 01.00 to 06.00.

The conventional manner of assessing night-time noise however relies on the consideration primarily of the overall night period from 23.00 to 07.00 and it is this 8 hour period that has been adopted, together with the associated aircraft movement numbers, in the noise contours presented in this report.

4.0 NIGHT NOISE ASSESSMENT CRITERIA

The assessment of airborne aircraft noise during the daytime is based entirely on $L_{Aeq,T}$ dB contours. Night-time aircraft noise is evaluated in different ways however, using different units, such as the Single Event Level (SEL) as well as the $L_{Aeq,8h}$ index (for the period 23.00 to 07.00 hours).

The technical matter of the effect of aircraft noise on sleep has been addressed on a number of occasions by the CAA on behalf of the Department for Transport, and more recently in the work of the Environmental Research and Consultancy Department, Directorate of Airspace Policy of the Civil Aviation Authority. From work of this type, guidance on the appropriate method of noise-impact assessment for the night-time period has been developed. Research studies into the field of the effects of aircraft noise at night are on-going but the general methodology remains much the same as has been in place for a number of years. The current guidance is underpinned by the considerable research study undertaken by the Department of Transport and published in 1992[1] on the topic of aircraft noise and sleep disturbance.

This extensive Department of Transport research study on the effect of night noise indicated that outdoor noise levels below 90 dB(A) SEL due to aircraft noise events are most unlikely to cause any measurable increase in the overall rates of sleep disturbance experienced during normal sleep. At higher levels the study indicated that there was a 1 in 75 chance of the average person being "wakened". One of the conclusions of the study was that, once asleep, very few people living near airports are at risk of any sleep disturbance due to aircraft noise.

An interpretation of the research study results is that there is no significant risk of sleep disturbance for locations outside 90 dB(A) SEL footprint area. For locations within 90 dB(A) SEL footprint, a very slight risk of sleep disturbance will be present. The chance of "awakening" (1 in 75) relates not to aircraft noise levels at 90 dB(A) SEL, but to aircraft noise levels in the range 90-100 dB(A) SEL.

Night-time noise from aircraft has also been considered taking into account the combined effect of several aircraft at night, by determining the night-time $L_{Aeq,8h}$ dB values. The use of A-weighted L_{eq} contours at night has been adopted in light of the findings of CAA research studies[2] into night noise, WHO guidelines and Planning Policy Guidance PPG 24 Planning and Noise which requires the night-time $L_{Aeq,T}$ dB value to be determined when assessing the suitability of a site for new housing.

The DoT study regarding sleep disturbance presented most of its conclusions in terms of the 90 dB SEL value, as mentioned earlier in this section. The study did however also include information on the measured sleep disturbance at the eight study sites in terms of the percentage arousals, and separately the night-time combined aircraft noise level in terms of $L_{Aeq,8h}$. The sleep disturbance information gives the percentage of sleep arousals at each site during periods which had an aircraft noise event (noise epochs) and also during periods where no aircraft noise was present (quiet epochs). The findings of the study are presented in Table 1 below.

Site Studied	Noise Exposure $L_{Aeq,8h}$ dB	% Arousals (Noise Epochs)	% Arousals (Quiet Epochs)
Stansted (WSB)	44	4.99	4.93
Stansted (HAT)	46	5.27	5.34
Gatwick (LFD)	52	5.62	5.24
Gatwick (LGN)	54	5.89	5.51
Heathrow (SWM)	54	4.79	4.80
Manchester (EDG)	56	6.13	5.58
Heathrow (HLW)	62	6.26	5.41
Manchester (HGN)	66	6.97	5.41

Table 1: Summary of Sleep Disturbance Study

The information above indicates that the average noise exposure at the study sites varied from 44 dB $L_{Aeq,8h}$ to 66 dB $L_{aeq,8h}$.

To assess when the level of aircraft noise becomes significant with regard to sleep disturbance, the two columns of percentage arousals have to be inspected. An increase less than 1% in percentage arousals occurs when the noise exposure levels are 62 dB $L_{Aeq,8h}$. The increase becomes 1.5% when the exposure reaches 66 dB $L_{Aeq,8h}$. This suggests a significant effect on sleep disturbance when such levels occur. The early 1980's CAA studies into night noise advised on the L_{Aeq} unit being a good aircraft noise disturbance measure for evening and night, and that there was a discernible increase in disturbance when night-time noise exposure is about 65 L_{eq}.

At lower levels, the increase in percentage arousals between quiet and noisy conditions is less clear. The results are inconsistent at 54 dB $L_{Aeq,8h}$. At 56 dB $L_{Aeq,8h}$ there is a very small increase (0.5%), equivalent to two arousals per year.

Therefore, to ensure cautious impact assessment for the local community around Manston, a night-time criterion of 55 dB $L_{Aeq,8h}$ has been used. This criterion level indicates when no consistent sleep disturbance effect is found due to aircraft noise; i.e. below the level where a clearly discernible effect has been established.

PPG 24 makes clear that use of the noise exposure category standards (for new residential planning applications) cannot be made in the context of proposals which would introduce new noise sources

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[1] Report of a Field Study of Aircraft Noise and Sleep Disturbance. Department of Transport, Dec 1992, Ollerhead J B et al (1992).

[2] DORA report 8008. Aircraft noise and sleep disturbance: final report. (1980). Prepared by the Civil Aviation Authority, on behalf of the Department for Trade.

into areas of existing residential development and gives no guidance with regard to noise at night from developments such as aerodromes. It does, however, report that Central Government proposed in 1990 to adopt as a trigger level 57 dB $L_{Aeq,8h}$ at Stansted Airport for sound proofing eligibility at night.

The Government's policies with regard to planning and noise of new residential developments are set out in Annex 1 of the PPG 24 document. 48 dB $L_{Aeq,8h}$ has been taken to represent the level of night-time noise where, although new dwellings may be constructed, noise should be taken into account. Up to a level of 57 dB $L_{Aeq,8h}$, it states that noise should be taken into account and, where appropriate, conditions imposed to ensure an adequate level of protection against noise. When the noise level at night exceeds 57 dB $L_{Aeq,8h}$ Government's advice is that planning permission should not normally be granted. Where it is considered that permission should be given, conditions should be imposed to ensure a commensurate level of protection against noise.

A summary of the PPG 24 guidance and other research findings is given in Table 6.7 below.

$L_{Aeq,8h}$ dB	Guidance/Experience with regard to airborne aircraft noise (night-time)
<48	PPG 24 Category A
48	Exposure compatible with achieving WHO internal level of 35 dB(A) in order to "preserve the restorative powers of sleep" with partially open windows
48 – 57	PPG 24 Category B
57	Trigger level for proposed sound insulation grants at Stansted airport (SIGS)
57 – 66	PPG 24 Category C
>66	PPG 24 Category D
70	Level compatible with achieving WHO internal level of 35 dB(A) in order to "preserve the restorative powers of sleep" with the property provided with the standard noise insulation package which provides an insulation of about 35 dB(A).

Table 2: Guidance/Experience With Regard to Airborne Aircraft Noise (Night-time)

For some UK airports, dwellings are exposed to noise levels in excess of 60 dB $L_{Aeq,16h}$ at night, eg. Nottingham East Midlands Airport (over 200 dwellings ≥ 60 dB $L_{Aeq,8h}$ (in 2004)).

At lower levels, i.e. 55 dB $L_{Aeq,8h}$, the number of dwellings so exposed around some UK airports are as follows:-

Nottingham East Midlands Airport (2004)	800
Stansted Airport (2003)	700
Gatwick Airport (2003)	600
Heathrow Airport (2003)	27,100

Annex 1 of PPG 24 also mentions a L_{Amax} dB criterion for night-time noise levels with regard to residential development sites, expressed as individual noise events regularly exceeding 82 dB L_{Amax} (S weighting) several times in any hour. Any site which is exposed to maximum noise levels of this magnitude should be considered as Category C (unless the site is already in Category D). Detailed research into aircraft noise at night has found that 82 dB L_{Amax} is approximately equal to 90 dB(A) SEL.

In the case of SEL values, PPG 24 above records that an individual event is required to occur regularly above approximately 90 dB(A) several times in any hour to rate the site as Category C. This demonstrates that the number of times a noisy event occurs is of relevance.

From studies undertaken by Griefahn and Scheuck[3], evaluation criteria have been devised for aircraft noise exposure to protect those living in the vicinity of civil airports. The criteria involve a three tier hierarchy:

Critical limits – above these levels there is a risk of health effects and such levels should only be tolerated as an exception for a limited time. Above these levels of noise it is imperative that noise control measures should be introduced.

Protection Guides – Exposure below these levels should not induce adverse health effects in the average person, although sensitive groups may still be affected. These are the 'central assessment values' above which action should be taken to reduce noise exposure.

Threshold Values – inform about measurable physiological and psychological reactions to noise exposure where long term adverse health effects are not expected. To increase quality of life these values constitute a long term goal.

The following limits are applicable for individual aircraft noise events over an 8 hour night period.

Critical Guide: 6 events @ 60 dB L_{Amax} indoors

Protection Guide: 13 events @ 53 dB L_{Amax} indoors

Threshold Value: 23 events @ 40 dB L_{Amax} indoors

Taking account of the sound reduction that may be expected from outside to inside though a closed single glazed window, which amounts to 27 dB(A) from PPG 24, this translates to the following:-

Critical Guide: 6 events @ 87 dB L_{Amax} indoors (approximately 95 dB(A) SEL)

Protection Guide: 13 events @ 80 dB L_{Amax} indoors (approximately 88 - 90 dB(A) SEL)

Threshold Value: 23 events @ 77 dB L_{Amax} indoors (approximately 85 dB(A) SEL)

Based on the above night noise assessment review, in summary, the night-time aircraft noise at Manston Airport may be assessed using two methods with their appropriate criteria:

[3] Scheuch K, Griefahn B, Jansen G, Spreng M (2003). Evaluation criteria for aircraft noise. Rev Environ Health, Jul-Sep 2003, 18(3), 185-201.

Acoustic Parameter	Criteria –	Max. events per 8 hour night	Risk of Sleep Disturbance
SEL (Individual Aircraft Movement)	85 dB(A) 90 dB(A) 95 dB(A)	≤ 23 ≤ 13 ≤ 6	Minimal – long term goal No significant risk Slight risk
$L_{Aeq,8h}$ Airborne Aircraft Noise)	48 dB >55 dB 57 dB		onset of any risk of sleep effects risk of some sleep disturbance PPG 24 NEC B/C Boundary (Recommended SIGS eligibility at Stansted Airport)

Table 3: Methods for Assessing Night-time Noise

5.0 NOISE CONTOUR AND ASSESSMENT METHODOLOGY

5.1 General

The night noise contours and SEL footprints for Manston Airport have been generated using the Integrated Noise Model (INM) developed by the Federal Aviation Authority. This software evaluates aircraft noise in the vicinity of airports using flight track information, aircraft fleet mix, standard defined aircraft profiles, user-defined aircraft profiles and terrain. It is commonly used to evaluate noise around airports in the UK and worldwide.

Noise contours have been generated using the INM for the year 2018 which represents the date by which the full usage of the night operations sought at Manston are expected to be achieved.

The assumptions upon which the noise contours presented in this report have been based are set out in Appendix A. This includes description of a representative mix of the number of aircraft movements expected in the future. Current activity levels at the airport at night lie below these levels so any increase will occur gradually over a period of time.

The shape of the contours will be affected by the flight routes flown by the aircraft. Figure 1 illustrates the departure and arrival routes in place at the airport and assumed in this analysis. For noise abatement purposes, there is a preference for departing on Runway 10 although the wind direction dictates to a large extent the runway usage. This analysis has assumed a runway usage of 67% movements on runway 28 and 33% movements on runway 10 which is consistent with runway usage throughout the 2009 calendar year.

SEL footprints have been generated for the most common aircraft types expected to operate at night as follows:-

B737-800 most common passenger aircraft operating at night

B747-400 and MD 11 most common freight aircraft operating at night

6.0 IMPACT OF NIGHT-TIME AIRBORNE AIRCRAFT NOISE

6.1 Current Night Operations

Night-time aircraft movements at Manston currently occur on an ad-hoc basis and involve aircraft of the type that are expected to fly in the future, for example the B747-400. The number of movements that take place currently vary from week to week and month to month but are typically around 2 per week at present. The night-time $L_{Aeq,8h}$ contours for 2009 are presented in Figure 2.1.

There are currently no dwellings located inside the 48 dB $L_{Aeq,8h}$ night-time noise contour, the area of which is just under 1.0 km^2.

The SEL footprints for freight aircraft in use today at MSE are discussed in Section 6.2 below.

6.2 Future Night Operations – 2018

The night-time $L_{Aeq,8h}$ dB contours for 2018 are presented in Figure 2.2 The 85, 90 and 95 dB(A) SEL footprints for the most common aircraft operating at night are presented in Figures 3.1 to 5.2. The SEL footprints relate primarily to operations on runway 28 as these impact people the most. Footprints on runway 10 are however also presented for the B747-400, the most significant aircraft concerning noise in 2018 operating at the airport.

The impact of night-time aircraft noise relates to the consideration of the noise contours, and noise from individual aircraft movements. Table 4 gives details of the contour areas and estimates of the number of dwellings situated within the $L_{Aeq,8h}$ noise contour bands for the year 2018.

Dwelling counts and population numbers have been determined from a consideration of 2009 Census data by postcode location provided by CACI Ltd.

Level	Area, km^2	Dwellings
48	14.4	6386
51	8.5	3964
54	4.9	1088
57	2.8	318
60	1.6	0
63	1.0	0
66	0.7	0
69	0.4	0
72	0.3	0

Table 4 – Areas and population, dwellings counts for night-time contours (dB $L_{Aeq,8h}$)

For freight aircraft, such as the B747-400, these are in operation today and are expected to remain so in the future. Issues concerning noise from individual departures and arrivals are therefore equally valid now as in the future. As discussed previously, the area under the 95 dB(A) SEL contour indicates a slight risk of sleep disturbance provided the events are less than six per night. The numbers of dwellings beneath the aircraft footprints are given in Table 5. Appendix A provides further details of areas, dwelling and population counts for all SEL footprints.

Aircraft	Number of Dwellings Under 95 dB(A) SEL Footprint			
	Westerly Operations Runway 28		Easterly Operations Runway 10	
	Departure	Arrival	Departure	Arrival
B737-800	50	29	40	0
B747-400	117	2598	79	32
MD 11	86	29	61	0

Table 5: Number of Dwellings Under 95 dB SEL Footprint

Table 4 indicates that 318 dwellings will be exposed to 57 dB $L_{Aeq,8h}$ and above, whilst there are no properties exposed to 60 dB $L_{Aeq,8h}$. An estimate of around 800 dwellings will lie inside the 55 dB $L_{Aeq,8h}$ criterion mentioned in Table 3 above, giving rise to a slight risk of sleep disturbance for some.

With respect to the noise effects of individual aircraft, Table 5 identifies that for all but the B747-400 aircraft, less than 100 properties lie within the 95 dB(A) SEL footprints for operations on either runway. For the B747-400, an arrival over Ramsgate on runway 10 will expose over 2500 dwellings to a noise level of 95 dB(A) SEL or greater. This one event however would only occur on average around once every five nights throughout a year.

On average, there will be just under 8 individual aircraft movements per night operating at MSE by 2018, most of which will produce the smaller of the noise footprints described above. During each of these aircraft events (excluding the B747-400), less than 100 dwellings will be exposed to a level of 95 dB(A) or higher although this would generally not occur more than around 4 times per night. For those properties closest to the airport and receiving the highest noise levels however, some risk of sleep disturbance will arise.

The computations of dwelling counts and contour areas assume flat terrain around the airport whereas the western edge of Ramsgate Town lies at a lower ground level than the runway and ground levels continue to fall towards the sea. It is estimated that this would reduce the noise levels incident on properties beneath the flight path in this zone by around 0.5 to 1 dB as compared to noise levels presented in this report.

The night traffic proposed in 2018 will however give rise to some risk of sleep disturbance to a portion of residents in Ramsgate and also to some residents of isolated properties to the west of the airport. The current situation is that these residents are exposed about once a week to high levels of noise from ad-hoc freight movements into or out of the airport. This situation is likely to be of concern to a few people but is generally considered acceptable and has been taking place for a number of years. The numbers of these movements will gradually increase in the future towards the levels forecast in 2018.

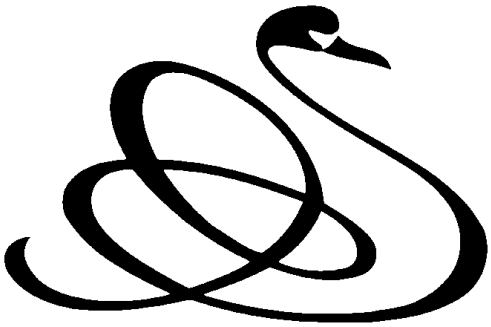
It would be appropriate to give consideration to the introduction of some measures to protect these residents prior to night-time activity exposing dwellings to a certain level of noise. Given the small number of individual aircraft events, it would not be appropriate to control aircraft noise by way of the SEL unit. It is proposed to introduce a night noise quota count limit as part of the Night Flying Policy and this will assist in limiting movements at night by the noisier aircraft types. The $L_{Aeq,8h}$ unit would be an appropriate means of introducing control since it takes account of the noise level and number of movements that take place within a period.

It has been shown in this report that 55 dB $L_{Aeq,8h}$ reflects the level at which there is some onset of a risk of sleep disturbance whereas 57 dB $L_{Aeq,8h}$ is the value suggested in PPG 24 for introducing sound insulation to dwellings around Stansted Airport. Other UK airports operate sound insulation schemes relating to night time traffic and operate similar schemes based on night-time contours in the range 55 dB $L_{Aeq,8h}$ (Robin Hood Doncaster Sheffield Airport) to 59 dB $L_{Aeq,8h}$ (Liverpool John Lennon Airport).

For Manston, in light of its relatively small size, it is suggested that consideration is given to introducing a sound insulation scheme to protect dwellings exposed to 57 dB $L_{Aeq,8h}$ at night. This is consistent with guidance set out in PPG 24 and in line with what occurs at other UK airports.

With this measure in place, together with a suitable night noise quota count limit relating to the mix of aircraft assumed in this report, the proposed night-time aircraft activities in 2018 at Manston Airport are not expected to have any significant noise impact on the local community.

Peter Henson
Partner



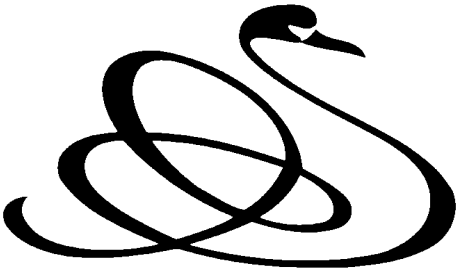
York Aviation

MANSTON AIRPORT

ECONOMIC IMPACT OF NIGHT FLYING POLICY

Final Report

August 2011



York Aviation

Originated by: Richard Connelly

Dated: 1st August 2011

Reviewed by: Louise Congdon

Dated: 1St August 2011

MANSTON AIRPORT

ECONOMIC IMPACT OF NIGHT FLYING POLICY

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1 INTRODUCTION

Background

1.1 Manston Airport (MSE) has recently submitted a Night Flying Policy to Thanet District Council under the obligations set out in a Section 106 agreement signed with the Local Authority in 2000[1]. We understand that this Section 106 was not a result of any planning application or change in planning status at the Airport, but was essentially an agreement for best practice in respect of its operations, particularly in relation to noise.

1.2 The commitment for the Night Flying Policy was that such a scheme would be put in place at least 6 months before the commencement of regular night time services. There was no indication within the Section 106 that night flying would not be permitted by Thanet District Council, and indeed we understand that there were no restrictions on such operations prior to the signing of the Agreement. However, since the signing of the Agreement, it has not been possible to schedule regular operations within the Night Time Period, although ad hoc operations have been permitted.

1.3 The night time period was defined as being from 23.00-07.00 (11pm through to 7am the following morning). The plan proposed by the Airport would allow scheduled passenger and freight services in the night time period, with no limit on total movements, but instead with the limit based on a total permitted Noise Quota Count, in which operating aircraft are assigned a Quota Count value and these are totalled over the year with an upper limit set.

1.4 Following the submission of the proposed Night Flying Policy and following consultations and a review by Bureau Veritas, Thanet District Council requested further information on the economic benefits that would be derived from the plan as proposed.

[1] 26th September 2000, Section 106 Agreement between Thanet District Council and Kent International Airport Ltd.

York Aviation Assessment

1.5 York Aviation LLP (YAL) was commissioned by Manston Airport (MSE) to provide an overview of the likely economic benefits which could be derived by Thanet District and the wider East Kent region by allowing the Airport to implement its proposed Night Flying Policy. YAL is a leading European consultancy providing advice in relation to the Economic Impact of Aviation.

1.6 Importantly, the Airport has identified that the night noise policy needs to be put in place at this time as attracting additional regular air freight services, some of which will need to operate at night, is critical to improving the financial viability of the Airport. Without such operations, and the revenue which they bring, there is a risk that the Airport will not be in a position to sustain its operations and attract additional passenger services over the medium to long term. The growth in forecast passenger numbers over time will also help the viability of the Airport, but whilst such services may reduce the dependency on airfreight overall, the Airport is unlikely to be financially viable without the forecast mix of both traffic types as set out in the Airport's Master Plan.

1.7 We have worked, in the first instance from the forecasts contained in the Master Plan of November 2009, and adjusted these to reflect market specifics.

1.8 Within this report, we identify our view of the potential benefits of permitting the proposals as outlined by MSE. The assessment compares the status-quo situation with no permitted regular night time flights with the level of flying proposed by the Airport. We have not directly attempted to consider the impacts of a greater or lesser level of night time activity, although prima facie these would be broadly pro rata.

1.9 However, we have considered the nature of the traffic overall in order to establish what elements of the projected traffic growth may be at risk if more structured night operations are not permitted. In undertaking this review, we have verified the level of operations shown within the noise assessment included within the Policy submitted by MSE as consistent with the levels necessary to achieve the Airport's Master Plan forecasts.

1.10 This report is split into three sections to review the Night Flying Policy as follows:

- **Section 2** reviews the likely nature of the forecasts for passengers and freight and establishes what may be at risk if no night flying is permitted;
- **Section 3** considers the economic impact of the Airport at present and compares the potential economic impacts under two scenarios with and without agreement to regular night operations in the future; and
- **Section 4** is our independent review of the business case for the introduction of the Night Flying Policy in terms of the implications for the viability of the Airport and its role as a catalyst for economic growth within the area.

2 AIR TRAFFIC FORECASTS

2.1 The Airport produced both Passenger and Freight forecasts within their November 2009 Master Plan, these are summarised in **Table 2.1**.

Table 2.1: Master Plan Forecast Passenger and Freight Growth

Year	Passengers	Freight Tonnage
2010	<50,000	31,600
2011	50,000-100,000	45,200
2012	206,000	57,300
2013	295,000	62,500
2014	527,000	107,000
2015	1,268,000	138,400
2018	2,286,000	167,500

Source: Manston Master Plan, November 2009

2.2 Despite the economic downturn which led to overall reductions in demand for air travel in the UK, MSE handled close to 26,000 passengers in 2010, up from approximately 5,500 passengers in 2009. This was in line with the Master Plan and passenger numbers will increase again in 2011, which will be the first complete year of scheduled services by Flybe.

2.3 Freight tonnage for 2010 was slightly down on the figure handled in 2009 and therefore slightly below the Master Plan forecast for the year, although this must also be considered against the backdrop of weakened demand for air freight services resulting from the economic downturn. Growth is now resuming in the air freight market globally.

2.4 We have not attempted to produce new forecasts for this study, but have instead relied upon those within the Master Plan. We have, however, reviewed the likely traffic mix for passenger and freight services in order to understand the possible impact of restricted night flying activities; these are considered in detail below.

2.5 We have chosen to test the impact of the night flying policy at 2018 to reflect a date when recovery in the wider aviation market should have been realised. Although the current passenger performance is in line with the Master Plan, it is anticipated that the potential for volatility in air transport demand more generally may mean the Airport's short term performance could fall short of the forecasts over the next couple of years.

2.6 However, as the market stabilises and grows again then MSE should be able to return to growth in line with the Master Plan. Whilst we refer to the figures for 2018, it is possible that that these forecasts may slip by a year or two given the depth of the recent recession.

Passenger Forecasts

2.7 In the early years of the Master Plan, it is expected that passenger growth will be delivered by inbound aircraft, i.e. those based at other airports and operating to MSE as the destination from the airlines' hubs and/or bases. This pattern has already been established through the services currently provided by Flybe, which see aircraft arrive from their bases in Belfast[2] and Edinburgh in the late morning and early afternoon periods. Charter services are anticipated to grow initially through the use of W-Patterns[3] or through inbound aircraft, again operating into the Airport during the daytime. Low fares services would be expected to follow a similar pattern initially, being operated by inbound (as opposed to based) aircraft and it would be expected that the arrival of such carriers could move some traffic from charter to scheduled services over time

[2] Belfast City Airport connections will be launched on 26th May 2011 to replace the Manchester service which was suspended by Flybe on 4th April, but also operated by an inbound aircraft.
[3] W-Patterns involve an aircraft leaving its base in the UK for a foreign destination, then returning to another airport in the UK, from here they fly back to the same foreign destination and from there return back to their home base.

2.8 In order to meet the forecast passenger demand, it is anticipated that the Airport will need to attract some based aircraft by 2018, either from low fare carriers (such as Ryanair, easyJet, Jet2, bmibaby etc.), from charter airlines (such as Thomas Cook and Thomson Airways) or a mixture of both. These will supplement inbound services which are anticipated to prove the market exists before airlines will commit to a base. It is likely that, at this point, some services will change from being served by inbound aircraft to being served by based aircraft. This is a familiar pattern, particularly for low fares carriers, when a base is established.

2.9 Based aircraft, particularly those of low fare airlines, will tend to diversify an airport's route portfolio. During the initial growth of MSE, services are likely to be dominated by domestic routes and those which serve larger volume outbound leisure markets. When aircraft are based at MSE, the airlines will need to offer a more rounded network for two key reasons:

- the airlines will need to operate their aircraft for as long as possible each day, and therefore will require a mix of shorter and longer flight times to maximise the use of the aircraft;
- it will not be possible to just add more frequencies and capacities to a limited number of destinations because the market will be saturated.

2.10 Additionally, low fares airlines rely to some extent on stimulating new passengers and on encouraging travel to new destinations in order to capture the discretionary travel market, as many travellers will visit a destination but not return for a second visit, and will instead seek new places to visit. The benefit for MSE of having based aircraft is that it is likely to bring more city orientated destinations, and more destinations which could generate inbound travel as well as outbound passengers.

2.11 By comparison, an airport which is reliant on inbound aircraft is likely to have a route network which is dominated by higher volume more traditional leisure routes which are less of a risk for the carriers. This means that such airports will tend to have fewer destinations, lower frequencies and overall less capacity (and therefore passengers).

The Impact of Night Flying Restrictions

2.12 Although it is reasonable to assume the majority of passenger services will operate between the daytime hours of 07.00 and 23.00, there is likely to be some need for services just outside of these hours. Operations between 23.00-07.00 are unlikely to be necessary for inbound aircraft and, therefore, the early years of growth are unlikely to generate much passenger traffic in the night time period. However, the ability to carry out some operations at the start and end of the night period will become extremely important if the Airport is to be able to attract based aircraft from either low fares or charter carriers.

2.13 As highlighted earlier, these airlines aim to operate for as long as possible during the day, and so their typical operating pattern will involve multiple services from each aircraft throughout a day. The average number of daily departures per based aircraft has reduced for low fare carriers from previous very high levels. Historically, they operated between 3-4 departures per aircraft per day, this has now dropped to around 2.5-3 departures per day average as they are now flying a higher proportion of longer sectors. However, this does still lead to a typical operating pattern that sees the first departures between 06.00-07.00 and the last arrivals in the period between 22.00-00.00 as aircraft return home. Such an operating pattern would also apply to based charter aircraft.

2.14 As a result, there may be some movements in the allotted night period. It is likely that the departures by based low fares and charter services would depart in the period 06.00-07.00, but it is not necessarily the case that they will all arrive back after 23.00. However, for these carriers to seriously consider a base operation they will need the flexibility of knowing that they can schedule some movements after 23.00 if needed to maintain the integrity and viability of the operation. A restriction or penalty on arrivals after this time would reduce the options open to the carriers to maximise the use of the aircraft and would be likely to act as an impediment to them basing aircraft at MSE. The resultant effects would be:

- fewer destinations served as the carriers would focus only on inbound services from higher volume destinations, thereby reducing the likelihood of key European city links and services to destinations which could increase inbound travel;

- ✈ fewer overall passengers for MSE as the airlines would operate at a lower overall frequency and, therefore, offer less capacity for sale.

2.15 From our experience, we believe that it would be extremely difficult for MSE to attract a based carrier with restrictive night flying policy of this nature in place. We do not believe that the pattern of services previously operated by EUJet is representative of what would be operated by another low fare carrier as the joint ownership of the airline and the Airport resulted in compromises to the schedule, which may have been a factor in the airline's demise. There would be little incentive for an independent carrier to structure their schedule to suit the Airport because this would probably mean they could use their aircraft to greater financial advantage by basing them at another airport where they could take advantage of longer flying hours.

2.16 If a carrier based aircraft at MSE, they would be likely to use these to substitute for some inbound services. If aircraft are not based at MSE, this does not preclude all operations by such airlines. Hence, impediments to basing of aircraft do not mean that all the traffic associated with these airlines would be lost without based aircraft. We reflect this in our assessment of how much of the forecast growth within the Master Plan is at risk without the ability to schedule regular night flights.

2.17 We have also taken into account the possible effects on a service to feed a hub, which will bring high value wider economic benefits through international connectivity, both to Long Haul and Short Haul destinations via a hub. Typically these services require an aircraft to be based overnight away from the home base and will involve an early morning departure to the hub and potentially a late night arrival back from the hub in order to meet the wave patterns of long haul services. This would therefore of course require the flexibility of operating hours to allow early and late movements.

2.18 In establishing the nature of traffic within the Master Plan forecasts, we have estimated the level of traffic which would be lost if airlines were restricted from operating in the night time period. For comparison, this is shown against the Master Plan forecasts in **Table 2.2**. This has been compiled by removing activities associated with based aircraft and not removing inbound services which would have been replaced by based aircraft.

Table 2.2: Comparison of Passenger Forecasts With and Without Night Movements (23.00-07.00)

Airline/Service Type	2013		2014		2015		2018	
	With Night Movements	Without Night Movements	With Night Movements	Without Night Movements	With Night Movements	Without Night Movements	With Night Movements	Without Night Movements
Flybe/Regional Services	83,000	83,000	121,000	121,000	177,000	177,000	447,000	447,000
Hub Feeder Service*	48,000	48,000	71,000	48,000	71,000	48,000	71,000	48,000
Based Low Fares Services	0	0	0	0	644,000	0	1,287,000	0
Inbound Low Fares Services	67,000	67,000	232,000	232,000	272,000	272,000	95,000	329,000
Based Charter Services	0	0	0	0	0	0	231,000	0
Inbound Charter Services**	97,000	97,000	103,000	103,000	104,000	104,000	155,000	165,000
Total Passengers	**295,000**	**295,000**	**527,000**	**504,000**	**1,268,000**	**601,000**	**2,286,000**	**989,000**
Lost Passengers	**-**	**0**	**-**	**23,000**	**-**	**667,000**	**-**	**1,297,000**

Notes:
*To a European hub such as Frankfurt or Amsterdam
**Either operated inbound by foreign aircraft or on W-Pattern by UK charter operators

Source: MSE Master Plan, York Aviation

Freight Forecasts

2.19 Freight services at MSE are currently dominated by those bringing perishable products such as fruit, vegetables and flowers into the UK, mainly from Africa, although these services are supplemented by ad-hoc freight flights carrying more general cargo. Additionally, the Airport has recently invested in a new equine facility for the air transport of horses, adding a further niche specialism to their offer.

2.20 The forecasts within the Master Plan reflect on-going discussions with freight carriers which are aimed at attracting services which will diversify the portfolio, and it is unlikely that the freight forecasts could be achieved without this diversification. Such services would be likely to bring flights from points in Asia, the Middle East, the USA and also from within Europe and would expand the range of freight handled, for example with perhaps high value electronics to and from Asia.

2.21 World freight forecasts produced by Boeing and Airbus both estimate that average worldwide freight will grow at around 5.9% per annum[4] over the period to 2029. **Table 2.3** shows the Boeing forecast growth rates for freight between world regions relevant to MSE.

Table 2.3: Forecast Annual Air Cargo Growth Rates by Region Flows 2009-2029

Regional Flow	Annual Growth Rate
Latin America-Europe	5.6%
Europe-North America	4.2%
Intra-Europe	3.6%
Middle-East-Europe	6.0%
Africa-Europe	5.1%
Europe-Asia	6.6%
South Asia-Europe	6.5%
Source: Boeing	

[4] World Air Cargo Forecast 2010-2011, *Boeing* and Global Market Forecast, 2010, *Airbus*

2.22 MSE stands to benefit from these levels of growth within the South East of England due to the likely growth of constraints in airport capacity in the region. Whilst the Government has not yet published its wider strategy for aviation, it is already known that they do not support additional runways being provided in the South East, namely at London Heathrow, Gatwick and Stansted. As runway capacity constraints start to take effect, it is likely that certain types of traffic, and most notably freight, will be pushed out of these airports and will require alternatives. Currently, there are still significant numbers of freight aircraft movements at London Heathrow and it is unlikely that this would remain sustainable in the future if no additional runway capacity is provided there.

2.23 Therefore, whilst the MSE Master Plan indicates growth rates above the worldwide average forecast by Boeing and Airbus, it is expected that some of the growth will come from the relocation of existing services from other London region airports. It is for the relocation of these services that MSE is ideally geographically positioned. Furthermore, the greatest opportunities are foreseen in the markets which are growing above the 6% p.a. average, such as the Middle East and points in Asia and South Asia.

2.24 With the exception of British Airways World Cargo (BAWC), there are very few large scale freight operators based in the UK (excluding integrators such as DHL and TNT). Consequently, it is expected that much of the freight growth will come from inbound aircraft, although the Airport intends to continue to seek a major based operator. Indeed, discussions have been held previously with BAWC about relocating at least a part of its operation to MSE.

2.25 Currently, the average freight carried per arriving aircraft movement is 80-100 tonnes, although many aircraft depart with no freight on board. The forecasts estimate a similar level of average load per movement, although it is likely that there will be some increase in outbound freight overall. It is also anticipated that as the nature of the network diversifies, so will the range of aircraft types operating freight movements in order to suit the needs of the wider range of markets served.

2.26 The Airport also believes that, in addition to scheduled freighter services, they should be able to increase the level of ad-hoc freight charter flights which can be very valuable to an airport. It is anticipated that these will contribute to the freight forecast within the Master Plan.

The Impact of Night Flying Restrictions

2.27 Restrictions on night flying would be likely to have a significant negative impact on freight growth at the Airport, although the exact impact is less easy to measure than on the passenger forecasts.

2.28 Currently, the scheduled freighter services at MSE are timed to arrive and depart during the day time period. However, the services do not always follow the published schedules, which is common for freight services. Passenger flights will aim to adhere strongly to their schedules to suit passenger demand and because the carriers will earn money from travellers even if they miss their flight. By comparison, freight airlines, such as those seen at MSE, are more able to operate off schedule in order to suit their customers' needs and to ensure that aircraft are full before departing (as the carriers will not receive payment if they do not carry the freight). This is an important aspect of the air freight market as it requires the maximum flexibility possible for operators, both with respect to the times they would like to schedule flights, but also for an airport to be able to handle services if they depart after the planned time. Clearly, flexibility is less with more perishable cargoes.

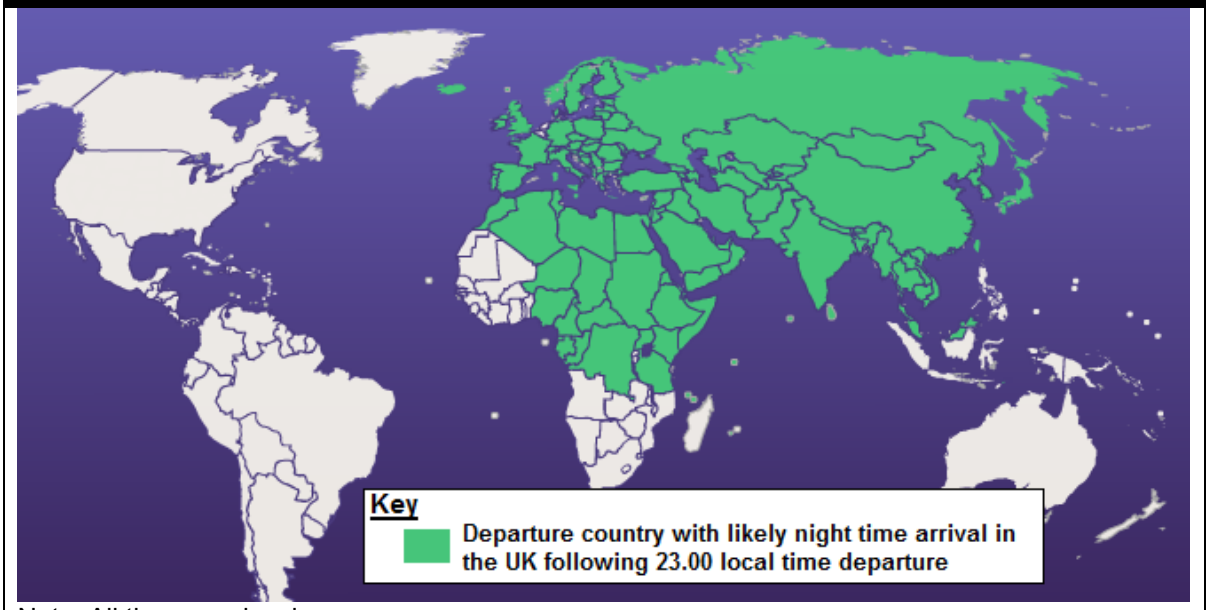
2.29 The desire of the Airport to diversify the range of markets which it serves with air freight services to include other global regions, and the nature of freight handled, is likely to come under pressure if night time movements are heavily restricted. Whilst the flights current from Central and Southern Africa can be timed to suit the customer at the origin and the airport at the destination, this is unlikely to be the case when new destinations are sought as new services are likely to serve a wider variety of customers than the niche fresh produce services currently dominating MSE.

2.30 In many cases, there is a need for freight services to leave their origin point at the end of a working day once freight can be collected and taken to an airport. This often leads to flight departures in the late evening, or early hours of the morning. Furthermore, for European services, there is likely to also be a desire for aircraft to return to the origin before the start of the next working day so that freight from the UK can be distributed.

2.31 In some cases, airlines provide feeder freight services at their origin, and a good example of this is MNG Airlines of Turkey who currently serve London Luton Airport. This airline provides feeder flights to its services to the UK at the end of the working day, and then the flight departs for the UK. The departure from the UK is then timed to allow an arrival in Turkey in time to move freight back onto the feeder aircraft to be distributed beyond the airline's Istanbul hub. Such an operation would not be viable at MSE with night time restrictions on scheduled activities.

2.32 **Figure 2.1** shows countries from which a direct departure at 23.00 hours (11pm) local time would lead to an arrival in the UK at some point between 23.00-07.00.

Figure 2.1: Countries Leading To Arrivals Between 23.00-07.00 In The UK After 23.00 Departure From Origin



Note: All times are local.

Source: York Aviation

2.33 Whilst not all flights will operate directly, particularly from Asian origins, the map does illustrate the scale of the markets which could be at risk if MSE cannot offer the flexibility for scheduling movements in the night time period. It is important to recognise that the regions with the greatest forecast growth in freight demand to Europe all fall within the regions which may generate services during the night period.

2.34 The major airlines of the Middle East such as Etihad, Qatar Airways and Emirates have historically focused on the growth of their passenger business, but each of these airlines has now seriously moved into the pure freight business with dedicated fleets of aircraft, both in service and with more on order. Airlines such as Turkish Airlines are also now focusing more on this aspect of their business with orders for new larger dedicated freight aircraft. Carriers such as these, covering Turkey, the Near East and Middle East would not be able to operate direct late night departures to MSE if a night flying policy prohibited the scheduling of services between 23.00-07.00.

2.35 This restriction would also apply to the fast growing Indian sub-continent. Currently, there are limited based carriers in these countries with dedicated freighter aircraft, but it would be difficult to imagine that this sector will not grow in line with the economies of this region, and particularly that of India. Indeed, within the Boeing freight forecasts, South Asia-Europe freight is expected to have the second highest growth rate of all those relevant to MSE over the period to 2029. Services from India are currently operated by airlines from other nations who provide stops in India to pick up and drop off freight on the way between Europe and the Far East. This would potentially be a significant market that MSE would not be able to serve with night flying restrictions in place.

2.36 Currently, around 9% of scheduled freight flights (arrivals and departures), excluding those by integrators, operate within the period of 23.00-07.00 in the UK[5]. However, it is likely that this proportion of traffic will increase as demand for services grows within the regions shown in green in Figure 2.1. MSE's Master Plan projections rely on the ability to diversify its network to be representative of the UK market as a whole. If it cannot do so, 9% of demand could not be fulfilled based on the current characteristic of the air freight market. However, as growth from regions affected by night time restrictions is likely to outstrip growth from countries which would not be, then this proportion is likely to increase over the period to 2018.

[5] Source: OAG for week commencing 2nd May 2011

2.37 Furthermore, this may understate the impact of such restrictions because this applies only to the scheduled network and does not include the effects on ad-hoc freight services. Currently, the Airport has a relatively low number of such services and within the Infratil Group of airports in the UK, such services have tended to be focussed at Glasgow Prestwick Airport. This is because the latter does not have night time restrictions, and many of these services operate during the night period. The Group has confirmed that airlines have been keen to use MSE but that the current night time policy means they tend to offer them Prestwick as an alternative, particularly as any charges imposed through the Section 106 agreement at MSE would need to be passed through to the airline, making MSE less attractive. At present, Prestwick handles around 10-15 such flights in a busy month.

2.38 Additionally it is likely that to achieve the freight forecasts the Airport will need to attract a based freighter operation which, and this may not be possible if night flying restrictions are in place, for similar reasons to those seen with the passenger operation, namely issues of reliability and a marginal number of flights being in the night time period. Freight operators will feel restrictions in two ways if night flying restrictions are applied:

- They will not be able to schedule services in the night period, but may need to do so to meet the demands of the air freight business;
- These carriers will not always fly to the prescribed schedule as described earlier, requiring maximum flexibility.

2.39 With restrictions in place, freight airlines would be likely to seek to base their aircraft in other locations where they can operate with flexibility, both in scheduling and the ability to operate off schedule easily where necessary. This does not just lead to a loss of night freight activity but also to the loss of freight operations which would be handled during the day, meaning that the effect would be proportionally greater on the total throughput than simply not handling the night freight.

2.40 Whilst we have not attempted to calculate an exact level of freight lost, we believe that based on these points the threat is credible and significant. For the purposes of our economic assessment we have assumed that 40% of freight traffic would be lost. In truth we feel this may be conservative given the levels of ad-hoc freight activity seen at Prestwick, the likely growth of demand from markets which would require an element of scheduled night flying, and the scale of base likely to be needed to achieve the forecasts but lost if night time flying restrictions were sufficiently stringent to prevent regular freight flights between 23.00-07.00.

2.41 It is also worth highlighting the potential disbenefits of such a policy on trying to attract a large based operator such as BAWC. A key requirement of such carriers, as with based passenger carriers, is the ability to have flexibility in scheduling. It is possible that such a based carrier may have very few services in the night time period, but if it simply did not have the ability to schedule services at night, particularly as it sought to change its network over time to suit changing markets, then a potential based carrier may see night restrictions as a barrier to basing aircraft at MSE at all. We understand, through discussions with MSE, that although this may not have been the only factor in the failure to attract BAWC, it appeared to be a factor the airline considered significant in their decision not to relocate to the Airport.

2.42 **Table 2.4** provides a comparison of the MSE Master Plan freight tonnage forecast with the estimated reduced freight tonnage arising from having night movements restrictions.

Table 2.4: Comparison of Freight Tonnage With and Without Night Movements (23.00-07.00)

Year	With Night Movements	Without Night Movements	Difference
2013	57,300	48,705	-8,595
2014	107,000	80,250	-26,750
2015	138,400	89,960	-48,440
2018	167,500	100,500	-67,000
Source: KIA Master Plan, York Aviation			

3 ECONOMIC IMPACT

3.1 Air services contribute to an economy in broadly two ways:

- **operational impacts** – those impacts related to the economic activity supported by the operation of an airport – i.e. the direct, indirect and induced effects; and
- **impact on the wider economy** – the benefits derived by users of passenger and freight services from access to the connectivity provided by an airport's services. These can manifest themselves in terms of impacts such as increased inward investment, trade, improved productivity or increased inbound tourism.

3.2 The overall approach that we have adopted in order to consider the economic impact of MSE is based on a framework of five categories of effect as set out in **Table 3.1**. This is the standard framework for analysis advocated by ACI EUROPE, the trade body for European airports, and is commonly used in a wide range of economic impact assessments.

Table 3.1: Economic Impacts Associated with Airports

Impact Category	Definition	Examples
Direct On-Site	Employment and GVA and wholly or largely related to the operation of an airport and generated within the Airport Operational Area	Airport operator, airlines, handling agents, control authorities, concessions, freight agents, flight caterers, hotels, car parking, aircraft servicing, fuel storage
Direct Off-Site	Employment and GVA wholly or largely related to the operation of an airport and generated within the local area.	Airlines, freight agents, flight caterers, hotels, car parking
Indirect	Employment and GVA generated in the chain of suppliers of goods and services to the direct activities	Utilities, retailing, advertising, cleaning, food, construction
Induced	Employment and GVA generated by the spending of incomes earned in the direct and indirect activities	Retailing, restaurants and entertainment
Catalytic/Wider	Employment and GVA generated by the attraction, retention or expansion of economic activity as a result of the airport's activity	Inward investors, exporting companies and visitor attractions including off-site hotels
Source: York Aviation		

3.3 It is possible to generate robust quantitative estimates of the first four categories of impact shown in the table (direct on-site, direct off-site, indirect and induced). These represent the employment and Gross Value Added (GVA) supported through the operation of the Airport as an economic activity. We present our estimates in relation to these impacts below.

3.4 The issue of catalytic or wider benefits is, however, considerably more complex. The impact of an airport, in this case, is accrued by users of the services. The ability to travel or the connectivity offered by an airport enables business sectors that use air services to operate more effectively, increasing productivity and output and thereby supporting GVA and employment in the wider economy. In the context of a modern developed economy, it is our view that these wider impacts are of considerably greater importance than the direct, indirect and induced impacts.

3.5 However, quantification of this wider impact in terms of GVA and employment is not possible. The relationship between air travel and economic activity is an indirect one. It is not possible to say that, for instance, a 10% increase in business passengers leads to a corresponding increase in GVA and employment through inward investment or greater productivity. It is, therefore, necessary to consider these issues through qualitative analysis and the use of broader indicators of an airport's impact.

Assessment Methodology

3.6 We have prepared an assessment of the airport's economic value to the region for a single year, 2018, under two scenarios:

- **Without Night Flying Restrictions**: a scenario in which the night flying policy proposed by the Airport is considered suitable and controlled night flying is permitted to take place; and
- **With Night Flying Restrictions**: a scenario in which all commercial flying in the night time period of restricted[6].

[6] We have not attempted to define this in detail and typically airports with such restrictions may make themselves available for emergency or specialist flights by exception.

3.7 We have not tested a scenario in which the Airport would experience completely unlimited activity during the night time period as this is not foreseen as likely or necessary to enable the Airport to realise its potential. The measures proposed by the Airport to operate under a Night Time Noise Quota system are understood to be adequate to suit the likely demand for services from MSE.

3.8 Although we have provided an indication of the current economic value of the Airport, we have focused on the future impacts under each scenario and provide a quantitative assessment of the direct, indirect and induced employment and GVA. We have also provided a qualitative description of the nature of the employment benefits. Additionally, we have provided some qualitative assessment of how severe night flying restrictions could impact on the Airport's ability to support growth in the regional economy.

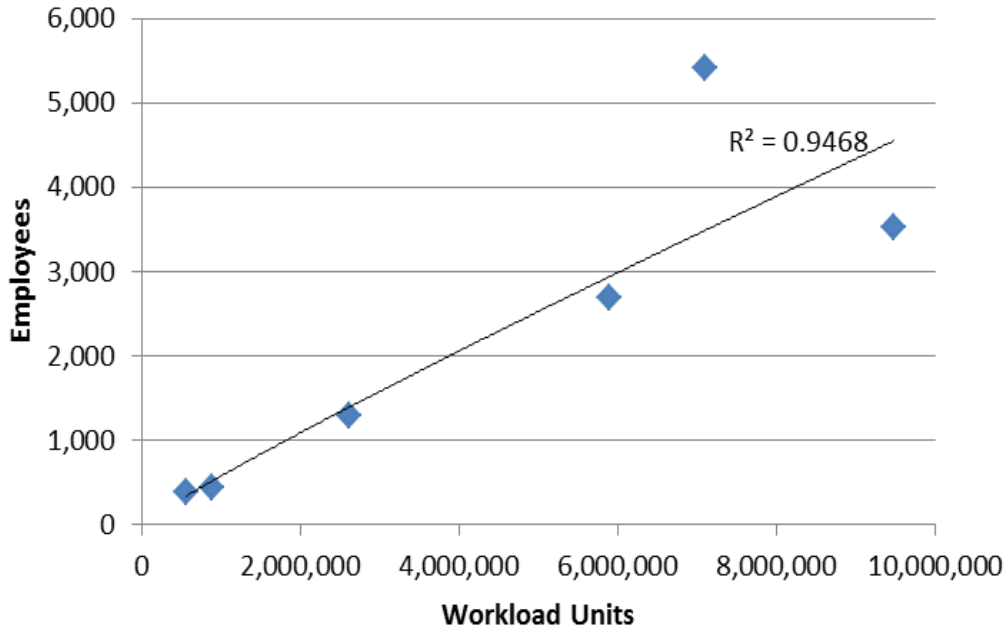
3.9 Assessing the future direct employment on site has been achieved by undertaking a regression analysis of comparator airports to calculate the employment generated per million workload units[7] for the Airport under both scenarios. The density of employment is likely to be different for both scenarios for a number of reasons including, among others:

- airports with based aircraft tend to be more efficient for passenger handling because the spread of passengers through the day is greater resulting in higher productivity measured in passengers handled per employee;
- this is partially offset by the fact that airports with based aircraft will generate additional employment for pilots, cabin crew and perhaps airline station management, which would not exist if all services were operated by inbound aircraft;
- airports without based aircraft may still require shift patterns for staff, but potentially over shorter working days.

[7] A workload unit at an airport is defined as one passenger or 100kg of freight. By assessing workload units instead of pure passengers, we can fully assess the impact of restrictions on freight and passenger activity.

3.10 The regression analysis was undertaken based on the actual employment of six UK airports that we have previously studied in detail and the graph for this analysis is shown in **Figure 3.1**. Importantly, the very high R^2 number, which is a measure of goodness of fit of the relationship, should be noted as it provides confidence that there is a discernable pattern to employment associated with growth in passenger and freight throughput.

Figure 3.1: Regression Analysis of Airport Employment by Throughput of Workload Units



Source: York Aviation

3.11 We have used the relationship illustrated in Figure 3.1 to estimate future employment at MSE. In relation to direct employment, we have not attempted to estimate how much of this would be on-site and how much off-site as defined in Table 3.1 because there is no clear basis for doing this at MSE. Typically an on-site survey of current employment would give an indication of this, but the very low throughput at MSE means that there are very few employers and most of the operational activities are currently undertaken by the airport operator. At small airports, we expect the vast majority of direct employment to be located on-site.

3.12 In relation to indirect and induced employment, we have used a multiplier of 0.5 for each direct employee. This multiplier is taken from our work for ACI EUROPE[8] and applies to the sub-regional level, which in this case will cover Kent and areas immediately adjacent to this.

3.13 Finally, for the GVA calculations, we have undertaken a simple analysis based on the local GVA per capita in the South East of £20,923 per head, taken from the Office for National Statistics[9] . This is similar to the average salary per employee in Thanet of around £21,000[10]. This gives an inherently conservative view of the contribution to GVA given that it assumes that operating surpluses are only captured locally to a limited degree. This is a simplified approach due to the absence of hard data about GVA added by employees at MSE today.

3.14 It would be reasonable to assume that not all of the GVA benefit will be directly contributed to Thanet, with some of the benefits of the Airport likely to be felt in the wider South East region where goods and services may be sourced.

Current Economic Impact

3.15 With the current low throughput of passengers, employment on the Airport is relatively low, albeit there is a high density of employment per workload unit because of the number of job positions which would exist regardless of throughput. In other words, the current productivity is low in terms of the volume of traffic handled per employee as a result of the low density of aircraft operations.

3.16 Most of the operational functions on site are undertaken by employees of the Airport, and some employees undertake several roles. An example would be the airport firemen who also act as baggage and freight handlers, undertaking these activities with their vehicles close at hand to allow them to go to an emergency if needed. This is typical at small airports and helps maintain costs at a viable level.

[8] *The Social and Economic Impact of Airports in Europe*, January 2004, Airports Council International/York Aviation
[9] 2009 GVA/Head
[10] *Annual survey of hours and earnings - workplace analysis*, 2008, NOMIS

3.17 There are also a number of companies which are tenants of the Airport but only a small number of these are directly involved in activities associated with an Airport. **Table 3.2** summarises the on-site tenants and their employment, and indicates how many jobs are associated with the activity of the Airport.

Table 3.2: Current Direct Employment Associated with Manston Airport, Full Time Equivalent (FTE)

Operational Employment	
Employer	**FTE Employees**
Manston Airport	100
Avis Rent-A-Car	1
AvMan Ltd	30
Fly-Me-Now	2
Polar Helicopters	3
Snax Group	2
TG Aviation	6
Total Airport Operational	**144**
Aviation-Related Businesses and Tenant Employment	
Employer	**FTE Employees**
AVIA Services	36
Hanover Aviation Consultants	4
Heli-Charter/Sky Charter UK Ltd	20
Hunglish Ltd	1
RAF History Museum	Unknown
Safety & Management Solutions	Unknown
Spitfire & Hurricane Museum	5
Summit Aviation	40
Taft International Transport	0
Trailblazer Travel Ltd	2
Total Other Tenant Employment	**108**
Total Overall Direct Employment	**252**

Source: York Aviation

3.18 MSE currently employs around 117 total staff, or 100 Full Time Equivalent employees (FTEs). Growth of passengers and freight would lead to direct growth in employment with the Airport, and is likely to lead to growth for the likes of Avis Car Rental and the Snax Group, which operates the café within the terminal. Some operators may not directly see growth in employment associated with increased throughput of the Airport, such as the two flying schools and possibly AvMan Maintenance which has a specialism of undertaking heavy maintenance on aircraft which are not based at MSE.

3.19 There are also some tenants on site which have activities related to aviation or the Airport, but who are not directly operational, for example Hanover Aviation Consultants (who act as a freight broker) and AVIA Services (who undertake component maintenance).

3.20 The current indirect and induced jobs associated with the operational activity of the Airport, as calculated through our methodology highlighted in Paragraph 3.12, amounts to 72 FTE. The total GVA associated with the operational activity of the Airport is calculated as £4.52m of which just over £3m is associated with direct employment. At regional airports, most employees typically live within a drive time area of approximately 30-60 minutes from Airport, and this will mean most employees will live within Thanet or the immediate area. There is little evidence of the local impact at a district level for airports and, whilst the 0.5 multiplier for indirect and induced employment is a sub-regional level, if it was assumed that the multiplier for the travel to work area was 0.25 then it would suggest that £3.8m[11] of the direct, indirect and induced GVA would be within the travel to work area, likely to mainly cover Thanet. We would make clear, however, that this is only based on this assumption and not on detailed evidence so this may understate the precise local impact.

[11] Assumed to be all of the direct employment and half of the indirect/induced employment.

Future Economic Impact

Direct, Indirect and Induced Employment

3.21 As highlighted earlier, we have assessed two scenarios of future throughput based on the extent to which night movements may or may not be permitted at the Airport. **Table 3.3** summarises the projected total throughput by scenario for passengers, freight tonnage and workload units.

Table 3.3: Forecast Throughput by Scenario 2018

Scenario	Passengers	Freight (tonnes)	Workload Units
With Night Movements	2,286,000	167,500	3,961,000
Without Night Movements	989,000	100,500	1,994,000
Difference	1,297,000	67,000	1,967,000
Source: York Aviation			

3.22 In considering the economic impact under the two scenarios, we have taken into account the different employment densities relative to passenger numbers associated with having based aircraft against those associated with not having based aircraft. Having based aircraft will lead to a lower density of employment per million workload units, i.e. it takes less staff to handle a million passengers. This is because the based aircraft may undertake 3-4 flights (two departures and one or two arrivals) during an airport work shift pattern, whereas a non-based aircraft is only likely to arrive and depart once during the same time period.

3.23 However, the benefits in relation to MSE will be derived through the sheer volume of total passengers associated with having based aircraft, i.e. whilst the staff can be used more efficiently, there needs to be more of them because the overall passenger volumes are much higher. It is likely that an airport which opens ready for passengers departing at 6am, and having the last passengers arriving back after 11pm will need more shift patterns than one that opens at 8am and closes at 8pm.

3.24 Furthermore the level of direct employment will be increased through the need to base pilots, cabin crew and potentially station managers at the Airport. There is also likely to be a need for some line maintenance employees, either directly employed by an airline, or provided by a third party firm. These jobs will bring the benefit of typically higher salaries than some of other jobs created at the Airport. Hence, in addition to operational staff which are needed under both scenarios, the region will gain the benefits of a small number of higher value employees.

3.25 **Table 3.4** shows the number of direct, indirect and induced jobs and the GVA associated with each future scenario.

Table 3.4: Direct, Indirect and Induced Employment, and GVA Effects by Scenario 2018		
	With Night Movements	**Without Night Movements**
Direct Employment	2,070	1,102
Direct Employment Density*	523	553
GVA Associated with Direct Employment	£43,315,167	£23,058,125
Indirect and Induced Employment	1,035	551
GVA Associated with Indirect/Induced Employment	£21,657,583	£11,529,062
Total Employment	3,105	1,653
Total GVA	£64,972,750	£34,587,187
Total Employment Lost with No Night Flying	**1,452**	
Total GVA Lost with No Night Flying	**£30,385,562**	
Notes: *Employees per million passengers		
Source: York Aviation		

3.26 It is unlikely that the lost employment and GVA would be taken out of the economy altogether as almost certainly most of the freight and the all of the passengers will be handled through other airports in the South East (although the effects associated with any stimulated passengers will be lost completely). However, it is probable that most of this impact will be lost from Thanet, the surrounding districts and possibly Kent as a whole and instead will benefits other parts of the South East.

3.27 The **total cost** of imposing stringent night movement restrictions (such as an outright ban) would be over **1,450 jobs** and approximately **£30.4m** at current values in 2018. Using our assumed multiplier for the travel to work area (covering mainly Thanet and surrounding areas), the **cost to the local economy** would be approximately **1,200 jobs** and **£25.3m** at current values in 2018.

3.28 With the night flying policy in place, the net increase in GVA over the current would be £60.5m, whilst restrictions on night flying would reduce this to a net increase of £30m at the sub-regional level.

Wider Economic Impact

3.29 As we have described earlier in this section, the issue of the employment and income supported by catalytic benefits is a more complex issue and needs further consideration in relation to the proposals for night flying at MSE. The difficulty lies in the complicated nature of these benefits. Unlike the link between the direct, indirect and induced effects, where economic activity links directly to the operation of an airport, these wider benefits accrue to businesses and sectors with no direct relationship to the operation of an airport but who are users of the services it provides or whose customers, suppliers or partners are users of those services.

3.30 However, the available connectivity provided by an airport is only one factor, although for many a very important one, in the success or otherwise of these wider businesses and consequently only an indefinable fraction of the employment or income generated in these other sectors can be said to be supported by an airport. Therefore, it is not possible to make effective estimates of employment and income supported by this wider catalytic effect.

3.31 The mechanisms through which this catalytic impact can operate include the following:

- as an important element in **company location decisions**, the presence of an international airport can be a important factor in:
  - attracting new investment from outside the area, and especially companies from overseas;
  - retaining existing companies in the area, whether they had previously been inward investors or indigenous operations;
  - securing the expansion of existing companies in the face of competition with other areas;
- promoting the **export success** of companies located in the area by the provision of passenger and freight links to key markets;
- enhancing the **competitiveness** of the economy, and the companies in it, through its fast and efficient passenger and freight services;
- attracting **inbound tourism**, including both business and leisure visitors, to the area.

3.32 As we have discussed above, the catalytic impact of airports is primarily dependent on the connectivity that the airport provides. However, it is not simply about the number of destinations served and the frequencies to those destinations that is important. One destination is not necessarily of the same 'value' to business users as another. For example, a service to Milan or Frankfurt is likely to be substantially more highly valued by the regional business base than a service to a major leisure destination such as the Palma or Tenerife.

3.33 Research undertaken by the Globalisation and World Cities (GaWC) network based at Loughborough University identifies a hierarchy of world cities based on the location decisions of leading advanced service firms, such as accountants, advertising and legal firms. This ranking can be seen as a proxy for the value of a city as a business destination. The results of the analysis by GaWC are set out in **Table 3.5**.

Table 3.5: Globalisation and World Cities Network **Inventory of World Cities**
Alpha World Cities
London, Paris, New York, Tokyo, Chicago, Frankfurt, Hong Kong, Los Angeles, Milan, Singapore
Beta World Cities
San Francisco, Sydney, Toronto, Zurich, Brussels, Madrid, Mexico City, Sao Paulo, Moscow, Seoul
Gamma World Cities
Amsterdam, Boston, Caracas, Dallas, Düsseldorf, Geneva, Houston, Jakarta, Johannesburg, Melbourne, Osaka, Prague, Taipei, Washington, Bangkok, Beijing, Montreal, Rome, Stockholm, Warsaw, Atlanta, Barcelona, Berlin, Buenos Aires, Budapest, Copenhagen, Hamburg, Istanbul, Kuala Lumpur, Manila, Minneapolis, Munich, Shanghai
Evidence of World City Formation
Relatively Strong Evidence
Athens, Auckland, Dublin, Helsinki, Luxembourg, Lyon, Mumbai, New Delhi, Philadelphia, Rio de Janeiro, Tel Aviv, Vienna
Some Evidence
Abu Dhabi, Almaty, Birmingham, Bogota, Bratislava, Brisbane, Bucharest, Cairo, Cleveland, Cologne, Detroit, Dubai, Ho Chi Minh City, Kiev, Lima, Lisbon, Manchester, Montevideo, Oslo, Rotterdam, Riyadh, Seattle, Stuttgart, The Hague, Vancouver
Minimal Evidence
Adelaide, Antwerp, Arhus, Baltimore, Bangalore, Bologna, Brazilia, Calgary, Cape Town, Colombo, Columbus, Dresden, Edinburgh, Genoa, Glasgow, Gothenburg, Guangzhou, Hanoi, Kansas City, Leeds, Lille, Marseille, Richmond, St Petersburg, Tashkent, Tehran, Turin, Utrecht, Wellington
Source: *'Introducing GaWC: Researching World City Network Formation'* by P.J. Taylor, D.R.F Walker and J.V. Beaverstock.

3.34 Therefore, an airport needs to develop a network of routes which will be attractive to businesses and inbound tourists. In our view, the restrictions on the network which would be put in place at MSE without night flying would reduce the overall catalytic benefits to Thanet and East Kent. As described in Section 2, if an airline bases aircraft at MSE they will need to maximise its use and spread the available flying hours over a mix of route types. These services are likely to benefit the area for a number of reasons:

- the need to serve some shorter sectors may generate flights to cities which are important to the business community;
- flights to city destinations are likely to be timed in either the morning or evening period (before or after a flight has undertaken one or two longer leisure sectors) meaning they are of increased value to business travellers than inbound services which may be in the middle of the day. There is also a greater chance that day return business trips may be possible to and from some destinations, than if served by inbound aircraft;
- whilst there may be some limited city destinations served without a based aircraft they may not offer the number or diversity that a based aircraft would bring. For inbound tourism this would then mean only a limited number of markets from which to attract inbound air passengers.

3.35 It is likely therefore that the full catalytic benefits of MSE will only be achieved if a full programme of flying can be provided, which will require night time operations in line with the plan proposed by the Airport.

4 BUSINESS CASE

Current Position

4.1 The Airport relies on a number of sources of income including aeronautical income from passenger, freight and general aviation charges, commercial income from car parking and retail, property rental and aviation fuel sales.

4.2 Presently charges associated with air freight activity make up around 51-52% of the total income for the Airport, and this increases when fuel sales are taken into account as freight aircraft upload the majority of the fuel sold at MSE. Presently, the income from aeronautical charges associated with passenger services is relatively low, with the forecast for the 2011/12 financial year indicating that around 8% of the Airport's total income comes from this source. The passenger services do increase the commercial incomes associated with car parking and retail, although in 2011/12 it is anticipated that this will amount to only approximately 3% of total incomes. This clearly illustrates the importance of the freight business to MSE.

4.3 Presently MSE, as with many UK regional airports, is a loss making business, however unlike others, the Airport has a wider array of income sources which, in our experience, is the most prudent strategy to reducing losses at a smaller airport. In many cases in the UK, regional airports are very reliant on passenger services which do not always deliver sufficient income to cover the costs.

4.4 Freight services can be of more value to smaller airports because these airlines put less pressure on them for heavily discounted fees in order to deliver services, which is often the case when low fares airlines start services from an airport. The role of freight is already clear at MSE and, without this activity, the losses at the Airport would be likely to increase substantially.

4.5 In keeping the Airport fully operational to the current standards, necessary in order to attract further freight and passenger growth, there are unlikely to be substantial opportunities to reduce operating costs further. However, the Airport may be capable of increasing throughput without increasing costs in the short term. Therefore, in order to stabilise the business, it is important that the Airport can find ways of attracting new traffic in the short term.

4.6 As freight is an already established sector at the facility, it would be logical to use this strength as leverage to attract further freight operators. Airlines will view this Airport as established in this market and take confidence from this that it can suitably serve the catchment area in the South-East of England. We understand that some discussions are on-going and that, in some cases, the airline(s) are unable to operate to the schedule they require in the absence of the night flying policy because some of their movements will fall in the designated night time period.

4.7 Growth in passenger services is likely to be slower in the short term as airlines will wait to judge the success of the recently re-introduced scheduled services. The past failure of EUjet may have dented confidence in the local market and, therefore, it will be easier for the Airport to market to a wider variety of carriers once there is a track-record of successful passenger services at the Airport again.

4.8 It is unlikely that short term growth in freight (and passenger) services will lift the Airport out of the current loss-making position. However, regional airports are long term investments for their owners, hence it is not clear cut to assume that the Airport will be closed if profits cannot be achieved in the immediate future, because it is possible that by 2018 the Airport will be providing a return. However, it is reasonable to assume that the losses must be reduced in order to secure the viable operation of the Airport over the medium-longer term. It is for this reason that new services, most likely through freight, need to be attracted now to contribute to reducing losses so that the Airport remains operational and able to deliver the benefits to the economy in the longer term.

Future Position

4.9 It is clear from the Master Plan forecasts that passenger numbers are expected to grow at a faster rate than freight over the period to 2018. We have undertaken some basic calculations to establish the potential level of income associated with this at 2018 (in current values). We anticipate that potentially, with 2.2 million passengers per annum (mppa), passenger income could increase to 36-40% of total income, up from the current 8%. Without night movements, and therefore with the lower passenger figure of 0.99mppa, the income could be around 25-28% of total income. The dependence on freight income would be expected to reduce proportionately from the current 51% to 35% and 48% respectively under each of the scenario. We believe that, while operating costs would increase with night movements, there is scope for revenues to be 40-45% higher if the full passenger forecast can be achieved.

4.10 The figure of 2.2mppa with night movements permitted will equate to an airport comparable with Cardiff (1.6mppa in 2009) and Leeds/Bradford (2.5mppa in 2009). In 2009/10, Cardiff Airport made an operating profit (£1.2m[12]) whilst Leeds/Bradford Airport incurred an operating loss (£4.1m[13]) despite its higher passenger throughput, although this was partly influenced by a step change in depreciation charges following capital investment. This illustrates well the need to have a diverse portfolio of incomes to bring an Airport to profit. Leeds/Bradford Airport is reliant on passenger services and some general aviation, by comparison Cardiff Airport features a large maintenance facility operated by British Airways. The latter facility will lead to aircraft movements which are not at discounted rates associated with passenger flights. This is therefore comparable to freight flights which are forecast to grow at MSE.

4.11 We believe that MSE will need to retain the mix of freight and passenger services in the future in order to achieve profitability and therefore be able to support the regional economy most effectively. Reduced freight services and reliance on passenger flights could put the Airport in the same loss making position as airports such as Doncaster/Sheffield (£6.8m loss in 2009/10) and Durham Tees/Valley (£8.3m loss in 2009/10)[14].

[12] *UK Airports Performance Indicators 2009/2010*, December 2010, Leigh Fisher (formerly published by Centre for the Study of Regulated Industries – CRI), Table 9.3b
[13] Ibid
[14] Ibid

4.12 As considered in Section 2, the ability to attract and retain the full mix of passenger and freight services will be dependent upon the ability to schedule into the night time period, both now and in the future. It would seem likely that our forecasts with night movements restrictions would still require the Airport to increase its cost base, but without the extra volumes of traffic which could be delivered for more marginal increases in cost. Therefore the risk of night flight restrictions is that the losses at the Airport could in fact increase and this would most likely by an untenable situation for any owner.

5 CONCLUSION

5.1 Our analysis of the economic impact of the Night Flying Policy proposed by MSE shows that without the policy, or with stringent night flying restrictions or a ban, the Airport is unlikely to be able to achieve the forecast proposed in the Master Plan.

5.2 The nature of the Airport, and the types of traffic it can serve, means that restricted night time operations may reduce potential passenger numbers in 2018 by 55% over those projected in the Master Plan and could reduce the quality of the network which the Airport can support. This impact would occur despite only a small number of the daily services needing to fall within the night time period as night restrictions would remove the flexibility for based operators such that the full benefits of based aircraft would not be achieved.

5.3 The importance of freight, both now and in future, must also be considered. It plays a valuable role in providing revenue to the Airport as well as supporting the local economy. The future scope for the Airport to become profitable will continue to be reliant on air freight which means this sector must be encouraged to grow. The Night Flying Policy proposed by the Airport would create the circumstances which would allow this growth, by offering the greatest flexibility to carriers, even if, as with passenger services, the majority of flights may still take place during the day time period.

5.4 The combined impact of night time restrictions is not only a measurable loss of 1,450 jobs and £30.3m from the regional economy, but also the risk that the full wider economic benefits of having an airport are not realised, taking away the attractiveness for wider business growth associated with air travel access. Furthermore, the risk may be greater in that if the Airport cannot be made profitable with the restricted operations, then its long term future may be put in jeopardy, along with all the jobs and GVA created by it locally.

March 2015

Manston Airport under private ownership:

The story to date and the future prospects

Position statement

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Introduction

For decades Kent County Council has made great efforts to develop aviation at Manston Airport.

Manston, with its proud history as a front-line Battle of Britain aerodrome, has long been a symbol of Kent's determination in the face of adversity.

But our desire to stimulate and grow Manston was not the result merely of nostalgia or sentimentality.

For decades we have been aware of the commercial potential of Manston's long, 2,700 metre runway. For decades we have championed Manston's proximity to London. For decades we have argued that Manston was a sleeping giant: a regional and national asset.

Our 2012 policy document 'Bold Steps for Aviation' made all this clear and promoted the development of Manston to the the Government as an alternative to building a controversial new runway in the Thames Estuary.

Our support for Manston has not merely consisted of kind words and encouragement. We have invested substantial sums of public money.

We have made substantial investments in both road and rail infrastructure to improve access to Manston and East Kent.

Our record in supporting Manston is plain to see and we are proud of it.

It was disappointing and regrettable to learn that all our hard work and investment, and the hard work of the various companies that had tried to make flying profitable at Manston, had failed.

Manston's story began in 1915 when it was a small grass airfield operated by the Admiralty. Now a new chapter is about to begin that will bring new jobs and new prosperity to East Kent. It will be our duty to encourage, guide and nurture to help ensure this happens.

This document sets out the story of Manston Airport over the last 16 years, from its sale by the Ministry of Defence to the present day. We also consider the future, which we are confident will be bright.

Hansard 28th April 2014

Robert Goodwill, Parliamentary Undersecretary of State at the Department of Transport

'Whatever the result of efforts to secure such a resolution (on Manston), the government are unable to intervene directly, as we believe that UK airports and airlines operate best in a competitve and commercial environment. It is therefore for individual airports to take decisions on matters of future economic viability'.

Chapter one

The last 16 years of private ownership

Since the Ministry of Defence sold RAF Manston in 1998, the airport has never made a profit and has never delivered on its promise of jobs for the area. When the airport closed on 15th May 2014 144 people were employed there.

Since 1998 three companies have tried and failed to run Manston as a viable business. The Wiggins Group, with its start-up low cost carrier EUJet, launched scheduled flights to twenty one destinations in Europe in 2004 but collapsed into administration in the summer of 2005 leaving 5,400 passengers stranded. Its fleet of five 108-seat Fokker 100 jets were repossessed by Debis Air Finance.

Infratil Limited, which bought Manston from the administrators in 2005, lost between £40 - £50 million over the next nine years attempting to achieve passenger numbers of over a million per annum. The highest number of passengers was 50,000. Similarly its ambitious plan to grow freight traffic failed.

Lothian Shelf (417) Limited, a company owned by Mrs Ann Gloag, bought Manston for £1 in November 2014. In the next 4 months the airport made revenue losses of £100,000 per week plus significant capital losses.

Mrs Gloag's decision to sell the airport was based on an assessment that these losses could not be sustained. Mr Trevor Cartner and Mr Chris Musgrave acquired 80 per cent of the company in order to provide space for a wide range of businesses, with a focus on attracting companies in the manufacturing sector, as well as the provision of housing, shops, schools and community facilities.

Chapter two

The Wiggins era 1998-2005

In 1998 Wiggins Group acquired Manston Airport for £4.75 million. Its company accounts show that between 1999 and 2002 the company reported losses of £8.6 million, with a further loss of around £2 million reported over the next two years.

In January 2004 Wiggins Group renamed itself Planestation and later that year Planestation bought 30 per cent of airline company EUJet.

In September 2004 EUJet operated flights to destinations across Europe. That year Planestation's losses were £73 million and the company had to borrow £46 million at an interest rate of 28%. In December Planestation bought the remaining 78 per cent of EUJet.

In its busiest month in early 2005 the airport carried 62,709 passengers. EUJet's aim had been to handle over 750,000 passengers per annum but the company became insolvent and went into administration.

In July 2005 all EUJet operations were suspended along with all non-freight operations.

Mr Tony Freudmann had overseen Manston's transfer from an RAF base to a commercial operation. He was Senior Vice President of Wiggins Group between 1994 and 2005. He was 'let go' by Wiggins in February 2005. He is now the spokesman for the RiverOak consortium.

The Wiggins Group and Planestation failed in their ambition for Manston to become a successful international airport; but even then, more than 10 years ago, they also had ambitions for property development on the airport site, in collaboration with property developers MEPC plc.

Chapter three

INFRATIL 2005-2013

Infratil Limited is a successful company listed on the New Zealand stock exchange with the primary purpose of investing in electricity distribution, public transport and ports. The company was established in 1994 with NZ$50m of capital. At the time it acquired Manston and Prestwick airports it controlled assets worldwide in excess of NZ$ 4.4 billion.

Following Wiggins' demise, Infratil Limited bought Manston Airport from the Administrator for £17 million in August 2005.

In addition to Manston, Infratil also owned Prestwick, Flughafen Lubeck, Wellington and Auckland Airports. Its master plan for Manston (published in November 2009) envisaged building a new passenger terminal to accommodate up to 3 million passengers per annum. It also envisaged building a parallel taxi way to the runway and an increase in the freight and passenger aprons. At the time of publishing its plan the airport was handling 32,000 tonnes of freight per annum. The master plan envisaged freight growth of between 4% and 6% per annum to equate to approximately 167,000 tonnes of freight per annum by 2018. It also planned on developing corporate jet facilities with an executive terminal.

In 2009 the airport was handling fewer than 50,000 passengers per annum. Infratil forecast that by 2014 this figure would rise to 527,000, by 2015 to 1,268,000 and by 2033 to more than 4.7 million passengers per annum. In 2009 the airport employed approximately 100 people, some full time and some part time. Infratil forecast that they would be employing more than 500 staff by 2014, 2,800 by 2018 and 6,150 by 2033.

When the airport closed in May 2014 there were 144 people employed at Manston Airport.

In 2012 Infratil announced that Manston and Prestwick airports were for sale.

In each year that Infratil Limited owned Manston it incurred losses of more than £3 million per annum and wrote off the purchase price of £17 million.

> As at 31 March 2013 Infratil's investment in the UK's airports had a book value of $20m and over the year a further $12m was contributed to meet costs. Their sale price crystallised a net economic cost of $32m."
>
> ***(Infratil financial results 2013-14)***

In 2013 KLM started passenger flights to Schiphol Amsterdam. However, over its 12 months of operation its seventy eight seat Fokker planes were less than half full (42 per cent of capacity). KLM operations at Manston made no significant financial contribution to the cost of running the airport.

In November 2013 Infratil Limited sold Manston Airport and the associated liabilities to a company controlled by Mrs Ann Gloag for £1.

Chapter four

Manston Skyport Limited 2013-2014

Mrs Ann Gloag originally approached Infratil with a view to buying both Manston and Prestwick airports, which were being sold as a package. However, Infratil set a deadline for their sale in order to stem their losses. When the Scottish Government bought Prestwick for £1 Mrs Gloag agreed to buy Manston also for £1.

From the discussions that Kent County Council had had with her and her team we believed that she had every intention to maintain and grow the aviation business at Manston Airport.

She gave a press interview with the Isle of Thanet Gazette on 8 August 2014 to dispel the myths and uncertainty that had been widely propagated by campaign groups opposed to the subsequent closure of the airport.

"Can you please outline the reasons behind your decision to close the airport?"

"The prospect of new passenger and freight opportunities failed to materialise and the scale of the losses meant that there was no credible prospect of the airport becoming profitable."

"Would you have bought it if you'd known you would have to close it just months later?"

"I wanted to make it a success and I didn't buy it to close it. Our whole team worked tirelessly to secure new business for the airport but no new operators considered it a viable option. It was only when our aviation team arrived at Manston that we started to discover the scale of the problems."

"Why did you reject RiverOak's offers to buy it?"

"They were introduced to us as a potential buyer and in good faith we entered into discussions with them. However, we had serious concerns from the outset about the way RiverOak conducted their business with us. We are aware of the £7 million figure that has been made public by RiverOak. For clarification, the structure of their offer meant the final amount would have been considerably less. They also failed to provide any business plan to back up their claims of future employment or to reassure us that their bid offered commitment to maintain it as an operational airport."

Prestwick airport made a pre tax loss of £10 million in its final year of ownership under Infratil.

After buying the airport for £1 the Scottish government said it could take a number of years for taxpayers to see a return on public investment in Prestwick.

It announced a £10 million commitment towards 'operating costs, repairs backlog and improvements to the terminal building.'

Prestwick is continuing to lose £1 million a month.

Chapter five

Support given to Manston by Kent County Council over the past 16 years

Kent County Council's support of Manston as an airport over the last 16 years has been unwavering.

Transport infrastructure

Kent County Council has made or enabled substantial transport and infrastructure investment for the benefit of Manston and the surrounding area.

In 1997 Columbus Avenue was constructed on the north side of the airport at a cost of £1.52 million. These infrastructure works were funded through the European Regional Development Fund and the Single Regeneration Budget.

In 1998 Kent County Council completed the A299 Thanet Way extension of the M2 through to Ramsgate.

In 2000 Kent County Council completed the Ramsgate Harbour Approach Road and in 2009 the Euro Kent link road.

The A256 dualling was completed in 2012 and £87 million was invested in the East Kent Access Road in 2013.

Kent County Council is in the planning stage of the £6.7 million Westwood relief scheme to help growing businesses at Westwood and Manston.

Network Rail has just announced the commencement of its £11 million scheme to reduce journey time between Ramsgate and Canterbury; Kent County Council is contributing £4.5 million to the cost of this upgrade. Kent County Council has also committed £12 million to a new Thanet Parkway Station near Manston.

Business premises;

In Spring 2006 Kent County Council acquired the undeveloped area of Manston Business Park, amounting to some 40 acres of developable land, from the Administrator of Planestation plc for £5.35 million.

Manston Business Park and the EuroKent sites subsequently became the key holdings of a joint venture between Kent County Council and Thanet District Council.

By 2015 Manston Business Park has seen the development of industrial units which will be occupied by start-up and small developing businesses.

Support for aviation

In its discussion document Bold Steps for Aviation (May 2012) Kent County Council supported the increased use of Manston Airport and stressed its potential to make a significant contribution to aviation in the UK.

"In Kent, Manston has the potential to make a significant contribution [to the UK's aviation capacity], providing excellent communications to European destinations and reduced flight times.

In addition:

- Over the years Manston has received more than £1million in financial assistance from Kent County Council. When EUJet commenced its flights in 2004 Kent County Council bought a 1.5% shareholding in EUJet Ops Limited.
- In 2007 Kent County Council provided financial assistance to enable the start of charter flights from Manston to Virginia USA, although these flights were discontinued shortly thereafter.
- Between May 2004 and May 2005 when EUJet Ops Limited was acquired by Planestation Limited, Kent County Council acquired options to buy further shares. Planestation Limited was however put into liquidation and the council's investment had no further value.
- When KLM expressed an interest in starting scheduled flights to Amsterdam, Kent County Council provided £100,000 to Visit Kent, the tourist agency which provided marketing and tourism support.

Support offered to investors at the airport

In March 2013, when Infratil were seeking aviation buyers for the airport, Kent County Council distributed a note offering to help new investment at Manston Airport through:

- Financial assistance from the Regional Growth Fund
- Use of land owned by Kent County Council adjacent to the airport
- Expediting the new Thanet Parkway station
- A Route Development Fund to increase the number of passengers
- Working with airlines and train operating companies to achieve integrated ticketing
- Discussing with Ministers to seek assistance from Government. Kent County Council's offer to any investor with a viable business plan remains open, although to date we have received no take up.

Helping to find a new airport operator

Kent County Council met PWC, the agents selling the airport, with a view to helping find a viable new owner/operator. Over 18 months discussions were held with thirty interested parties including low cost airline operators and private investors, many were introduced to PWC by Kent County Council.

In the event, two of the shareholders of Discovery Park Limited made an approach to Mrs Ann Gloag which subsequently led to their purchase of the airport.

Chapter six

What do we know about RiverOak and its proposal for a compulsory purchase order?

RiverOak was introduced to Kent County Council by Mr Tony Freudmann. Subsequently the Leader of Kent County Council invited representatives of RiverOak to meet to discuss their plans for the airport. RiverOak declined, saying that their plans were confidential. The invitation to present their business plan to the council has been repeated on several occasions: RiverOak has always declined to do so.

RiverOak Investment Corp LLC was established in January 2001 in Delaware USA to manage *'niche focussed real estate investments for institutional entities that are strategically driven, including private and public pension funds.'*

Its CEO is Mr Stephen DeNardo.

The RiverOak website states *'within a time frame that spans nearly 4 decades of business experience, Steve DeNardo has successfully been involved in all phases of real estate investment, development and management. His focus and interest has been on the management and turnaround of troubled assets.'*

RiverOak's Chief Investment Officer is Mr George Yerrall. The website says: *'He is in charge of sourcing and analysis of investment opportunities and the execution of investment and asset management strategies.'*

In its statement to the UK Airports Commission (The Davies Commission) RiverOak described its strategy for Manston as handling 250,000 tonnes of cargo per annum by 2030, 500,000 tonnes of cargo per annum by 2040 and 750,000 tonnes by 2050. It also described its long term strategy to include 'aircraft maintenance, repair and teardown operations.'

RiverOak also stated that by summer 2017 at the earliest they would plan to re-open passenger services *'if appropriate contracts can be agreed with suitable carriers.'* They would also re-establish Manston as a key diversion airport, capable of providing emergency resilience to the wider South East airport system.

In an interview on 12 May 2014 with Paul Francis of the KM Group Mr DeNardo was asked *'How did RiverOak become involved in the bid to buy the site from Mrs Gloag?'*

Mr De Nardo replied; *'We have been active in searching for opportunistic transactions in both the UK and Ireland, We have an extensive network of contacts in both and one of our contacts made us aware of the Manston situation.'*

He was also asked *'How did you team up with Annax Aviation whose Chief Executive Tony Freudmann has become spokesman for your bid?'*

Mr DeNardo replied: *'Our contacts put us in direct discussion with Tony Freudmann who we knew had both operational experience at the airport and had made an attempt to purchase the airport.'*

Following Mrs Gloag's refusal to accept an offer from RiverOak to buy Manston Airport, RiverOak then approached Thanet District Council with a view to the council making a Compulsory Purchase Order of the airport in favour of RiverOak. Thanet District Council concluded that a decision on a CPO could not be made until:

- Thanet District Council had commissioned an independent feasibility study on the future viability of a going concern operational airport.
- Any prospective airport owner/operator submit a viable business plan and also enter into an indemnity agreement that would cover any exposure to all costs placed upon Thanet District Council.

Thanet District Council commissioned Falcon Aviation whose report was considered by the Council's cabinet on 31st July 2014. The report identified *'no business plan with a credible investment plan of less than 20 years is likely to provide the commitment necessary to rebuild confidence. From an investor's standpoint, the payback period might be as long as 50 years. The level of investment would have to be significant (£100m's) and there are never any guarantees of success.'*

Throughout Thanet District Council's consideration of a CPO it has been advised by its Section 151 Officer that it appears evident that the airport will not be successful if it reopens and attempts to operate in the same configuration as it has done previously up to its closure.

The advice to Thanet District Council's cabinet was that invitations should be issued to parties willing to enter into an indemnity agreement capable of delivering the twenty year business plan.

During the course of Thanet District Council's processes, on 17 July 2014, Kent County Council unanimously adopted the following motion;

"Kent County Council supports the actions taken so far by Thanet District Council to retain Manston as a regional airport. We recognise the value that a regional airport brings to East Kent and are disappointed at its closure. Kent County Council will explore with Thanet District Council ways in which it can support proposals to retain Manston as an airport." The original Motion proposed by Mr Cowan (Dover Town, LAB) and Mr Truelove (Swale Central, LAB) was replaced by the above, proposed by Mark Dance (Whitstable, CON).

In supporting the amended motion the Leader of Kent County Council said "Thanet District Council's approach is now such that they are going to carry out and have already commissioned, an independent study as to the viability of running the airport as a going concern or not. Nobody knows the conclusion to that, as I said on the radio this morning, after 16, 17, 18 years of Manston, everybody has just lost money. So what is the market telling you? And it will be interesting to see what the independent viability report concludes. And Thanet District Council are absolutely right in doing that. If it does suggest there is viability they will then ask for expressions of interest from people to come forward who have the ambition to do exciting things at Manston in running it as an airport, or not. And if there are some exciting propositions, or if we had an owner that is reluctant to do anything exciting, which again we don't know, we will then make the decision as to whether or not to support the CPO process. And it is premature to have that decision now, which is why we can't support your original motion which was asking for an open ended commitment to support Thanet and their CPO, no matter what. I want to see, and hope, that there are exciting propositions that come forward, with good people, that have got the money to do exciting things. And we will have to wait and see as to whether that's the case, and then we will review our position."

In an endeavour to support Thanet District Council, on 1st September Kent County Council's Director of Governance and Law wrote to Thanet District Council's' Monitoring Officer to remind them of our offer to assist the council. The Monitoring Officer replied: ' We need to do the evaluation of any Expressions of Interest first before we can begin to assess what legal support might be needed moving forward and whether any of that support would need to be commissioned from Kent County Council. We are not in a position to make any decisions until we have the result of this, but I will be more than happy to consider making such an approach at the appropriate time.'

Kent County Council has never been approached by Thanet District Council for the help offered.

Unsuprisingly, **as a result of this**, on 11 December 2014 Thanet District Council recieved a cabinet report detailing the outcome of its excercise to seek an indemnity partner for the compulsory purchase of the airport and a comprehensive and viable business plan. The following was decided:

'That no further action be taken at the present time on a CPO of Manston Airport on the basis that the council has not identified any suitable expressions of interest that fulfil the requirements of the council for a CPO indemnity partner and that it does not have the financial resources to pursue a CPO in its own right.'

The conclusions made by the council's Section151 Officer were that *'The information provided does not provide assurances which would satisfy him that a valid expression has been put forward and he is therefore unable to recommend moving ahead with this proposal. Although the issues here are emotive Members should excercise extreme caution before seeking to move forward with any proposal which is at odds with advice from its officers, particularly where there are likely to be* ***significant risks*** *which would affect the council at a fundamental level.'*

As the Falcon report, Thanet District Council's feasibility study and the advice from the council's 151 Officer show, the financial risks of a compulsory purchase of the airport were unacceptable.

Chapter seven

What do we know about Discovery Park Limited and its directors?

The new owners of Manston, Chris Musgrave and Trevor Cartner, have a strong track record in taking over large difficult sites following the demise of earlier uses and regenerating them to create jobs and bring economic benefits to the wider area.

Ten years ago they acquired Wynyard Park in Billingham after Samsung had announced that it was closing its operations there. They have now created 2000 jobs and have attracted £200million of private investment at Wynyard Park.

Seven years ago they invested in the advanced manufacturing manufacturing park (a joint venture betweeen the University of Sheffield, Boeing, British Aerospace and Rolls Royce) to build seventeen units for local small and medium size enterprises associated with aerospace research and other advanced manufacturing on the site of the former Orgreave colliery. In 2013, when the site was fully occupied, they sold their investment.

In 2012 they acquired Discovery Park from Pfizer after Pfizer had announced that they were closing down all their operations there and were planning to demolish the buildings at the site. When Pfizer made this announcement they employed 2,200 staff all of whom were subject to redundancy notice. By March 2015 700 of the Pfizer jobs have been retained and a further 1,700 jobs have been created by more than 100 new tenants on the site. Currently total job numbers are in excess of 2,400 and Discovery Park is on track to deliver more than 3,000 new jobs.

Trevor Carter and Chris Musgrave plan to transform the 800-acre site at Manston with a £1 billion redevelopment, over a 20-year period, into a mixed-use scheme helping to create more than 4,000 jobs. They will be announcing more details over the next few weeks.

Conclusions

The truth is that Manston has failed over a prolonged period of time to run as a commercially successful airport.

Kent County Council gave strong support to various investors but the reality of commercial aviation at Manston Airport led to very significant losses. In fact, in the 16 years since it was taken into privately ownership it has incurred losses by those who have tried to operate it in excess of £100 million.

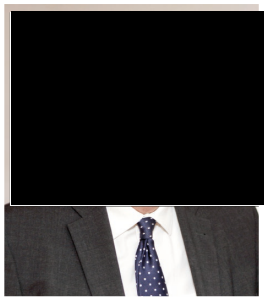
The objective now must therefore be to make sure that we have owners who want to do exciting things on the site and that the land is not left abandoned.

Bristow Group had chosen Manston as its location for the regional search and rescue base; when the airport closed the company decided to locate that base at Lydd. Kent County Council is pleased that this vital service will still be located in Kent. Lydd Airport is also starting a substantial investment programme to extend its runway and construct new aviation facilities.

Surely it is now time to look at a B Plan for Manston.

The driver must be to seize the best opportunity to create a significant number of new jobs and bring prosperity into East Kent.

RiverOak has not managed to convince Thanet District Council that there is a viable business plan. We believe the new owners have got a credible plan and the financial ability to create substantial numbers of new jobs which will bring prosperity and economic growth to East Kent.



Paul Carter, Leader of Kent County Council:

"I would like to make it abundantly clear that in my 10 years as Leader of Kent County Council I have done everything in my power to help and support the economy of East Kent. I believe that this document demonstrates and evidences exactly that."

Myth busting questions and answers

1. What is Kent County Council's stance on Manston Airport? At first you supported a CPO process but now you are supporting a business park – is this not inconsistent?

Promoting job creation, supporting business growth and generating economic prosperity for the residents of East Kent is - and always has been - Kent County Council's primary objective. Kent County Council (KCC) has never deviated from this.

The closure of Manston Airport was met with deep disappointment at County Hall. Any viable proposal from an aviation company with sufficient financial backing to run Manston as an airport would have been strongly supported by Kent County Council as our debate at the July council meeting made clear. No viable proposal was presented to Kent County Council or TDC.

The sale of Manston to the Discovery Park Team Musgrave and Cartner in September offers substantial private sector investment to support job creation and economic growth for Thanet. Cartner and Musgrave have a strong track-record at Discovery Park with 1,700 new jobs since 2012.

2. How can you say no viable proposal came forward? Didn't RiverOak say they would pay the full asking price?

Kent County Council asked RiverOak if we could see their business plan. RiverOak has consistently refused to let us see any details on the grounds they are commercially confidential. TDC took a decision that the information supplied by RiverOak to it was insufficient to support a Compulsory Purchase Order.[1] We have therefore concluded that RiverOak's plan is not viable. Representatives of Mrs Ann Gloag explained to the Transport Select Committee why Mrs Gloag refused to accept the offer from RiverOak.[2]

[1] **http://democracy.thanet.gov.uk/documents/b10075/Supplementary%20Agenda%202%2031st-Jul-2014%2019.00%20Cabinet.pdf?T=9**

[2] **http://parliamentlive.tv/Event/Index/d4330491-c83e-4204-a339-28a011b42071**

3. Did you promote Manston to the best of your abilities to attract a new investor when the closure was announced? Is it not true that Manston has unique infrastructure with the longest runway in England and superb transport links?

Kent County Council has taken every opportunity to support and promote the use of regional airports such as Manston. The authority's discussion document Bold Steps for Aviation, written in 2012, makes our position abundantly clear, showing Kent County Council has lobbied central Government to prioritise Manston above other proposals, such as the establishment of a Thames Estuary Airport.

Our support for Manston is evidenced by our substantial investment in transport infrastructure making Manston more accessible to a greater potential customer base, including investing in the East Kent Access Road, a new railway station, and improving the rail infrastructure. The Regional Growth Fund has been made available to companies with plans to increase employment.

Since the Minister of Defence privatised the airport there have been three private owners of Manston Airport: Wiggins, Infratil, and Ann Gloag. Despite ambitious plans to increase passenger numbers and freight operations, each of these has sustained significant financial losses totalling over £100 million.

When Manston Airport was put up for sale, Kent County Council introduced PWC (the marketing agents for Infratil) to 30 potential buyers from around the world (including RyanAir) none of whom in the event decided that they could make the airport profitable.

Myth busting questions and answers

4. What offers of support were made by Kent County Council to Thanet District Council to assist them with their CPO process?

We very much supported Thanet District Council in the potential for a CPO subject to the outcome of their independent feasibility study and submissions by indemnity partners.

At the Leader's request, Kent County Council's Director of Governance and Law offered to help Thanet District Council in the CPO process. TDC responded in writing saying *"We need to do the evaluation of any Expressions of Interest first before we can begin to assess what legal support might be needed moving forward and whether any of that support would need to be commissioned from KCC. We are not in a position to make any decisions until we have the result of this, but I will be more than happy to consider making such an approach at the appropriate time."*

The offer of support was repeated several times by the Leader at different meetings with Iris Johnston.

5. Who now owns Manston? Is it Mr Cartner, Mr Musgrave, Ann Gloag?

The company that owns Manston Airport has three shareholders; Mr Cartner (40%), Mr Musgrave (40%), and Mrs Gloag (20%). This information has been provided to the Select Committee by solicitors acting for Mr Cartner and Mr Musgrave.

6. How could the Leader of Kent County Council support Mr Cartner and Mr Musgraves' purchase of the site? I have heard Wynyard Park is in debt and promised to supply thousands of jobs and only a proportion have been realised.

Information provided to Kent County Council shows that Wynyard Park is currently debt free. Under Mr Cartner and Mr Musgraves' ownership, Wynyard Park has created more than 2000 jobs and attracted £200million of private investment. Publications which have asserted that this is incorrect have been served with a letter from a firm of solicitors specialising in libel.

(NOTE: It is quite normal for development companies to carry debt/bank borrowings on their balance sheet. The key is sensible debt to value ratios).

7. How can you be excited by the new proposition by Cartner and Musgrave if you have seen no plans? What are the plans?

The new owners issued a press release when they acquired Manston Airport outlining their intention to create more than 4,000 jobs and a £1 billion redevelopment. They will be announcing more details in the next few weeks.

At the time when Mr Cartner and Mr Musgrave outlined these plans to the Leader of Kent County Council, the planning consultants had not yet completed the master plan so no document was handed over. However, a fairly detailed description of what was envisaged was discussed. The plans include a new sports centre and the financial backing of the Spitfire museum, as well as plans to bring advanced manufacturing to the site.

8. How can Kent County Council ignore its democratic mandate? Haven't you seen the petitions showing that the people of Thanet want an airport?

The Save Manston Campaign was invited to County Hall to present its petition. However when representatives of the group arrived they had not brought it with them. All letters and emails from objectors have received replies. We have also received letters of support re the closure.

9. When have you met Ann Gloag or her colleagues and what was the purpose of each meeting? Are the minutes available? Was a change of use discussed?

Elected members and officers of the council met Ann Gloag and her company representatives on a number of occasions before and after she bought the airport. The purpose of the meetings was to establish what were her intentions for bringing jobs and new investment to Kent and to sustain a viable airport.

Myth busting questions and answers

At a meeting on 14 March 2014 when we were expecting an update on progress, much to our suprise we were told confidentially that given the scale of losses it had been decided to notify staff the following week that a redundancy process was necessary.

Subsequently a meeting was held on 3 July 2014 to discuss with Ann Gloag what she intended, and she explained she was discussing a possible sale but that the details were commercially confidential.

10. Why have you appeared to support Ann Gloag when she obviously bought the site to turn it into a housing development and never intended to operate an airport? Have you a vested interest? Did you not say you wanted a housing development last year?

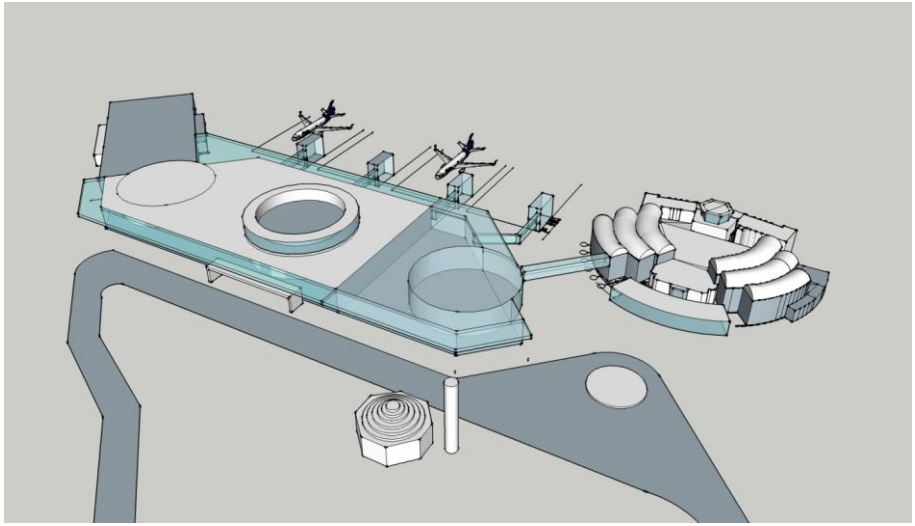
Mrs Gloag told us that it was her intention to run Manston Airport as a commercial venture and that was why she hired aviation specialists to put in place a strong business plan for aviation and support the implementation. She also retained the previous Managing Director of Manston, Mr Charles Buchanan. She told us subsequently that it was only when she was advised that the airport could not be made viable, and that the losses of £100 thousand per week could not be sustained, that she decided that the airport must be closed.

During our discussions, a change of use of the airport was not discussed although we did touch on alternative uses for parts of the airport site such as aviation hangar space, servicing and maintenance. The Leader of the Council has no private business interests in the Manston site and will not benefit personally from any proposal relating to the development.

11. Thanet does not need more business parks. Existing local business parks are struggling to attract businesses and are over 50% empty.

When Pfizer announced closure of its R&D facility at Sandwich it was a common view that all the buildings would need to be demolished and the site could not be redeveloped.

Mr Cartner and Mr Musgrave have successfully applied for planning approval for a multi-use development to include commercial, retail and housing: the site is currently over 50% reoccupied by commercial users and there are now 2,400 jobs. It was their success with Discovery Park that persuaded them of the potential at Manston, and they already have a number of substantial potential tenants.





FALCON CONSULTANCY LIMITED

THANET DISTRICT COUNCIL

thanet district council

EXPERT OPINION ON THE PROSPECTS FOR THE VIABLE DEVELOPMENT OF MANSTON AIRPORT

STAGE 1 – INITIAL EVALUATION AND VALIDATION OF THE AIRPORT OWNER'S ASSESSMENT

16 JULY 2014

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PREFACE

AIRPORTS

History:

Before considering the future of Manston Airfield, it is worth reflecting for a moment upon the history of regional airports in the UK, their role and the challenges that face them in the short to medium term future.

Unlike most other countries, the early regional airports in this county were constructed, not by a central civil aviation agency but by the councils of the cities they were designed to serve. This is important because, at the time of their inception, there was no national strategic plan for the location of airports. These airports were developed as public facilities, and managed professionally to ensure a safe operational platform for aviation activities.

In those early days of aviation, airports catered for a number of small airlines, private aviators and post office mail carriers. There was no requirement for paved runways and the operational infrastructure required was relative cheap to provide.

World War II delivered a profound change in civil aviation. Surplus military airfields offered an attractive prospect for the development of new additional airports, with the consequence that the UK abounded with airfields/airports that were uneconomically close to each other. An outstanding example of the civil use of a WWII airfield is Manchester Ringway Airport a development that curtailed the growth of purpose-built, nearby Liverpool Airport.

The War also provided a quantum leap in the capabilities and performance of civil aircraft. As a consequence, airport owners had to provide far greater sophistication in airport aeronautical facilities, typically, runways, taxiways, hard standing for aircraft parking and navigation aids such as Radar and ILS.

Ever increasing safety regulation required airports to employ dedicated personnel and costly equipment. The cost of the local councils' ownership of their local airport began to spiral upwards.

The advent of another generation of post war aircraft introduced the jet and brought air travel to the public at large, spawning a demand for the growth of passenger and cargo facilities thus requiring councils to provide ever greater capital expenditure.

Meanwhile surface transport links improved across the nation with the construction of the Motorway network and investment in the railways. As each airport sought to compete for a larger share of the "catchment" area of passengers and cargo so the airlines, anxious to focus their resources wisely, began to pick and choose the airport that offered the best surface transport "feed". Some airport's lost where others gained. It could be argued that mainland Britain has too many airports too close together and, ideally, needs one very large airport serving the South East, another perhaps in the North West and these fed by a handful of regional airports no nearer than 1.5 to 2 hours driving from each other

In 1986, the Airport's Act ended the management of airports as public assets and required them to operate as businesses. In the absence of a national airport strategy, airports competed openly with each other and a race began to build the facilities necessary to attract the airlines. Councils faced an impossible task to raise the necessary finance and most turned to various forms of private sector initiates to bridge the gap, including outright sale.

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Non-aviation Profit Generation:

Although safety remained the imperative and regulation ensured its compliance, the new breed of airport managers turned their focus to the commercial exploitation of the drawing power of the airport activity and developed a diverse range of non-aeronautical activities yielding higher profits than the aeronautical services they provided. Initially focused merely upon land surplus to the airport's operation, Schiphol Airport, Amsterdam developed the concept into an "Airport City", a business and retail community that is strategically planned and marketed to have synergy with the airport's activities. Today a successful airport seeks to generate approximately half its turnover and considerably more than half its profit from non aviation activities such as real estate development, retailing and rental.

Airlines:

As airports developed so did the airlines. Aircraft grew in capacity and with more seats to fill, airlines reconsidered their commercial strategies. The large legacy airlines such as Air France, Lufthansa, and British Airways took their lead from the US airline industry, developing "hub and spoke" networks. This technique worked on the broad principal that ultimate market efficiency was reached when a third of a load of passengers disembarked at the destination, a third remained on board in transit to the ultimate destination and a third connected to another flight or another airline. Under this philosophy, regional airports were firmly relegated into the role of hub feed airports. The opportunity for them to attract lucrative long hauls flights receded.

The, regional airports responded to the decline in scheduled airline business and found new revenue opportunities by attracting seasonal tour traffic and all freight services.

For a while, regional airports enjoyed a niche role in a new concept of airline operation, the low cost carrier (LCC). The business model of the LCC is to provide a short to medium distance air travel product to the market that had hitherto not afforded to fly by eliminating all unnecessary costs and maximising on the capacity of the aircraft. They chose to base their operations on regional airports where they could negotiate virtually free operating costs with the desperate airport operator, arguing that the airport could generate compensating revenues from car parking and retailing, especially Duty Free. For a while this formula satisfied both airline and airport operator although the airports struggled to generate the investment necessary for upkeep and modernisation.

At the time of writing this introduction, fierce competition between all the airlines is redrawing the map once again and forcing the low cost airlines back towards the larger airports. Ever larger aircraft delivered to the major airlines offer many more seats to be filled from the major airports and the capacity and performance of these aircraft is so great that, for the moment at least, the growth is air cargo can be absorbed in the belly holds of passenger aircraft.

The seasonal tour business too is changing as passengers prefer to book individual inclusive tours on the large airlines from the main airports.

Thus the role of the regional airport has been relegated once again to hub feed.

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So far, this overview has dealt with the role of regional airports in serving the airline community. However regional airports may serve a number of aviation roles from which they may generate revenues.

GENERAL AVIATION (GA)

The General Aviation community is diverse, comprising private aviation, corporate aviation, crop spraying, air ambulance, gliding, helicopters, and training.

GA has enjoyed a brief period of growth exploiting the war surplus facilities, hangars and runways; in many cases facilities that far exceeded their needs. However it was not long before the cost of maintaining these facilities exceeded the meagre revenues generated by this segment of the civil aviation market. Inevitably, failing airports had to close and much of the private flying community, operating light aircraft gravitated back to grass runway airfields.

Serving major businesses, corporate aviation has flourished. Large, high performance corporate aircraft have evolved that are generally accommodated at major airports and serviced in FBO (Fixed base Operations) specially designed service facilities. Around London, where the capacity at Heathrow and Gatwick is limited, specialist corporate airports have developed at Farnborough, Fairoaks and Biggin Hill served by the excellent road and rail connections to London that are the imperative for their corporate clients. However even here, the operational constraints are limiting further growth. If Manston could offer a guarantee of long term operation, necessary to support the high levels of investment, an FBO operator might be attracted.

MISCELLANEOUS

Regional airports may also provide the operating facility for other civil aviation activities:

AIRCRAFT MAINTENANCE REPAIR AND OVERHAUL (MRO)

MRO is a highly competitive business where the availability of high skills at low cost is the imperative. The airlines have chosen to look around the world for low MRO costs and are willing to fly the aircraft wherever this can be found. A large investment is required to construct a modern MRO facility and investors must be assured of continuity of airport operation.

SPECIALIST CARGO CHARTERS

Employing “just-in-time” manufacturing principles, some industries charter large cargo aircraft to deliver components from remote suppliers as required. Perishable commodities such as flowers and food stuffs are often transported by air.

Cargo charterers welcome the open availability of regional airports if the transport links are suitable but this invariably requires the airport to provide largely under-utilised equipment and facilities,

PARCEL AND MAIL HUB

A lucrative business for a regional airport, operating a post office hub (generally at night) or a parcel hub involves a large number of aircraft arrivals and departures in a concentrated period of time. However it is best located at airports that do not have community noise issues.

AICRAFT BREAKERS

Aircraft breaking is a specialist business with few participants. A substantial runway is required but the utilisation is extremely low.

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1 KEY OBSERVATIONS

1.1 Overview:

	Key Observations	Comment
1	The airport is a major (sunk) capital asset. Nevertheless it has lacked the investment needed to develop it for today's airport role, especially for the development of key transport links to London.	The closure and surrender of the CAA licence is unfortunate as is the disposal of equipment, but can be turned to an advantage. Until a positive and realistic business plan has been developed, investment is visible through construction, and the fast rail link is near completion, that airport should remain closed. .
2	The site offers ample opportunity for considerable aviation and commercial development (with other land available for acquisition).	A Business Plan must set out the phased development of the airport in respect of both operational facilities and commercial infrastructure, so that the full synergies of both may be realised.
3	It is located in the S.E. where airport capacity is a major issue.	The issue of capacity saturation and the need for additional runway capacity in the S.E. should be exploited as the core business opportunity.
4	Although there are plans for additional runways in the S.E., the reality is that a new runway is years away.	Whatever the political decisions arising from the Davies Commission, the planning process will take at least 10 years and the benefit of one new runway may be short lived thereafter. Manston could play a significant role in providing the required capacity even if only in the short term.
5	Many regional airports have to supplement their aviation revenues through a visionary strategy of real estate development, Manston is no exception.	Air operators and investors in airport real estate must be assured that the airport will remain operational for at least 20 years, thus the real estate business must be integral to the aviation business
6	Neither Infratil nor Kent Airport Limited have offered a clear strategic option to develop the airport (with financial projections)in partnership with the Council,	Either the airport is written off or a long term business plan to profit is developed in financeable phases and with full council and national political support.
7	The airport has never sustained growth. Now, the doubts surrounding Manston's survival have become a self fulfilling prophesy.	No business plan with a credible investment plan of less than 20 years is likely to define the commitment necessary to rebuild confidence. Phase 1 investment required could be in the order of £100m with no guarantees of success. Political support will be required to attract investors and PR work will be needed to convince the airlines.

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This Report was commissioned following the unexpected closure of the airport by its owners, Kent International Airport Limited

The Report was compiled by the FCL in only 7 working days following contract signing. Further research is therefore essential to prove and develop the comments contained herein.

2 EXECUTIVE SUMMARY

Kent Airport Limited and Thanet Council have provided FCL with sufficient data to understand the key issues and opinions that have led to the airport's closure. Kent Airport Limited declined to provide the full range of information requested, restricting it to that which they considered relevant. For this reason, the FCL Team have initiated our own research in advance of Stage 2.

2.1 Present State

Kent Airport Limited is selling off crucial airport equipment and facilities, rendering the airport inoperable. Any proposal to reopen the airport with existing facilities would need to consider, whether to purchase new or second hand replacement equipment.

The general appearance of redundancy and the reputation of failure will conspire to frustrate any promotion of the airport to prospective operators.

2.2 The Role the Airport

Airports play various roles in the civil aviation industry mix. For example, Heathrow is clearly:

- A capital city gateway airport,
- A hub for global air passenger traffic connectivity,
- A major cargo airport,
- A huge retail facility
- A large real estate business.

(It is important to note that highly successful airports attract adjacent commercial land values equivalent to city centres. Under the airport ownership and properly managed and developed in synergy with the aviation activity, the profits from an airport real estate portfolio help to sustain the airport's investment planning.)

2.3 Manston as a UK Regional Airport

Manston has always been perceived as a Regional Airport.

Kent Airport Limited is right to identify the negative marketing features of the airport's location as a regional airport. The airport is not well located to serve as a travel interchange serving the wider UK.

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Regional Airports provide an operational service to most segments of the civil aviation operation, typically regional airlines, corporate aircraft, flying training, private flying and so on.

The primary segment is commercial air transport (the airlines). However, this business is rarely profitable as airports struggle to resist the downward pressure on airport charges as the airlines seek to offer lower fares.

Cargo generates very little revenue for an airport and is invariably unprofitable.

Much of the revenue from FBO's comes from the sale of fuel and the provision of aircraft maintenance.

Regional Airports need the profits from rentals, retail, car parking and real estate to bridge the profit gap of the aviation activities.

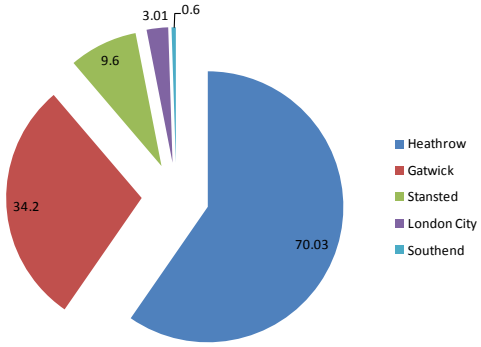
Schiphol Airport Amsterdam invented the concept of the Airport City, the development of specialised retail and business community located at the airport with synergy between the airport activity and the focused development of the real estate.

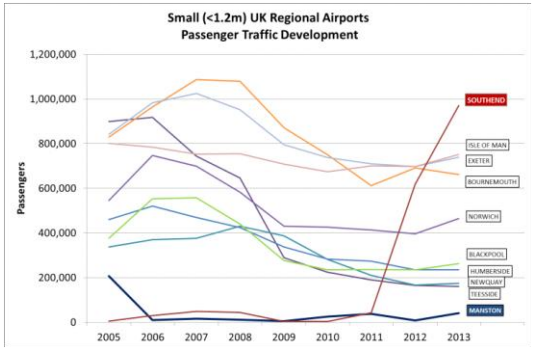
MANSTONS ROLE AS A UK CIVIL AIRPORT		
ROLE	**ATTAINMENT**	**REASON**
Regional Airport	Repeatedly failed to sustain scheduled airline services and attract other profitable aviation activities.	• Poor UK network location • Poor surface transport links • Limited UK catchment area
Cargo Airport	Proven record of success in attracting all-freight air carriers.	• Ideal operating facilities • Ease of access.
London Corporate FBO	Failed to attract a share of the London Corporate market.	• Lack of quality facilities and • Poor surface transport links Farnborough to Canary Wharf 45 miles / 1.14 hrs Manston the Canary Wharf 72 miles 1.25 hrs
London Satellite Airport	Failed to compete with other satellite airports.	• Lack of quality facilities and • Poor surface transport links
Airport "City" Business Park	Failed to develop a viable estate portfolio.	• Failure to sustain activity growth • Lack of vision • Lack of infrastructure.
NOTE 1:	*Where airports are close to their capacity, they are able to sustain published aviation tariffs. The activity drives up real estate values and the throughput generates retail revenues. Such airports generate substantial profits.*	
NOTE 2:	*Manston Airport was up for sale for some time. That there was no interest reflects its poor business reputation, (it has never made a profit in all the years since the RAF moved out) and the general industry perception that it is not in an ideal location. It has failed to fulfil its perceived role as a regional airport.*	

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London Air Passenger Market – 2011

Total market: 134,997,486





2.4 Manston Airport's Passenger Market

Kent Airport Limited had commissioned a professional passenger market assessment (DF Aviation Consultancy) however this stopped short of a demand forecast. Although we were told of the contacts made with airlines, no minutes of meeting were available.

FCL agrees that as a regional airport, Manston has no natural sustainable passenger market. The practical experience of the airport's operation demonstrates that its catchment area and its propensity to travel is insufficient to generate for the airlines enough traffic on one route to sustain a twice daily operation, the minimum required to risk launching a service.

The Infratil Masterplan for Manston does not provide a sound basis to initiate a refurbishment plan nor does it convey an attractive proposition for investors and potential users of the airport. It is not surprising therefore those airlines have shown little faith in its realisation.

Nevertheless, the airport is s approximately and hour's surface travel from London. As saturation of runway capacity in the S.E. moves towards reality and decisions to build new runways seems years away, Manston's location should enable it to compete for a market share as a London airport.

Southend Airport on the opposite bank of the Thames, has demonstrated that a share of this huge and lucrative market can be captured with adequate facilities and a travel time to London competitive with other London Airports (Luton, Stansted, Gatwick and so on).

FCL's research has discovered a submission by Infratil to the Davies Commission, this has yet to be analysed.

2.5 Cargo

Kent Airport Limited had commissioned a professional cargo market assessment (ILS Solutions) this also stopped short of a demand forecast. The assessment pointed towards a contact list and a price based marketing strategy but we are unaware of follow up.

The construction of an international component assembly plant (e.g. car plant) on nearby land would dramatically stimulate the cargo throughput.

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IMPORTANT:

The Davies Commission is due to decide whether or not to shortlist a Thames Estuary option for new airport capacity for London, and will then undertake formal consultation on the shortlisted options.

Manston is not shortlisted.

2.6 Business Planning

Kent Airport Limited is right to identify the ongoing evolution of the airline industry as new aircraft enter service with ever more impressive performance capabilities. It is true that these developments detract from Manston's immediate market opportunity, in the short term.

Kent Airport Limited's negative operating financial projections are reasonable, based on past performance but it must be noted that an analysis of the accounts of some major airports would show a similar shortcoming. The pressure on the air travel and air cargo industry to reduce tariffs against a background of high fuel costs places inevitable pressure upon them to drive down their operating costs especially all costs associated with the time the aircraft is on the ground, including airport charges. Airport operating revenues are under pressure and must be compensated by exploiting the aviation activity base to attract other revenue generating activities.

Kent Airport Limited did not provide a comprehensive Business Plan to support their decision to close the airport. The decision would appear to have been made on the basis of past performance and short term projections without the support of a credible long term (minimum 20 years) investment plan, a key component of a detailed Business Plan (developed logically from a demand forecast through a capacity plan, phased master plan, CAPEX/OPEX projections to financial projections for the full planning term).

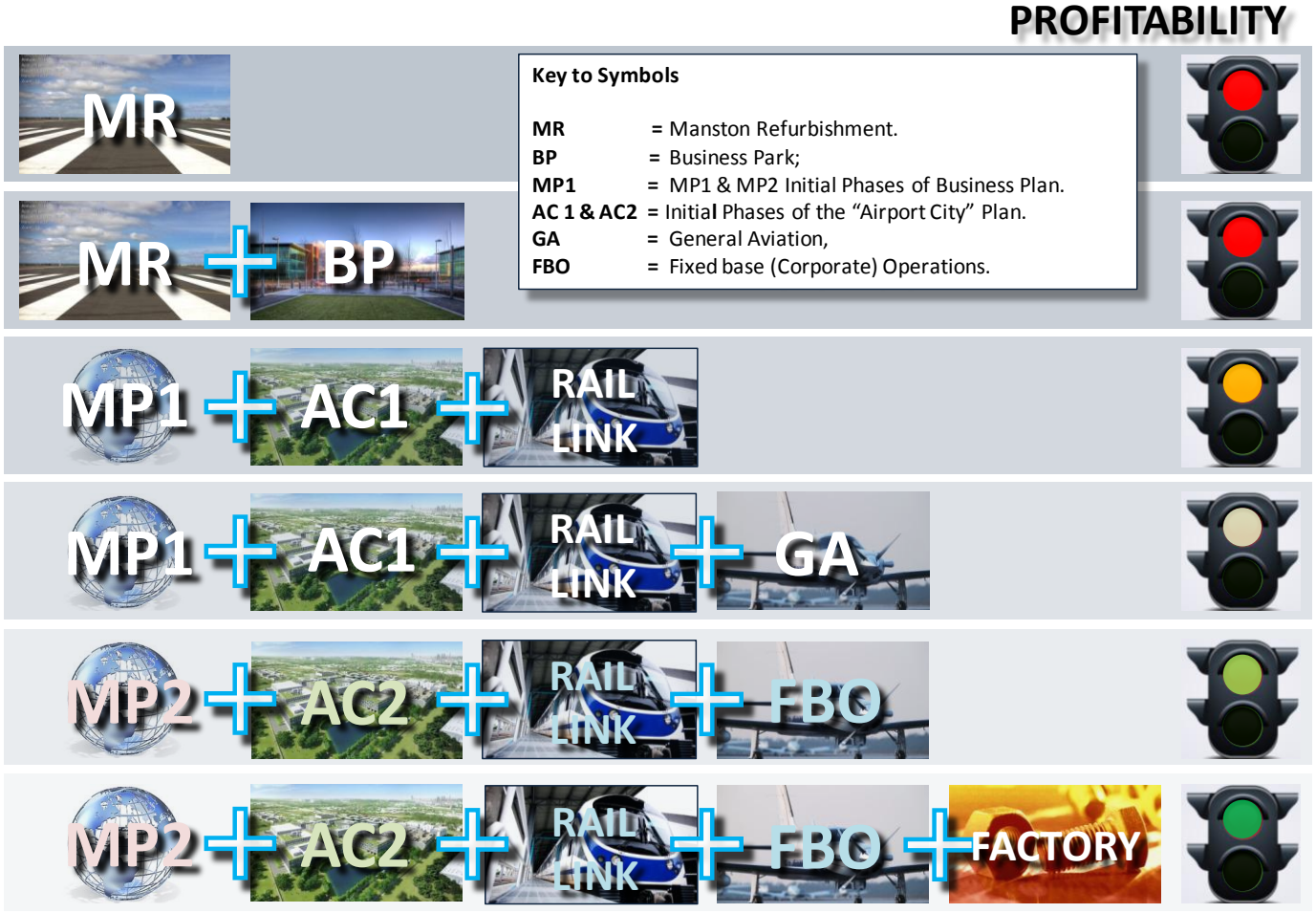
FCL's observations of Manston Airport at the end of Stage 1 are:

- It is not unique among the UK's regional airports in failing to secure a scale of aviation activities that will cover the cost of its aviation related operation.
- It is fortunate among regional airports in its location in the S.E. so close to London, for, given significant improvement in road and rail links to the capital, it could compete as a London airport.
- The trigger to revival would seem to be a fast rail link to London and the protracted timescale needed to properly address the saturation of the S. E. airports.
- The promotion of any revival will depend upon a credible investment plan and initial construction that encompasses the trigger (above) and provides airline user friendly facilities.
- The success of Manston revival must be proved through a 20 year business plan with financial projections based on the assumption that the trigger will be realised.
- More work must be done to engage the airlines' views on a Manston Business Plan that offers a 20 year commitment.

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2.7 The Road to Sustained Profitability

The chart below offers FCL's view of the path to profitability. Note that, even with an associated business park, the airport is unlikely to succeed and, in our opinion, will generate substantial operating losses. However, through phased planning and investment aimed at capturing a share of the London traffic, the airport could move into profit. A nearby international component assembly plant (e.g. car factory) would add further value.



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3 CONCLUSIONS AND RECOMMENDATIONS

3.1 THANET DISTRICT COUNCIL'S OBJECTIVES & SUMMARY OF CONCLUSIONS

Stage 1 – The Brief

THANET COUNCIL'S OBJECTIVES	FCL'S CONCLUSIONS
Validation of the underlying costs and profit drivers.	We have had insufficient financial detail and insufficient time to probe Kent Airport Limited's financial figures. However, in our view, the order of costs as presented are in line with the operation as it was before closure.
Validation of assumptions regarding investment needs.	We are unable to validate the assumptions many of which are now rendered irrelevant by the airport's closure and the sale of assets.
Take a view on whether all available opportunities have been taken to identify different aircraft operators capable of being attracted to and capable of operating from the airport – freight and passenger, and including short haul aircraft and private aviation.	In our view Kent Airport Limited rightly commissioned professional reviews of the commercial passenger and cargo operator markets but these offered no projections of demand. We have no evidence that the reviews were subjected to detailed scrutiny or followed up with sound commercial propositions to identified target airlines. In our opinion, overtures by Kent Airport Limited to airlines to introduce air services to Manston were unlikely to succeed without the tangible evidence of substantial investment necessary to convince them of the medium term sustainability of their operations.
Take a view on whether all available markets for ancillary airport operations which could take place at the airport have been considered.	In our view, Kent Airport Limited has identified all the aviation related activities that are typical of regional airport but we have no evidence that these markets have been assessed and projected into a comprehensive Business Plan.

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3.2 Recommendations

The FCL Team are not convinced that enough has been done to develop a visionary strategy and Business Plan for Manston. Therefore, FCL recommends that Thanet District Council should take the following next steps:

1. Revisit the Stage 2 ToRs and instruct FCL, typically:
    a. Develop a high level Vision of the maximum planning potential of the airport, identifying any further potential land acquisitions necessary to fully realise the potential.
    b. Develop a high level, 20 year, Business Plan, commencing from the opening of the rail link, that integrates five business models:
        1)Manston as a London Airport,
        2)Manston as a multi-purpose Regional Airport,
        3)Manston as a Cargo Airport,
        4)Manston as a Corporate FBO (Corporate aircraft service centre),
        5)Manston as a sophisticate Airport City (Real estate).
    c. In partnership with the Council, undertake a first-cut review of the environmental issues of major development.
    d. In partnership with the Council, define an aero-political strategy to promote Manston as a London airport.
    e. In partnership with the Council, define a framework "Airport City" strategy.
    f. In partnership with the Council, develop an investment strategy
2. Open discussions to establish the earliest construction of the rail link,
3. Open discussions to facilitate a Phase 1 "Airport City" business park including the relaxation of Planning restrictions / Processes,
4. Instruct FCL to engage an expert to establish the cost of replacing the equipment essential to resume operations,
5. Open discussions on investment funding,
6. Open discussions with Government on the S.E. Runway issue.

Meanwhile there is no commercial justification for reopening and marketing the airport in the same configuration as it was upon closure. It should remain closed but arrangements put in hand for the low level maintenance of key facilities.

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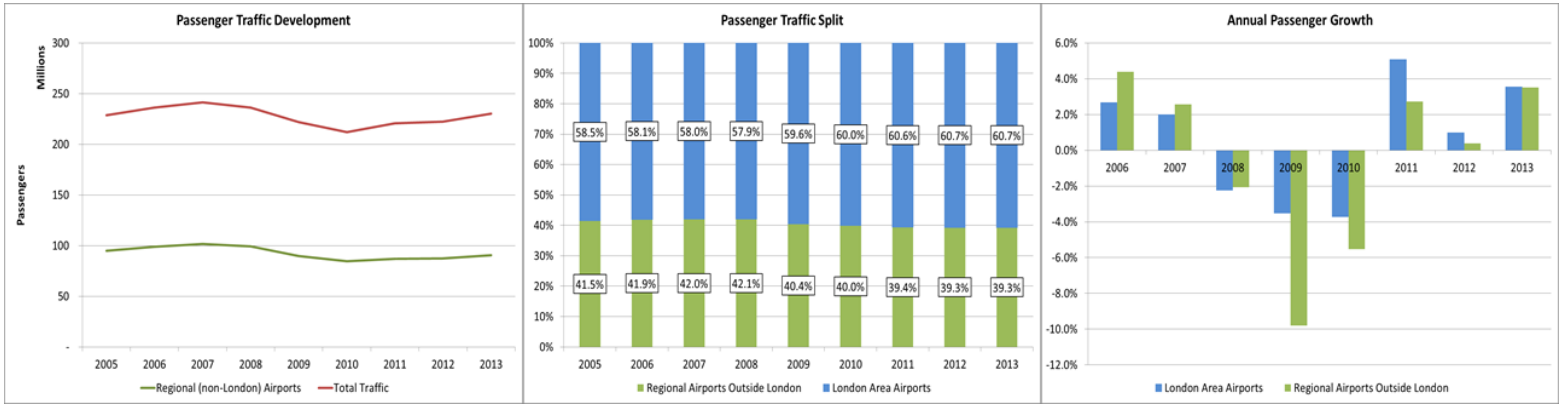
4 UK DEMAND FOR REGIONAL AIRPORTS

4.1 Passengers

In 2013 there were 230.1 million passengers using airports within the United Kingdom. Those airports serving the London Area including Heathrow, Gatwick, Stansted, Luton, Southend and Manston dominate total activity accounting for 139.7m passengers. The rest (loosely termed Regional or non-London Area airports) accounted for 90.4m passengers. The split of traffic has been steadily increasing in favour of London Area airports rising from 58.5% in 2005 to 60.7% in 2013.

Since 2005 and throughout the recession in the UK the overall development of passenger traffic has hardly changed, rising only by 0.08% (CAGR) over the period. This masks the fact that traffic at regional airports has actually declined 0.53% compared with a rise of 0.49% for those in the London Area over the period. Furthermore, whilst growth rates at regional airports in 2006 and 2007 were ahead of those in the London Area, since then rates have been lower with the impact of the recession hitting traffic development in the regions far more severely than that in the London Area. In 2013 however growth at regional airports was (3.5%) almost the same as the London Area (3.54%).

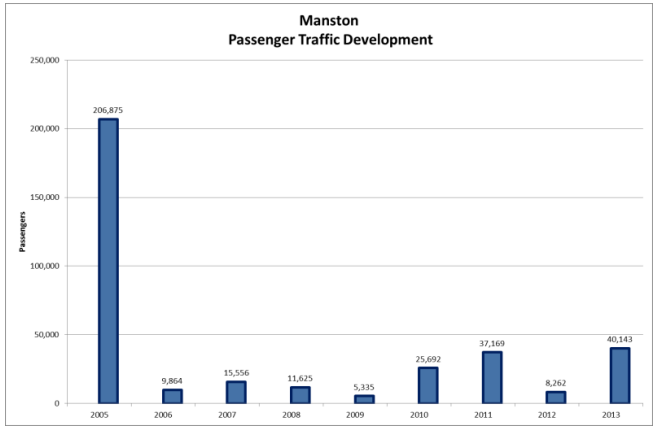
Figure 1 UK Airport Market 2005-2013 Source CAA



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Passenger traffic development at Manston during this period (2005-2013) has been small apart from during 2005 when a low cost carrier EUJet briefly set up a base at the airport only to collapse and cease operations in July of that year. In the period prior to closure announcement, the arrival of the Dutch carrier KLM, providing services directly to Amsterdam, appeared to herald the beginnings of a new dawn at the airport.

Figure 2 Passenger Traffic at Manston 2005-2013



Generally speaking traffic development at the airport has been lower than might be expected for a smaller airport in the UK, especially when compared to other airports at similar coastal locations such as Blackpool, Humberside and Newquay. They all tend to have low traffic flows, yet even they have seen greater flows than Manston. Indeed there are examples at coastal locations such as Exeter and Bournemouth that can support larger traffic volumes. It therefore remains a mystery why a major piece of aviation infrastructure at a coastal location in the UK cannot support greater volumes than at Manston.

Of particular interest to Manston is the development of traffic at Southend Airport. For many years the airport handled low passenger volumes until in 2008 it was purchased by the Stobart Group and major investments followed. These included a newly terminal building, control tower and an extended runway. However the most significant development was a new station built within walking distance of

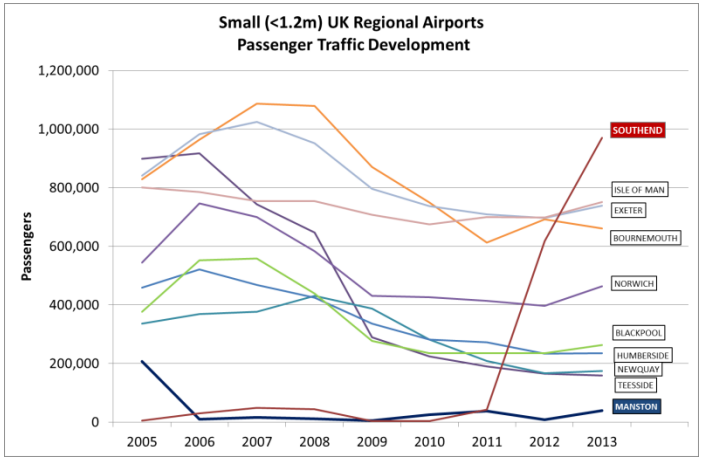
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the terminal enabling access to regular rail services to central London in under an hour.

EasyJet began operating services opening a base at the airport in April 2012 and a rapid increase in passenger numbers followed; from 42,439 in 2011 to 969,950 in 2013. In the first four months of 2014 traffic had risen by a further 40%.

Figure 3 Passenger Traffic at Smaller UK Airports 2005-2013



This is relevant to Manston because Southend has shown that where access to the London area conurbation can be achieved swiftly and seamlessly the potential for airport passenger expansion can be rapid. Traffic development is not simply a function of local catchment area but of accessibility.

This model holds considerable potential for the Thanet region because it enables the airport facility at Manston to move towards achieving a critical operating mass in a realistic time frame. If it could be replicated on the site the scale of traffic flow would generate activity to justify the levels of investment likely. This need not be necessarily measured simply in cash-flow terms for the airport operating

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account but more importantly from the regional perspective at the job creation and economic regeneration levels.

The key question is which carrier would respond to this development of the airport and its access in order to develop traffic at the airport. An extensive review of potential candidates undertaken by previous consultants concluded that EasyJet, Ryanair and Jet2 are likely targets although a further potential target could be the Low Cost-long haul operator Norwegian.

The airport owners made the following comment when asked about contact with airlines:

"….we spoke with a number of airlines. No passenger airlines with any current activities had any interest to start operations at the airport (albeit Ryanair had had an interest that went away just prior to Christmas)"
Alistair Welch July 2014

This response from the airlines is not unsurprising given that the fundamental issue of access to London area conurbation has not yet been addressed by any investment proposal at the airport. Indeed it seems probable that the airport's history of consistently failed passenger operations and marginal airline activity would undoubtedly dissuade most carriers. It is interesting to note however the flicker of hope - which came and went - from Ryanair, demonstrates that even without access resolution, traffic expansion could be possible.

There is therefore a challenging period ahead where the issue of reduced journey time to the London area conurbation needs to be radically addressed. Even the proposed Thanet Parkway station would require some additional mode of transport to connect passengers from the terminal to the station. A solution is necessary that minimises journey time to the capital. This is a critical issue since there are so many alternative airport choices that the traveller to and from the London conurbation can decide upon.

However if an improved access could be resolved the future potential of the airport could soon be realised.

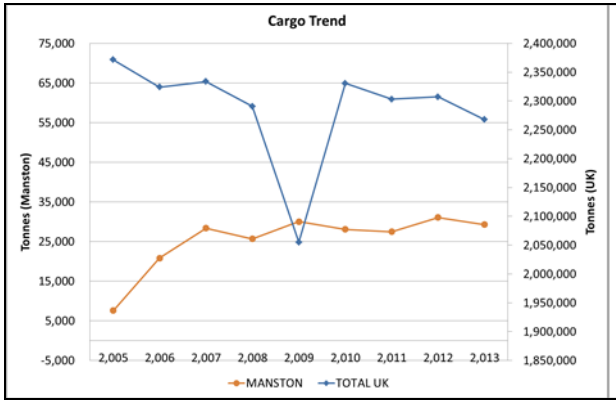
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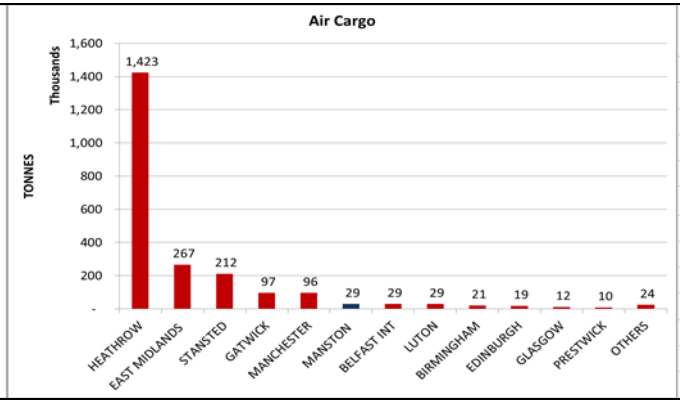
4.2 Cargo

4.2.1 UK Background

Manston is the sixth largest airport for air cargo in the UK representing an important and often overlooked aspect of the operation at the airport. In 2013 cargo reached 29,306 Tonnes. This was down 6% on the previous year in a market that was down 1.7% throughout the UK on the year previously. Almost all (99.9%) of the cargo at Manston was carried on dedicated cargo aircraft.

Figure 4 Cargo Trend; Largest Cargo Airports in UK; Proportion Cargo Carried by Aircraft Type Source CAA





	Passenger Aircraft	Cargo Aircraft
HEATHROW	95.12%	4.88%
EAST MIDLANDS	0.01%	99.99%
STANSTED	2.16%	97.84%
GATWICK	99.99%	0.01%
MANCHESTER	85.01%	14.99%
MANSTON	**0.03%**	**99.97%**
BELFAST INT	0.36%	99.64%
LUTON	3.41%	96.59%
BIRMINGHAM	72.48%	27.52%
EDINBURGH	1.77%	98.23%
GLASGOW	93.38%	6.62%
PRESTWICK	0.28%	99.72%
OTHERS	42.90%	57.10%

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By comparison London Heathrow, the largest cargo airport in the UK handling over 1.423million Tonnes in 2013, handled only 5% on dedicated cargo aircraft with the balance carried in the under-belly of passenger aircraft. This was true also of Gatwick which handled almost no cargo on dedicated freighters with most its cargo conveyed on passenger aircraft.

East Midlands is the UKs most important dedicated cargo airport with nearly all its 267,000T carried on cargo aircraft. It is an important base for Royal Mail as a major overnight mail hub as does DHL, Fedex, TNT and UPS express cargo operators A significant factor in the success of the airport is its close proximity to an excellent motorway network which ensures that 90% of the land mass of England and Wales is within a four hours truck journey from the airport.

In addition twenty four hour operations also make the airport friendly for freighter operations. Despite all these advantages East Midlands airport cargo throughput has only grown by 5.6% in the past nine years..

Airport competition in the UK is naturally centred on London Heathrow and it is estimated that approximately 85% of the UK forwarding industry is based with a 10 mile radius of the airport.

Manston airport also faces competition from five airports in Europe with excellent motorway links to the south east of England. Frankfurt (699km), Amsterdam (483km), Brussels (319km), Paris (377km) and Liege (403km) all have excellent cargo hub capability with fast motorway connections across Europe and to the UK.

4.2.2 Cargo Trends

In general airfreight business has had a turbulent period since 2010. The economic downturn and the fall in demand from China and Asia has significantly altered the key economic drivers of the cargo business. There is been very little growth in airfreight from Asia since the peak in April 2010. This has been exacerbated by the increase in aviation fuel since 2009. The current Fuel Price Index is 559 which has stabilised in the past year but the price of aviation fuel is still high at USD120/bbl.

Over recent months airfreight markets have maintained the 2013 year-end improvements but there has been no further increase in growth. Stronger economic growth has not generated the

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expansion in economic trade as it has done in the past, as production has been on-shored due to a variety of factors.

Airlines are replacing their passenger aircraft with more fuel efficient aircraft at an increasing pace. Wide bodied twin aisle passenger aircraft deliveries are expected to grow by 19% this year which will effectively increase belly hold capacity worldwide by 8% allowing more and more cargo to be conveyed in the free under-belly cargo holds of passenger aircraft.

Capacity is growing at a far faster pace than demand for airfreight and as sea freight yields are falling there is also a shift from airfreight to sea freight.

The climate for cargo-only aircraft operations could not be much worse. This has led to decisions by many major airlines to move out of freighter aircraft or to down size their fleets significantly. Current developments in the carrier market include:

- Japanese Airlines (JAL) which have moved away from freighter aircraft in 2013 as have
- British Airways in May 2014.
- MK Airlines a UK Cargo Airline ceased operations in 2010. (It previously operated produce freighters into Manston).
- Eva Air of Taiwan is reviewing its freighter operations.
- Lufthansa is reshaping and reducing its freighter fleet
- Air France/KLM are actively reviewing their fleets and there are indications that a sale of Martinair the wholly owned subsidiary of KLM is about to be sold.
- Cathay Pacific has ordered more freighters but these are being delivered into the desert for storage. Cathay Pacific has also cancelled freighter operations to Manchester after many years and restructured its freighter operations.

By contrast the only airlines currently increasing their freighter fleets are the four Middle East carriers, Emirates, Etihad, Qatar Airways and Saudia Airways Cargo. In Asia Korean Air still operate and extensive freighter fleet but it has no operations into the UK.

In conclusion dedicated freighter operations are not finished but trade flows coupled with strong demand need to be in place to make such operations viable in the next few years.

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4.2.3 Cargo Opportunities

Although the current climate for cargo operations is not positive especially for "all cargo operations" there are still cargo airlines who successfully manage niche opportunities.

CAL of Israel is one example of a profitable cargo only airline. UN and other relief charity organisations could use Manston as a centre for their operations. The UK is the second largest contributor in the world to disaster relief flights. A flexible low cost operation is required by the major relief organisations.

The slot position at Stansted is tighter than it was under previous ownership as the success of Ryanair and Easy Jet is beginning to put pressure on slots at Stansted. Manston could be a south east alternative to "cargo only operations" out of Stansted.

Perishable and Equine freighter charters have been operated successfully in the past and with a strong marketing effort is possible that these activities could be restarted as there was a proven track record of fast and efficient operations of these two specialised activities.

In addition the produce charters activity could be augment by industry investment if packaging and distribution on airport activity.

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TAG Farnborough,

Recently voted International FBO of the Year by readers of Aviation International News magazine for the sixth consecutive time,

Invested more than £100 million (US$160.7 million) over the last 10 years to improve the airport's facilities and infrastructure.



The airport now features an award-winning main terminal, control tower, on-site radar and two three-bay hangars, providing over 240,000ft2 of hangarage space, and further planned developments include re-designing one of the airport's departure lounges, with the introduction of a bar and new seating areas.

www.farnboroughairport.co.uk/

4.3 General Aviation (GA) /Corporate

General Aviation is defined according by UK CAA to encompass aircraft ranging from micro-lights and amateur-built aircraft, through balloons, airships and gliders, to piston twins and single-engine turbine aeroplanes up to 5700kg Max Take-Off Mass (MTOM), and single-pilot helicopters up to 3175kg (MTOM).

GA provides significant economic benefits for the UK of around £1.4 billion per annum and has a large direct and indirect employment base. The sector delivers vital services, including search and rescue, mail delivery, life-saving (organ) transport, law enforcement, aerial survey and environmental protection flights, as well as underpinning the training of future pilots, ground-based aircraft engineers and technicians.

Business and general aviation connects many UK and international destinations that do not have, and are unlikely to develop, scheduled air services or other direct transport links. GA aerodromes can also complement commercial air transport and provide increased connectivity at important hubs such as London. These links are particularly important for

local businesses. According to a recent study ninety-six per cent of city pairs served by business aviation in Europe have no scheduled air connection.[1]

The UK Government is keen that, while recognising that at congested airports this may not be always be appropriate, it encourages airport operators to ensure that GA aircraft are able to continue to enjoy equitable access to their airports.

There is evidence however that GA activity is declining and that this is not just a result of economic recession. Excessive regulation, increasing costs and taxation are all perceived to be contributing factors.

The number of annual private pilot's licence applications has fallen dramatically from 4500 in 1991 to around 2500 in 2012. There have also been recent declines in the number of hours flown by fixed-wing light aircraft: estimates[2] suggest 7% fewer hours flown in 2012 than 2003.

Overall revenue generated from GA is limited in scope and tends not to factor as a major contributor to airport economic activity. The range of competitor airports for Manston

[1] The Role of Business Aviation in the European Economy, Oxford Economics, October 2012

[2] DfT GA Challenge Panel Interim Report – January 2014

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Business Aviation

London Biggin Hill Airport is just 12 miles from Canary Wharf and 15 from Central London, and it has three full service FBO's to cater for all the different wants and needs of the business aviation user.



- *Around sixty based business jets ranging from small four seat citations to ultra long range Gulfstream, Global, and Falcon jets*
- *Convenient opening hours.*
- *Maintenance and hangarage facilities for most types of business jet.*
- *The Airport is a Port of Entry with full border control facilities during all opening hours.*
- *No runway slots required.*
- *Very user friendly airport.*
- *Close to the centre of London and in the heart of the South East of England.*

where serious high yielding corporate aviation activity takes place include Lydd, Luton, Biggin Hill and Farnborough. In several instances there are significant investments by Fixed Based Operators present at these airports.

On balance therefore the likelihood that the continuation of GA at Manston will be a reason to prompt the retention of the airport is slim. However there is no doubt that GA is a valuable contributor to airport activity for training and recreational purposes and it would seem likely that the airport would be used by GA when open.

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5 PRESENT STATE OF THE AIRPORT

At the time of closure to aircraft movements the airport was operating in a safe and secure manner. The state of the airport's operating surfaces can therefore be considered as being adequate. However essential aeronautical equipment has been disposed of leaving the airport inoperative. As with any facility that becomes unused deterioration will now occur as routine maintenance and heating is withdrawn. The airport was briefly visited on the 2nd July and the following opinions formed:-

5.1 Main Runway

The main runway is 2752m x 61m on a heading of 28 / 10. Originally constructed during WW2 it replaced the grass runways that had served the RFC, and then the RAF, since 1915. It has seen several re-surfacing operations, concluding with an asphalt overlay in 1999 (undertaken by the PSA) and then a slurry-seal type coat in 2013 (as advised by the current owners). The runway is therefore in pristine condition and should require only minor maintenance during the next 5 to 10 years.

Terminal Building – The passenger terminal was opened by The Duchess of York in 1989 with flights then operating to Yugoslavia and Spain. The building is set out on a single level with all the usual processes (check-in / baggage reclaim etc) well arranged. Some areas may require re-decoration but the overall impression is that the building is well maintained and more than adequate for the processing of up to, say, 750,000 passengers per annum. The running cost of the building may be high as a building of the late 1980's will not have the same thermal insulation values as a modern structure. Some elements of the building (e.g. electrical installations / flat roof covering) may need renewal in the short term; this opinion is based upon the 25 year design life often used at that time.

5.2 Hangers

There are a number of aircraft hangers, and similar small sheds, on the site. These were not inspected in detail but we were advised that they are all generally water-tight and fit for purpose. It is also understood that these hanger buildings do not contain any specialist aircraft maintenance or servicing equipment.

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5.3 Cargo Building

The Cargo building, including a cold store and pallet conveyor, has not been extensively used as the majority of cargo handling was undertaken on the apron, direct from the aircraft to the lorry. There was one water leak noted, possibly from a blocked roof gutter, which will require attention. The cold store and pallet conveyor has had very little, if any, use and so is in very good condition.

5.4 Equine Facility

The equine building was not inspected but we were advised that it is only a few years old and had only handled about 10 horses since it was opened. It is therefore reasonable to assume this facility is also sound.

5.5 Aircraft Parking aprons and taxiways

There are 2 aprons, one for passenger and one for cargo aircraft. Both are formed of concrete and both are in good condition. The passenger aircraft stands nearest to the terminal building are on a significant slope, but remote, level, stands are available close by.

5.6 Car and Vehicle parking

There is ample car and vehicle parking adjacent to the terminal. Local information is that the car parks have never been congested. Some minor repairs are required to the car park surface and the general area could benefit from attention to the soft and hard landscaping.

5.7 Air Traffic Control Tower and Fire Fighting and Rescue centre

These buildings were not inspected but from a distant view they both appeared sound.

To conclude the facilities of the airport are in a generally good condition and are at least equal, or better, than some other regional airports in the UK. The airport equipment was also seen to be in a generally reasonable condition but we understand that items are now being offered for sale.

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AIRPORT PLANNING

6.1 The Infratil Masterplan

Kent Airport Limited do not appear to have prepared an airport masterplan but refer to the Kent International Airport, Manston – Master Plan November 2009 – developed by their predecessors, Infratil Airports Europe Ltd.

The following comments refer to the global zoning strategy of the airport estate as illustrated in that plan, the illustrations of which are contained in Pages 58 to 60 of the relevant document. :

(a) The overall site zoning policy does not seek to optimise the operational land footprint in order to maximise other commercial activities within the current airport boundaries.

(b) The Master Plan advocates future investment in separate Cargo and Passenger aprons, which may not present the optimal solution in terms of capital and life time costs, operational flexibility as well as consolidated servicing and staffing requirements.

(c) The proposed Passenger Terminal development, on the eastern and western flanks of the passenger apron is likely to frustrate the potential future expansion of the apron pavement and limit its flexibility to accommodate a broader potential future fleet mix.

(d) The proposed alternate location of fuel storage facilities immediate to the Threshold 28 runway strip safeguarding area places the hazardous installation in close proximity to the position of greatest accidental risk at the airport.

(e) The Master Plan has failed to fully capitalize on the potential ground transportation resources and links in the immediate vicinity of the airport boundaries

(f) The Master Plan did not explore additional land acquisition opportunities within the context of related commercial activities.

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6.2 Planning Options

In view of the above it is recommended that the airport is subject to a rigorous capacity and operational zoning strategy review. Such a study shall address the following key issues:

(a) Current and potential future ground transportation modal interface conditions. Stimulation of commercial opportunities through enhanced transportation links

(b) Definition of the optimal sustainable operational airfield footprint envelope commensurate with the potential unconstrained capacity of the single existing runway and the projected aircraft mix. (Saturation Capacity Plan)

The definition of a high level Airport Saturation Plan will provide a strategic framework tool and decision matrix which can then be used to test and validate the following granular development aspects:

a) Identification of operational land use requirements specific to target market sectors and their technical requirements reconciled with the demand forecast targets.

b) Definition of the footprint(s) of residual land resources within the current airfield boundaries available for other aviation-related and general commercial activities.

c) Illustration of short, intermediate and long term enabling tactical development initiatives to release maximum commercial land area in line with (d) above.

d) Delivery of environmentally sensitive and sustainable solutions using leading edge and emerging technologies.

e) Preparation of CAPEX aligned with any investment requirements to achieve those targets identified under headings (c) to (f) as outlined above.

Appendix – A to this report provides a range of generic illustrations consistent with the advocated planning deliverables.

At this stage of the study such illustrations are not aligned with any specific operational or commercial targets or business strategies. They are, however, representative of a holistic approach to Airport Planning with a view to optimising the use and value of the existing available land and technical resources of the airport estate.

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7 INDEX OF DOCUMENTS PROVIDED BY THANET DISTRICT COUNCIL AND KENT INTERNATIONAL AIRPORT LIMITED

TITLE	SUBJECT	PROVIDED BY
Project Brief –	Viability of Manston Airport, June 2014	Thanet District Council
No document Name	Kent International Briefing Notes	2 July 2014
Kent International Airport and Kent facilities Limited	Management Accounts Financial year ending 31 March 2014	Thanet District Council
Manston Market Assessment	Market evaluation prepared by DF Aviation Consulting Limited	Thanet District Council
High Level Air Cargo Overview - Freighters	ILS Solutions High Level Market Overview	Thanet District Council
Kent International Airport, Manston – Master Plan	Infratil Airports Europe Ltd. Masterplan November 2009 –	
Thanet Economic and Employment Assessment December 2012	County demographics	Thanet District Council
Thanet Local Development Framework Employment Land Review 2010	Development Planning	Thanet District Council
Thanet Employment Topic Paper May 2013		Thanet District Council

In addition to these documents, FCL accessed the Infratil submission to the Davies Commission.

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8 SIGNIFICANT EXTRACTS FROM THANET REPORTS:

Thanet Economic and Employment Assessment – Report 2012

Thanet benefits from a regionally significant airport and a major cross channel port, both of which have identified growth potential. If Manston Airport can achieve its ambitious growth plans, this could result in 2,000 additional jobs and up to 420 additional induced jobs as a result of the impact on the wider supply chain. We must however be cautious in interpreting these figures, as despite some promising developments, the airport faces a number of challenges.

The majority of manufacturing sectors have continued to decline during this time, as has agriculture forestry and fishing.

It is however clear that whilst across the UK around 5 per cent of businesses have the potential to export, in Thanet this figure is half (2.5%). This can be partly explained by foreign ownership figures which are lower than the UK average although given the presence of Ramsgate Port and Manston Airport provided easy access to overseas markets we might expect this figure to be higher.

If Manston Airport can achieve its ambitious growth plans, this could result in 2,000 additional jobs and up to 420 additional induced jobs as a result of the impact on the wider supply chain.

Employment Land Review 2010

In line with Government guidance, the Council wishes to ensure that its strategy, land allocations and policies provide for choice, flexibility and competition, and are sustainable and based upon a realistic assessment of the needs of local business and market reality. Thanet's economy is one the key themes in the Council's Corporate Plan, with the main priorities to attract inward investment and support indigenous companies, attracting more jobs to the area and helping those who are unemployed. **Note: This policy may be at variance with a priority to attract commerce to the airport.**

There are very few major employers in Thanet, with over 65% of businesses employing between 1-4 people. Out of a total of 4,000 firms, only 100 firms employ more than 100 people. (Figure 10). The largest companies in the district include Thorley Taverns, Cummins, Piper Windows, Thanet Earth and Tescos.

Government and European Funding

2.39 Thanet benefits from having Assisted Area Status. Through the Grants for Business Investment (GBI) scheme the aim is to assist businesses to increase productivity by funding capital investment in equipment and technology. It is for businesses looking to expand, modernise, rationalise, diversify and increase productivity in order to maintain or establish sustainable growth and provide skilled jobs. Thanet is a Tier 2 area where any size of business can access the grant, with a possible 15% more funding available than a Tier 3 area. It is important that the District maximises the potential of its Area Assisted Status in order to promote inward investment and support the growth of indigenous companies to achieve economic development. 2.40 Under the

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European Structural Fund Thanet has Objective 2 Status which enables the district to benefit from the European Competitiveness Grants through a bidding process and qualifies for Interreg Funding which is dependent on having partners in two other European Regions outside of the UK.

Regional Spatial Strategy: South East Plan *Policy EKA5: The Gateway Role* recognises that the growth of gateways should be supported as catalysts for economic development. Kent International Airport should become a catalyst for economic development and growth as a major passenger terminal, and the large land reserves within and adjacent to this should remain available for ancillary and related activity.

Thanet District Council's Corporate Plan; 3.47 **An integrated transport hub:**
- work with KIA to agree a masterplan for the airport
- develop a sustainable business plan to enable the Port of Ramsgate to be successful
- Work with the transport authorities to develop a plan to improve public transport links in Thanet
- work with partners to maximise benefits of the high speed rail link

Policies EC2, EC4 and EC5 relate to the Kent International Airport (KIA) at Manston, and the surrounding land. The policies support the growth of KIA which has significant potential to encourage the economic regeneration of Thanet, and East Kent as a whole. Policy EC4 relates to the land north of the runway (the Northern Grass), and is restricted for airside development purposes; for activities that have an operational requirement for direct access to aircraft and therefore dependent on a location immediately adjacent to the runway or capable of direct access to it via taxiways. This allocation, whilst restricted, does provide additional employment land for the district, as well as supporting the development of the airport. Planning permission was granted for a large hanger for aircraft painting, but this has now expired, and a freight building for a Border Inspection Point to facilitate the movement of fresh produce has been built. The only other airside development currently present has been established at the airport for a number of years.

Supporting the Growth of Kent International Airport (KIA)
The future growth of the airport to one of regional significance is supported as a preferred option for providing economic prosperity in the District, which continues the view of the existing Local Plan. One of the currently preferred options supports the recommendations set out in the Draft Airport Masterplan. These recommendations include the release of the Northern Land, which is currently protected for airside development, for general employment purposes.

Thanet Employment Topic Paper May 2013
Facilitating further growth at the Airport and Ramsgate Port could unlock further opportunities. Current export levels from Thanet are low and there could be growth potential in this area given the close proximity of Thanet to Europe coupled with transport links. There is also the potential for growth given knock on effects from the airport in terms of the supply chain. Facilitating further growth at the Airport and Ramsgate Port could unlock further opportunities. Current export levels from Thanet are low and there could be growth potential in this area given the close proximity of Thanet to Europe coupled with transport links. There is also the potential for growth given knock on effects from the airport in terms of the supply chain.

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9 GLOSSARY OF TERMS

TERM	EXPLANATION	TERM	EXPLANATION
AODB	Airport Operational Data Base	PSA	Present State Analysis
CAPEX	Capital Expenditure	PSR	Present State Report
CCTV	Closed Circuit Television	"Quick Fix"	A period of concentrated effort to rectify minor deficiencies
CUTE	Common User Terminal Equipment		
FCL	Falcon Consultancy Limited	RFFS	The Fire and Rescue Service
FBO	Fixed Base Operation (Corporate Aviation)	SLA	Service Level Agreements (typically between MSE and Customs/Passport Control)
FIDIC	Fédération Internationale Des Ingénieurs-Conseils		
FIDS	Flight Information Display Systems	VOR/DME	Aeronautical Navigation Equipment (*Visual Omni Directional Range & Distance Measuring Equipment*)
HR	Human Resources		
ILS	Aeronautical Navigation Equipment *(Instrument Landing System*)		
MRO	Aircraft Maintenance repair and Overhaul Base		
MARS	Multiple Aircraft Ramp System		
OLS	Obstacle Limitation Surface		
OPEX	Operating Expenditure		
AIRPORT CODES			
AMS	Amsterdam Airport Schiphol	**MSE**	**Kent International Airport**
BOH	Bournemouth	SEN	Southend Airport
JER	Jersey	SOU	Southampton
LCY	London City	STN	London Stansted
LGW	London Gatwick		
LHR	London Heathrow		

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10 APPENDIX A – CAPACITY PLAN

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Commercial Viability of Manston Airport

AviaSolutions FINAL Report for Thanet District Council

September 2016

aviasolutions
A GECAS Company



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Glossary of Terms

- **Air Journeys:** Also referred to Journeys. A unit of measurement for the number of flights taken by passengers.
- **Air Traffic Movement:** Abbreviated to 'ATM'. Defined as an aircraft landing or taking-off for commercial purposes.
- **Belly-hold:** A term referring specifically to passenger aircraft (as opposed to freighters). This term refers to the hold of the aircraft that is utilised for the carriage of passengers' baggage and freight.
- **Capacity per ATM:** A unit of measure defined as the number of seats or freight capacity on each ATM. Often an average of a larger sample.
- **Capacity:** The total capacity of an airport or aircraft to transport passengers or freight.
- **Catchment Area:** Airports draw their passengers from within a catchment area. The size of the airport and its network affect the size of the catchment area. Typically, the smaller the airport the smaller the catchment area that it can draw upon.
- **Discovery Park Limited:** Also referred to as Discovery Park. An entity that is closely linked to Stone Hill Park Limited through shared ownership.
- **Freight per ATM:** A unit of measure defined as the number of tonnes of freight loaded on each ATM. Often an average of a larger sample.
- **Freight:** Also referred to as Cargo or Air Freight. This includes all shipments that are transported for commercial purposes on board the aircraft under an Air Waybill excluding 'Mail'.
- **Freighter:** An aircraft specifically designed for the transportation of freight. This type of aircraft has no seats fitted, and in their place, has a cargo hold.
- **Full Service Carrier:** An airline business model that includes carriers who have traditionally offered all services included in one ticket price. This includes carriers such as British Airways, Lufthansa, Air France-KLM and Virgin Atlantic.
- **IATA Airport Code:** A three letter code designated by IATA to many airports around the world. All major airports are assigned a code, the most commonly used in this report are.
- **Kent Airport Limited:** Formally Infratil Kent Airport Limited. An entity whose main purpose is the operation of Manston, Kent's International Airport.
- **Kent Facilities Limited:** Formally Infratil Kent Facilities Limited. An entity whose main purpose is the provision of facilities to the operator Manston, Kent's International Airport. This entity in effect owns the airport site.
- **London System:** Also referred to as London Area Airports. A term referring to six airports of London (LHR, LGW, STN, LTN, LCY, SEN).
    - London City - LCY
    - London Gatwick - LGW
    - London Heathrow - LHR
    - London Luton - LTN
    - London Southend - SEN
    - London Stansted - STN
- **Low Cost Carrier:** Abbreviated to LCC. Low cost carriers are one of the major airline business models. Major European LCCs include Ryanair, easyJet, Norwegian, Wizz, and Vueling.
- **Million Passengers per annum:** Abbreviated to mppa. A standard unit of measurement for airport capacity or throughput.
- **Narrow-Body:** A type of aircraft, typically distinguished as one which has a fuselage wide enough for one passenger aisle. Includes aircraft such as Boeing B737 series and Airbus A320 family.
- **Passenger Movement:** A unit of measure referring to the number of passengers arriving or departing from an airport.
- **Passenger:** Abbreviated to PAX. The fare paying passengers on board an aircraft. Excludes those travelling on non-revenue tickets such as airline employees.
- **Passengers per ATM:** Abbreviated to PAX per ATM. A unit of measure defined as the number of passengers carried on each ATM. Often an average of a larger sample.
- **Peak Demand:** The demand at its highest point for an airport. There are several forms of peak demand, these include a daily peak (often early morning) and annual peaks (often around holiday seasons).
- **RiverOak Investment Corporation LCC:** Also referred to as RiverOak. An American investment firm that is seeking to acquire the Manston Airport site.
- **RTK:** Revenue tonne kilometre. A unit of measure in the freight industry. Calculated as the tonnes uplifted multiplied by distance flown.

- **Stone Hill Park Limited:** Previously Lothian Shelf (718) Limited. The current entity that owns Manston Airport.
- **Unaccommodated Demand:** A term referring to the demand that cannot be accommodated at a particular airport or combination of airports due to it exceeding the capacity available.
- **Wide-Body:** A type of aircraft, typically distinguished as one which has a fuselage wide enough for two passenger aisles. Includes aircraft such as Boeing 767, 777 and 787 series and Airbus A330, A340 and A350 family.

1. Introduction

1.1. Context

Thanet District Council ("TDC") appointed AviaSolutions to provide independent advice on whether a re-opened Manston Airport might a have financially viable future as an operational airport.

The airport closed in May 2014 and the current owner, Stone Hill Park (formally Lothian Shelf 718), has submitted a planning application for a mixed-use development on the site, comprising 2,500 dwellings, general business and commercial areas which is reported to support the creation of up to 4,000 jobs, and a range of leisure and sports activities.

RiverOak Investment Corporation ("RiverOak") is an American investment firm that wish to acquire the Manston site and re-establish airport operations. The re-established airport would be freight focussed but would also offer passenger services along with ancillary businesses. RiverOak are seeking a Development Consent Order (DCO) under the Planning Act 2008 to compel the sale of the site as a Nationally Significant Infrastructure Project.

TDC is seeking guidance on whether the airport has a reasonable prospect of operating as a financially viable, standalone entity within the period of the Local Plan which extends to 2031.

AviaSolutions commenced this study on 13th July 2016.

1.2. Scope and Limitations

The scope of AviaSolutions work was set out in the procurement document issued in June 2016 by TDC and our proposal for services submitted in the same month. Specifically, the scope requested:

> "The Council requires an independent assessment advising whether or not it is possible to run a viable and economically sustainable free-standing airport operation from Manston. The Council is seeking advice from an independent expert aviation consultant who can make this assessment within the context of the national and international air traffic market, the viability of airport operations at a national and international scale and likely future developments in airport operations."
>
> *Source: TDC Briefing Document*

Our proposal and this subsequent report have been developed in the context of these requirements. It is therefore necessary to indicate specifically those areas which fall outside of the scope of our works, and to which we have given no credence in the application of our analysis. These areas include:

- Whether Manston Airport is an asset of national significance
- The effect of any scenario on the wider Kent economy, or subsequently the effect on the UK economy as a whole
- The legal, planning, environmental, or social effects of any scenario, or whether these elements would present any challenges
- The economic benefit or need for industrial or housing units in the Thanet area
- The comparison between any airport scenario and any other alternative use of the airport site
- Passing judgement on the use of the site beyond that of whether an airport may be viable
- We take a neutral view with regards to the local campaign groups, both those for and against the airport

It should also be noted that many of the stakeholders engaged by AviaSolutions sought to broaden the discussion to include a wide range of airport-related topics. Whilst this has provided useful context and highlights the political sensitivity of the airport, AviaSolutions study is restricted to commercial analysis and does not seek to provide any legal, environmental or socio-economic advice or comments.

1.3. Our Approach

AviaSolutions commenced the study with a review of the various documents that describe the history of Manston Airport, the local and national planning context and the current development proposals for the site. The two main aspects of our work however were seeking the views of stakeholders relevant to the specific topic of airport commercial viability, and an extensive analysis of the relevant air transport market.

In conjunction with TDC, we agreed the primary and secondary stakeholders to be contacted for this engagement. Our interview programme was not intended to canvass the views and opinions of the many parties and individuals with views, many strong held, about the airport and its future. It was intended to seek facts about its historic development and proposed future development from the two prospective developers (Stone Hill Park and RiverOak) and from a range of parties within the air transport and freight industries. It is these parties and their like who will determine whether commercial aviation activities could be viable on the Manston site. Whilst conducting these interviews, many companies and individuals spoke on the condition of anonymity.

Our analysis added to our existing knowledge of the air transport industry the specifics that are associated with Manston Airport, namely its historic traffic performance, details of its catchment area, and the experiences of previous airline and freight users of the airport. AviaSolutions has developed two models specifically for this study. The first assessed the capacity of six airports serving the London Area and how future passenger and freight traffic might be distributed between these airports including Manston, and the second was a financial model to assess the potential cashflow outlook for Manston Airport.

1.4. Report Structure

In this report, we first summarise the history of Manston Airport and describe the different visions of its future put forward by Stone Hill Park and RiverOak. We next describe different scenarios for possible air transport use of Manston Airport, before investigating the passenger and freight traffic potential of each scenario. We then describe our financial model, setting out the basis of our revenue and cost assumptions if Manston were to be brought back to use as an operational commercial airport. Finally, we bring together the different threads of our analysis and reach our conclusions on the financial viability of Manston Airport.

1.5. AviaSolutions' Qualifications

AviaSolutions has been appointed to provide an independent assessment of the prospects for Manston Airport. We are is an aviation management consultancy, established in 2001. In October 2012, GE Capital Aviation Services acquired 100% ownership, adding consultancy to the leasing business for which it is known. Since then, AviaSolutions has grown rapidly, building an airline business in addition to our traditional airport advisory services. Over the past 15 years AviaSolutions has earned a strong market reputation in a number of key areas:

- Airport Strategy and Support
- Airline Strategy and Support
- Airport and Aviation Transactions
- Air Service Development
- Regulation, Policy and Planning
- Passenger and Cargo Traffic Forecasting
- Route and Network Strategy
- Ground Handling
- Business and Commercial Advisory

2. Executive Summary

2.1. Summary

AviaSolutions was appointed by Thanet District Council ("TDC") to advise on whether viable airport operations could be re-instated on the site of Manston Airport. Following ownership by the Ministry of Defence, three separate private companies tried and failed to operate Manston Airport profitably and the airport closed in May 2014. TDC needs to prepare its next Local Plan looking forward to 2031, and has two proposals for the use of the site: an operating airport or a mixed residential, business and leisure development.

AviaSolutions has discussed the re-opening of Manston Airport with a number of organisations and individuals, and carried out a detailed assessment of the air transport market and the potential finances of a re-opened Manston Airport. On this basis of this work, we have concluded that it is most unlikely that Manston Airport would represent a viable investment opportunity even in the longer term (post 2040), and certainly not during the period of the Local Plan to 2031.

The assessment of financial performance of a re-opened Manston Airport is based on relatively favourable assumptions for Manston Airport. We would typically position the financial forecast as a 'High Case' as a number of tailwinds are required to deliver the financial forecast in terms of passenger and freight volume and the revenue yield that can be achieved. Throughout the research AviaSolutions has consistently taken a positive outlook with regards to the underlying demand assumptions. Specifically, this means that we have opted for the upper bounds of traffic, the upper bounds of unit operating revenue, the lower bands of unit operating costs, and minimal asset costs and capital investment requirements.

2.2. Background

Since the Ministry of Defence sold Manston Airport in 1998, three separate private sector investors have attempted to develop the airport as a viable commercial undertaking. These ventures have all been unsuccessful and have incurred substantial losses in the process. The airport closed in May 2014. TDC has undertaken extensive exercises to find new investors prepared to re-open the airport, but has failed to identify an appropriate party. One interested party, RiverOak Investment Corporation LLC ("RiverOak"), has though emerged from this process, and is interested in acquiring the site and developing Manston Airport as a freight airport. RiverOak has been critical of previous owners, considering that they were not sufficiently active in seeking to develop and market Manston as a freight airport. In contrast, the current owner of the site, Stone Hill Park Limited ("Stone Hill Park"), has brought forward plans to develop the area for mixed residential, employment and leisure uses. TDC has identified a need to understand whether an airport would be a viable use for the site, and whether there is a reasonable prospect of that occurring within the period of the Local Plan to 2031.

2.3. Historic Performance of Manston Airport

During its years of operation as a commercial airport, Manston had a range of air services to domestic and short haul Europe points, and handled around 30,000 tonnes of freight a year, almost exclusively imports of fresh produce coming on dedicated freighter aircraft. The scale and nature of the passenger traffic suggests that Manston has relatively few air journeys originating or destined for a catchment area of East Kent that it might reasonably be expected to serve: we estimate that demand from this catchment area is about a third of the size of the demand in a catchment area of Southend Airport. While we consider that a re-opened Manston Airport would attract some passenger services and regain freighter operations at a level similar to its historic performance, our financial assessment is that this would be insufficient to support financially viable operations of the airport.

2.4. Manston as an Overflow Airport for London

Manston is located in the South East of England, where there is a need for additional runway capacity. This issue has been researched extensively over recent years, including the Davies Commission which recommended in 2015 that a third runway be constructed at Heathrow. A decision on the new runway

capacity is expected to be made in October 2016. In addition to the recommendation for Heathrow, Davies also considered a second runway at Gatwick, opening up the possibility of alternative decisions, including of course that either both or neither runway may be approved. We have developed a detailed model of how future passenger and freight demand might be distributed around the six airports in the London area under different airport capacity scenarios, in order to assess how much unaccommodated demand would be generated by 2050. We have also assessed how much traffic might be attracted to a re-opened Manston Airport.

These traffic estimates have been inputs to a financial model which AviaSolutions has developed to assess Manston's viability to 2050. We have based our estimates of unit aeronautical revenue, commercial revenue and operating costs on those levels achieved at other UK airports of a similar scale to that projected for Manston. We have also assumed that the site could be acquired for £10 million, and that further capital expenditure of £27 million would be required to re-commission the site as a licensed commercial airport. We further assume that the business is financed initially through an equity injection from shareholders of £50 million with no debt funding.

The scenario recommended to Government by the Davies Commission is the construction of a third runway at Heathrow. Under this scenario, the forecast passenger traffic at Manston would initially grow to almost 2.5 million passengers per annum (mppa) immediately before the opening of the third runway in 2030, but would fall materially afterwards. Retained earnings would not become positive until around 2040, preventing payment of dividends to equity investors until around that date. EBITDA margin would become positive in the early 2030's and grow and reach 41% by 2050. On this basis, we would very much doubt that an informed private sector investor would consider an equity stake in Manston Airport.

The scenario which most supports the re-opening of Manston Airport is one in which no new runways are built in the South East of England in the period to 2050. In this scenario, forecast operating cash flow of Manston Airport is negative until 2025; re-financings of £20 million are required in both 2028 and 2029 to fund terminal expansion; and retained earnings remain negative until 2029 preventing the payment of dividends. Thereafter, financial performance improves significantly, but it is 2043 before EBITDA margin reaches 50%.

It should be noted that these conclusions are based on a set of assumptions that favour Manston Airport at all times, with examples including above market aeronautical yield, aggressive cost reduction projections and minimal acquisition costs, which, while in our opinion are achievable, would nonetheless require some significant management attention. This attention would be focused on two aspects, securing new business at advantageous aeronautical revenue per passengers from LCC's and structuring the business to take advantage of unit cost reduction through scale. . These would not be assumptions which AviaSolutions would suggest are presented as a Base Case to an Investment Committee considering the proposition, but rather ones describing a potential upside scenario. In our experience, it is likely that an Investment Committee would not consider investing on this basis.

This scenario of no runway development in the South East of England before 2050 is also a low probability scenario in our view. It also carries a high risk that a decision in 2016 not to commission another runway could be reversed at any time in the future. If Manston were operational at the time a decision were reversed the impact on the business would be considerable, and the decision is not one in which the owners would have any control whatsoever To give just one minor illustration of the risk, it was reported in early September 2016 that Heathrow Airport Limited was considering requesting permission to operate an additional 19,000 ATMs each year, which if granted would reduce the traffic that might spill to Manston.

The other runway scenarios which collectively are more likely than 'no runway development', produce worse financial forecasts for Manston Airport.

2.5. Conclusions

AviaSolutions concludes that airport operations at Manston are very unlikely to be financially viable in the longer term, and almost certainly not possible in the period to 2031.

3. Manston Airport: History and Development Proposals

3.1. Introduction

In this chapter, we briefly describe the history of Manston Airport and the different development proposals that are currently being tabled. We also summarise the information and views that we gathered during our interviews with each prospective developer of the site.

3.2. Manston Airport History

The history of Manston Airport has been well documented in a series of reports and investigations about its prospects. Like many airports, it started life as a military airfield and played an important role during the Second World War. Although it continued as an Air Force base after the war, civilian operations were permitted. In 1998, the Ministry of Defence sold the site to the Wiggins Group plc, which endeavoured to build up commercial operations, including investment in an airline (EU Jet) to provide passenger services. However, the airline quickly ceased operations in July 2005 and the parent group (renamed Planestation), went into administration.

The following month, Infratil Limited acquired Manston Airport from the administrators, and sought to continue commercial air transport operations. However, without the support of a based airline, passenger numbers returned to the historically low levels experienced prior to EU Jet. In each year that Infratil Limited owned Manston it incurred losses of more than £3 million per annum and wrote off the purchase price of £17 million. Infratil disposed of the airport and associated liabilities in November 2013 for the notional price of £1.

Manston Skyport Limited completed its acquisition of the airport in December 2013, but in the face of continuing financial losses gave notice to staff in March 2014. The airport closed for operations on 15 May 2014.

TDC then explored the possibility of using a Compulsory Purchase Order (CPO) to buy the airport, and then sell immediately onto a private sector investor willing to use the site as a commercial airport. A month-long search yielded a small number of interested parties but further scrutiny indicated that none provided the Council with sufficient confidence that it would be indemnified were it to exercise its CPO rights. This led the Council to reach an initial conclusion in December 2014 that it was unable to find a CPO Indemnity partner.

At the request of RiverOak Investment Corporation (one of the previously interested parties), in May 2015 it started a review of this decision and in October 2015 reached the same conclusion. Nonetheless, at the start of 2016, the Council launched a further search for a CPO Indemnity partner, but this again proved unsuccessful.

In the meantime, the former airport site was sold in September 2014 to the current owners, Stone Hill Park Limited

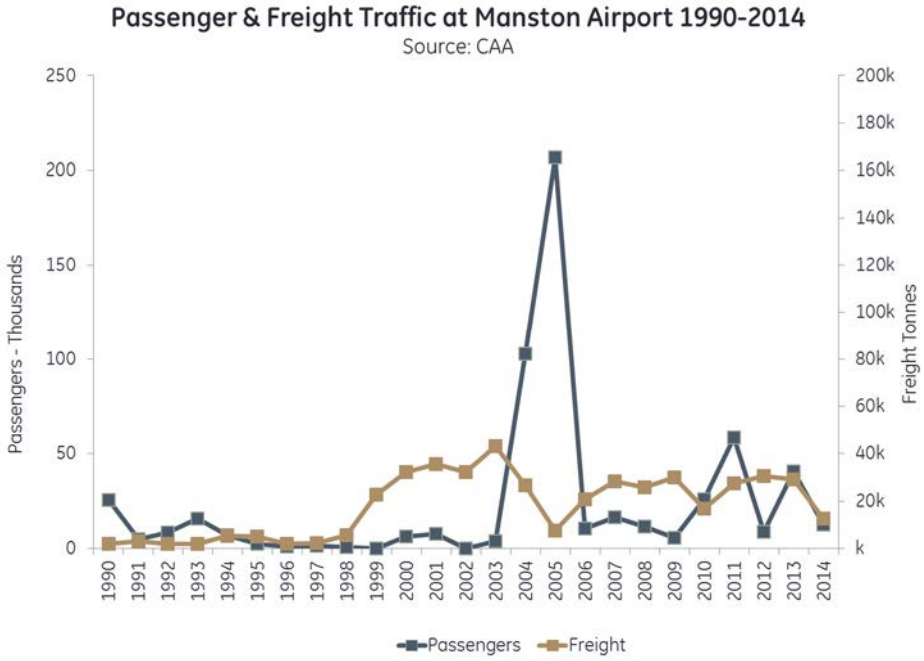
3.3. Commercial Activity at Manston Airport

Immediately after Wiggins Group plc acquired the airport Manston saw an increase in freight traffic. This grew rapidly to circa 30,000 tonnes per annum, however the passenger element of the business stagnated. After Wiggins Group plc invested in an airline specifically for the region, EUJet, the airport saw rapid growth in passengers increasing to 200,000 in 2004. EUJet however, quickly fell into financial difficulty and ceased operations in July 2005 bringing an abrupt halt to the passenger growth.

In the years since, through the ownership of Infratil and Manston Skyport, freight volumes were maintained at circa 30,000 tonnes per annum. Passenger volumes increased with the introduction of Flybe in 2010 but

fell back as the routes were withdrawn. Most recently, KLM began operations from the airport in 2013 but were also withdrawn due to the announcement of the airports closure.

Since being taken into private ownership the airport has averaged 30,500 passengers and 25,000 tonnes of freight per annum, with the peak being 207,000 passengers in 2005 and 43,000 tonnes of freight in 2003.



3.4. Stone Hill Park Development Proposal

Stone Hill Park Limited has lodged a planning application with TDC to construct a mixed development of residential and business units on the site of the former airport.

Stone Hill Park set out its position with regard to the history of the airport, indicating its years of financial losses under various ownerships. The company also outlined the steps that had been taken by management and consultants, both when the airport was operational as Manston SkyPort, and when it came into its ownership, to revive the airport's fortunes. It should be noted that Stone Hill Park indicated that no documents or reports were available to evidence these efforts. Stone Hill Park concluded that the airport site would be better utilised as a redevelopment site than as an airport[1].

3.5. RiverOak Investment Corporation Development Proposal

RiverOak was perhaps the most interested party in TDC's search for an Indemnity Partner to support its consideration of a CPO. It has indicated that its plan for the re-opening of Manston Airport is based on attracting 10,000 annual movements by freighter aircraft.

During AviaSolutions interviews, RiverOak provided a high level review of why it wished to acquire the airport and its vision of the airport's future development. The strategy is to develop a freight hub with supporting passenger services. RiverOak criticised the previous owners' lack of effort to develop air freight traffic at Manston.

[1] The scope of this report does not extend to a consideration of other uses for the airport, and AviaSolutions is therefore not able to comment on the reasonableness or otherwise of the alternative use proposals.

RiverOak was unwilling to disclose any material detail of its Business Plan for reasons of commercial confidentiality. Therefore, the discussion over future viability was at a more generic high-level basis, with RiverOak not disclosing any traffic projections, revenue projections, cost base or specific airlines (passenger or freight) with whom it had discussed plans (with the exception of Ryanair). It did not name any parties that had given firm commitments to use a re-opened Manston[2].

A critical factor for RiverOak's proposal is that in order to establish an airport on the Manston site it will need to obtain ownership of the site from the current owners. They have not secured the site's sale through negotiation with the owners and are currently preparing for a DCO process, a part of which shall aim to demonstrate to the relevant authorities that the airport site is nationally significant transport infrastructure. If successful, RiverOak may then be granted the ability to purchase the site on a compulsory basis. Without this power, there appears little prospect at present of the group securing ownership.

[2] For the avoidance of doubt, AviaSolutions therefore does not offer any opinion about the reasonableness or otherwise of RiverOak's commercial plans for the airport.

4. Potential Development Scenarios

4.1. Introduction

In this chapter, we describe a number of possible development scenarios for Manston Airport. These scenarios have been developed on the basis of our experience of the air transport industry and provided the background for our discussions stakeholders within the air transport industry.

We first describe two scenarios (4.2 and 4.3) that consider possible developments at Manston with regards to cargo and passengers. These scenarios are considered in isolation from decisions made in relation to the provision of a runway in the London area. However, given that Manston is in the South East of the UK, its potential development is likely to be directly influenced by any runway decision. Consequently, we incorporate the first two scenarios into a wider consideration of possible developments in the London area in view of the possibility that Manston might provide some 'over-flow' airport capacity. These considerations are drawn together in our four distinct demand scenarios for Manston Airport.

4.2. Cargo Activity

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.

We also consider whether the scale of activity might be greater than experienced in the past. There would be two possible causes for this:

- 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. We discuss this further throughout the remainder of this chapter.

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.

4.3. Regional Passenger Airport

Manston Airport played a role from the early 2000s until its closure as a local airport serving the East Kent region. Although our research and analysis (described in Section 5) has indicated that its core catchment area produces significantly less demand for air travel than the area around Southend Airport, we consider that it might nonetheless be able to support an operation equivalent to one or two 150-200 seat passenger aircraft operated by a LCC based at Manston. However, the longevity of such a development may be limited since if a new runway were to be built at Heathrow or Gatwick, the LCC concerned would in all probability transfer its aircraft to the new runway. There are many reasons why these aircraft would be re-based, including:

- Gaining access to vitally important catchment area

- Competitive positioning, the major LCCs are likely to fiercely compete and attempt to gain first mover advantages
- The airlines will need to base multiple aircraft at the airport with a new runway in order to achieve economies of scale on the cost lines of their business
- Securing slots at valuable airports to secure slots
- Airlines have finite resources, including the number of aircraft they have to operate. A major structural change in the runway capacity environment will demand that those resources be reviewed and the optimum allocation revised.

In our analysis we make the assumption that the airport quickly ramps up to 800,000 passengers per annum on this basis until such a time as a new runway is opened, at which point the aircraft are re-based and the passenger traffic lost. This volume of annual passengers is equivalent to two B737-800 based aircraft with a typical LCC seat configuration. We also assume that Manston would not feature in the network plans of airlines for non-based aircraft.

4.4. Runway Development in the South East

The shortage of airport capacity in the South East of England has been widely debated for many years, if not decades. The most recent public investigation was undertaken by the Davies Commission which reported to Government in 2015. No decision on its recommendation to provide a third runway at Heathrow has yet been made, although one is expected in October 2016. Even if a decision is made as currently planned, it could be ten years or more before that runway would be operational. The Davies Commission considered a long list of possible locations for additional runway capacity in the South East, although it should be noted that Manston Airport (still open at the time) was not one of them, and despite its available capacity a new runway was still deemed necessary.

The Commission short-listed two schemes at Heathrow for a third runway (LHR3) and the provision of a second runway at Gatwick (LGW2), and recommended LHR3. During the next ten years, there will be a shortage of airport capacity in the South East, leading to a scenario in which Manston acts as an overflow airport for demand that cannot be accommodated elsewhere. We consider that there are four possible outcomes from the Government's current decision process:

- Build LHR3: While in line with the Davies Commission recommendation, this choice would nonetheless be the most controversial, and probably take the longest time to deliver.
- Build LGW2: It is likely that a runway at Gatwick would be available earlier than at Heathrow. It is probably the outcome that would be least supportive of a re-opening of Manston Airport, since Gatwick is the closest airport to Manston, and a runway there is likely to be operational several years before one at Heathrow.
- Build both: Should Government indicate that its policy would permit both to be built, Gatwick shareholders might well conclude that while its runway could be operational first, there would be a significant risk of loss of traffic to Heathrow as and when its additional runway opened.
- No expansion: It is possible that Government will not sanction any runway expansion in the South East. It is the outcome that would be most supportive of a re-opening of Manston Airport, albeit an outcome that could be reversed at any time in the future, thereby depriving a re-opened Manston of traffic.

It is feasible that there would be a legal challenge, irrespective of which of the above possibilities were chosen (possibly less so with the fourth 'do nothing' option), further delaying the opening of a new runway. It is unclear whether the Government's decision would indicate simply its preferred location with the airport operator then following the normal planning process to obtain the necessary permissions, or whether it would seek to provide the permissions through a Parliamentary process.

4.5. Dynamics of Traffic in the London Airport System

The six airports of the London Airport system all have different owners, and each has a particular characteristic in the traffic which it handles. However, there is a dynamic in the distribution of traffic between the airports, which also have a particular hierarchy.

Heathrow is the premier airport, and there are numerous examples of airlines moving services there when they are able to do so. This has been evidenced with airlines purchasing slots from incumbent Heathrow

airlines, for example in February 2016 Oman Air purchased a pair of Heathrow slots from Air France-KLM for a reported $75 million.

Gatwick is clearly the second airport in the system, and secondary slot trading is also beginning to take place. The airports of Stansted and Luton to the north of London play similar roles in supporting the low cost airline market. London City Airport is very much a niche airport and has marginally relieved pressure on Heathrow by serving an increasing range of short haul (often business-oriented) destinations. The least busy airport is Southend which has grown again in the last few years as a result of easyJet basing two to three aircraft at the airport.

4.6. Model Scenarios

Before the construction of a new runway at Heathrow and/or Gatwick, there is expected to be a shortage of airport capacity with passenger demand growing. We have developed a simulation model to estimate the size of unaccommodated demand at one airport, and how the demand might respond to an airport capacity shortage. Our demand cascade follows the form of:

- Some passengers using the airport to connect between flights will choose to use other airports as their connection point (voluntarily to avoid over-crowded facilities and delayed flights, or as a consequence of airlines increasing fares to such passengers);
- Some passengers will choose not to travel, or not to travel by air (as air fares are increased);
- Some passengers will endeavour to use another London airport; and
- The remaining potential travellers are available for attraction by UK airports other than the six London area airports.

We have used our experience and discrete analyses to determine the likely sizes of the first two categories above, and then estimated the passenger handling capacities of the airports. In general, this is based on the number of Air Transport Movements (ATMs) that each airport's runway system can handle[3] and the average number of passengers per ATM at the airport. There is a long-term and widespread trend for passengers per ATM to increase, meaning that the passenger handling capability of an airport can grow even though there may be no change in the number of ATMs that it can handle. We have also divided the maximum ATMs between passenger and freighter operations, maintaining freighter operations at the average level seen over the five years 2011 to 2015[4], except at Stansted. Within this model we have also considered freight demand and the ability of airlines to carry this demand, either on the dedicated freighter ATMs or in the belly-holds of passenger aircraft.

Once the total unaccommodated demand for the London System has been identified we then apply analysis to identify the share of this unaccommodated demand Manston might attract. These 'spill' demand scenarios are in addition to the base loads of 800,000 passengers (up until a new runway) and 30,000 tonnes of freight. Our demand scenarios are therefore:

- LHR3: The spilled passenger demand Manston would capture if a third Heathrow runway were developed and in addition 800,000 passenger per annum and 30,000 tonnes or freight per annum until FY2030.
- LGW2: The spilled passenger demand Manston would capture if a second Gatwick runway were developed and in addition 800,000 passenger per annum and 30,000 tonnes or freight per annum until FY2025.
- Both: The spilled passenger demand Manston would capture if a third Heathrow runway were developed and a second Gatwick runway were developed and in addition 800,000 passenger per annum and 30,000 tonnes or freight per annum until FY2025.
- No Runway: The spilled passenger demand Manston would capture if no new runway were developed and in addition 800,000 passenger per annum and 30,000 tonnes or freight per annum until FY2050.

[3] *In the cases of Heathrow, Stansted and London City there are also statutory limits*
[4] *One of Stansted's S106 conditions specifies the division of ATMs between passenger and freighter, with freighter ATMs being 20,500 per annum, and passenger ATMs 243,500 per annum*

4.7. Development Options Outside of Scenarios

We have not included in the possible scenarios any development that does not include commercial air transport operations. Hence, we do not consider the potential use of the Manston site as; a Maintenance, Repair and Overhaul (MRO) centre, an aircraft refurbishment or fit-out location, aircraft 'tear-down' or storage centre, or flight training facility. These and similar activities are often sought by owners of airports with low levels of aircraft activity as a means of generating ancillary revenue to boost income. However, the operators of these businesses are often flexible about the location of the works, and as such, the businesses providing these types of activities are highly sought-after by existing airports and the businesses are able to negotiate favorable commercial terms.

Given the intense competition that exists for these types of business, in our judgment no private sector investor would re-open Manston Airport based primarily on this type of activity. Similarly, while the site has an historic position in aviation and has a heritage centre, and this activity could add to viability, this would be only a marginal financial contribution and would be dependent on there being a commercially viable airport around which to build such an activity.

We also discounted the possibility of Manston developing as a business aviation (GA) centre: it is simply too distant from London to be an attractive offering to corporations and high net-worth individuals using private jets and would struggle against established airports such as Farnborough and London City.

5. Passenger Analysis

5.1. Introduction

In this section, we discuss the passenger market both at Manston and in the London Area as a whole. We then explore the potential demand scenarios outlined in section 4.6.

5.2. Historic Passenger Traffic at Manston Airport

Various passenger services have operated at Manston Airport in the past. In general, they were consistent with the type that might be expected at a small UK regional airport, namely scheduled services to major short haul domestic and European destinations, supplemented by charter flights to the more popular Mediterranean holiday resorts.

Passenger volumes peaked in 2005, when EUJet, then a subsidiary of Planestation, was operating from Manston Airport. A large number of destinations were served, although EUJet was achieving a load factor of only 41% when it ceased trading in July 2005.



Destinations/Origins of Manston Airport Passengers, 2005

Airport	Passengers	Airport	Passengers
Edinburgh	32,259	Gerona	6,177
Dublin	26,879	Newcastle	5,118
Amsterdam	16,600	Belfast	4,563
Manchester	15,091	Barcelona	4,351
Malaga	14,119	Ibiza	3,657
Prague	10,434	Shannon	2,897
Nice	9,848	Valencia	2,316
Murcia	9,774	Glasgow	2,200
Alicante	7,822	Madrid	2,077
Palma	7,584	Other international	12,186
Geneva	6,801	Other domestic	18
Faro	6,502	Total	209,273

Source: CAA Airport Statistics

After EUJet ceased trading, passenger volumes fell dramatically, and remained persistently below 20,000 per annum until 2010/11 when Flybe commenced some limited flying to domestic destinations. The service to Manchester performed poorly, with an average load factor of 26% (source: CAA) and was soon terminated. A Belfast service had a marginally better load factor at 44% but ultimately was unsustainable. The highest performing route in terms of load factor was to Edinburgh which reached a load factor of 53% Passengers were mainly outbound from Manston and travelling for personal or leisure reasons resulting in fare yields being relatively low. The culmination of this poor demand resulted in Flybe ceasing services from the airport (source: Flybe Interview).

In 2013, KLM commenced a twice daily service on weekdays from and to Amsterdam, aiming to feed its connecting hub at Schiphol as well as facilitating travel to and from the city. KLM operates to many airports in the UK on this basis and in 2013, KLM carried nearly 36,000 passengers. However, in that same year, a further 48,000 passengers from Manston's core catchment area travelled to Amsterdam from other London Area Airports, meaning that the Manston service captured just 42% of the demand that arose from Manston's core catchment area (albeit services started only in April 2013).

Passengers to Amsterdam, 2013

London Area Airport	Passengers to Amsterdam from Manston Catchment Area, 2013
Heathrow	22,008
Gatwick	20,048
London City	4,091
Stansted	1,932
Luton	596
Total	48,675
Passengers on KLM service from Manston	35,854 (42%)
Total Catchment Area Passengers to Amsterdam	84,529 (100%)

Source: CAA Passenger Survey (N.B. Southend not included in survey)

5.3. Local Demand

We have defined an area of eastern Kent as Manston's core catchment area, as shown in the diagram below.



To gauge the demand from Manston Airport's core catchment, we analysed the number of journeys from the core catchment to a basket of easyJet destinations (using Southend Airport's easyJet network as a typical example). The London airports captured 517,000 air journeys to these UK domestic and short haul

European destinations[5]. This figure does not include the small number of passengers that travelled via Manston to Amsterdam in the first three months of the year.

District	Passengers from Manston's Catchment Area
Ashford	59,463
Canterbury	78,339
Dover	48,575
Maidstone	74,279
Medway	131,123
Shepway	41,159
Swale	47,074
Thanet	37,315
Total Using London Area Airports	**517,327**
Passengers on Services from Manston	**12,344**
Total Catchment Area Passengers to these points	**529,671**

Source: CAA Passenger Survey (N.B. Southend not included in survey)

In contrast, in 2014, the core catchment area for Southend generated more than 580,000 passengers to and from these points flying from the other London Airports. This is in addition to the passengers carried by easyJet from Southend to these destinations.

A proportion of the passengers that used services from Southend will have come from outside the airport's core catchment area. The analysis indicates that the maximum proportion of demand from a core catchment area that a small airport might attract is around 60%. This assumed percentage capture is broadly in line with the 42% capture by KLM from Manston during its first nine months of operations in 2013.



Airport Used	Passengers from Southend Catchment Area
Gatwick	270,450
Stansted	251,443
Heathrow	21,978
London City	20,868
Luton	16,820
Total using London Area Airports	581,559 (38%)
Passengers on easyJet services from Southend	959,523 (62%)
Total Catchment Area Passengers to these points	1,541,082 (100%)

Source: CAA Passenger Survey (N.B. Southend not included in survey)

If this same percentage were applied to the 2014 demand from Manston's core catchment area, it suggests that the maximum number of passengers that might be attracted to these points on services from a re-opened Manston would be some 330,000 per annum (529,000 x 62%). To sustain operations, it is therefore conceivable that Manston would, like Southend, almost certainly need to attract passengers from outside its catchment area. Southend is some 55 minutes from central London by rail (with pedestrian access between airport terminal and station), while Manston is scheduled to be 75 to 105 minutes from

[5] *Barcelona, Belfast, Amsterdam, Faro, Alicante, Ibiza, Malaga, Jersey, Palma. Geneva, Venice, Edinburgh, Berlin, Krakow, Tenerife*

Central London. Manston would face a significant challenge to match Southend's attraction to passengers from central London.

Train to London from airport, (Assumes Ramsgate connection for Manston)

Airport	Train to London	Connect to Terminal	Vs. Manston
Heathrow	15 minutes every 15 minutes from Paddington	Direct to terminal	75 minutes quicker
Gatwick	30 minutes every 15 minutes from Victoria	Direct to terminal	60 minutes quicker
Stansted	50 minutes every 15 minutes from Stratford / Liverpool Street	Direct to terminal	40 minutes quicker
Luton	40 minutes every 10 minutes to Kings Cross St Pancras	10 minute shuttle	50 minutes quicker
London City	On the DLR Line	Direct to terminal	Variable
Southend	53 minutes to Liverpool Street, 44 minutes to Stratford. 8 trains an hour at peak	Direct to terminal	37 minutes quicker
Manston	75 - 105 minutes to Ramsgate, four trains per hour to Kings Cross St Pancras	15 minute shuttle	n/a

Source: Airport website, national rail

This potential level of passenger demand at Manston for short haul services would be approximately equal to that which could be handled by one 150 seat narrow-body aircraft (such as a Boeing B737 or an Airbus A319) operated by an LCC based at Manston.

5.4. Airline Interviews

AviaSolutions spoke to several passenger airlines with regards to potential future operations at Manston airport. More detailed notes are provided in Appendix A.

Ryanair provided the most positive indication of future service concluding that:

> '*Ryanair are constantly reviewing their network and remain open to approaches from any airport. If the airport became operational, the airline would review its potential and fit within the wider airline network in due course, and is available to discuss terms with the owners at any time*'
> Ms. Kate Sherry, Deputy Director of Route Development, Ryanair

Whilst Ryanair remained somewhat open to the possibility of future services, it was in our opinion, far from a commitment to serve Manston airport if it should re-open. We received a similar positon statement from KLM, effectively citing that a re-opened Manston would be included in the annual network review.

Discussions with other carriers indicated a less positive outlook for the airport, with Flybe, an airline that had previously served Manston stating:

> '*It is unlikely that, even if Manston should reopen, the airline would choose to serve the airport.*'
> Mr. Martin Pearce, Flybe

Other airlines and individuals interviewed had similar stances, stating that:

> '*...Manston would not be a consideration for us...*'
> Major European LCC

and that:

> '*Following the BREXIT vote many airlines will be considering their approach to the UK. During a period of uncertainty, it will be difficult for Manston to convince carriers to open routes to the airport*'
> Ex-Director of Network Route Development for Major European LCC

We also discussed with a major UK carrier its views on Manston Airport as part of an operational resilience strategy. This is an aspect of the airport which has been made promoted as a potential benefit to the UK aviation sector. Flight Operations within an airline is a highly scrutinised function, in particular with regards to fuel and diversionary airport selection. When calculating a Flight Plan, airlines plan contingency fuel based on regulatory standards that ensure sufficient fuel is available upon landing, meeting this minimum landing fuel is a core part of the duty of all aircraft commanders. Our contact stated that:

'It is my personal view that Manston does not offer any safety or resilience benefits of a material nature to the UK system. The airport is located in close proximity to six London airports which offer excellent resilience already'
Manager, Flight Operations, Major UK Carrier

Based on AviaSolutions interviews in relation to passenger services, we conclude that whilst there is some notional interest in passenger services at Manston Airport, no airline was committed at present, or in the future seeking to serve to the airport should it re-open. No airline wished to give any more commitment beyond that it would consider Manston as part of their process of reviewing their network.

5.5. Potential Overflow from London Area System - Model

We outlined in Section 4 the principles on which we have based our model of how passenger traffic might cascade around the London Area Airport system. In this section we set out the main assumptions and results.

Capacity
The starting point of our assumptions is the ATM capacity of the London airports. At a number of airports, the ATM capacity has a statutory cap (as opposed to an estimate based on its physical capacity). At these airports we have assumed up to 97.5% of the movement cap to reflect constraints on the optimal scheduling and peak demand profiles.

Airport ATM Capacity

Airport	Annual ATM Capacity	Comment
Heathrow	480,000	With two runways. Statutory limit
	720,000	With three runways, from 2030 if added
Gatwick	280,000	Estimated capacity of single runway
	480,000	With two runways, from 2025 if added
Stansted	264,000	Statutory limit. Includes 20,500 for freight flights
Luton	100,000	Estimated. Statutory passenger cap of 18 mppa
London City	111,000	Statutory cap (noise-adjusted) - passenger limit of 6.5 mppa
Southend	53,300	Statutory cap

These ATM capacities are converted into a passenger capacity by multiplying by the average number of passengers per ATM. Passengers per ATM have historically increased over time as a result of larger aircraft with more seats and the increase in the number of seats occupied (the load factor).

We have assumed a continuation of this trend, although at a rate of 0.5% per annum, much lower than seen in recent years. It may be seen that even by 2050, the number of passengers per ATM with this assumption never exceeds 200 at any airport. This assumption acts to increase the demand that cannot be accommodated at the six London Area airports. However, it is likely that when faced with runway capacity constraints, airlines will increase passengers per ATM at a faster rate than would otherwise be the case. Our assumed rate of increase is consequently likely to lead to an over-estimation of the demand that is available to be handled at Manston.

Passengers per ATM

Airport	Passengers per ATM					CAGR 2011 to 2015	CAGR 2015 to 2050	Pax per ATM 2050
	2011	2012	2013	2014	2015			
Heathrow	146.6	149.5	155.0	156.8	159.7	2.2%	0.5%	190.2
Gatwick	137.9	142.5	145.2	149.7	153.5	2.7%	0.5%	182.8
Stansted	142.3	144.1	146.3	149.2	155.9	2.3%	0.5%	185.6
Luton	136.4	139.0	141.8	143.3	145.1	1.5%	0.5%	172.8
London City	49.2	46.9	49.7	52.0	54.5	2.6%	0.5%	64.9
Southend	33.8	84.9	102.4	95.5	100.4	5.7%*	0.5%	119.5

* 2012 to 2015

Demand

We have based our forecasts of future passenger traffic on those set out in the Davies Commission Report - unconstrained carbon traded forecast (the most optimistic). Given that the early forecast volumes have been superseded by actual performance, we have uplifted the forecast figures to reflect actual demand seen across the London System in the intervening years.

Demand Allocation London System

Demand is then compared to capacity available, and assigned to the airport which Davies assumes is its natural first choice. The greatest demand is for Heathrow, and traffic not accommodated there is assumed to (a) spill to other non-London Area airports for connecting traffic, (b) 5% is assumed not to travel (by air), or (c) spill to Gatwick.

A similar process is then followed for Gatwick, with any unallocated demand being allocated to one of the other four London Area airports, until each has reached its capacity. At this point, any unaccommodated demand becomes available for other airports outside the London System to handle. We summarise below the forecast demand at the London Area airports in 2050 for each of our defined scenarios, together with unaccommodated demand.

Forecast Passenger Demand (mppa) at London Area Airports, 2050

Airport	Scenario			
	LHR R3	LGW R2	Both	Neither
Heathrow	134	89	134	89
Gatwick	51	88	88	51
Stansted	45	45	45	45
Luton	17	17	17	17
London City	7	7	7	7
Southend	2	2	2	2
Unaccommodated	44	40	5	79

Unaccommodated Demand (mppa) by Scenario and Year

Year	Scenario			
	LHR R3	LGW R2	Both	Neither
2020	5	5	5	5
2025	11	9	9	11
2030	17	6	2	25
2035	9	9	4	36
2040	16	16	5	49
2045	27	27	3	61
2050	44	40	6	79

Demand Allocation - Regionals

This Unaccommodated Demand is potentially available to airports other than the six London airports and specifically to airports in regions other than the South East as well as to Manston. Using CAA data, we have calculated the origin and destination distribution of passengers at the London Airports split by the part of the UK they are travelling either to or from. This indicates that 49% of total passengers are travelling to or from Greater London and 4% to or from Kent. We have assumed that the distribution of future Unaccommodated Demand matches the pattern of demand seen in 2014, such that if 100 passengers were unaccommodated, 49 of those are travelling to or from Greater London and 4 to or from Kent.

We have then estimated how much of this Unaccommodated Demand Manston may reasonably be assumed to capture. Given its location in Kent it is reasonable to assume it would capture a large share of the Unaccommodated Demand for Kent (4 passengers in the example above). We have assumed that this share is 90% (90% of the 4 passengers). Applying a similar logic, we assume that the Greater London passengers would have more choice and therefore Manston would capture a smaller share of this market. We have assumed Manston will captures 10% of the Greater London market (10% of the 49 passengers).

It is also important to recognise that currently 27% of passengers using the London Area airports do not have origins or destinations in the South East region, but use surface means to access the air services at the London airports. It is our view that airlines will consider adding additional capacity at airports to the North and West of London (potentially Southampton, Bournemouth, Cardiff, Birmingham, Manchester) to dissipate this excess demand and permit the London System to absorb the demand growth in the Greater London area. These non-London airports, in general, have a wider catchment area already provide services from many carriers with the associated economics of scale and mature presence in these markets.

Surface Origin/Destination of Terminating Passengers at London Area Airports, 2014 (mppa)

Area	LHR	LGW	STN	LTN	LCY	Total	%
South East	36.0	28.1	11.6	10.2	3.3	84.2	73%
of which							
Greater London	24.9	15.0	10.1	5.3	3.1	56.7	49%
Kent	0.9	2.5	0.4	0.1	0.1	4.1	4%
Other UK regions	11.3	7.2	7.5	5.0	0.3	31.2	27%
Total Terminating	47.3	35.2	19.1	10.2	3.6	115.4	100%
Connecting	25.8	2.6	0.8	0.2	0.1	29.5	
Total Terminal	**73.1**	**37.9**	**19.9**	**10.4**	**3.6**	**144.9**	

Source: CAA Passenger Survey

In addition to this overflow of unaccommodated demand, in each of our scenarios we have added the introduction of an LCC base of two aircraft supporting 800,000 passengers per annum from 2018, equivalent to two Ryanair B737-800 aircraft. This base continues at Manston until a new runway is opened at Heathrow and/or Gatwick. In the year when new capacity is introduced, the Manston based aircraft are assumed to transfer to the airport with the new runway, as the airline concerned seeks to establish presence at that airport at the same time as consolidating its operations in the London area.

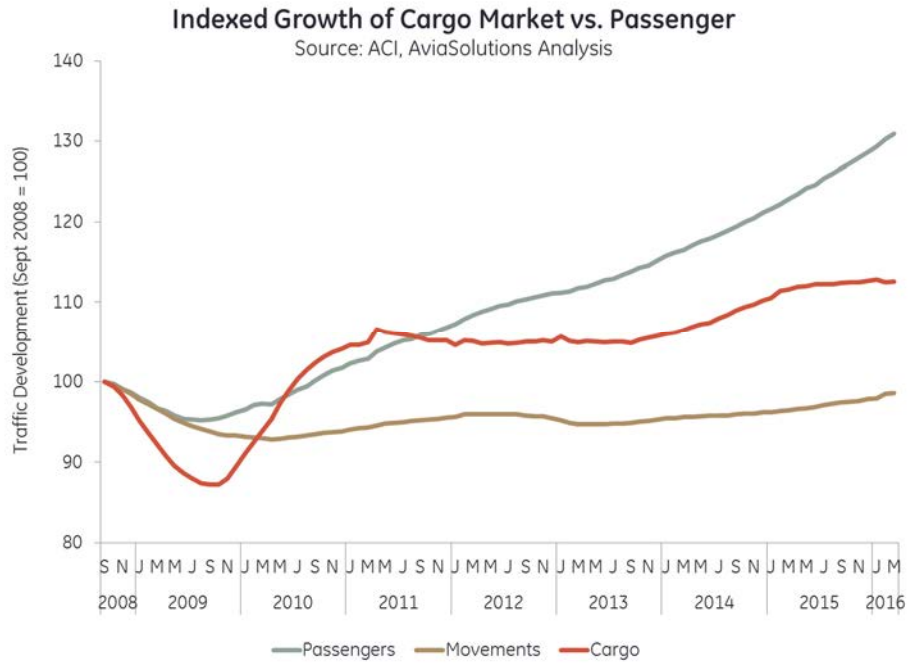
6. Cargo Analysis

6.1. Introduction

In this chapter we examine the air cargo market and its overall prospects. We also consider how freight traffic might develop at Manston Airport in our scenarios.

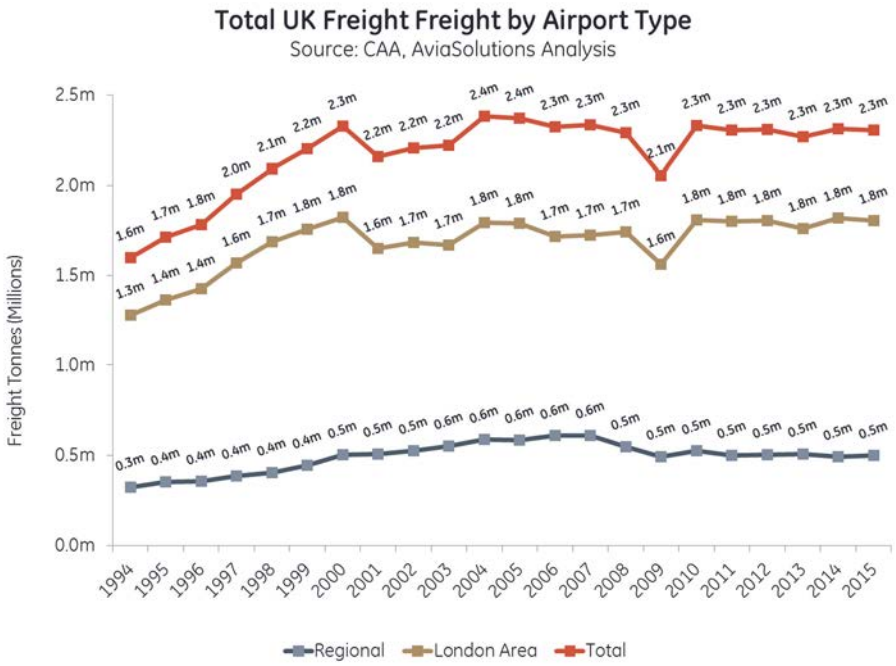
6.2. Overall Cargo Market

The air cargo market declined significantly after the global financial crisis of 2008. Although cargo volumes recovered to previous levels within two years following the crash in 2008, growth over the last five or six years has been modest.



A similar pattern has been observed in the UK. Indeed, total air freight handled at UK airports has been virtually constant at around 2.3 million tonnes per annum since 2000, with the exception of reductions immediately after the start of the recession in the early 2000s and the financial crisis in 2008. Prior to this period, demand for air freight had grown at CAGR of 8% since 1990.

There is a reasonably even split between freight set-down (imports for international freight) at 52.5% and freight picked-up (exports) at 47.5%. More than 95% of UK air freight in 2015 was international.



Within this national context, individual airports' performance has varied, with the five London area airports (Heathrow, Gatwick, Stansted, Luton and City) increasing their aggregate share slightly to just under 80%, with regional airports reducing by an equivalent amount.

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[6], 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.

Air freight activity in the UK is highly concentrated, with just six airports handling 95% of the UK's air freight volume.

[6] *Stansted's freight ATMs declined from 13,967 in 2000 to 9,956 in 2015*

Freight by UK Airport

Airport	Freight (Tonnes) 2013	2015	% of 2015 Total	Cumulative Share	% carried on Freighters in 2015
Heathrow	1,422,939	1,496,551	65%	65%	5%
East Midlands	266,968	291,689	13%	78%	100%
Stansted	211,952	207,996	9%	87%	100%
Gatwick	96,724	73,371	3%	90%	0%
Manchester	96,373	100,021	4%	94%	10%
Manston	29,306	-	0%	94%	100% (2013)
Belfast International	29,288	30,389	1%	95%	100%
Luton	29,074	28,008	1%	97%	96%
Birmingham	21,067	7,164	0%	97%	0%
Edinburgh	18,624	19,322	1%	98%	99%
Total	**2,267,812**	**2,304,345**			**30%**

Source: Analysis of CAA Statistics

In 2015, there were around 60,000 ATMs by all-freight aircraft across UK airports. These were split almost equally between international and domestic operations. Freight movements are relatively concentrated on a small number of airports, with East Midlands and Stansted accounting for 64% of movements in 2015.

Airport	Freighter ATMs Domestic	International	Total	Int. as % of 2015 Total
Heathrow	3	2,385	2,388	8%
East Midlands	9,603	12,516	22,119	42%
Stansted	3,445	6,511	9,956	22%
Gatwick	0	3	3	0%
Manchester	205	830	1,035	3%
Belfast International	4,091	17	4,108	0%
Luton	183	1,519	1,702	5%
Birmingham	0	0	0	0%
Edinburgh	3,883	1,088	4,971	4%
Other	10,136	5,032	15,168	17%
Total	31,549	29,901	61,450	100%

Source: Analysis of CAA Statistics

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.

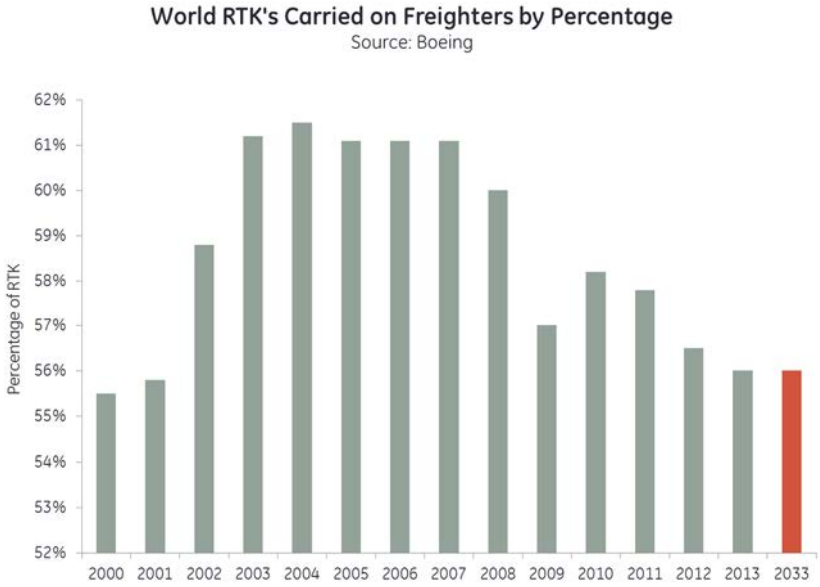
As passenger demand increases additional belly-hold capacity will enter the market. This capacity growth is unhooked from the demand scenario for belly-hold cargo and can result in excess capacity in the market. As a result airlines will often sell this belly-hold capacity using a marginal cost pricing 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

structure, belly-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.

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 belly-hold 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.



Manston

Before its closure in 2014, Manston Airport was the sixth busiest airport in the UK for freight. For the last ten years of operations the airport handled between 25,000 and 30,000 tonnes of freight annually, representing just over 1% of the UK market (refer table 'Freight by UK Airport' on previous page)

In 2013, the overwhelming majority of the airport's freight was carried on all-freight aircraft, CargoLux being the primary operator. There were 511 freighter movements (landings or take-offs) during the year, with an average of 57 tonnes of freight per movement. In reality Manston was almost exclusively used for imports, and this averaged 107 tonnes per import, with virtually no export volume.



6.3. Freight Industry Interviews

Our discussions with representative of the cargo industry indicate that much of the cargo at Manston was fresh produce from Africa. The airport was popular with shippers as it was uncongested, offered good quality handling services (provided by airport staff) and the airport charges were competitive. While it is close to continental Europe, airlines/shippers nonetheless had to incur the costs of flying freight aircraft virtually empty on the return leg to their base airport (e.g. Luxembourg, Ostend and Liege) after off-loading. When Manston closed, it is understood that some movements transferred to Stansted, whilst others switched to airports on the near-Continent and their loads trucked across the Channel to the UK.

Our primary interest in interviewing representatives of the freight industry (current and former executives), and previous users of the airport was to assess potential future use. It was clear from these discussions that whilst the airport clearly offered a professional service, the strategic position of the airport was a clear disadvantage.

> *'Airlines base the decision on where to operate their freighters based on a multitude of factors. However, the overriding factor is based on where investments in infrastructure have been made by*

their clients, freight forwarders. These capex investments by freight forwarders are required to ensure they maintain economies of scale through their transit facilities and distribution centres. In the UK, these investments are centred at Heathrow, and more recently Stansted'
Senior Executive in Cargo Division for airline operating freighters at Stansted.

The individual went on further to discuss the possibility of relocating his freighters to Manston Airport and was unequivocal in his position:

'The airline would be extremely unlikely to consider moving services to Manston, even if we were no longer able to serve Stansted, regardless of the commercial terms offered. If the airline had to move services, we would consider East Midlands and Manchester or other centrally located airports before Manston'
Senior Executive in Cargo Division for airline operating freighters at Stansted

This view was echoed by Mr. Stanley G. Wraight, a cargo professional with a global reputation, and over 40 years' experience in the cargo industry:

'The conclusion is there is virtually no incentive for operators to move operations to Manston, there are alternative UK airports that offer competitive services on reasonable terms. The UK doesn't need another airport for freight that has no USP. If Manston were to be developed it would be essential for it to gain a niche market such as becoming an Amazon or Alibaba e-commerce base'
Mr. Stanley G. Wraight – Senior Executive Director Strategic Aviation Solutions Limited

Balancing this view were those of an air cargo charter broker who had previously used Manston for charter services. The airport had offered excellent service and, while the broker's use might be for a moderate level of ATMs, it would be keen to re-establish a presence, provided the right commercial terms could be agreed:

'...we would certainly be interested in using the airport again if it re-opened but in order to do so, we would be looking to secure competitive rates for landing, parking and screening charges...'
Air Cargo Charter Broker – UK

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.

6.4. Potential Future Freight Operations - Model

Based on our research and analysis, it is AviaSolutions' view that if Manston were to re-open as an airport, it would attract some dedicated freighter operations. However, in the absence of a firm commitment from a multinational to establish a distribution centre near Manston, the growth of freight activity at the airport would be in line with historic performance, with incremental growth resulting from a general expansion of the UK cargo market and a diversion of freighter flights if these were constrained at Stansted.

Demand

There are very few national forecasts for the development of air freight. One example is the report developed by Oxford Economics and Ramboll for Transport for London as part of the investigation of the development of an estuary airport for London. A potential cause of the stagnation of growth in air cargo since 2000 was identified as the increase in oil and jet fuel price. Trend forecasts were based on average growth from 2000 to 2012 (the Lower Bound) and from 1990 to 2012 (the Upper Bound). The difference in growth rates of the two periods produce very different forecast outcomes.

Average Annual Growth	Period	London Area Airports	UK

Belly Hold Cargo	1990-2012	2.95%	2.87%
Belly Hold Cargo	2000-2012	0.49%	0.48%
Dedicated Cargo	1990-2012	2.76%	3.52%
Dedicated Cargo	2000-2012	0.02%	0.40%

Source: Oxford Economics

We note that despite being one of the world's leading economics consultancy's, Oxford Economics relied on a forecasting technique based on historic trends, rather than econometric regression analysis seeking to correlate historic growth in air cargo with changes in external/exogenous variables such as GDP, international trade etc. that might be driving the freight growth. Boeing and Airbus base their long term forecasts on GDP changes. The Oxford Economics' approach is consistent with it either not being confident in any relationships that exist, or simply not finding any explanation for the stagnation of air freight. Certainly, the forecasts produced have an exceptionally large range between low and upper bounds, which indicate the difficulty of forecasting cargo growth with confidence.

We have used the mid-point of these forecasts to drive our cascade model of how traffic might be distributed across the London area airports as and when airport capacity becomes constrained. We have estimated available capacity for cargo based on belly hold capacity generated on passenger services and on dedicated freighter flights.

Capacity

We have considered only belly-hold capacity Heathrow and Gatwick. 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. In an environment of freight growth, we have assumed this figure would increase at 1% per annum, reaching 4.3 tonnes per ATM in 2050, a load factor of 61%.

Currently, the majority of flights (85%) at Gatwick are narrow-bodied aircraft to short haul destinations, and likely to carry minimal volumes of freight. We estimate Gatwick's belly-hold capacity to be two tonnes per ATM. In 2015, actual belly-hold loads averaged less than 0.3 tonnes per ATM. We have assumed that this increases at 1.5% per annum, and reaches just over 0.3 tonnes per ATM in 2050, reaching a load factor of 15%.

We have assumed that the number of dedicated freighter flights remains at the average activity of the last five years at Heathrow and Luton. However, at Stansted permitted freighter movements may approach the statutory cap of 20,500 per annum. We have not included freighter movements at any of the other London airports. As the capacity per ATM on freighters at both Heathrow and Stansted was significantly above the loads actually carried, we have assumed that loads on freighters at these airports would grow by 1.5% per annum if UK freight market was growing at the forecast rate noted above. These assumptions take average loads on freighters to 55 tonnes and 53 tonnes respectively in 2050, still materially lower than the available capacity. We have assumed that the average load on freighters at Luton continues at 2015 levels.

Airport	Capacity Type	2011	2012	2013	2014	2015	Capacity 2015
Heathrow	Belly Hold load (tonnes)	3.0	3.0	2.9	3.0	3.0	7
	Freighter ATMs	2,456	2,380	2,365	2,084	2,388	2,388
	Freighter load (tonnes)	31.3	30.0	29.9	32.8	32.9	83
Gatwick	Belly Hold load (tonnes)	0.4	0.4	0.4	0.3	0.3	0.3
Stansted	Freighter ATMs	9,359	9,602	9,788	9,340	9,741	20,500
	Freighter load (tonnes)	20.3	21.3	21.2	21.7	21.0*	80*
Luton	Freighter ATMs	1,717	1,810	1,716	1,520	1,701	1,693
	Freighter load (tonnes)	15.6	15.9	16.3	15.1	15.8	15.8

* The average load in international freighter ATMs in 2015 was 31.7 tonnes per ATM, and the capacity on these movements 80.3 tonnes. We have used this as our forecasting base since most freight traffic is international.

Demand Allocation

These assumptions indicate that all forecast freight demand can be accommodated in all scenarios up to 2045. It is only in this year that some demand remains unaccommodated in two of the scenarios, although by 2050 there is unaccommodated demand in all scenarios.

Unaccommodated Demand (Tonnes x 1,000) by Scenario and Year

Year	Scenario			
	LHR R3	LGW R2	Both	Neither
2020	0	0	0	0
2025	0	0	0	0
2030	0	0	0	0
2035	0	0	0	0
2040	0	0	0	0
2045	0	35	0	123
2050	173	178	62	278

There is strong anecdotal evidence that a material proportion, probably around 20%, of air freight flying to and from the UK actually originates or is destined for continental Europe and is trucked across the channel. We have assumed that 20% of unaccommodated demand is lost to the UK air freight industry and flies from continental European airports. 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.

7. Financial Analysis

7.1. Introduction

In this section, we present the findings of our financial analysis based on the passenger and cargo forecasts set out in the earlier sections following an assumed re-opening of Manston Airport. The principles of the financial model and underlying assumptions are explained, followed by the outputs of the model for the Heathrow Third Runway scenario as it is the recommendation of the Davies Commission to Government. Finally, we present summary results of the other scenarios. A more comprehensive description of the outputs for the other scenarios is given in Appendix C.

7.2. Model Description and Input Assumptions

7.2.1. Financial Model

AviaSolutions has developed a model to assess the financial viability of a re-opened Manston Airport. This model assesses the financial performance of the airport based on various assumptions for four London area capacity scenarios which result in different demand scenarios for Manston. The assumptions have been developed in a number of different ways and draw on a wide range of sources including; analysis of the wider aviation industry, published financial accounts of the companies responsible for Manston Airport, benchmarking of comparable airports, information from our stakeholder interviews and our independent judgment based on knowledge and expertise within the aviation industry.

7.2.2. Brief Overview of Model

The model simulates the financial performance of the airport under different scenarios. This performance is measured through simplified financial statements including a Profit and Loss Statement (P&L), Cash Flow Statement and Balance Sheet. It should be noted that these are simplified statements used to illustrate performance and have not been produced to GAAP standards. The financial statements are modelled over a period from FY2017 to FY2050, on the assumption that the airport is reinstated on the site in FY2018. The Financial Year is assumed to correspond to the calendar year. This time period is typical of that used to evaluate long term infrastructure assets such as an airport, and the specific dates correspond with the period of the passenger forecasts used by the Davies Commission.

7.2.3. Approach to Assumptions

Throughout the research AviaSolutions has consistently taken a positive outlook with regards to the underlying demand assumptions. Specifically, this means that we have opted for the upper bounds of traffic, the upper bounds of unit operating revenue, the lower bands of unit operating costs, and minimal asset costs and capital investment requirements.

We therefore conclude that the assumptions and analysis that follow present the prospects of Manston airport in a very favourable context. We would consider these outputs to represent a 'High Case' and believe they present the airport in a situation where there is a very limited prospect of additional revenue or lower cost structures.

7.2.4. General Assumptions

Revenue

Airports generate revenue from two primary sources: from the charges levied on airlines for using their facilities (referred to as Aeronautical Revenue), and from more discretionary activities including retail, car parking and property (referred to as Non-aeronautical or Commercial Revenue). Manston Airport historically provided ground handling services to its customer airlines, and revenue from these activities is included in Aeronautical Revenues. Previously Manston Airport supplied fuel to some airlines, and our model includes this as a separate revenue line (as a net revenue so that the cost of the fuel does not need to be considered).

Revenue Assumptions within AviaSolutions Model

Revenue	
Aeronautical Revenue per Passenger	£7.00
Revenue per Tonne of Freight	£50.00
Commercial Revenue per Passenger	£5.00
Fuel Revenue per WLU	£0.93

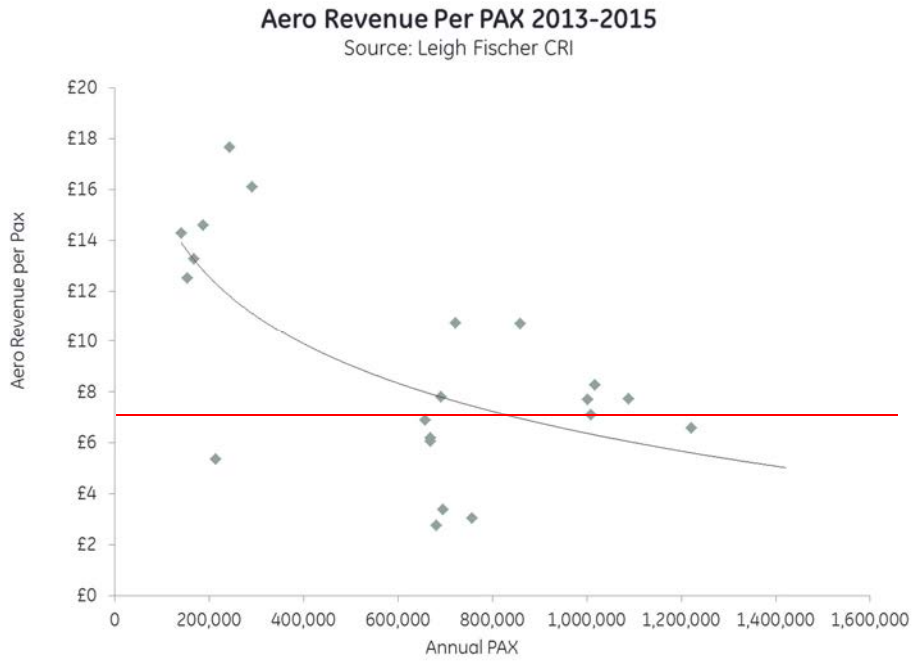
Aeronautical Revenue per Passenger

This revenue includes all airline related fees, including landing charges, passenger charges, and aircraft parking charges. However, it excludes Air Passenger Duty (APD), which is collected by the airline but passed on directly to the UK HMRC. It is normal industry practice, however, and for LCCs in particular to agree a fixed fee per passenger covering the entire range of airport operations (excluding any property rental).

Our experience is that the fees generated by the airport are greatly affected by the type of airline operating at the airport and the level of throughput achieved by the airline. Ryanair's airport charges, across its entire European network in 2015, amounted to €7.80 per total passenger (€15.60 per departing passenger) and during our stakeholder interview the airline indicated it would need to secure a highly competitive airport charge to base aircraft at Manston. The Ryanair average airport charge of €7.80 will include many capital city airports where the airline is very likely to be paying significantly above this average.

We also considered the average aeronautical revenue per passenger of airports that operate with a large share of LCC traffic, as would be expected at a re-opened Manston Airport. In the most recently published accounts (2015) Luton and Bristol airports reported aeronautical revenues of £5.66 and £4.24 per total passenger (£11.32 and £8.48 per departing passenger) respectively.

We have also assessed the aeronautical revenue per passenger achieved across a large sample of similar sized airports in the UK.



Based on these comparisons, we have concluded that a reasonable aeronautical revenue assumption for Manston Airport would be £3.50 per total passenger (£7 per departing passenger) for LCC traffic, and £7.00 per total passenger (£14 per departing passenger) overflowing from the London area.

Revenue per Tonne of Freight

The published accounts of Kent Airport Limited from 2013 identified revenues generated by freight activities. These revenues will reflect the landing charges from freighter movements, the use of the freight warehouses and the handling services provided to the airline. We have confirmed through an independent source that the historic revenue per tonne for freight achieved at Manston is consistent with market rates generally in the UK.

Commercial Aeronautical Revenue

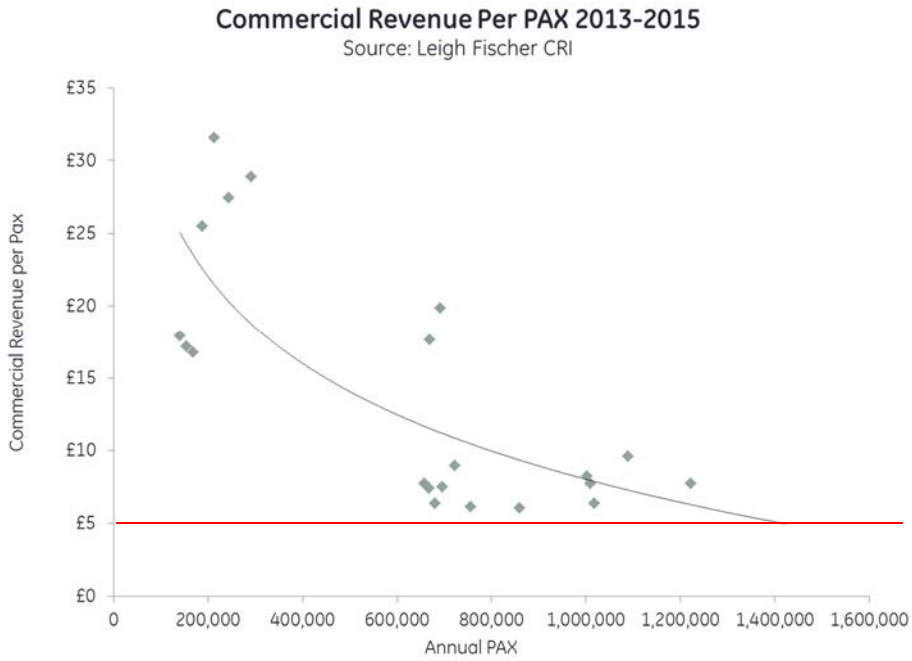
Commercial revenue is generated from passenger-facing services at the airport. One of the main sources of revenue are the airport concessions to operators of the retail shops (including duty free), food and beverage (F&B) outlets, car rental and currency exchange services. The operator will typically pay a percentage of turnover to the airport. Car parking is another source of revenue, with some airports managing operations in-house, whilst others out-source to specialist operators, such as APCOA or NCP.

Property revenue at Manston was £110,000 in 2014, and we have assumed that at a re-opened Manston Airport arrangements would continue on a similar basis.

We have built-up an estimate of potential commercial revenue per passenger by considering typical passenger spending and concession rates (turnover rent) that could be expected at a relatively small airport such as Manston.

In aggregate we have assumed that Manston could generate around £5.00 per total passenger (£10 per departing passenger).

We have also compared the unit commercial revenues generated at a number of smaller UK regional airports. It may be seen that there are a number of airports with low passenger throughputs which record high levels of commercial revenue per passenger. This is almost certainly caused by dividing a relative fixed rental income by a small number of passengers leading to an artificial inflation of the commercial revenue when measured on a per passenger basis.



We therefore conclude that a reasonable initial assumption for commercial revenue per passenger across all non-aeronautical activities is £5.00.

We have also considered the forecast expansion of the terminal to provide the necessary passenger capacity in later years under some scenarios. The terminal expansion would be expected to improve the retail and F&B offer and is assumed to contribute increased commercial revenue by £2 per passenger.

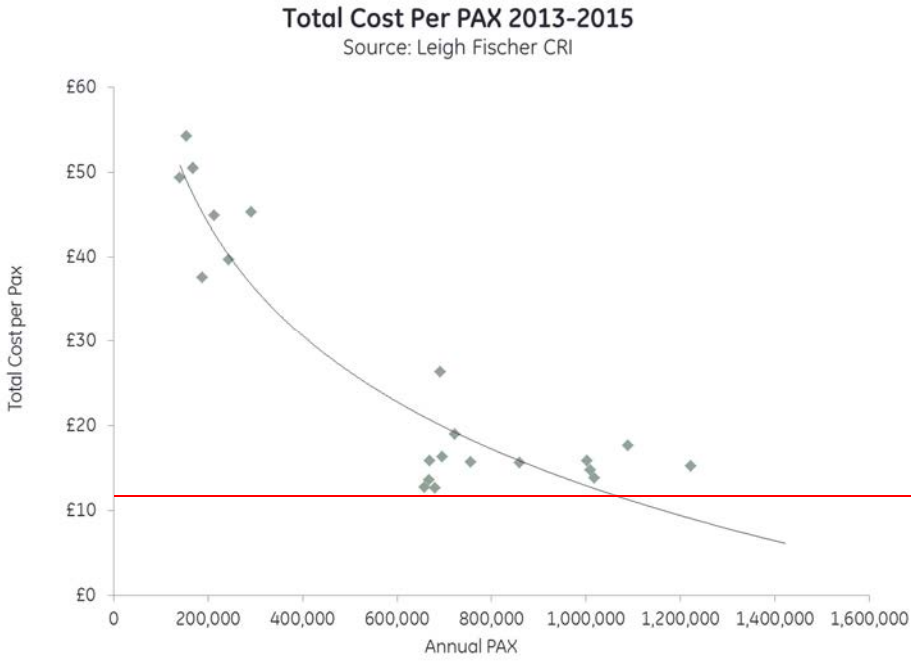
Aviation Fuel

The forecast for aviation fuel revenue is based on the net revenue after cost of fuel has been subtracted. The revenue is effectively the margin payable to the airport for fuel flowage. The margin has been estimated based on industry experience ranging from 3.5% - 7.5%. We have assumed Manston is able to achieve a margin of 5.5% and applied this to the total fuel revenue published in Kent Airport Limited's accounts (2014) to identify the fuel revenue per passenger or tonne of freight.

Total Operating Costs

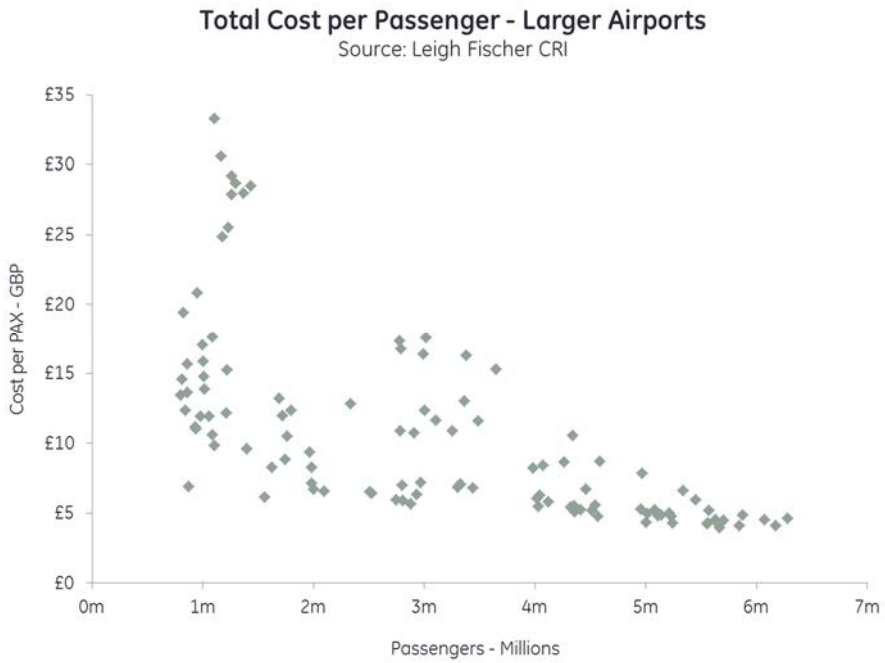
Airports with very low throughput have a high cost of operation per passenger: the fixed cost of airport operations can only be distributed across a low volume. Within a limited range, the marginal operating cost of an additional passenger is zero, but the marginal revenue of an additional passenger will be close to the average revenue per passenger.

This financial characteristic is common to capital intensive infrastructure assets. The chart below illustrates the relationship between volume and unit operating costs (per passenger) at a sample of small UK regional airports.



To reflect the expected evolution of the airport's operating costs over the forecast period we have assumed a fixed total operating cost of £7 million when annual passenger throughput is below 0.5 million. As passenger volume increases beyond 0.5 million we assume that the total operating cost per passenger will decline on a linear basis to reach £12 per passenger at around 1.0 million passengers. This would position Manston Airport amongst the best in class cost per passenger within its UK peer group.

It is reasonable to assume that unit operating costs will continue to decline with further increases in throughput leading to additional economies of scale, as illustrated below. We have linked unit costs to annual passenger throughput such that when annual throughput reaches 6.5 million passengers the unit cost would be £5.00.



Costs specifically associated with freight have been estimated at circa 60% of freight revenue based on the historic performance at Manston.

Overheads

Overheads have been obtained from the published accounts of Kent Airport Limited (2014) and exclude any restructuring costs. In a standard business plan these would often be linked with elasticity to revenue growth. However, as growth would come from a very low base AviaSolutions' view was this would have introduced too many additional costs into the business. Therefore, we estimated that these costs grew at a rate of 0.1x Work Load Units.

Other Assumptions

We have made several assumptions about the initial equity and purchase price of the airport. These assumptions have come from our stakeholder interviews and other research. They are for illustrative purposes only and may differ significantly from any actual investment.

Our estimate of the site purchase price is derived from the recognised value of the airport in Kent Facilities Limited's 2014 published accounts (£7 million) inflated by circa 50%. It is believed that this could be considered a conservative valuation of the site, dependent on the designation of the land at the time of acquisition. The current owners (Stone Hill Park) are seeking planning permission for up to 2,500 dwellings, should this permission be granted, we would assume the land to be valued far in excess of £10m.

We have developed our own estimate of the costs of re-establishing the site as an operational airport based on our industry experience and a site visit. The estimate includes the necessary work to return the airport to a serviceable condition that would satisfy the CAA and facilitate the handling of up to about 2 million passengers annually. We have excluded any advisory or legal fees associated with the Development Consent Order, though these may be considerable.

Cash Flow & Balance Sheet	
Initial Capital Injection	50,000,000
Airport Site Purchase Cost	10,000,000
Airport Site Development Costs	27,000,000
Debt Interest Rate P.A	3.0%
Straight Line Depreciation Years	60
Effective Tax Rate on Net Income	20%
Dividend Payment % of Profit / Cash	0%

We have also assumed that the investment in Manston is funded solely by equity with no debt facility. This is in part to reduce the assumed cash outflow in the early years of operations, but also because we believe that debt-financing would be difficult to secure and relatively expensive.

Additional Capital Expenditure (CAPEX)

Additional capital expenditure is assumed to be required at the point when the airport reaches 2.0 million passengers per annum and is forecast to remain at this level or above. Where the airport is growing rapidly (notably in the 'No Runway' scenario), the additional capacity investment is in two £50 million stages. Where the airport is expected to grow more slowly, additional capacity investment is assumed in a single £30 million stage.

Financial Statements

Taking the combined effect of the financial assumptions and the demand scenarios we have developed a number of illustrative financial statements. These include:

Profit and Loss:

- Operating Statistics
- Revenue Lines
- Direct Cost Lines
- Gross Income
- Overheads
- EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation)
- EBITDA Margin (EBITDA as a percentage of revenue)
- EBIT (Earnings Before Interest and Tax)
- Net Income (EBIT less Interest and Tax))

Cash Flow Statements:

- Opening Cash Balance
- Net cash flow from Operating activity
- Net cash flow from Investing activity
- Net cash flow from Financing activity
- Closing Cash Balance

Balance Sheet:

- Total Assets
- Long Term Liabilities
- Owner Equity
    - Retained Earnings (which in part determines the ability to dividends to equity investors)
    - Share Capital

7.3. Outputs for LHR Third Runway Scenario

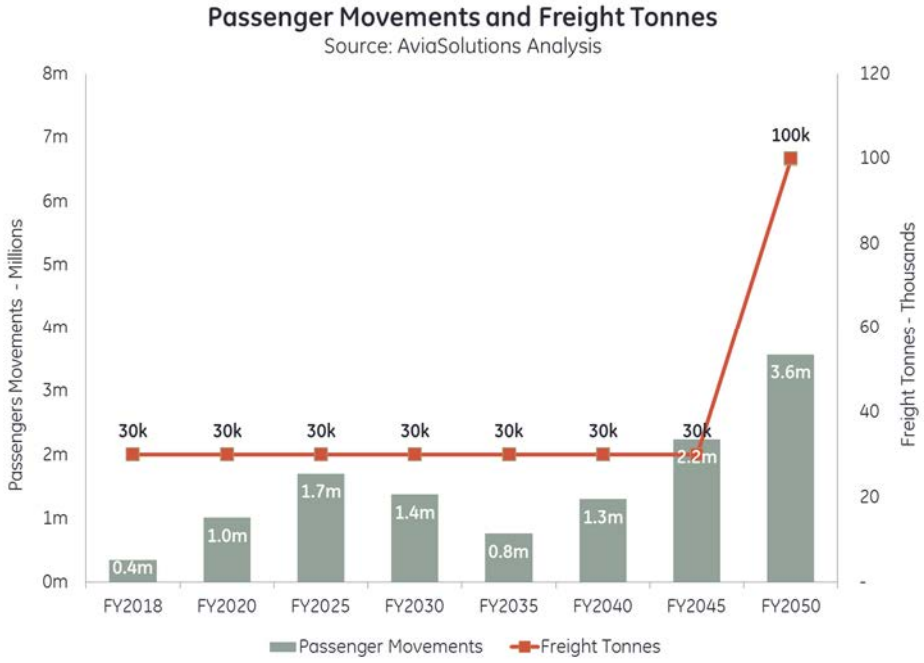
In the following paragraphs we explore the financial viability of Manston Airport based upon there being a third runway at Heathrow. This is the option which was recommended by the Davies Commission and therefore may be presumed to be the most likely outcome. However, the likelihood is that a runway at Heathrow would take longer to commission than one at Gatwick so consequently, Manston may have an initial boost to traffic before falling back and then growing again. This scenario takes spill from the London system in addition to a base level of activity generated from the presumed small LCC operation and freighters. This scenario is more favourable for Manston Airport than a development at Gatwick, and is perhaps the most likely.

7.3.1. Volume Profile

Passenger numbers are forecast to grow to nearly 2.5 million by 2029, the year before the assumed opening of the third runway at Heathrow Airport, but immediately fall back from 2030 and decline to a low of 0.5 million in 2033. From this low point, traffic volume grows as a result of the resumption of overflow, reaching 3.5 million passengers in 2050. Overall growth between FY2018 and FY2050 averages 10% annually.

Freight is not forecast to grow beyond the 30,000 tonnes of the core freighter operations until FY2040, but at that point, freight is assumed to spill from the London Area taking it to some 100,000 tonnes by FY2050.

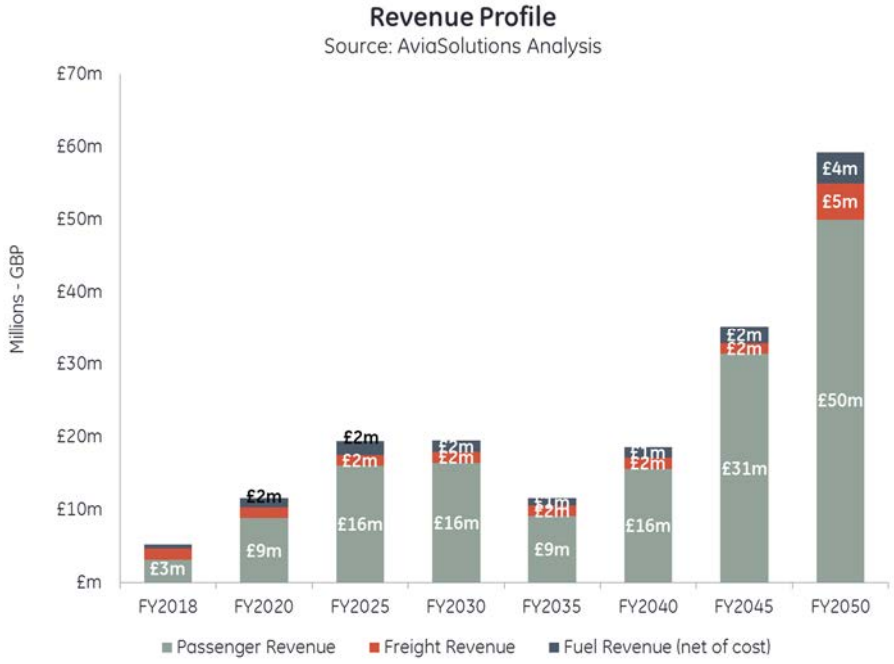
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Passenger Movements	350k	1,010k	1,700k	1,370k	760k	1,300k	2,240k	3,570k
Freight Tonnes	30k	30k	30k	30k	30k	30k	30k	100k
Total ATMs	1,100	2,900	6,400	9,600	5,300	9,200	15,800	28,000



7.3.2. Revenue Profile

Airport revenue is forecast to grow at CAGR 12% between FY2018 and FY2030, driving revenues to about £20m by FY2030, and at CAGR 8% between FY2018 and FY2050 to reach total annual revenues of around 0m by FY2050.

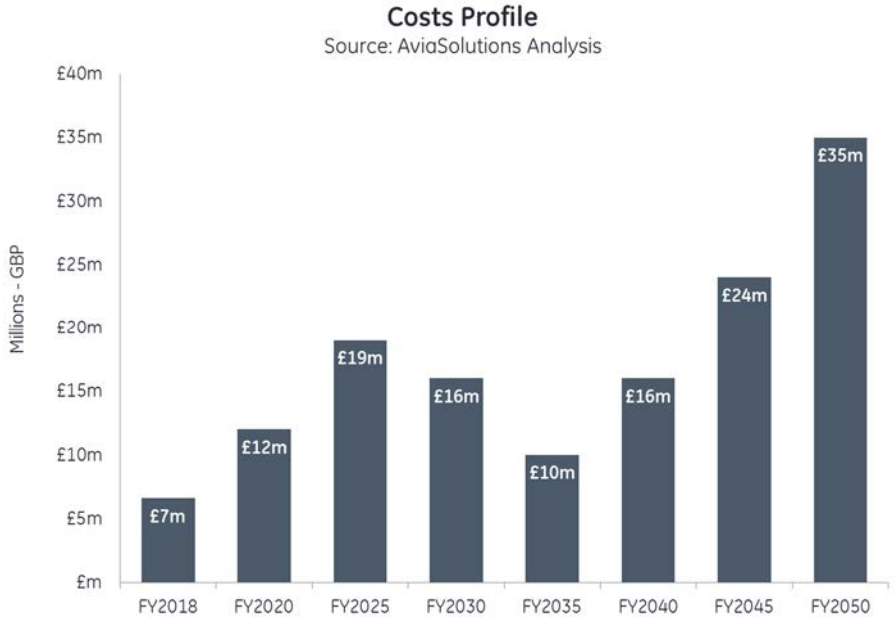
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Revenue	£5m	£12m	£19m	£19m	£12m	£19m	£35m	£59m

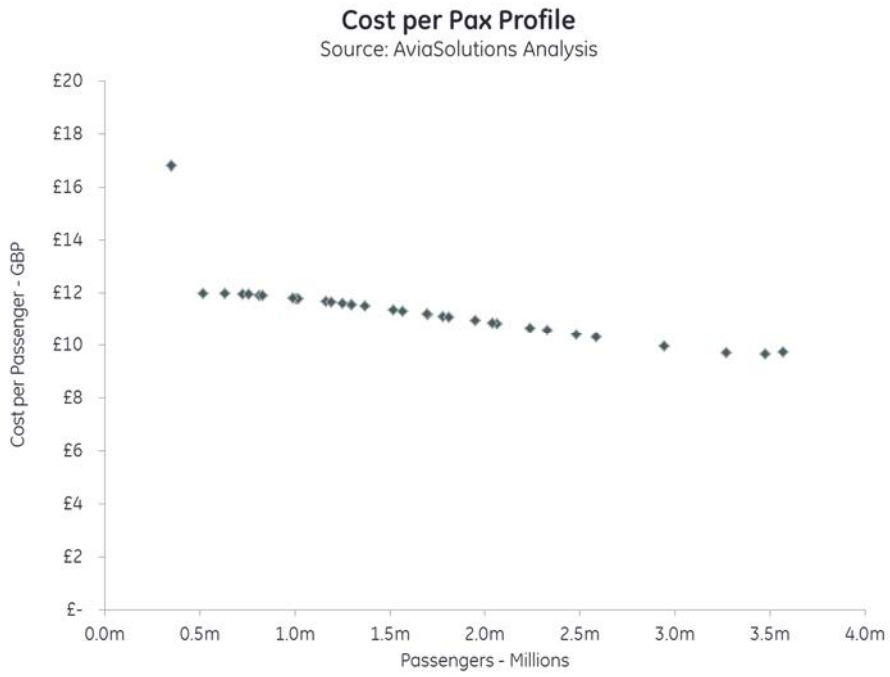


7.3.3. Cost Profile

Total Costs are forecast to grow at 8% per annum on average between FY2018 and FY2030, resulting in total costs of about £15m by FY2030, and at 5% per annum between FY2018 and FY2050 to produce total annual costs of £35m by FY2050.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Cost	£7m	£12m	£19m	£16m	£10m	£16m	£24m	£35m

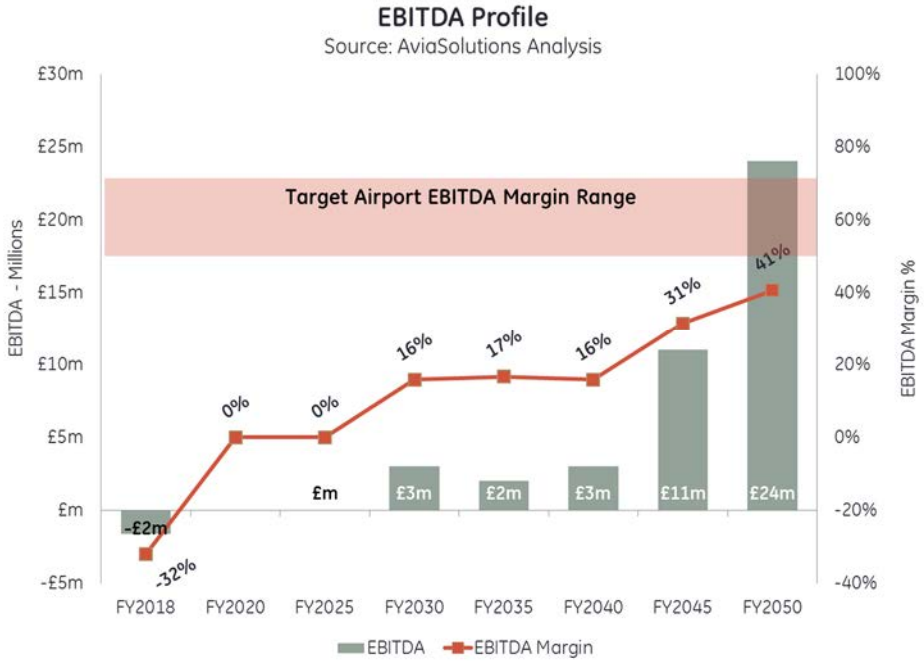




7.3.4. EBITDA Profile

EBITDA is initially forecast to be negative, indicating that the airport would be loss making in the early years at an operational level. It first returns an operating profit in FY2030, generating £9m of operating income and an EBITDA margin of 16%. As the third Heathrow runway comes on-stream, EBITDA at Manston would stagnate due to the lack of available volumes. The EBITDA margin in the long term is forecast to reach 41%, with an EBITDA of £24m in FY2050. This level of EBITDA is significantly below that which we would typically expect for an airport to be attractive to the investment community.

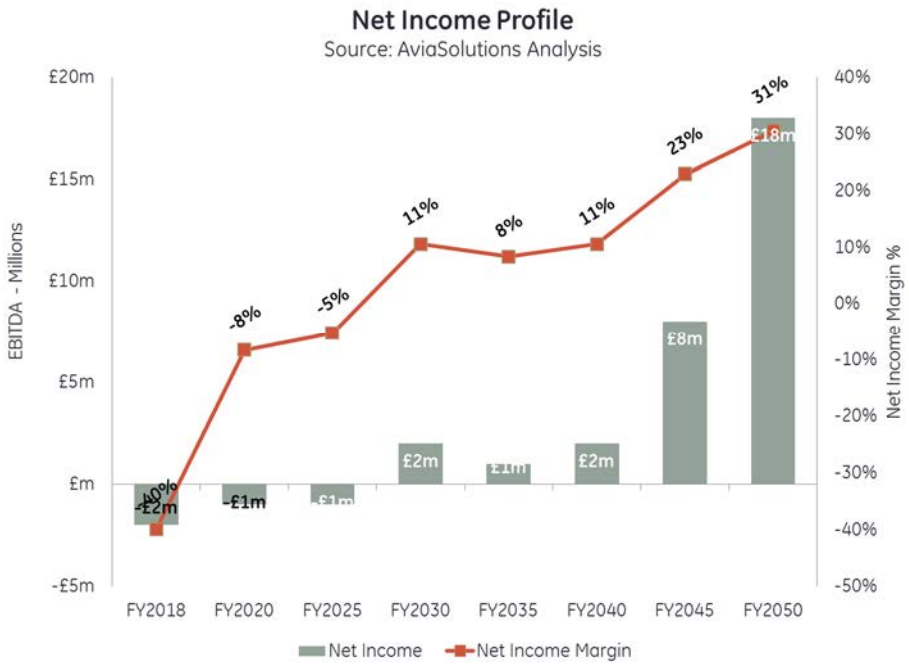
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
EBITDA	-£2m	£m	£m	£3m	£2m	£3m	£11m	£24m
EBITDA Margin	-32%	0%	0%	16%	17%	16%	31%	41%



7.3.5. Net Income Profile

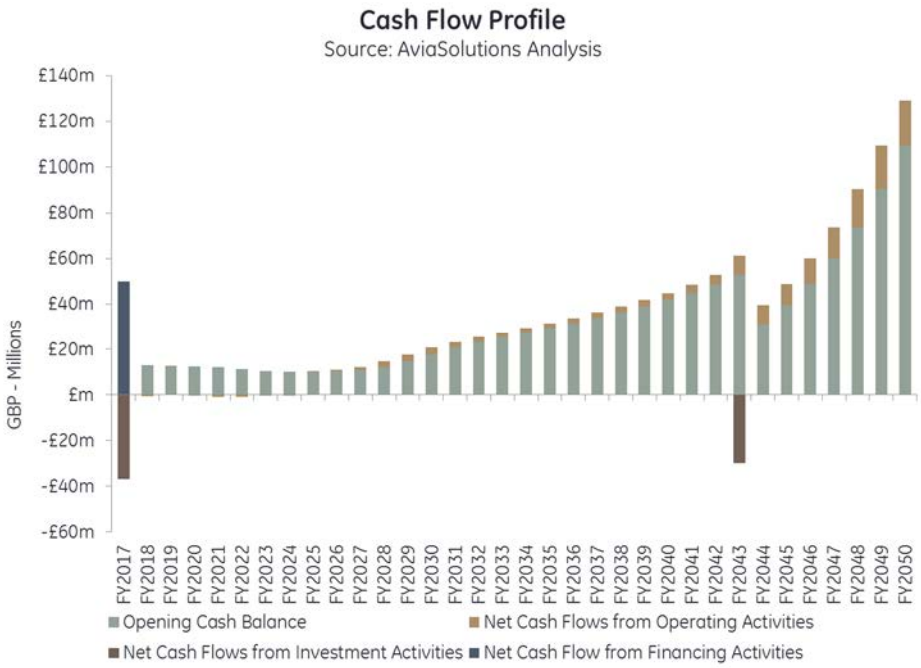
Net income, the profit after deductions, is forecast to be negative until FY2025. The first positive results are generated around FY2030 when the airport is expected to generate net income of £2m. The income stream remains constant for the following 15 years before increasing as capacity becomes constrained once more in the London system. It reaches £18m in FY2050.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Net Income	-£2m	-£1m	-£1m	£2m	£1m	£2m	£8m	£18m
Net Income Margin	-40%	-8%	-5%	11%	8%	11%	23%	31%



7.3.6. Cash Flow

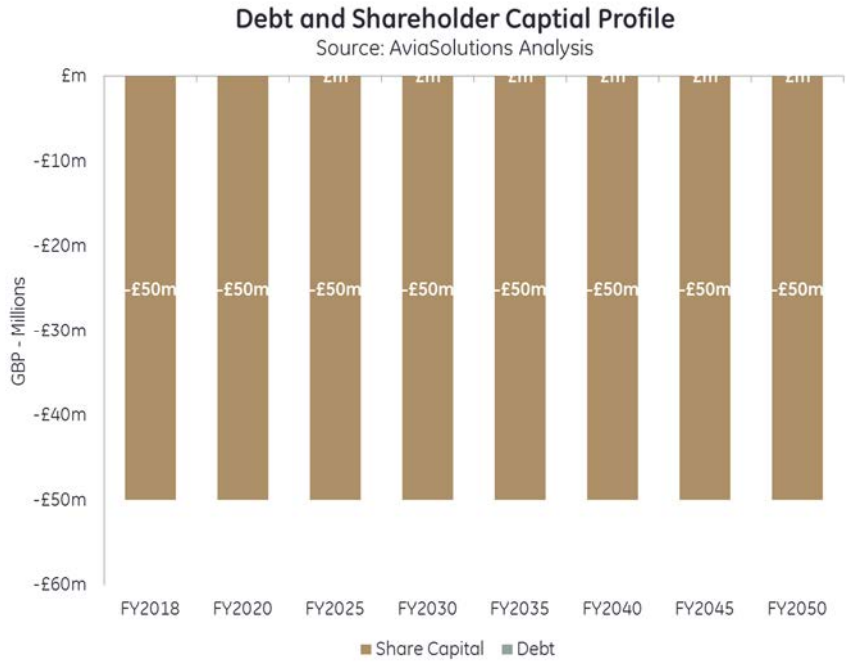
The airport is forecast to develop its cash position with limited additional capital requirements until FY2042 when there would be a requirement to expand the terminal. We have assumed that although demand would exceed terminal capacity in the late 2020s, new terminal capacity would not be provided in anticipation of the loss of traffic following the commissioning of the third runway on 2030. The position shown below excludes any dividend payments that the owner may wish to extract from the asset: such payments would reduce its cash position.



7.3.7. Debt and Shareholder Capital

Whilst the exact nature and mixture of debt and shareholder capital would be subject to complex financial optimisation, we have illustrated below a simple capital structure used in the analysis to illustrate the need for additional capital throughout the period. To maintain the business no further financing would be required. Whilst the business does not generate significant revenues or income, there is little requirement for significant CAPEX investments, thereby eliminating the requirements for additional financing

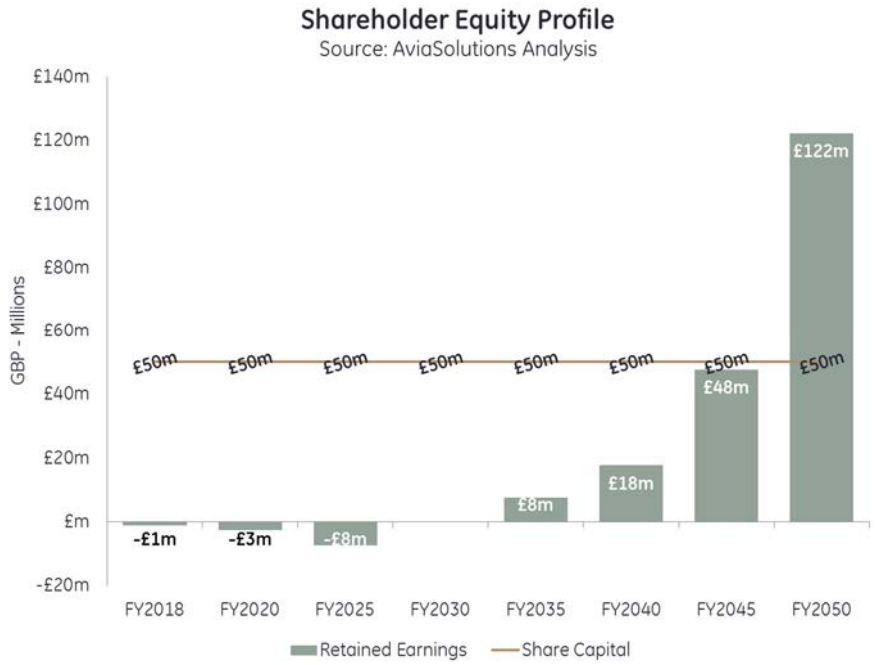
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Debt	£m	£m	£m	£m	£m	£m	£m	£m
Share Capital	£50m	£50m	£50m	£50m	£50m	£50m	£50m	£50m



7.3.8. Shareholder Equity

Considering the effects of earnings on shareholder equity, the business does not post positive retained earnings until nearly FY2035. This in effect limits the business's ability to pay dividends to shareholders until this point at the earliest.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Retained Earnings	-£1m	-£3m	-£8m	£m	£8m	£18m	£48m	£122m
Share Capital	£50m	£50m	£50m	£50m	£50m	£50m	£50m	£50m



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. It should also be noted that the scenario outlined above excludes any return to the investor, and we have therefore effectively weighted the cost of equity at zero in our model. Investors will always be seeking to maximise the return on their investment in a manner appropriate to the risk they bear in the asset. Given the risks involved with Manston, it would be right to consider that any investor would be seeking the potential for above average returns, which, according to the analyses, may not materialise.

7.3.10. Non-Technical Summary

AviaSolutions' analysis indicates that the airport, operating as a standalone trading entity and in the scenario where a third runway is built at Heathrow, is unlikely to be a financially viable proposition. Airport operations are not anticipated to generate material profit until FY2040.

This is due to the relatively low level of revenue that can be generated and the high level of fixed costs required to operate the airport. This in turn means that the airport would not be able to distribute profits to investors in the airport for many years.

Generally, investors seek to achieve a return on their capital with an expected return commensurate with the risk of the investment. As the risks of investing in Manston are significant there would need to be reasonable prospects of a high return, which does not appear likely based on our analysis.

7.4. Summary of Other Scenarios

We have presented in this main body of text the scenario deemed most likely to occur e.g. LHR3. This is the current recommendation of the Davies Commission and therefore, at the time of writing, believed to be the Government's current preferred option. Details of the three other capacity development scenarios are given in Appendix C.

7.5. Comparison of Scenarios

We compare some key aspects of the four scenarios below.

Measure	LHR R3	LGW R2	Both	Neither
First year retained earnings positive	2031	2032	N/A	2029
Retained Earnings at 2050	£122m	109m	-£20m	£516m
Refinancing				
When?	None	None	None	2028, 2029
Why?	n/a	n/a	n/a	Capex
How much?	n/a	n/a	n/a	£40m
EBITDA Margin				
Year first greater than 50%	n/a	n/a	n/a	2043
or in 2050	41%	40%	34%	60%
Probability	40%	40%	10%	10%

8. Conclusions

8.1. Introduction

In this chapter we draw together the conclusions of our research and analysis to form our conclusions, specifically to opine on whether there is a realistic prospect of a financially viable airport operating on the Manston Site.

8.2. Summary

It is AviaSolutions view that having considered the stakeholder interviews and independent research and analysis into historic accounts and 'reasonable' adjustments for one-off costs that there is little prospect of a financially viable airport on the site.

The only circumstances in which we believe the airport may be viable is that in which no new runway were developed in the South East of England. However, this scenario presents extreme risk to the investor, as a decision to increase runway capacity at those not physically constrained (e.g. legally constrained LHR and STN) could be made at any time, or a new runway may be authorised at any time in the future.

8.3. Stakeholder Interviews

Our stakeholder interviews were split between those focused upon passenger development and those focused upon freight development. The range of interviews provided an understanding from the industry as to their position on the airport.

Our passenger service interviews suggested that overall there is little interest in serving the airport, in particular from airlines that had previously served the airport such as Flybe. There was some limited interest from airlines such as Ryanair and KLM, who would consider the airport as part of their standard UK market review, however they were not actively seeking to serve the airport. It is our view that we must consider this in light of its context; for an airline that bears no risk in an airport's reinstatement and for whom its reinstatement may present upside risk, it would be illogical to rule out the possibility of serving it. Overall, our interviews suggested there was very limited interest in the airport for passenger services thus suggesting a long term viable passenger service may be difficult to sustain.

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.

8.4. Simulations

AviaSolutions' models provided simulations of the financial performance of an airport on the site under different demand scenarios. These scenarios were developed with a positive view of the potential demand profile, unit revenue and unit cost and investment costs. Two simulations (LHR3 and LGW3) suggested that the airport was unlikely to generate profits at an operational level (EBITDA) until circa FY2025, and that these profits would remain muted through until FY2040. The EBITDA profile suggests that, based on recent industry exit multiples, it would not be possible to recover the initial equity through a sales process as this point. Furthermore, these scenarios suggest that retained earnings would not turn positive for 15 to 20 years, thus limiting the ability of an investor to recover their costs of equity. In summation, these scenarios present very large risks with small returns over a long time horizon.

Our 'Both' runway scenario, naturally, provides an even less favourable result for Manston airport. If this runway scenario were to materialise there would be no prospect of Manston operating on a sustainable basis.

Our 'No Runway' scenario presents some opportunity for the airport. As demand through the London System increases and capacity remains muted, this demand will be spill to alternative airports. Manston, located within reasonable distance to London could be an airport to benefit from this spill, along with airports such as Southampton and Birmingham who are well connected by train to London. In our simulation, this scenario generated sufficient operational income (EBITDA) to support itself, and only required additional financing to expand. However, we must caution that this scenario is balanced in a careful equilibrium, should this be disturbed through the introduction of additional capacity via a new runway or loosening of regulation, the prospects of Manston could be severely diminished.

9. Appendix A: Stakeholder Interviews

Throughout the study, AviaSolutions spoke to many companies and individuals to gather their feedback. Given that these companies operate in a competitive commercial environment, it is not unsurprising that many of those spoke on the condition of anonymity. This is not unusual, particularly given the particular sensitivities around the project. In the following section detailing our interviews, and summarising the comments made, any company or individual that spoke on the basis of anonymity has been identified by only their sector and seniority.

AviaSolutions spoke to the follow stakeholders and / or their representatives:

- Discovery Park / Stone Hill Park
- RiverOak Investment Corporation
- Ryanair Ltd
- Flybe
- KLM
- Mr. Stanley G. Wraight
- Sir Roger Gale MP

Anonymous Sources

- Major European LCC
- Freighter Operator at Stansted
- Air Cargo Charter Broker – UK
- Ex-Director of Network Planning – Major European LCC
- Manager, Flight Operations, Major UK Carrier
- Ex-Senior Executive DHL

Disclaimer: The following Stakeholder Interview notes are representative of the views and opinions of the stakeholders only and not that of AviaSolutions. The notes represent, in AviaSolutions view, an accurate account of the interview but are not a verbatim account of our interview.

Mr. Paul Barber, Managing Director, Discovery Park
Mr. Paul Barber is the Managing Director or Discovery Park, and represents the current owners of the airport site.

- Mr. Barber outlined the ownership structure of the airport site. The airport is owned by Lothian Shelf 718 which is ultimately owned by Chris Musgrave, Trevor Cartner and Ann Gloag.
- Paul Barber is Managing Director and responsible for the day-to-day running of Discovery Park which is the *de facto* administrator of the site.
- The current owners, Mr. Cartner and Mr. Musgrave, are specialists in the redevelopment of the brownfield sites; they have redeveloped Discovery Park and a second site in the north of England.
- Mr. Barber gave a frank view as to the difficulties PricewaterhouseCoopers had when attempting to dispose of the site. After two years the only offer made on the site was from Ann Gloag for £1. Thus, in the view of the current owners, demonstrating the lack of financial interest in the site as an airport.
- During the period of ownership by both Manston Skyport, and under Lothian Shelf 718, Mr. Alistair Welch was heavily involved in the airport. Whilst under Manston Skyport, Mr Welch was chairman of the airport. Later in his career Mr. Welch became Managing Director of Southend Airport and was responsible for introducing EasyJet to Southend.
- Throughout the period of ownership whilst the airport was open Mr. Welch made high-level contact with every reputable airline and not a single airline was interested in operating from Manston, even with aeronautical charges at zero. The only airline that even considered operations was Ryanair, but the option was declined within 48 hours.
- Whilst the airport was open for operations freight was the main source of income. This freight was predominantly import driven from Africa. Whilst the site was able to offer quick access from aircraft to road there was little value-add to clients.

- Thanet Parkway Railway Station will add little value. It is not certain if or when it will be operational, and costs appear to be overrunning already. There is a funding gap and it does not improve journey time to London by more than 10-12 minutes.
- Due to the lack of airlines operating from the airport, Mr. Barber stated that the airport losses were running at close to £5.0m per annum.
- Mr. Cartner and Mr. Musgrave bought into the airport site after the airport had closed. They had no stake in the business whilst it ran as an airport. The business men approached Ms. Gloag given their proximity to the airport and specialisms in the development of brown field sites.
- Stone Hill Park Ltd was formed with Ms. Gloag, Mr. Cartner and Mr. Musgrave. The company believe that Thanet District Council require an additional 15,600 homes. The development will offer around 2,500 of these homes, mixed between starter homes up to five bed executive homes. The planning application includes a provision for social infrastructure such as schools.
- At present there are some small costs associated with the site, but these are mainly the single employee and the security of the site, and utilities. The current owners are not fundamentally against the concept of an airport being run, however they see no credible business plan to evidence its possibility, nor do they believe it is best economical use of the site.
- When pressed on RiverOak's desire to reopen the airport, Discovery Park "don't know where RiverOak are coming from stating an airport is viable". Discovery Park has not had sight of any business plan from RiverOak and RiverOak have not made any credible offers for the site.

RiverOak Investment

AviaSolutions met with RiverOak Investment and its representatives:

- *Mr. Tony Freudmann*
- *Ms. Sally Dixon*
- *Mr. Richard Connelly*
- *Ms. Angela Schembri*

- RiverOak Investment (RiverOak) became interested in Manson airport due to a previous project in the U.S.A. A RiverOak Partner (Nial Oldman) had organised a bond for a U.S airport that was freight driven and found excellent returns on the investment, thus sought an investment of similar characteristics.
- With regards to the asses itself, RiverOak believes the airport is geographically well positioned to capture freight, being in the South East and near the Channel Tunnel. It acknowledges that considerable investment will be required to return the airport to an operational state. However, they are confident through their initial plans that this is feasible and the asset can quickly be returned to a state in which is can handle in excess of 10,000 freighter movements per annum.
- The total investment that RiverOak would seek to make is in the region of £300m over the course of a 12 year period. This would ensure the airport site delivers a high level product and service. Further to this investment, the group would need to sink costs in the DCO process, the DCO purchase cost (circa. £4m in RiverOak's view) and finally in compensation to the current owners (although RiverOak have a value in mind, they are unable to disclose). RiverOak believe the minimum investment needed to bring the airport back to viability is circa £20m, excluding DPO, site purchase and compensation.
- The driving force behind the business plan is air freight and is the vital link to secure a NSIP designation.
- The absence of a national freight strategy is an opportunity which RiverOak seek to influence and develop.
- When probed as to the previous failures at the airport, the RiverOak team held strong views as to the causes of this, and what could be done to overcome this situation in the future. The team had strong views that whilst the airport offered excellent service, the previous owners had done nothing to exploit the asset, or its niches, or to improve its market position. In particular, the team felt strongly that the airport had not made any efforts to promote the airport to Freight Forwarders.
- It is RiverOak's understanding that the airport should be heavily involved in the sale of capacity on board freighters. They believe the previous owners were satisfied to allow freighters to depart with unutilised capacity, and this is an area they would seek to address as owners. ***(Note, AviaSolutions understand this to be an irregular market position to take and pressed to clarify this point during our interview).***
- RiverOak have also considered the geographic location of Manston airport and how it feeds into the ATC systems. They believe Manston is ideally located for aircraft to plug in and out of the national ATC

network. Furthermore, they would expect to receive an EASA license and have had discussions with the CAA to understand the processes required to re-license the airport.
- Further to passenger and freight traffic, RiverOak believe the airport would offer additional services as a diversionary airport within the UK system. There may also be revenue streams from permitting the airport to be used for training purposes.

Traffic

The team talked to AviaSolutions briefly on their Traffic forecast, this area of the business plan has been developed by Ms. Sally Dixon.

- Initially, Ms. Dixon began by reviewing the currently available literature. York Aviation's report of January 2015 suggested that due to capacity constraints 2.1m tonnes of freight will be lost from the London system if no runway is built. RiverOak estimate that this is the equivalent to 100,000 truck movements across the Channel, should this freight all be lost to Europe.
- With regards to capacity type, RiverOak stated that capacity is 70/30 split in the UK with only 30% of capacity offered on Maindeck-freighter services. In Europe, it is stated that this is much closer to 60/40. It is RiverOak's belief that this is caused through a lack of slot availability for freighters in the UK, thus the demand is being constrained.
- The business plan forecast that Manston would achieve 10,000 freighter ATMs in the fifth year of service, these ATMs would be predominantly wide-body aircraft. This level of freighter movement is supported, in RiverOak's view by the wider industry.
- The airport would also seek to develop a passenger business and seek volume from several sources. RiverOak believe that KLM would be keen to return to the airport (despite low load factors). They also state that they are in advance discussions with Ryanair over the potential to base two to three aircraft at the airport. RiverOak are also in preliminary discussions with EasyJet. Finally they believe there is a potential to develop Charter traffic, in particular with the cruise markets and Dover port.
- Taking all these considerations together RiverOak state that they would 2m passengers per annum in the second year of operations.

Ms. Kate Sherry, Deputy Director of Route Development, Ryanair

- Ryanair have recently discussed with RiverOak potential future operations at Manston airport. These conversations have been on the same basis as Ryanair is open to discussions with any airport wishing to obtain services from the airline.
- Previous to these discussions, Ryanair held talks with the owners of Manston airport prior to its closure. These talks were halted when the airport closed and therefore not concluded.
- If Manston were to become an operational airport once again, it is not a foregone conclusion that Ryanair would serve the airport. The airline would look to base any decision on a multitude of factors, including the size and depth of the catchment area and also the commercial terms proposed. Securing a low cost base to the airline is a core aspect of the analysis; this includes the handling and airport charges, effects of APD, operating economics of the route, and in the case of the UK, FX rates to Euros.
- When considering the Catchment delivered from population size Ryanair would look to the airport to sell the benefits of their specific catchment. It is difficult to comment at present on the quality of the Catchment.
- When considering the effects of the London System, Ryanair are not currently concerned with spillage from the London System to periphery airports. The airline is comfortable that there is room for expansion at Stanstead.
- If Ryanair were to serve the airport, the depth of the network would permit the airline to serve it without necessarily basing aircraft at Manston. However, it is possible in the future that the airline could choose to base a single aircraft at the station.
- Once a decision to operate had been reached, generally a lead time is permitted to allow the sales and marketing processes to embed. This also ensures the airline can plan its schedule appropriately, working approximately six to nine months in advance.
- As has been recently stated in the media, BREXIT remains a concern for Ryanair and any effects of the UK's exit from Europe would be factored in to a decision to operate.
- In summary, Ryanair are constantly reviewing their network and remain open to approaches from any airport. If the airport became operational, the airline would review its potential and fit within the wider airline network in due course, and is available to discuss terms with the owners at any time.

Mr. Martin Pearce, Flybe

- Europe's largest regional airline, Flybe, operated several routes from Manston in the years' preceding its closure. The airline did not base aircraft at Manston. In their experience the service offered was excellent with no issues arising from handling or passenger services. The passengers traffic was were mainly leisure and VFR, with very few business passengers.
- Mainly outbound e.g. Manston to the destination, very little in terms of other end originating
- These routes closed predominantly due to poor load factors, there was insufficient demand for the service from the local catchment area and very little demand for inbound traffic to Manston. Furthermore, the yield profile of the traffic did not meet with the airlines expectations.
- In normal circumstances the airline would permit a two to three year ramp up period following a route opening, however given the operating conditions the airline ceased operations within 12 months.
- The reasons the route performed below expectations are varied, but these are believed to have been exacerbated by the relatively small local catchment, less favourable average economic development and poor public transport infrastructure links to London.
- The airlines have reservations as to whether the airport could serve the South East catchment, and do not believe that the airport could realistically serve spilled traffic from the London system.
- It is unlikely that, even if Manston should reopen, the airline would choose to serve the airport.

Major European LCC

- Manston is not an airport the airline is considering. The company focuses on core catchment areas with less than 60 minute travel to the airport, and at most 90 minutes.
- Manston has a weak demand and the local catchment area is not overtly wealthy.
- Alternative airports offer better options, Southend and Stansted tap the London catchment area and can be really cost-effective airports
- Manston would have to tap into Gatwick's catchment and price would need to be very low (no more than a few pounds per passenger.
- The airport is probably not for the LCC in question. If there was no runway capacity available in the South East, the LCC would opt for a larger aircraft type before selecting Manston and would probably consider alternatives such as Southampton and Bournemouth first.
- Other carriers without a footing in Gatwick might consider Manston, as might freighters.

Ex-Director of Network Route Development for Major European LCC

- Following the BREXIT vote many airlines will be considering their approach to the UK. During a period of uncertainty it will be difficult for Manston to convince carriers to open routes to the airport.
- LCC's would look to secure deals with minimal aeronautical charges. Without an extremely competitive rate there is no possibility an LCC would locate services at an airport. In some cases, LCC's have walked away from airports offering negative aero-charge deals due to poor volumes.

Manager, Flight Operations, Major UK Carrier

- The individual plays a key role in the Flight Operations team at a major UK carrier.
- It is the individual's view that Manston does not offer any safety or resilience benefits of a material nature to the UK system. The airport is located in close proximity to six London airports which offer excellent resilience already.
- The airline would also not consider using Manston airport as diversion airport except in an on-board Mayday emergency (which are extremely rare).
- When considering diversion airports the airline considers multiple factors such as; does the airline already offer services at the airport, the size of the airport, the facilities at the airport to handle passengers, the local facilities to provide hotel and accommodation, the equipment at the airport to handle all types of aircraft required e.g. GSE equipment, and other legal requirements such as the provision of sufficient Fire Cover. On these measures, it is considered unlikely that Manston would be selected as an alternative airport, when Gatwick, Heathrow and Stanstead can all provide superior services within London.
- In the individuals view, whilst Manston would be used in an absolute emergency, it would be very unlikely to receive regular diversions for routine operational reasons, such as weather or runway closures.

KLM Position

- We are evaluating our network to the UK on a yearly basis. We are constantly being approached by airports who would like us to operate to their airports. These opportunities that arise are being looked into and MSE could be one of them.
- It is not possible to say how likely the chance would be that this would materialize in a new operation in the next 5 years in case MSE airport would be operational again

Senior Executive in Cargo Division for Airline Operating Freighters at Stanstead

- Airlines base the decision on where to operate their freighters based on a multitude of factors. However, the overriding factor is based on where investments in infrastructure have been made by their clients, Freight Forwarders. These CAPEX investments by Freight Forwarders are required to ensure they maintain economies of scale through their transit facilities and distribution centres. In the UK, these investments are centred at Heathrow, and more recently Stanstead.
- The airlines first choice of destination was Heathrow, as the majority of Freight Forwarders have their major infrastructure in and around Heathrow. The airline was unable to access slots at Heathrow and so selected Stanstead due to runway length, a mature offering including infrastructure development and third party handlers
- Stanstead operates a world class facility and has the competencies to handle freighters. It is questionable whether this would be possible, at least initially, at Manston.
- The airline would be extremely unlikely to consider moving services to Manston, even if they were no longer able to serve Stanstead, regardless of the commercial terms offered. If the airline had to move services they would consider East Midland and Manchester or other centrally located airports over Manston.
- The individual also believes that there is virtually no chance that a Freight Forwarder would choose to relocate services to Manston.
- Furthermore, as air cargo is a commodity virtually all operators offer the same service and compete on prices. Therefore, most operators implement similar strategies and business models. The result of this is that, in the individual's opinion, other freighter operators would also take a similar stance.

Air Cargo Charter Broker – UK

- The company had made use of Manston Airport in the past (circa. Up to 2 x flights per week) and found it to be a reliable and efficient airport that was well placed for access to the South East of England. The airport had the facilities to handle many aircraft gauges, from small freighters right through to B747F operations. The airport provided good access and the company had no difficulty in obtaining slots. The cost of operating from Manston was more effective than at Stansted, this included the aeronautical landing fees and associated handling costs.
- The company's over riding view was that Manston was an easy airport to use, it provided a good service and gave priority to freight.
- The airport provided all services on the ground, including ramp handling for freight.
- The company was aware that many of its competitors also used the airport along with scheduled operators such as Cargolux and ANA.
- The company was cognizant that, whilst the inbound demand for freight existed, there was little demand for outbound freight, which resulted in aircraft departing with unutilised capacity. The inbound demand was largely from West Africa, with strong volumes of fresh flowers and produce imported. Manston was particularly efficient at handling this cargo and permitted road feeder services to access the apron which resulted in quick access to the UK road network.
- Alongside produce, the airport had a reputation as being able to handle outsized freight such as engines and turbines.
- The airport's location prohibited its use for more northern destinations, East Midlands and Doncaster were favourable in these instances
- The Air Cargo Charter Broker confirmed that they would certainly be interested in using the airport again if it re-opened but in order to do so they would be looking to secure competitive rates for landing, parking and screening charges.

Ex-DHL Aviation Senior Sales Executive

The individual has held senior positions in the cargo industry for over 15 years.

- Whilst Manston may offer an opportunity for some it is unlikely that DHL would relocate its operations. The setup at East Midlands is tuned to its needs. Further, East Midlands is geographically well located for quick access to the UK road network which is exceptionally important for the courier business model.
- In their experience, they believe it unlikely that any integrator would be interested in moving their operations to Manston.
- Generally, more and more freight is being shipped as General Cargo from Heathrow. Given the six hour close out period, it is reasonable to assume carriers could then use road feeder services to distribute this via Manston.
- Regarding other freight uses, Charter operators and scheduled all cargo operators may wish to locate services at Manston but this is highly dependent on the commercial offer. The sole purpose of utilising Manston would be to reduce cost, either through reduced flight operations or lower airport charges.
- One point of note is that the UK is a lot cheaper to export form at present. Thus, a lot of freight originates in continental Europe and moves via belly hold.
- Overall the individual's view was that whilst Manston would undoubtedly attract some business it is unlikely to be significant volumes.

Mr. Stanley G. Wraight – Senior Executive Director Strategic Aviation Solutions Limited

Mr. Wraight is an industry veteran with over 40 years' experience in the air cargo industry. Previously, Mr. Wraight held the positon of CEO at AirBridgeCargo, and Senior Executive roles at Atlas Air and KLM.

- The airport offered a good location for freight being imported from Africa; this was the predominant origin market. Generally, the freight that was imported was pre-packed shop-ready fruit and vegetables that could be transported directly into the supply chain.
- When the airport closed, Doncaster and Stanstead tried to win the business from Manston, whilst some gains were made, the majority of the business relocated to European hubs as they are more closely located to the final destination, thus reducing overall cost.
- There are few all-cargo operators who would consider locating operations at the airport. Operators will be tied into their networks, in part due to their clients locating their facilities at the main airports (Heathrow and Stanstead). One opportunity could be Cargo Logistics, an off chute of AirBridgeCargo.
- In order to secure freighters movements at the airport, it will be necessary to demonstrate a cost advantage over competitors. This could be through a reduction in the overall Flight Hours required for operations, however the ability to do this is limited given much of the freight is destined for Europe. The ideal origin market for freight, on minimum Flight Hours basis is the USA.
- With regards to Integrators basing operations at Manston, the probability of this is viewed as slim. The Integrators have committed large capital expenses to existing operations at Stanstead and East Midlands, these barriers to exit are substantial and would be difficult to overcome, in particular given Manston's inferior geographical positon within the UK.
- It would be difficult for Manston to compete with East Midland or Stanstead. EMA in particular offers 24/7 cargo operations with customs available 24/7. They have developed economies of scale in both service and cost.
- Further to this, the saturation of regional airports in the UK and Scotland in conjunction with additional wide-body passenger aircraft create difficult trading conditions for a new regional airport.
- Finally, the centre of power within the industry is held by Freight Forwarders, the majority of whom are based at LHR. As the industry is ever increasingly commoditised, Forwarders refuse to divert their business from Heathrow, instead choosing to truck cargo in from the regions to feed the facilities and consolidation business centred there and achieve the necessary economies of scale required to compete.
- The conclusion being that there is virtually no incentive for operators to move operations to Manston, there are alternative UK airports that offer competitive services on reasonable terms. The UK doesn't need another airport for freight that has no USP. If Manston were to be developed it would be essential for it gain a niche market such as becoming an Amazon or Alibaba e-commerce base.

AviaSolutions Meeting with Sir Roger Gale MP – 13th Sept 2016

As part of the stakeholder engagement process AviaSolutions has, at his request, interviewed Sir Roger Gale (MP for North Thanet) to seek his perspective on the commercial viability of and political support for, Manston Airport. The following comments are intended to reflect the substance of the meeting, rather than a verbatim transcript.

- Sir Roger Gale MP ("SRG") stated that Manston Airport and its associated runway are national assets of strategic importance to UK PLC.
- SRG noted that he does not support any particular group wishing to use the asset as an airport and that his interest is in solely in keeping the airport open. He notes, however, that to date RiverOak offers the only sustained and viable interest in operating Manston as an airport. SRG noted that he had seen the outline River Oak business plan which in his view was credible. SRG was not surprised that River Oak did not disclose the plan to AviaSolutions, and was not willing to divulge any of the details for reasons of commercial confidentiality. However, SRG also added that all of RiverOak`s case would be made public when the company submitted its` application for a Development Consent Order to a Planning Inspectorate that was qualified to subject the submission to detailed public scrutiny and inquiry.
- SRG said that it was clear that the intentions of those currently in control of the site were to develop the land for residential and commercial purposes, rather than invest in the airport facilities and expand the air service network.
- SRG provided a brief summary of the historical evolution of the airport, including services by Silver City to Jersey and Clive Bourne, a logistics operator.
- With regards to the development of a railway service to the airport SRG noted the scope to develop the railway is limited by the physical constraints of laying the line and precludes a link directly into the airport. The practical alternative is a Thanet Parkway station, which would initially be linked by a shuttle bus service, and ultimately could be linked by a Gatwick-style monorail.
- SRG is of the view that the primary reason that the airport has not been financially sustainable in the past is the nature of the business model that has been pursued. Previous operators have focussed on developing the passenger business, rather than the freight capacity of the airport, which is the reverse of the model that SRG believes, would be more sustainable.
- SRG noted that UK PLC is losing business to Europe already, with freight being switched from the UK to other European hubs (Frankfurt, Amsterdam, and Paris). SRG also noted that a major courier has expressed an interest in relocating to Manston. He was of the view that the UK has reached maximum capacity for London originating freight services and that excess demand was being lost to other hubs.
- SRG observed that post-Brexit it was going to be vital that the UK develops additional and alternative markets outside the European Union. These greater distances will inevitably mean an increase in the demand for air freight capacity between Britain and the rest of the world if the country is not to lose still more aviation business to mainland Europe.
- In terms of runway capacity, SRG suggested that freighter traffic currently using Heathrow could be relocated to Manston, freeing these slots to facilitate additional passenger services to the Far East. SRG also noted that operators that were forced to re-locate following the closure of Manston were waiting for the airport to reopen and would be keen to return.
- SRG stated that Low Cost Carriers are very interested in operating from the airport, and that if the airport were to re-open, would be very likely to start services at the appropriate time in the airport`s re-development. However, SRG was not willing, for reasons of commercial confidentiality, to disclose the source of this information nor the airline in question.
- SRG was keen to stress the importance of ancillary businesses to the airport's viability, which included aircraft dismantling and engineering firms. SRG also noted the Search & Rescue operations which had recently been permanently located at Lydd. Further options for the airport would include General Aviation (GA) which would be able to access London via Battersea Heliport.
- SRG noted the widespread political support for Manston Airport, including Sir Patrick McLoughlin, the former Transport Minister, The Minister of State for Aviation, John Hayes and David Cameron when Prime Minister. He indicated that that political support at national and local levels was, particularly in the light of the Brexit decision, on-going. SRG also noted that there would not be any need for financial support from Central Government and that the airport should be able to attract sufficient private capital to exist as a standalone business.
- SRG spoke at length on the alternative proposal by Stone Hill Park for the site, noting that that the ability to develop the site for residential and commercial purposes was questionable, with several potential challenges including the likely presence of a war grave, buried low level radio-active waste,

archaeological interests, and issues with the effect upon Thanet`s aquifers all needing to be addressed prior to any redevelopment. He indicated that any alternative development would, prior to change of use, require the same intensive Environmental Impact Assessment as that currently being undertaken by RiverOak for airport purposes. Furthermore, SRG noted that there is limited demand for additional industrial space in the area, that there is already a more than adequate supply of industrial land available in East Kent and that the number of new jobs generated at Discovery Park is, contrary to the claims made by the Leader of Kent County Council, low.

- With regard to a new runway in the South East, Sir Roger indicated that he believed that a runway decision would be made fairly soon but that any actual new runway would not be operational for at least 15 years. It is his belief that, even with a new runway in the London airport system, the Manston Airport remains a viable facility with freight as its primary purpose supported by passenger traffic.

Non-Reply

- The following airlines were sent a request for their positon on Manston airport but chose not to submit a response.
    - Monarch
    - Thomas Cook
    - Tui

10. Appendix B: Condition Report Manston Airport

Introduction

The following section contains our report on the condition of the airport assets, it should not be read as a definitive summary of the asset condition. Our report is based on a visual inspection of the airport on 3 August 2016 under the supervision of the current airport owner's representative.

Terminal Building

Summary

The current facility has an approximate footprint of 1,900m^2 and in general would have been suitable for single and dual aircraft operations simultaneously. On balance we would suggest that the building in its current configuration could be re-instated but that the cost of such modifications may make it more economically viable to demolish it and erect a purpose built low cost facility. In general the basic fabric of the building was intact, although there is evidence of water entering the building via the roof at various locations.

General

We observed that the drop off/pickup area was located adjacent to the front of the terminal building. This is in contravention to current security requirements and would necessitate the offsetting of the drop off pickup area. In-turn, this would require the transforming some land currently allocated to parking. The current site could facilitate this change through lateral expansion of the parking area.

We note that the current configuration of the terminal building, along with the apron, limits lateral expansion. To accommodate significant traffic volume would require a significant change to the current layout.

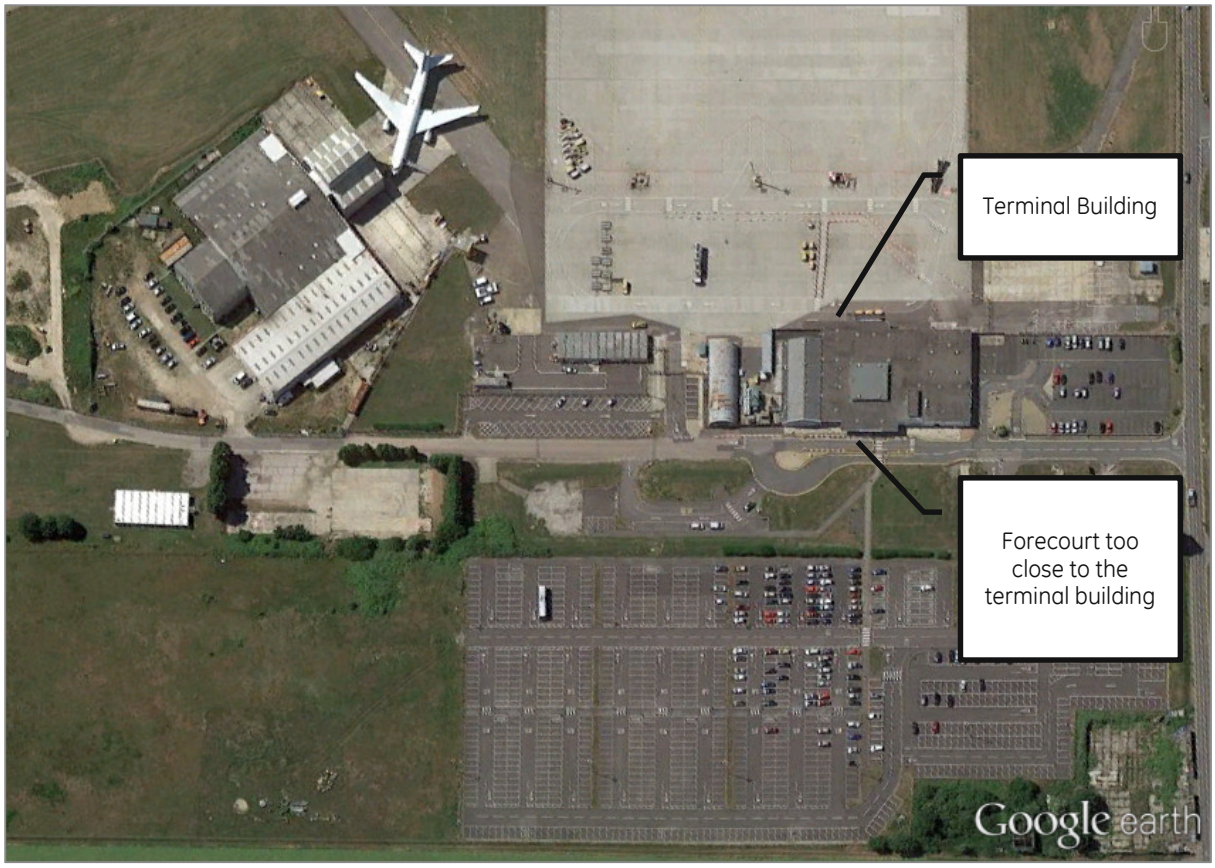


Figure 1: Google Earth image of aircraft maintenance hangar, terminal, parking area and apron (prior to the closure of the airport)



Figure 2: Evidence of water entering terminal building



Figure 3: Main foyer of terminal building from arrivals. Check-in area to the left of the image.



Figure 4: Evidence of water damage in may foyer.



Figure 5: Check in hall (desks removed)

Movement Areas

Apron

Summary

The fabric of the apron appeared to be in relatively good condition with space for up to four simultaneous Code C or two Code E operations.

General

Of note was the significant depth of the apron which accommodated a large GSE storage area at the head of the stand. To become compliant the apron marking would need to be re-established, which is relatively straight forward to accomplish.



Figure 6: Apron as viewed from terminal



Figure 7: Apron Drainage. Some growth of plants which will need to be addressed.

Taxiways

Summary

In general we observed that the taxiways were of relatively good condition with only minor spot repairs required. To re-stablish services appropriate lighting and marking would be required.

Runway

Summary

A visual inspection of the runway indicated that overall it is in very good condition. There is evidence of some vegetation appearing. Discussions with the current owner's representatives identified a surface friction issue. We note that there were plans to address this through surface treatment issues but to our knowledge this work was not carried out.

General

The runway approach and edge lighting has been removed and require re-installing to permit operations. Additionally, the runway has been painted to accommodate 'Operation Stack'. Considerable work is required to remove the current markings from the runway and repaint it with appropriate aviation markings. However, it is our understanding that this work will be completed as part of the current agreement with the Department for Transport.



Figure 8: Runway (Rwy) 29 Threshold



Figure: 9 Large aggregate used for wearing course may be impacting surface friction characteristics



Figure 10: Shoulders of runway are paved. Evidence of plants establishing a presence in cracks



Figure 11: Runway 27 and evidence of plants establishing presence in cracks

Systems

Navigation

Summary

It is our understanding that the Instrument Landing System and supporting systems were sold upon the airport's closure. These systems, including backup power supply, would need to be re-instated.



Figure 12: Radar tower with radar removed

Lighting

Summary

It is our understanding that the approach, runway, taxiway and apron lighting systems and supporting elements were sold upon the airport's closure. These systems including backup power supply would need to be re-instated.

Control Tower

Summary

No appreciable control tower facilities were available to inspect. To facilitate commercial operations it would be necessary to install a new control tower and associated support systems, including appropriate radar systems.

Rescue & Fire Fighting

Summary

The current Fire Station is unsuitable for use. We believe it would require demolishing and the construction of a new Fire and Rescue Station.



Figure 13: Dilapidated Rescue & Fire Fighting Facility

Ancillary Buildings

Maintenance Hangar

Summary

Adjacent to the primary apron is a large aircraft maintenance hangar with a unique addition allowing it to accommodate aircraft larger than what it was originally designed for. It is our understanding that this building is currently under lease by a maintenance company undertaking limited maintenance work. The building fabric appeared to be in reasonable condition.



Figure 14: Maintenance hangar



Figure 15: Interior of maintenance hangar



Figure 16: Bespoke tail enclosure of hangar

Cargo Hangars

Summary

During the visit we undertook a preliminary inspection of several cargo facilities on the airport site. The location of the facilities was ideal for this type of operation, having access to the local road network and the taxiway system. In general the buildings appeared to be in reasonably good condition. We foresee no reason as to why they could not be re-instated as cargo facilities.



Figure 17: First cargo hangar exterior



Figure 18: First cargo hangar interior



Figure 19: Second cargo hangar exterior



Figure 20: Second cargo hangar interior

Re-Establishment Cost Estimate

The following is an estimate of costs associated with re-establishing the required infrastructure to operate commercial services from the airport.

For the avoidance of doubt, these costs do not include the costs associated with any acquisition of the airport site.

Element	Cost Estimate £	Note
Old Terminal Demolition	400,000	Demolition of existing terminal building
Terminal Building	7,500,000	Construction of new modular single story terminal
Approach Road	750,000	Relocation of approach road to accommodate security requirements
Apron Repairs	200,000	Repairs to apron surface
Airport Lighting	3,000,000	Complete airport navigation lighting system
Navigation Systems	2,500,000	ILS/DME/DVOR
Radar	3,500,000	Secondary Radar System
Runway Treatment	1,500,000	Grooving of runway to address low friction characteristics
Cargo Building Repair	400,000	Minor repair to cargo buildings
Power System	2,500,000	Complete power back up system to accommodate CATI ILS approaches
Mobilisation	1,200,000	Ancillary mobilisation costs of re-instating airport operations
Contingency	3,517,500	15% contingency
	£ 26,967,500	

11. Appendix C

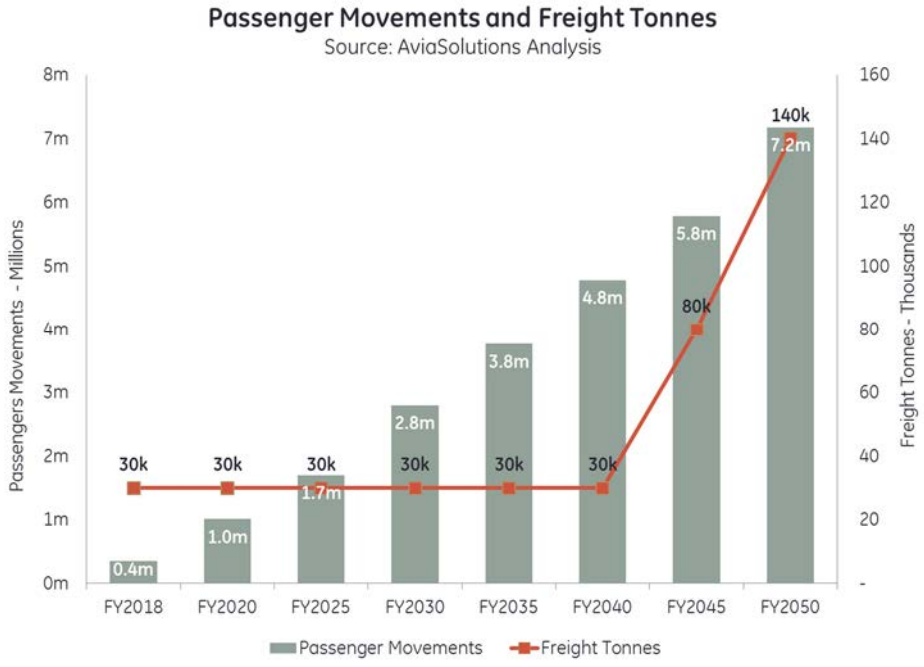
11.1. Outputs for No Runway Development Scenario

In the following paragraphs, we explore the financial viability of the airport based upon there being no new runway in the South East. This scenario takes spill from the London system in addition to a base level of activity generated from the presumed small LCC operation and freighters. Whilst this scenario is the most favourable for Manston airport, as it generates the largest number of passengers and freight, it is perhaps the least likely.

11.1.1. Volume Profile

Passenger movements are forecast to grow at CAGR 19% between FY2018 and FY2030, totalling circa 2.8m passengers by the close of FY2030, growth FY2018 to FY2050 is estimated to be at CAGR of 10%. Freight is not forecast to grow beyond the 30,000 tonnes of the core freighter operations until FY2040, but at that point, freight is assumed to spill from the London Area taking it to some 140,000 tonnes by FY2050.

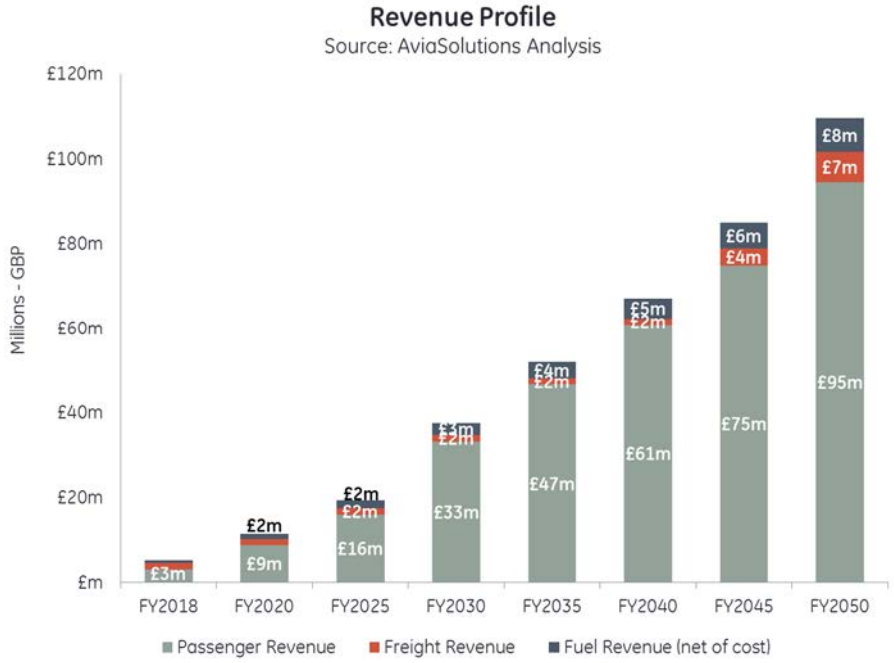
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Passenger Movements	350k	1,010k	1,700k	2,800k	3,770k	4,780k	5,790k	7,180k
Freight Tonnes	30k	30k	30k	30k	30k	30k	80k	140k
Total ATMs	1,100	2,900	6,400	14,100	20,900	28,100	37,200	49,500



11.1.2. Revenue Profile

Revenue generation is forecast to grow at a CAGR of 18% between FY2018 and FY2030, driving revenues to £38m by FY2030, and at a CAGR of 10% between FY2018 and FY2050 to reach total annual revenues of £110m by FY2050. The revenue profile is exponential in nature due to the increasingly constrained London System environment permitting increasing spill to Manston.

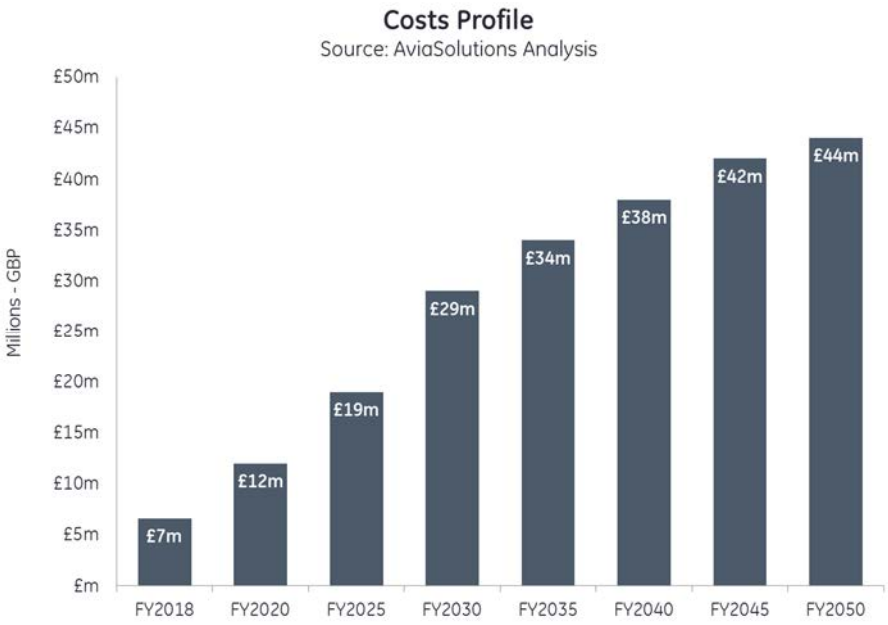
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Revenue	£5m	£12m	£19m	£38m	£52m	£67m	£85m	£110m

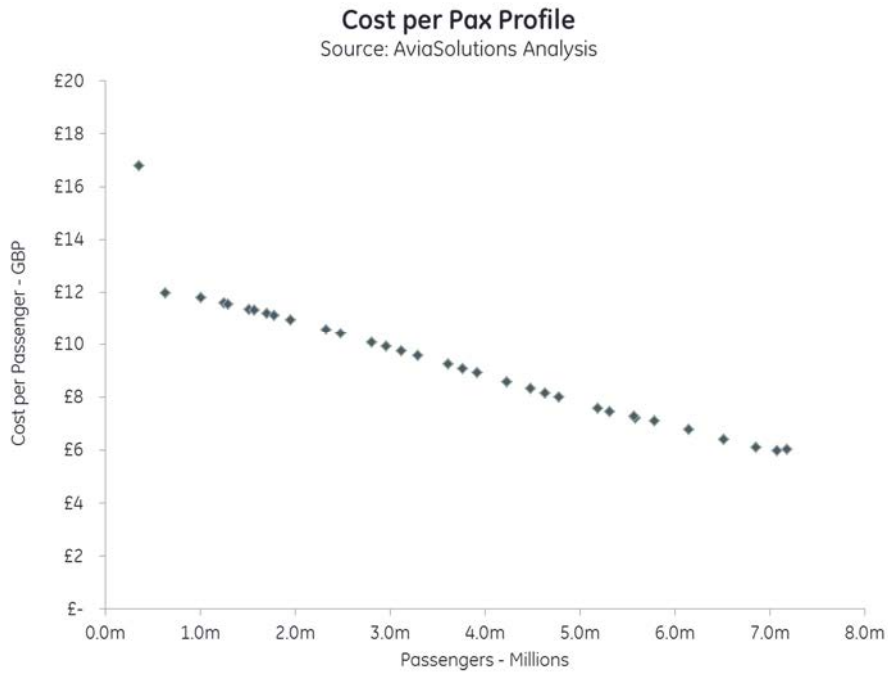


11.1.3. Cost Profile

Total Costs are forecast to grow at 13% per annum on average between FY2018 and FY2030, resulting in total costs of £29m by FY2030, and at 6% per annum between FY2018 and FY2050 to produce total annual costs of £44m by FY2050. Costs are increasing more slowly than revenue, leading to greater margin generation. We consider that as the airport generates increased volumes of traffic, it is able to achieve increasing economies of scale, in particular within its passenger operation. Furthermore, as the passenger volume increases, the non-unit driven costs are distributed over an increased base, thereby reducing the average cost per passenger to the airport, an essential element in increasing margin.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Cost	£7m	£12m	£19m	£29m	£34m	£38m	£42m	£44m

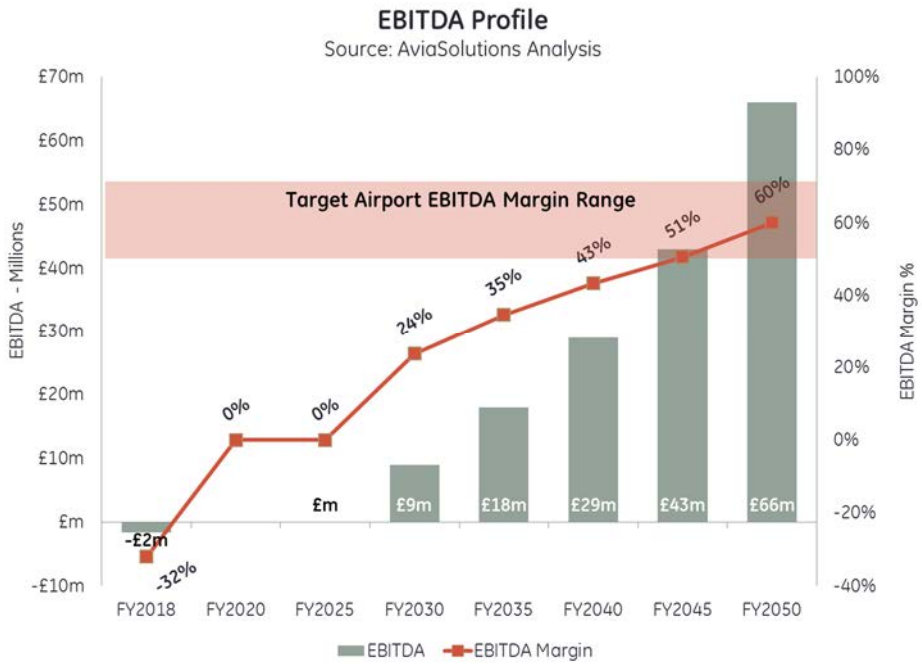




11.1.4. EBITDA Profile

EBITDA is initially forecast to be negative, indicating that the airport would be loss making in the early years at an operational level. It first turns an operating profit in FY2030, generating £9m of operating income and an EBITDA margin of 24%. The EBITDA margin in the long term is forecast to reach 60%, generating £66m of EBITDA in FY2050. This level of EBITDA is much more akin to a typical airport which requires sufficiently high EBITDA margins to cover the ongoing costs and CAPEX of a large asset base.

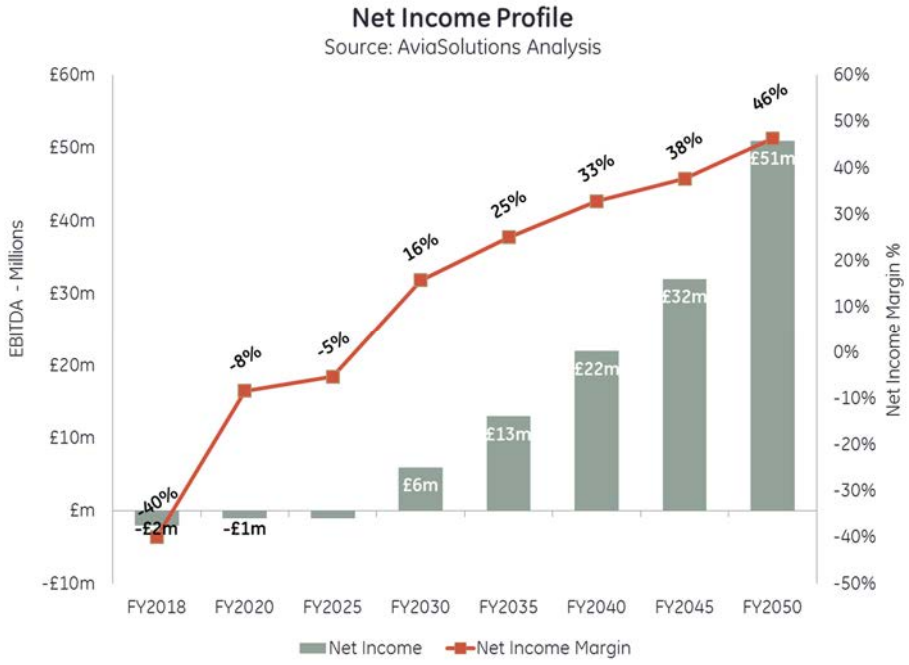
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
EBITDA	-£2m	£m	£m	£9m	£18m	£29m	£43m	£66m
EBITDA Margin	-32%	0%	0%	24%	35%	43%	51%	60%



11.1.5. Net Income Profile

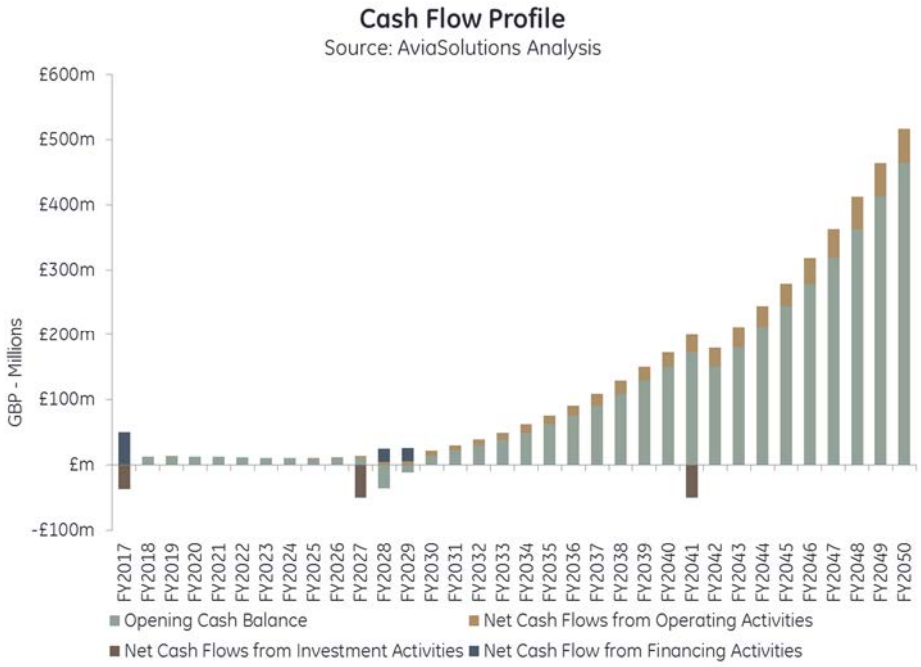
Net income, the profit left after all deductions, is forecast to be negative until FY2025. The first positive results fall circa FY2030 when the airport is expected to generate net income of £6m. This income stream steadily increases through to FY2050 at which point it is expected to be circa £51m per annum.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Net Income	-£2m	-£1m	-£1m	£6m	£13m	£22m	£32m	£51m
Net Income Margin	-40%	-8%	-5%	16%	25%	33%	38%	46%



11.1.6. Cash Flow

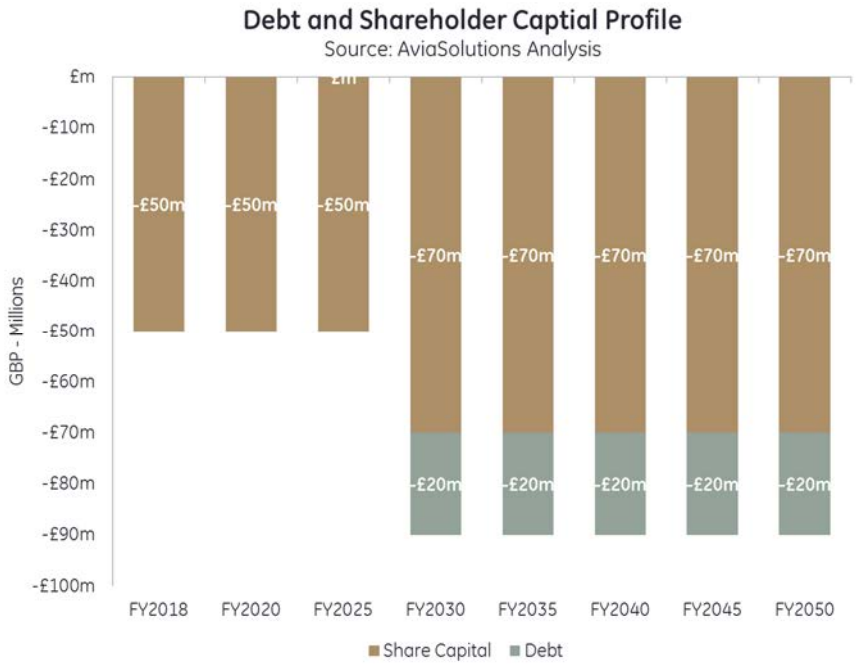
The airport is forecast to develop its cash position with limited additional capital requirements except those required to expand the terminal in FY2027. The position shown below is excludes any dividend payments that the owner may wish to extract from the asset: such payments would reduce its cash position.



11.1.7. Debt and Shareholder Capital

Whilst the exact nature and mixture of debt and shareholder capital would be subject to complex financial optimisation, we have illustrated below a simple capital structure used in the analysis to illustrate the need for additional capital throughout the period. To maintain the business it would be necessary to acquire circa £40m in additional capital around FY2027. For the purposes of modelling this additional capital has been split between debt and equity.

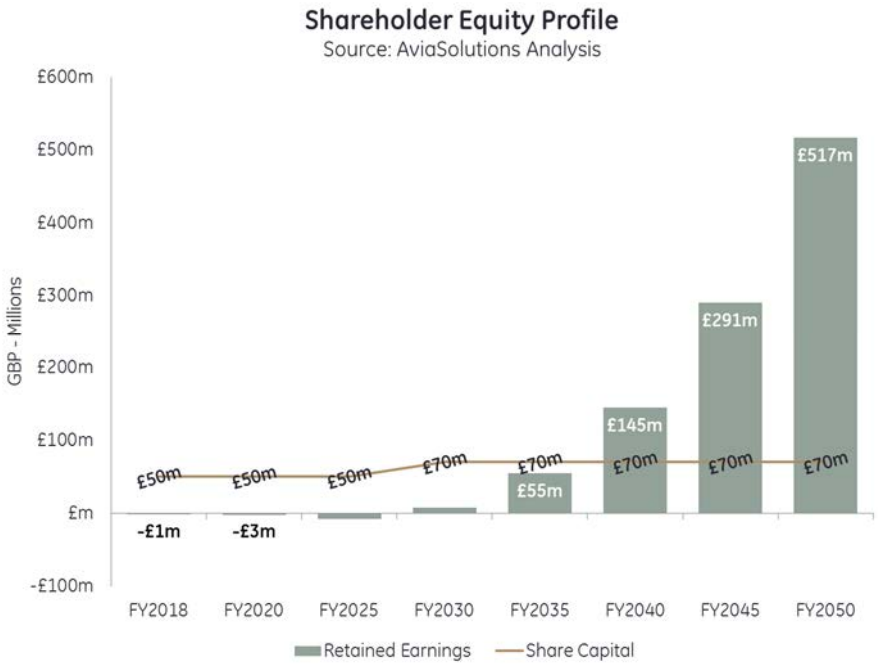
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Debt	£m	£m	£m	£20m	£20m	£20m	£20m	£20m
Share Capital	£50m	£50m	£50m	£70m	£70m	£70m	£70m	£70m



11.1.8. Shareholder Equity

Considering the effects of earnings on shareholder equity, the business does not post positive retained earnings until circa FY2030. This in effect limits the business's ability to pay dividends to shareholders until this point at the earliest.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Retained Earnings	-£1m	-£3m	-£8m	£8m	£55m	£145m	£291m	£517m
Share Capital	£50m	£50m	£50m	£70m	£70m	£70m	£70m	£70m



11.1.9. Conclusion

Given the parameters of this specific scenario it could be feasible to operate a commercially viable airport on the site. However, the risks in doing so are high and many of the elements that cause the proposal to payback can be reversed (such as a new runway being authorised) and are out of the control of the asset manager.

Whilst we believe an airport on the site may be feasible in this scenario, the probability of there being no new runway in the South East is very low, even if a decision is delayed, it is still expected that a new runway will be required at some point. If Manston were to become an established airport it would need many years to reach a point of maturity where it would be able to withstand a new runway becoming operational. The probability of this occurring, given the Government's current position on runway capacity, is uncertain at best. Therefore we conclude that whilst potentially feasible, this scenario is improbable.

11.2. Outputs for LGW Second Runway Scenario

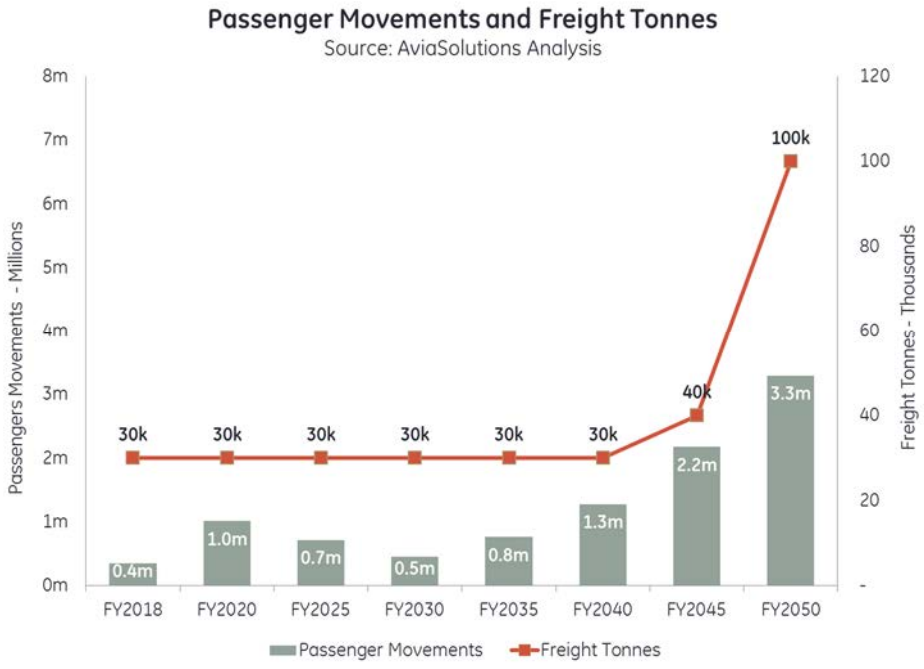
In the following paragraphs, we explore the financial viability of Manston Airport based upon there being a second runway at Gatwick. This was an option short-listed by the Davies Commission and while not finally recommend has a body of support based on its lower environmental impacts and the consequent ability to be delivered earlier (assumed here to be 2025). Manston may have a short initial boost to traffic before the second runway becomes available but then traffic falls before growing again. This scenario takes spill from the London system in addition to a base level of activity generated from the presumed small LCC operation and freighters. This scenario is less favourable for Manston Airport than would be a development at Heathrow.

11.2.1. Volume Profile

Passenger numbers are forecast to grow to more than 1.5 million in 2024, the year before the assumed opening of the second runway, but immediately fall back starting in 2025 and declines to a low of 0.5 million in 2033. From this low point, it grows as a result of the resumption of overflow, reaching 3.5 million passengers in 2050. Overall growth between FY2018 and FY2050 averages 7% per annum.

Freight is not forecast to grow beyond the 30,000 tonnes of the core freighter operations until FY2040, but at that point, freight is assumed to spill from the London Area taking it to some 100,000 tonnes by FY2050.

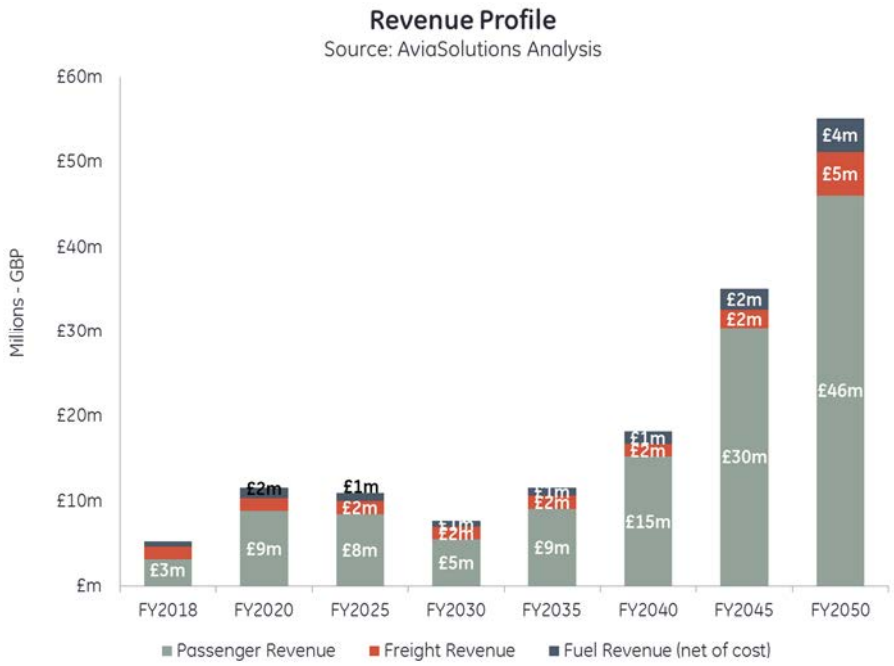
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Passenger Movements	350k	1,010k	710k	450k	760k	1,270k	2,170k	3,290k
Freight Tonnes	30k	30k	30k	30k	30k	30k	40k	100k
Total ATMs	1,100	2,900	5,000	3,200	5,300	8,900	15,900	26,000



11.2.2. Revenue Profile

Revenue generation is forecast to grow at a CAGR of 4% between FY2018 and FY2030, driving revenues to £8m by FY2030, and at a CAGR of 8% between FY2018 and FY2050 to reach total annual revenues of some £55m by FY2050.

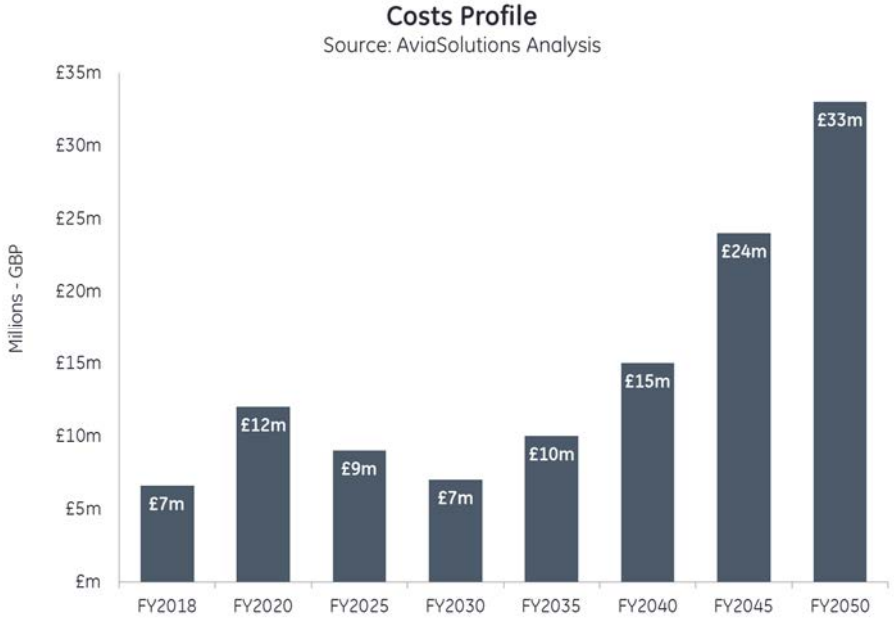
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Revenue	£5m	£12m	£11m	£8m	£12m	£18m	£35m	£55m

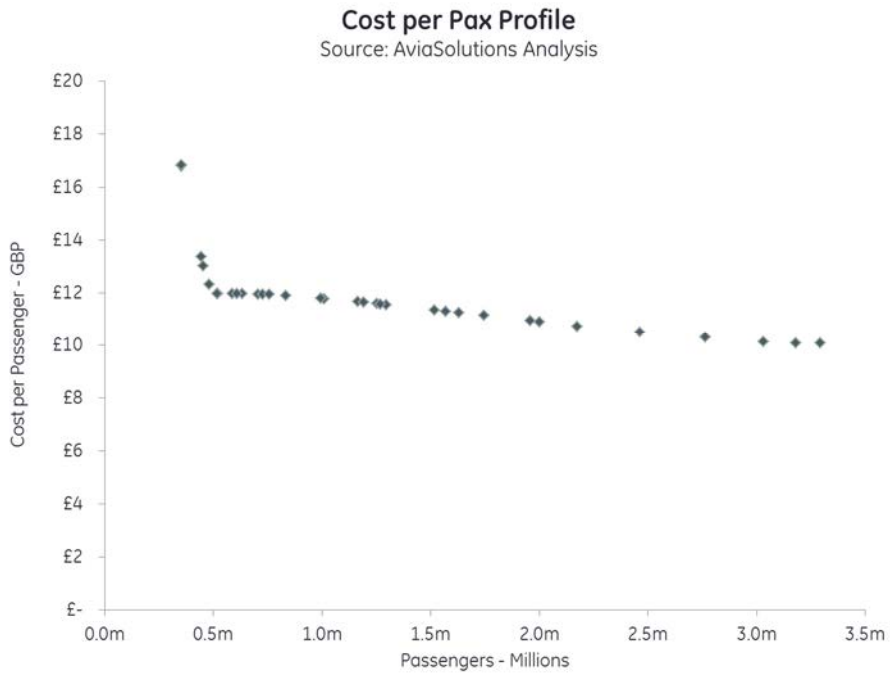


11.2.3. Cost Profile

Total Costs rise prior to the opening of the second runway, but then fall back to £7 million in FY 2030. Thereafter, they increase to nearly £35 million in 2050, representing an average increase between FY2018 and FY2050 of 5% per annum. Cost per passenger falls over the period of the projections.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Cost	£7m	£12m	£9m	£7m	£10m	£15m	£24m	£33m

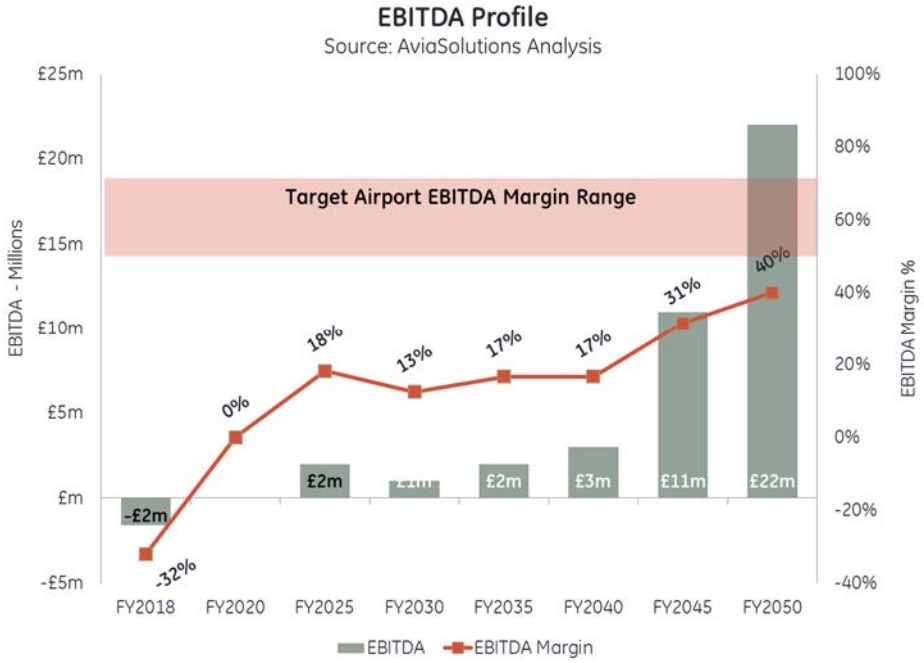




11.2.4. EBITDA Profile

EBITDA is initially forecast to be negative, indicating that the airport would be loss making in the early years at an operational level. It first returns an operating profit in FY2025, generating £2m of operating income and an EBITDA margin of 18%. As the second runway at Gatwick comes on-stream, EBITDA at Manston would stagnate due to the lack of available traffic volumes. The EBITDA margin in the long term is forecast to reach 40%, with an EBITDA of £22m in FY2050. This level of EBITDA is significantly below that which we would typically expect for an airport to be attractive to the investment community.

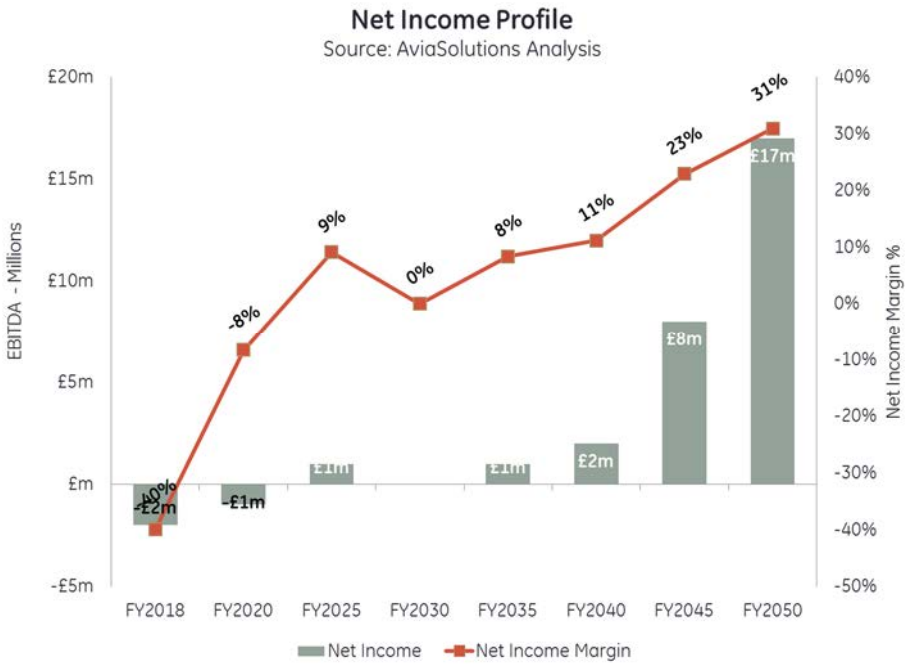
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
EBITDA	-£2m	£m	£2m	£1m	£2m	£3m	£11m	£22m
EBITDA Margin	-32%	0%	18%	13%	17%	17%	31%	40%



11.2.5. Net Income Profile

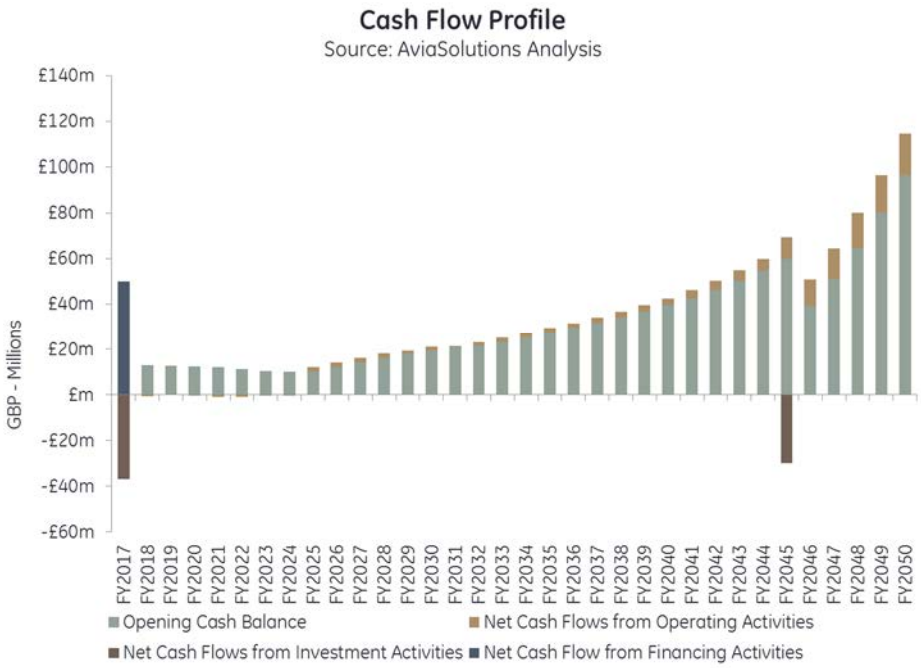
Net income, the profit left after all deductions, is forecast to be negative until after FY2020. The first positive results are generated around FY2025 when the airport is expected to generate net income of £2m, although it falls slightly thereafter as Gatwick's new runway absorbs traffic. The income stream then remains broadly constant for the following 15 years before increasing as capacity becomes constrained once more in the London system. It reaches £17m in FY2050.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Net Income	-£2m	-£1m	£1m	£m	£1m	£2m	£8m	£17m
Net Income Margin	-40%	-8%	9%	0%	8%	11%	23%	31%



11.2.6. Cash Flow

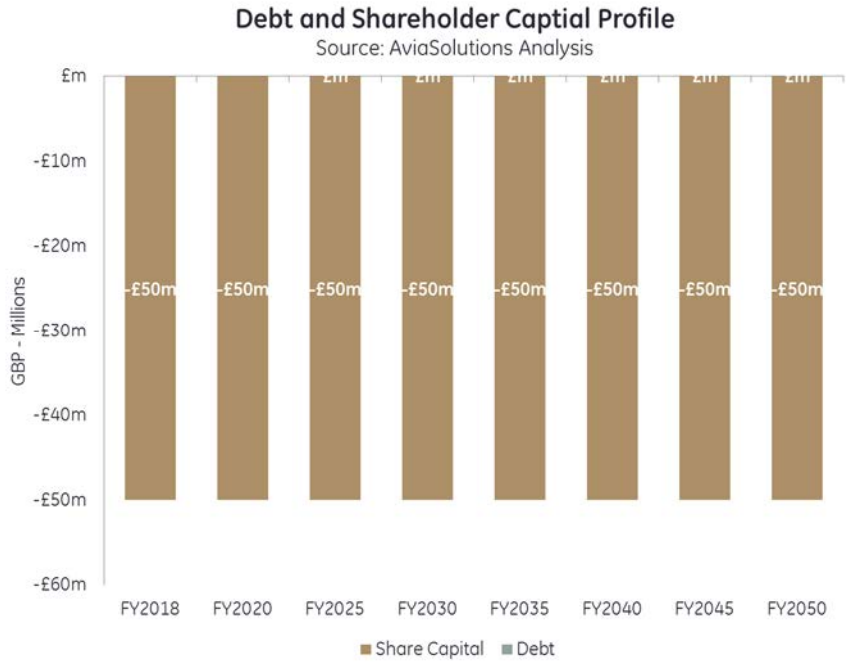
The airport is forecast to develop its cash position with limited additional capital requirements until FY2045 when there would be a requirement to expand the terminal, by which time the company could have built up sufficient cash to be able to finance the CAPEX from reserves. The position shown below excludes any dividend payments that the owner may wish to extract from the asset: such payments would reduce its cash position.



11.2.7. Debt and Shareholder Capital

Whilst the exact nature and mixture of debt and shareholder capital would be subject to complex financial optimisation, we have illustrated below a simple capital structure used in the analysis to illustrate the need for additional capital throughout the period. To maintain the business no further financing would be required. Whilst the business does not generate significant revenues or income, there is little requirement for significant CAPEX investments, thereby eliminating the requirements for additional financing

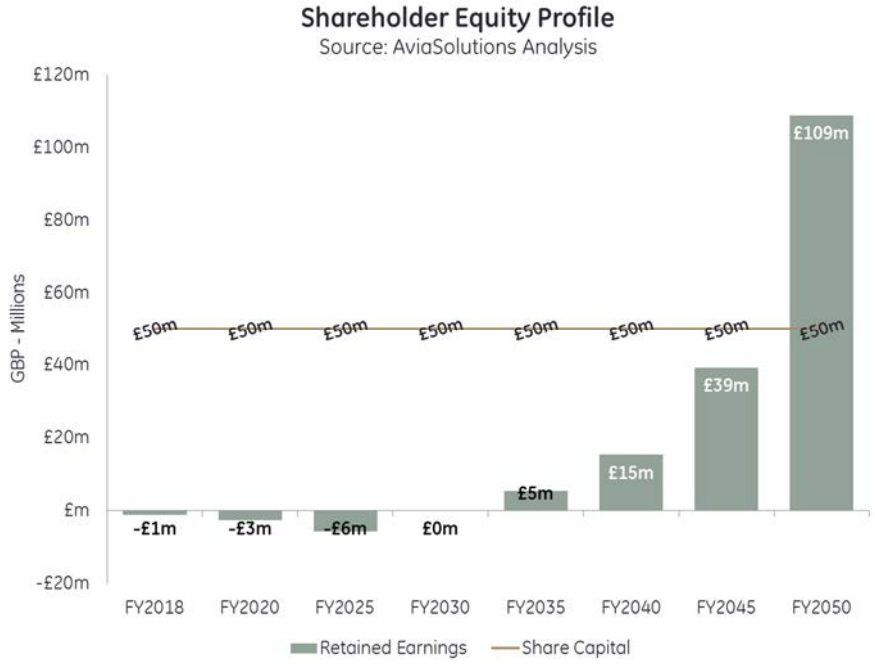
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Debt	£m	£m	£m	£m	£m	£m	£m	£m
Share Capital	£50m	£50m	£50m	£50m	£50m	£50m	£50m	£50m



11.2.8. Shareholder Equity

Considering the effects of earnings on shareholder equity, the business does not post positive retained earnings until nearly FY2035. This in effect limits the business's ability to pay dividends to shareholders until this point at the earliest.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Retained Earnings	-£1m	-£3m	-£6m	£m	£5m	£15m	£39m	£109m
Share Capital	£50m	£50m	£50m	£50m	£50m	£50m	£50m	£50m



11.2.9. Conclusion

The asset would require significant long term investment but would only generate a marginal return. These returns are also predicated on a large number of external variables over which the owner of Manston Airport has very little influence. It is AviaSolutions' view that based on this scenario there is no viable long term prospect of an economically viable airport being established on the site.

11.3. Outputs for Both Runways Scenario

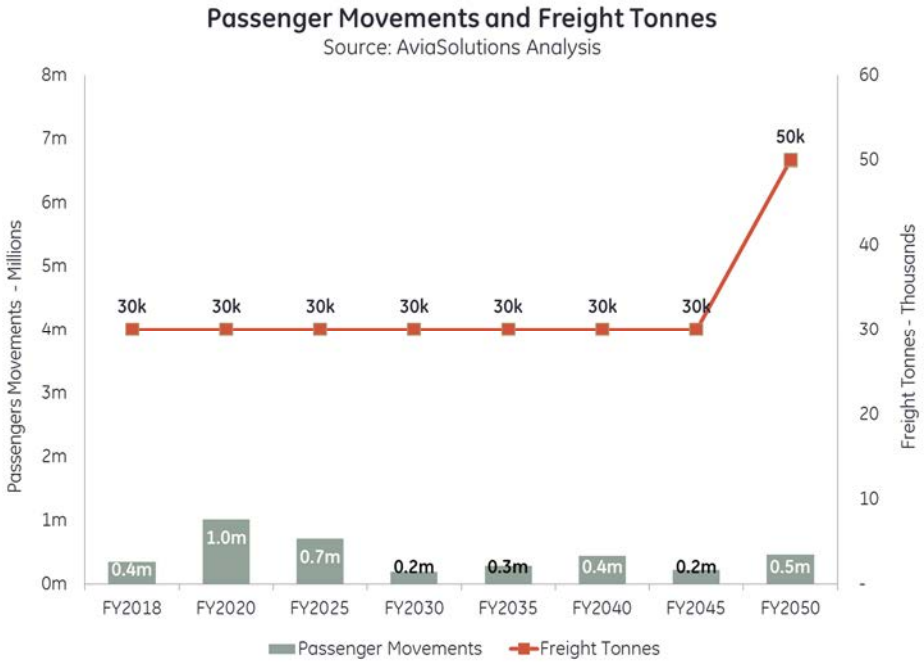
In the following paragraphs, we explore the financial viability of Manston Airport based upon there being two runways constructed in the South East, one at Gatwick and the other at Heathrow. It is clear from this assessment that in the longer term there is forecast to be sufficient demand to require two additional runways. In our assessment, we have assumed that the runway at Gatwick would be opened first, followed later by that at Heathrow. It is though possible that Gatwick might decide to postpone its second runway given its likely loss of traffic Manston would have a short initial boost to traffic before the first of the runways becomes available but then traffic falls and only resumes growth towards the end of the forecasting period. This scenario is the least favourable for Manston Airport.

11.3.1. Volume Profile

Passenger numbers are forecast to grow to more than 1.5 million in 2024, the year before the assumed opening of the first of the runways, but immediately fall back starting in 2025. Passenger traffic remains minimal for the remainder of the forecasting period.

Freight is not forecast to grow beyond the 30,000 tonnes of the core freighter operations until after FY2045, but might reach some 50,000 tonnes by FY2050.

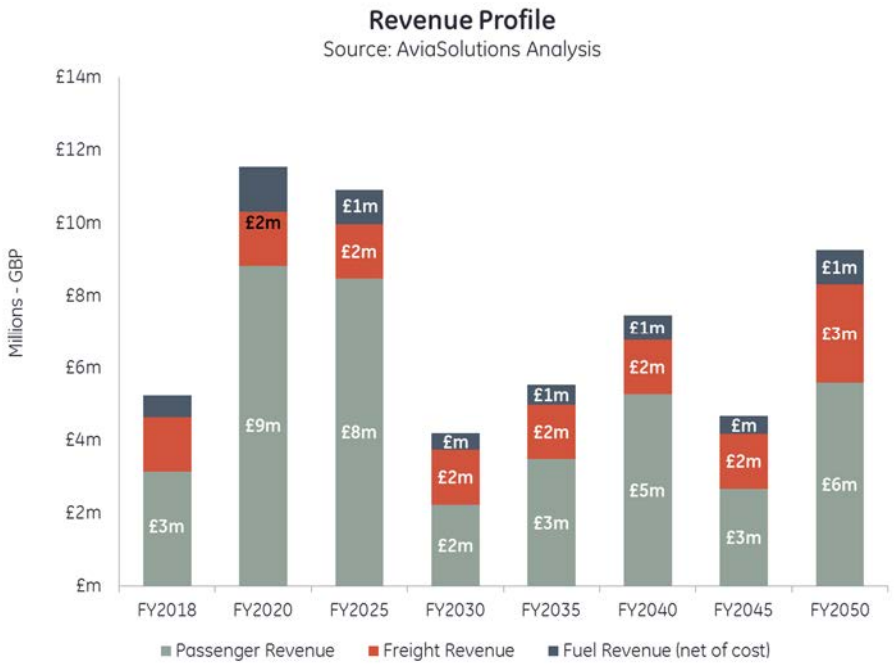
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Passenger Movements	350k	1,010k	710k	190k	290k	440k	220k	460k
Freight Tonnes	30k	30k	30k	30k	30k	30k	30k	50k
Total ATMs	1,100	2,900	5,000	1,300	2,000	3,100	1,600	4,300



11.3.2. Revenue Profile

Revenue generation reflects the lack of traffic volume and peaks in the period up to FY2025.

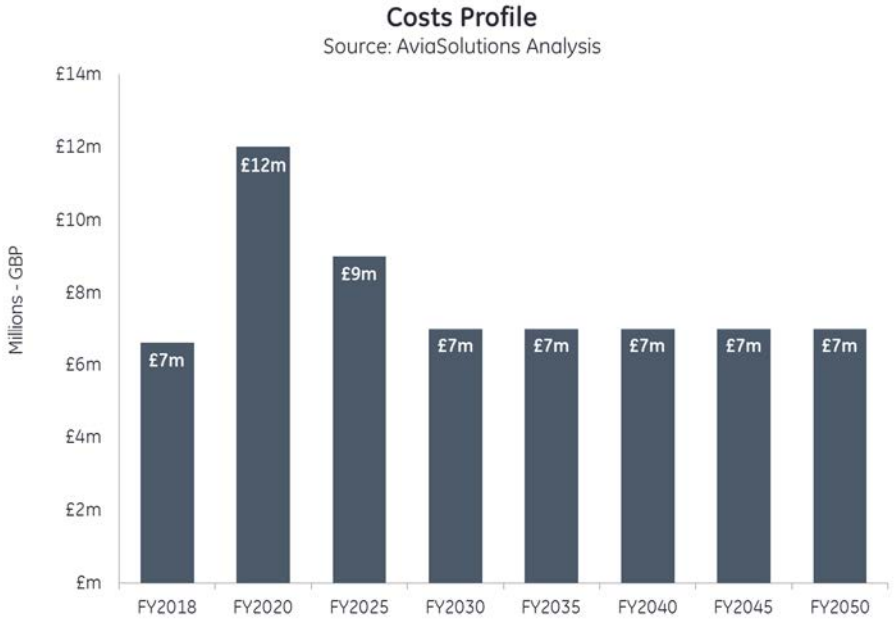
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Revenue	£5m	£12m	£11m	£4m	£6m	£7m	£5m	£9m

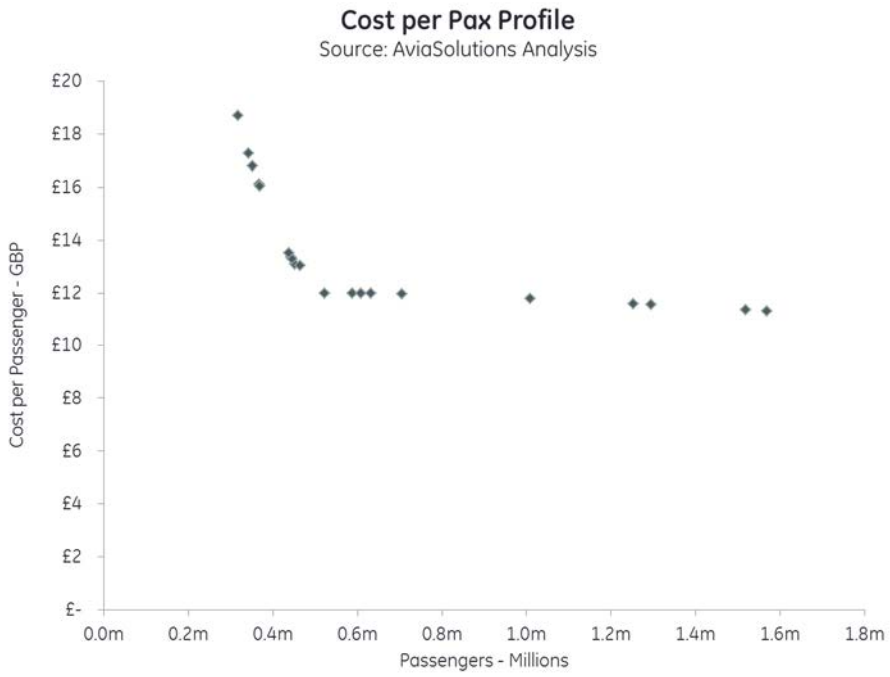


11.3.3. Cost Profile

Total Costs rise a little before the opening of the first of the runways, but then fall back to the core essential fixed costs associated with having the airport open

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Total Cost	£7m	£12m	£9m	£7m	£7m	£7m	£7m	£7m

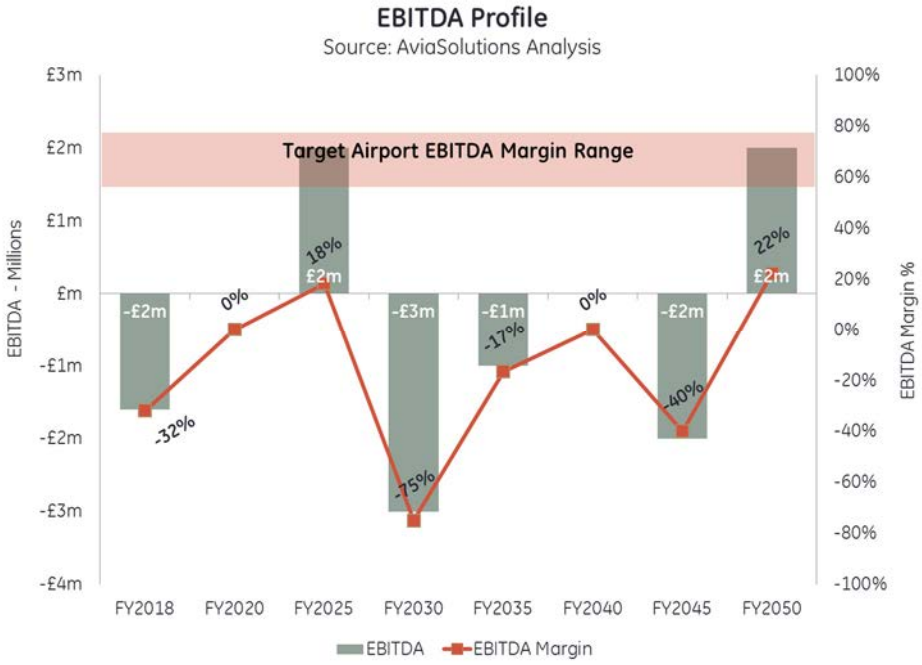




11.3.4. EBITDA Profile

EBITDA is forecast to be negative for the majority of the forecast period, except for the period up to FY2025 and at the very end

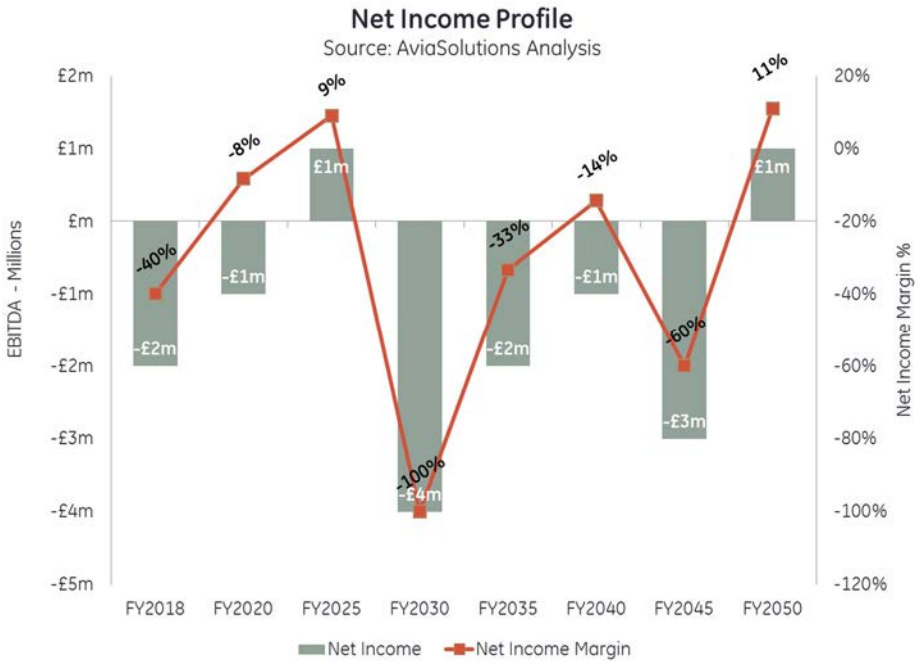
	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
EBITDA	-£2m	£m	£2m	-£3m	-£1m	£m	-£2m	£2m
EBITDA Margin	-32%	0%	18%	-75%	-17%	0%	-40%	22%



11.3.5. Net Income Profile

Net income, the profit left after all deductions, is forecast to be negative for almost the entire period.

	FY2018	FY2020	FY2025	FY2030	FY2035	FY2040	FY2045	FY2050
Net Income	-£2m	-£1m	£1m	-£4m	-£2m	-£1m	-£3m	£1m
Net Income Margin	-40%	-8%	9%	-100%	-33%	-14%	-60%	11%



11.3.6. Conclusion

If two runways were to be constructed in the South East, then it is clear that there is no realistic prospect of long term viability for a re-opened Manton Airport. The potential profits in the period to FY2025 would not be adequate to justify the costs of acquiring and re-commissioning the airport, and prospects thereafter would be exceptionally poor.

PRIVATE & CONFIDENTIAL



Manston Airport
Local Plan Representations - FINAL REPORT

Report for Thanet District Council

By AviaSolutions

August 2017



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Executive Summary

AviaSolutions has reviewed the Local Plan Representations that referred specifically to AviaSolutions' earlier report prepared for Thanet District Council "Commercial Viability of Manston Airport" (September 2016) that Thanet District Council is using as evidence in the Local Plan process.

AviaSolutions' 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.

The objections raised through the Representations are similar across the eight documents under review and variously suggest that AviaSolutions' report did not fully consider the excess demand for air freight and passenger movements in the congested London airport system nor the full range of commercial opportunities available to the operator of Manston Airport. This argument is put forward alongside a range of counter-proposals for Manston Airport. However, it is evident that these counter proposals do not stand up against scrutiny on a variety of regulatory, commercial and financial aspects.

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.

1. Introduction

1.1. Introduction

Thanet District Council (TDC) commissioned AviaSolutions on 26th June 2017 to provide support pertaining to TDC's treatment of Manston Airport within the Local Plan, and more specifically, to provide commentary as required with regards to Local Plan Representations ("Representations") it received through the public consultation period.

This work scope follows the previous engagement of AviaSolutions by TDC to report on the financial viability of Manston Airport (AviaSolutions: Commercial Viability of Manston Airport[1]) and a subsequent Frequently Asked Questions report[2].

1.2. Documents Reviewed

AviaSolutions has reviewed the following Representations, copies of which may be found in the Appendix of this report.

Colin Bandick	Comment ID 136
Beau Webber	Comment ID 527
David Stevens	Comment ID 826
Phillip Kruger	Comment ID 950
Dover District Council	Comment ID 1221
Bob Parsons	Comment ID 1316
John Jeapes	Comment ID 1425
Supporters of Manston Airport	Comment ID 734

[1] *https://www.thanet.gov.uk/media/3500741/Final-Report-for-TDC-Manston-Airport-Viability-Oct2017_2.pdf*

[2] *https://www.thanet.gov.uk/media/3553836/AviaSolutions-FAQ-for-TDC.pdf*

2. Local Plan Representations

2.1. Colin Bandick – Comment ID 136

Representation Details

Comment ID: 136 Respondent: Colin Bandick

Response Date: 30 Jan 2017 Response Type: Object

Summary of Representation

Mr. Bandick surmises that the former Manston Airport site should be reinstated as an airport dedicated to the carriage of airfreight, but also with a parallel development of a rail-head, permitting intermodal freight. It is further suggested that this rail-head would permit the carriage of the Road Feeder Service ("RFS") vehicles on board the freight trains and disperse them via strategic locations throughout the UK. The support for this type of service, would, in Mr. Bandick's opinion, be forthcoming from the rail freight industry.

AviaSolutions Response

In the UK, there are currently no intermodal airfreight to rail freight exchanges[3], and the major freight hubs of Heathrow, East Midlands and Stansted are no exception. The reasons are multifaceted and revolve around key areas. Firstly, current legislation permits the carriage of bonded 'Known' freight by Road Feeder Services (trucks) but this does not extend to rolling stock. Secondly, the structure of the industry is highly concentrated amongst the large Freight Forwarders; they have invested heavily (strategically, presenting barriers to entry of new competitors) in their current infrastructure which is centred around hub airports and the distribution channels they can already access.

[3] 3. *Page 41- Department for Transport (2009), The Air Freight End-to-End Journey: An analysis of the end-to-end journey of air freight through UK international gateways. Available from http://webarchive.nationalarchives.gov.uk/+/http:/www.dft.gov.uk/about/strategy/transportstrategy/tasts/userexperience/endtoendjourney.pdf*

2.2. Beau Webber – Comment ID 572

Representation Details

Comment ID: 572 Respondent: Beau Webber – Save Manston Airport Association

Response Date: 13 March 2017 Response Type: Object

Summary of Representation

The Representation by Mr. Webber is strongly pro-Manston airport and raises several areas of objection. These include:

- Stating that "There is … 'currently unmet demand for freight in the South East, which for the South East of the UK is calculated to be around 80,000 movements ….' – this is nearly 10 times the movement requirement for the Development Consent Order, which is 10,000 movements per year. So, to say that there is no need for aviation at Manston Airport requires wilful blindness"

- In the RiverOak non-statutory consultation document, they say, additional facilities proposed include:
  - a base for at least one passenger carrier;
  - an aircraft recycling and engineering facility;
  - a flight training school;
  - a fixed base operation for executive travel; and
  - business facilities for aviation related organisations.

AviaSolutions Response

Several of the URL's provided by Mr. Webber link to a secure site that has restricted access permissions, so it has not been possible to ascertain the source of these quotes. Notwithstanding this, AviaSolutions believes that the points raised regarding demand / capacity is invalid.

As one of the premier UK freight hubs, Stansted Airport currently handles c. 10,000 ATM annually for dedicated air freighters. This less than half of the statutory 20,500 ATM allocated under its licensing agreement for dedicated freighter operations. Whilst some of these slots are arguably less favourable, or less cost attractive, if demand for these slots were as much as 80,000 ATM, it is difficult to understand why they remain at less than half of their allocation. Furthermore, the industry fully expects a new runway to be built in the South East (the Government currently opting for Heathrow) which will bring additional belly-hold capacity into the market. The strong, mature, long haul market from Heathrow is one of the prime reasons that freight flourishes in the UK; it offers a far wider, more frequent set of destinations than dedicated freighters could ever achieve. Finally, whilst not definitive, it is believed the '80,000' freighters quoted may be a reference to a

York Aviation[4] report in which (p19), it presents various scenarios and the residual unmet demand. 80,000 ATM in this case correlates to a 'No Expansion' scenario, which is clearly at odds with industry expectations. Furthermore, the report purely considers the effect on the London Area Airports; the residual demand could be met by regional airports such as the national freight centre at East Midlands, or Manchester Airport (same ownership as Stansted under MAG).

In addition, Manston Airport whilst operational, offered the air freight industry additional cargo capacity, though annual cargo throughput remained relatively constant from 2000 to 2013 at around 30,000 tonnes.

With regards to the facilities it is stated RSP wish to provide at Manston Airport:

- A base for at least one passenger carrier - a plausible option - this was explored in the AviaSolutions viability study. This would most likely be a Low-Cost Carrier, seeking to pay the minimal landing and passenger charges. The AviaSolutions Viability Study used a proxy yield of £3.5 per passenger which is above the rates paid by Low Cost Carriers at many regional airports.
- An aircraft recycling and engineering facility - these facilities are courted by many airports around the world, and in the UK. Whilst it is acknowledged that at least one party has expressed an interest in Manston Airport due to a personal tie, this does not substantiate a sustainable economic industry interest.
- A flight training school - many airports offer flight training schools, it is difficult to justify what Manston Airport's unique proposition would be given the relatively thin catchment for such activities.
- A fixed base operation for executive travel - Executive travel in private jets is likely to be undertaken by wealthy individuals and business people. The offer at Manston Airport, located so far from central London, is highly questionable. It is challenging to understand why users would opt to travel to Manston over Farnborough, Biggin Hill, London City Airport or similar mature and more convenient airports.
- Business facilities for aviation related organisations - whilst aviation related organisations would undoubtedly support the airport, the revenue generated by the airport from these activities is relatively small. Typically, this comes in the form of property rent, the market rates for which are not likely to be sufficient to turn the airport into a financially viable entity.

[4] *http://www.fta.co.uk/export/sites/fta/_galleries/downloads/air_freight/air-freight-implications-from-new-capacity.pdf*

2.3. David Stevens – Comment ID 826

Representation Details

Comment ID: 826 Respondent: David Stevens

Response Date: 17 March 2017 Response Type: Object

Summary of Representation:

The Representation by Mr. Stevens objects to the SP05 proposal along the following lines:

- It is the view of Mr Stevens that the information put forward by RSP and its associates, in conjunction with the forthcoming proposed DCO process, demonstrates that there is a reasonable prospect of the Manston Airport site being utilised as a fully operational airport.

- Furthermore, it is Mr Stevens view that the AviaSolutions Viability Study, which is being used as evidence from by Council, is not evidence based and is opinion, which has been shown to be unreliable by Mr. Chris Cain, a consultant for RSP for the following reasons:
  - Excluded the RiverOak business plan because Avia would not or could not sign a non-disclosure agreement.
  - When the RiverOak plans are run through the Avia model it shows that the airport is viable.
  - Was based on an out of date growth rate of 1% when it should be nearer to 3.7%.
  - Worked on a modest investment of £77m when RSP are looking to invest up to £300m.
  - Assumed that cargo tonnage would remain static at 30,000 tons when two experts working independently using different models project figures of between 220,000 to 230,000 tons.
  - Uses the assumption that belly hold capacity will be able to take up all the demand, which is simply not the case.
  - Ignored the income and jobs generated from general aviation activities, which is worth between 20%-25% of a smaller airport's total revenue.
  - Ignored the plans for maintenance, repair and tear down which will generate substantial income as well as providing skilled jobs.
  - Focused primarily on passenger not freight which is the basis of the RSP plan.
  - Stated that Manston was in the wrong place, but the key to freight operations is trucking time and Manston is within three to three and a half hours of most of the South East.

AviaSolutions Response

AviaSolutions' Viability Study examined the financial viability of Manston Airport under various demand scenarios. The majority of these scenarios resulted in the airport being financially unviable, predominantly due

to the competitive landscape reducing Manston Airport's ability to attract sufficient cargo and / or passenger traffic.

With regards to the proposal put forward by RiverOak Strategic Partners and its associates, and the forthcoming DCO, it is unclear which material this refers to specifically. In any case, given the DCO is yet to be submitted, AviaSolutions has not had access to this material and cannot provide comment on the probability of its success, or whether it would then result in a financially viable entity as its substance and detail is not known.

With regards to Mr. Stevens comments pertaining to Mr. Chris Cain's evidence and the effect this has on the AviaSolutions viability study.

- AviaSolutions client throughout has been Thanet District Council, therefore all and any work AviaSolutions conducts must be done in a manner that can be shared with Thanet District Council. RiverOak, at the initial meeting between AviaSolutions and RiverOak, made it clear that it did not intend to share its Business Plan, in the same way it had not been shared with Thanet District Council. It is thought that an NDA would not have altered this course of action.
- It is suggested that RiverOak's Business Plan, against the AviaSolutions Viability Study indicates a profitable business, however no information has been provided to this effect. AviaSolutions has not shared publicly its financial model so it is difficult to understand how such a claim could be substantiated.
- Mr. Stevens indicates that the AviaSolutions report is based on '1% growth', however it is unclear what this refers to. A search on the document reveals the only growth rate of '1%' is the 'Tonnes per ATM' at Heathrow when considering the average freight carried on-board passenger aircraft. The actual growth rate in the AviaSolutions model for total freight in the London System is 1.9%.
- The investments used in the AviaSolutions model were based on the demand forecast. In infrastructure investment, normal practice is to stagger facilities investment in line with demand to ensure maximum return on capital investment. The investment is a function of the growth in demand, thus increasing the investment to £300m would simply reduce the free cashflow requirement to service the debt and / or shareholder returns.
- AviaSolutions' model assumed cargo throughput could be between 30,000 tonnes and 140,000 tonnes by 2050 depending on the development of additional capacity at alternative London airports. This is based on a cascade model that AviaSolutions has developed to mimic the most likely business behaviour in a capacity constrained environment. The suggestion that Manston might achieve 220,000 tonnes does not specify which experts have predicted this, although for the purposes of this report it is assumed to be Sally Dixon[5]. This level of freight activity would place

[5] *Sally Dixon – Manston Airport: A National and Regional Aviation Asset: Volume III pg. I*

Manston Airport as the 3rd busiest freight airport in the country within 10 years, a case that is simply unachievable under normal market conditions given the level of maturity of the cargo operation at Heathrow, Stansted and East Midlands.

- AviaSolutions has not assumed belly-hold capacity will absorb all freight demand. However, given the extremely mature aviation networks operating from the UK, that belly-hold will continue to represent the largest share of capacity. Bellyhold capacity tends to be cheaper (except on the busiest of freight routes), more frequent, and offers more destinations than freighters.
- General aviation income is usually derived from an FBO license fee and landing fees. By way of a comparator, a highly successful regional UK airport might expect to generate revenues of £1million annually from GA, and after operating costs and overheads are deducted the impact on EBITDA at an airport the size of Manston is limited.
- MRO and Tear-down facilities are large, complex investments that often require operating partners to be involved in the infrastructure proposal and development thus ensuring the facility has a means of revenue generation form the outset. Whilst RiverOak state they will develop these facilities, it has yet to be demonstrated that such facilities are in demand in Manston. Notwithstanding such demand issues, the revenue the airport actually generates from such operations usually only constitutes rent and licenses, which are generally low value operations for the airport.
- Manston Airport is located in the south east of Kent. Viewed on a map, 3/5ths of the circle around it is the sea. It is not realistic that it could be considered as an excellent location for RFSs. Freight transported to Heathrow, Stansted and East Midlands has instant access to the UK motorway network, is much more closely located to large conurbations, and therefore reduces RFS time and cost.

2.4. Phillip Kruger – Comment ID 950

Representation Details

Comment ID: 950 Respondent: Phillip Kruger

Response Date: 17 March 2017 Response Type: Object

Summary of Representation

The Representation by Mr. Kruger objects to the SP05 proposal through an objection to the AviaSolutions Viability Report:

- The AviaSolutions report ignores the impact of BREXIT.
- The AviaSolutions report ignores the impact of the Paramount Theme Park or Ebbsfleet Garden City.
- New runway capacity at Heathrow or Gatwick will not be ready until 2036 so the need for freight capacity at Manston is more pressing.
- The AviaSolutions viability report does not consider the diversified income streams available, as indicated by Mr. Chris Cain in his evidence.
- Lessons to be learnt from other benchmark airports.

AviaSolutions Response

The objections put forward have been considered by AviaSolutions:

- Brexit was not considered directly in the report which was written a few months after the referendum, at which point little was known on the impact Brexit may have. Now, more than a year on from the vote, the impact of Brexit is still unclear, as is the potential positive or negative impact on the freight industry. At present, huge volumes of freight move in both directions across the Channel seeking the most advantageous prices, however, due to the networks available from the UK, generally this is to the UK's advantage and it is believed to be a net-beneficiary. A Brexit agreement that increases the friction in this operation may result in less freight moved across the Channel, and therefore more residual capacity from the UK. However, the UK Government has stressed that it will seek an arrangement with the EU that has the least possible impact on the free movement of goods between the UK and EU states, therefore we would expect the impact to moderately supress air freight demand in any case.
- In June 2017, it was announced that Paramount has pulled out of the proposed an entertainment park development in Swanscombe, Kent. Despite this, the developers are continuing the planning and though there is clearly a risk that the project may never materialise, therefore incorporating any incremental demand assumptions would not be prudent. Furthermore, the airports at Gatwick and Southend will both be closer to the theme park than Manston, therefore any benefit to Manston Airport is considered marginal at best.

- New runway capacity consensus amongst the industry is that it will be operational by 2030, which leaves a limited period of time for Manston Airport to develop its infrastructure and operation to recoup its investment. Currently there is residual capacity at Stansted airport to handle freighter operations, and airports in the Midlands have additional capacity. This again indicates that should Manston Airport re-open, it will face stiff competition from the outset.
- Whilst the income available from diversified business opportunities certainly augments airport profitability, the ability to generate such income on a long-term basis is challenging. Businesses of these type require high levels of investment meaning that barriers to entry are high, furthermore once they are established at an airport their barriers to exit are high. It is AviaSolutions' opinion that such businesses are unlikely to invest in Manston Airport until such time as they can be sure of its long-term future. Manston Airport presents significant risk, particularly in light of its recent track record of unprofitable operations.

2.5. Dover District Council – Comment ID 1221

Representation Details

Comment ID: 1221 Respondent: Dover District Council

Response Date: 23 March 2017 Responses Type: Observation

Dover District Council's representation raised no objections, rather it provided a commentary on the process thus far, and the position of the Council. In summary, it stated that Dover District Council upheld its previous resolution with regard to the airport;

> "This Council supports the campaign to retain Manston as an operational airport, recognising the role and place it can have in the UK aviation industry, making the better use of regional capacity in accordance with the views of the South East Local Enterprise Partnership, while making a significant contribution as one of the strategic priorities for regeneration of the East Kent area"

The Council came to this conclusion through an appraisal of the process to date including:

- A summary of DDCs agreed representations to TDC, including; an encouragement on TDC to more actively engage in the Duty to Cooperate (DCT) system, until any DCO process is concluded not to change the designation of the site away from 'Aviation Use Only'; a clear specification of other potential uses of the site, and a consideration of the impact on DDC of such uses.
- The chronology since its original resolution was passed in July 2014
- A summation of potential interested parties including RiverOak Strategic Partners and City financier Eddie Truell.
- A summary of the potential challenges DDC has to a housing and commercial development, including; employment and leisure floor space demand, the district centre and its effect on trade in across the two authorities' constituencies, and the visual impact on the landscape of any redevelopment.

AviaSolutions Response

DDC do not raise any objections specifically related to the viability of Manston Airport, rather it focuses on the process and political aspects. As such, AviaSolutions has not provided further comment at these areas of concern are outside of its remit.

2.6. Bob Parsons – Comment ID 1316

Representation Details

Comment ID: 1316 Respondent: Bob Parsons

Response Date: 13 February 2017 Response Type: Object

Summary of Representation

The Representation by Mr. Parsons objects to the SP05 proposal through an objection to:

- Manston's location has been described as being remote from a reasonable catchment area to support passenger flights but this is exactly the opposite for cargo where it is located close to dual carriageway and motorway routes avoiding the capital, railway infrastructure and ferries for efficient payload ground handling. The airport can deliver similar services for air cargo that the three-year-old London Gateway does for marine containers currently transferred from/to about five Freightliner/DB Cargo rail services in each direction per day.
- Manston has the potential to also develop some passenger services; some perhaps linked to operation of regional combi aircraft with a cargo capacity of (say) 3,000kg-4,000kg and 50 passengers to destinations beyond a reasonable time achievable by road or rail for time critical business and able to mix passenger and cargo capacity to ensure a high overall load factor.
- With its 2,750m runway the airport also has the potential to accept the largest aircraft for maintenance and end of life recycling which was a minor business under previous owners but is increasingly important for aircraft manufacturers' life cycle planning. The process removes reusable equipment that might then be reconditioned and form part of maintenance of equivalent aircraft with a continuing working life, the remainder of the body being deconstructed for removal to specialist recycling businesses.
- Turning to ground transport, there is a fairly high volume of air cargo moved by road between airports. As an example, the German operator Lufthansa operates about 200 HGV services, Mondays to Fridays, serving UK airports. Attracting cargo from/to Manston can, as with marine containers, allow for air cargo to be conveyed directly by rail from/to inland terminals in a similar way to present Royal Mail rail services and the planned international "Euro Carex" rail operation (Eurotunnel being the UK partner, the trains planned to use Deutsche Bahn's rail freight terminal at Dagenham via HS1).

AviaSolutions Response

AviaSolutions has reviewed the representation and provides the following response:

- Manston Airport is located in the south east of Kent. Viewed on a map, 3/5ths of the circle around south east Kent is the sea. It is not realistic that it could be considered as an excellent location for RFSs. Freight transported to Heathrow, Stansted and East Midlands has instant access to the UK motorway network, is much more closely located to large conurbations, and therefore reduces RFS time and cost.
- In the UK, there are currently no intermodal airfreight to rail freight exchanges[6], and the major freight hubs of Heathrow, East Midlands and Stansted are no exception. The reasons are multifaceted and revolve around certain key features. Firstly, current legislation permits the carriage of bonded 'Known' freight by Road Feeder Services (trucks) but this does not extend to rolling stock. Secondly, the structure of the industry is highly concentrated amongst the large Freight Forwarders; they have invested heavily (strategically, presenting barriers to entry of new competitors) in their current infrastructure which is centred around hub airports and the distribution channels they can already access.
- Whilst the income available from diversified business opportunities certainly augments airport profitability, the ability to generate such income on a long-term basis is challenging. Businesses of these type require high levels of investment meaning that barriers to entry are high, furthermore once they are established at an airport their barriers to exit are high. It is AviaSolutions' opinion that such businesses are unlikely to invest in Manston Airport until such time as they can be sure of its long-term future. Manston Airport presents significant risk, particularly in light of its recent track record of unprofitable operations.
- The suggestion for operators to utilise 50 seat combi aircraft is an interesting consideration, however, there are no airlines operating these aircraft types in the UK or Europe, and the concept is largely out-dated globally in all but the most remote regions; it would be challenging for the airport to attract such an operator. Furthermore, the range of such an aircraft would be considered limited, only able to operate to destinations that are currently operated to by aircraft from Heathrow and Gatwick. Such short haul flights attract very little freight which is generally transferred throughout Europe by RFS.

[6] *3. Page 41- Department for Transport (2009), The Air Freight End-to-End Journey: An analysis of the end-to-end journey of air freight through UK international gateways. Available from http://webarchive.nationalarchives.gov.uk/+/http:/www.dft.gov.uk/about/strategy/transportstrategy/tasts/userexperience/endtoendjourney.pdf*

2.7. John Jeapes – Comment ID 1425

Representation Details

Comment ID: 1425 Respondent: John Jeapes

Response Date: 10 February 2017 Response Type: Object

Summary of Representation

The Representation by Mr. Jeapes objects to the SP05 proposal through an objection to various aspects:

- Mr Jeapes has a clear belief that Aircraft Tear Down and Recycling would be suitable for Manston Airport and that this should be consider further.

AviaSolutions Response

AviaSolutions has reviewed the representation and provides the following response:

Whilst it is evident that Mr Jeapes has domain knowledge of the Aircraft Recycling sector it remains questionable whether:

- Aircraft recycling alone could support Manston Airport's viability.
- Any investor has the desire to invest in potentially the world's largest aircraft recycling centre in Manston Airport.
- Investors are willing to invest in Manston Airport given its uncertain future, or at what point in the future they may wish to invest. It is not unreasonable to assume they may defer investment for two years to ensure the airport is viable.
- Manston or the wider region in Kent has the labour knowledge and skills to support an operation in its start-up phase.
- How competitors will react. It would be highly unlikely that those businesses already operating in this sector would simply accept a loss of business.
- How such a business located in Manston, with its relatively high cost base vs. emerging economies, will compete in a labour-intensive industry.

2.8. Supporters of Manston Airport (SuMA) - Comment ID 734

Representation Details

Comment ID: 734 Respondent: Ruth Bailey, on behalf of Supporters of Manston Airport

Response Date: 16 March 2017 Response Type: Object

This document has been supplied as a non-submitted Representation.

The objections are as follows:

- AviaSolutions Viability Study cannot be used as evidence as it failed to meet the brief in that it did not consider ALL options, including various diversified businesses.
- The AviaSolutions report does not consider opportunities to offer short term capacity at Manston Airport whilst a new runway is developed, and then transfer/ redistribute services to a new runway at Heathrow or Gatwick.

AviaSolutions Response

AviaSolutions has considered the document supplied and has provides the following response:

- AviaSolutions considered what it believed to be the most viable means of ensuring the airport became a financially viable entity. This approach has been adopted because an airport must have a profitable core service offer. It is not conceivable that an investor would invest c. £75m - £300m to develop a business where its core service is unable to generate profits. In airport terms, this means the airport needs to be profitable from either its passenger or cargo operations, or a combination of the two. Additional and auxiliary services, no matter their number or diversity, should serve to improve EBITDA margins and generate incremental profit. If these businesses are required simply to break-even, the risk is likely to be considered too great for investors.
- With regards to a joint venture / share of operations with either Heathrow or Gatwick, airports in the UK operate in a free market and compete to attract airline customers. Airlines in turn operate their fleet, network and schedule for commercial objectives. In our view, Manston Airport (working with either London Heathrow or London Gatwick) could not develop the above proposition as neither Manston nor Heathrow/Gatwick has the authority to 'direct' aircraft to alternative airports. Furthermore, the commercial proposition to the airline is simply not the same, as operations from Manston Airport (when compared with Heathrow for example) will not generate the same levels of demand or average seat yields. A further key feature of Heathrow Airport is the diversity of connecting options, which would not be available at Manston. The concept of an airport seeking to 'redistribute' airline traffic is simply untenable in the UK aviation sector.



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.

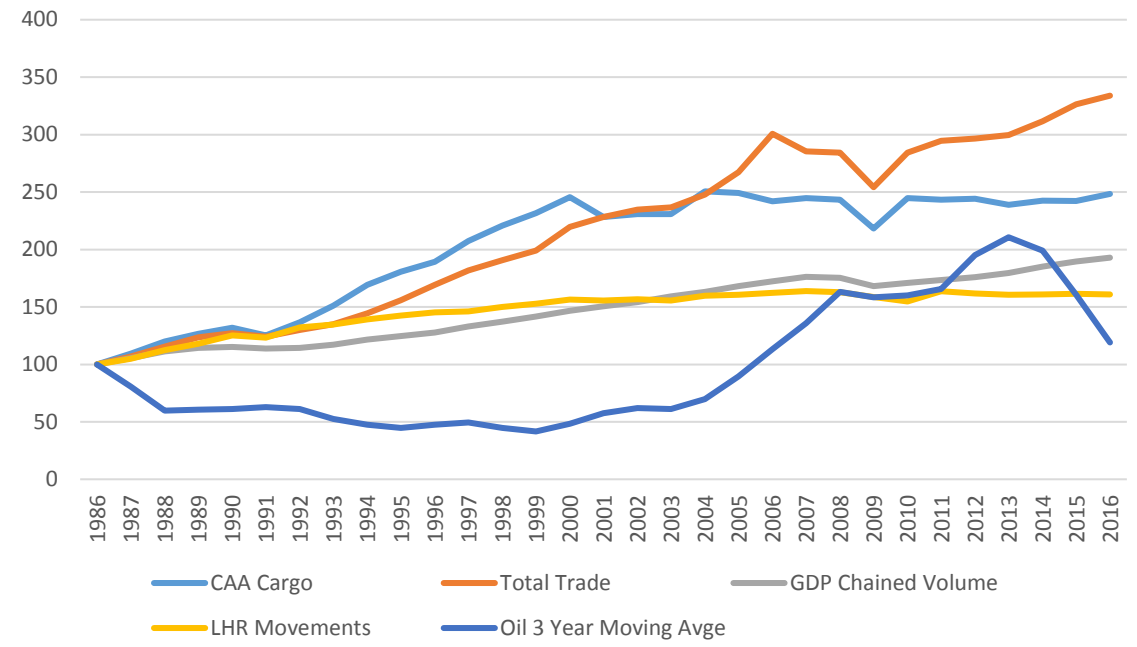
3.4 In this report, we now consider specifically the potential role for Manston by way of a scenario analysis that draws on the analysis of the overall market and the past performance of the Airport. The use of scenarios rather than a single forecast is intended to show a range of possible outcomes for 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.

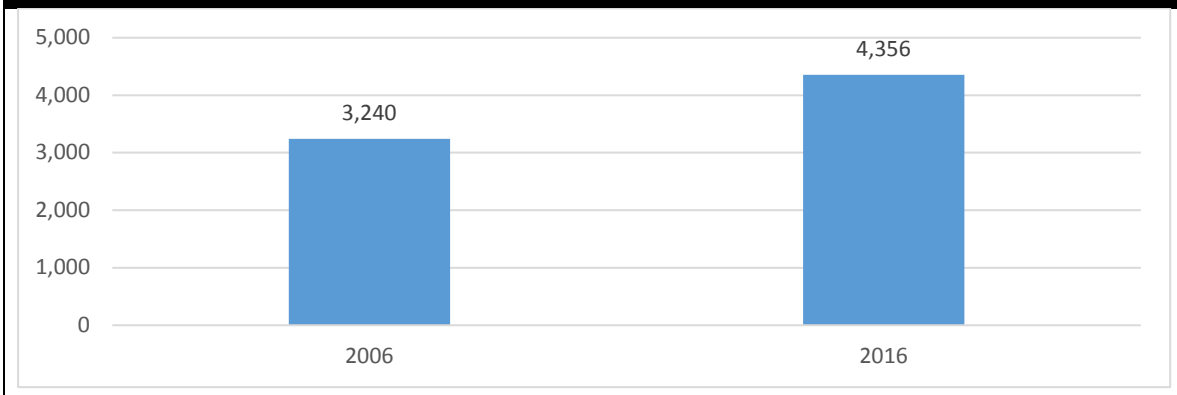
3.10 This is particularly important as it suggests that the market for bellyhold freight is different from that for pure freighter traffic. This is a function of price and urgency in relation to general air freight, as opposed to either express freight or niche products. For express freight or niche 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.

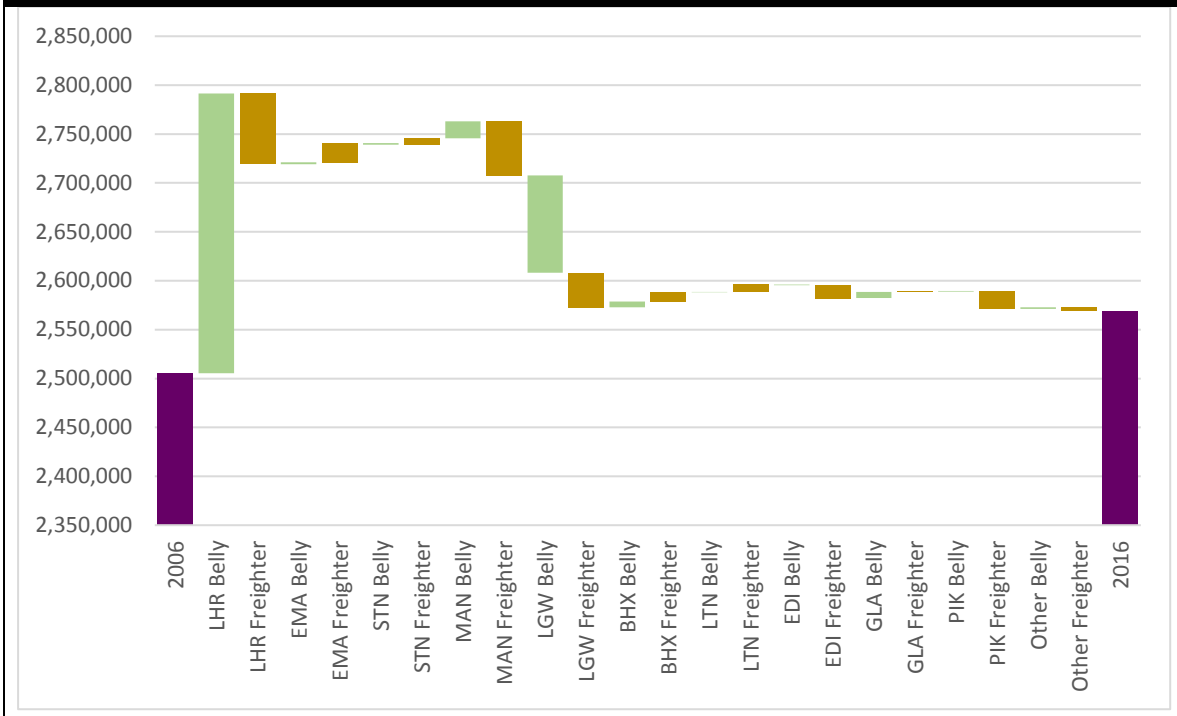
Figure 3.2: UK Air Cargo Market Herfindahl-Hirschman Index of Market Concentration



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.

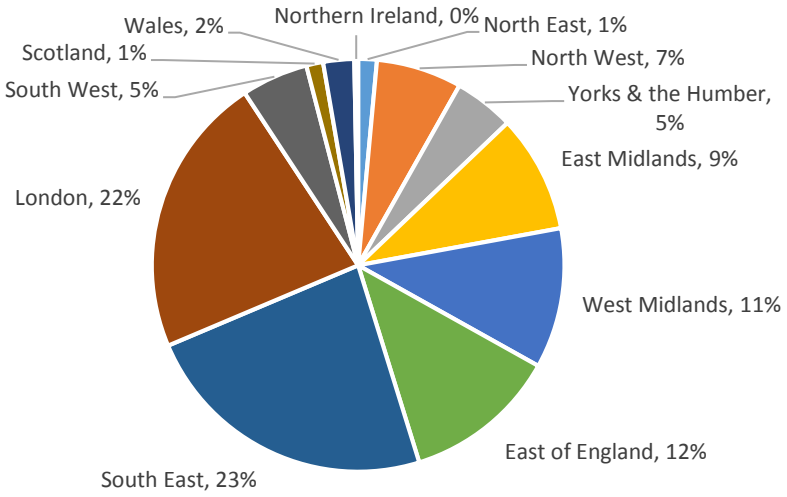
3.17 We have, therefore, developed a simple gravity model that distributes air cargo regionally across the UK based on:

- 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

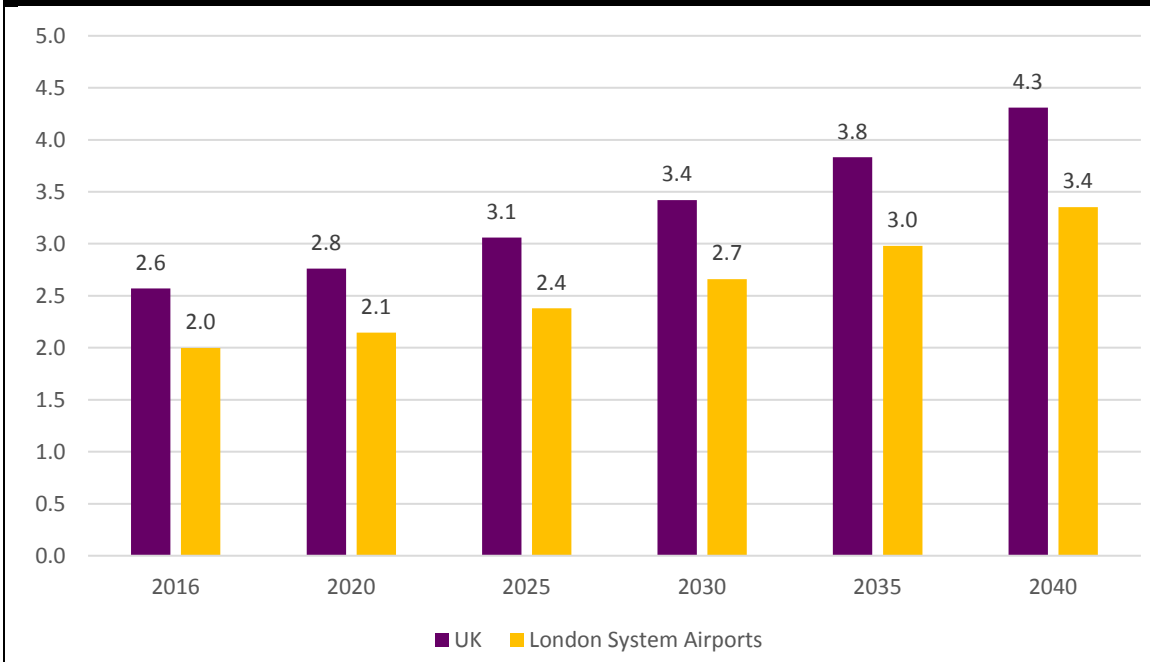
3.20 The initial step in producing our cargo forecasts for Manston is to consider the likely size of the London system and UK air cargo markets in the period to 2040. This is an unconstrained forecast and does not, at this stage, consider whether capacity will be available to deliver this demand.

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;

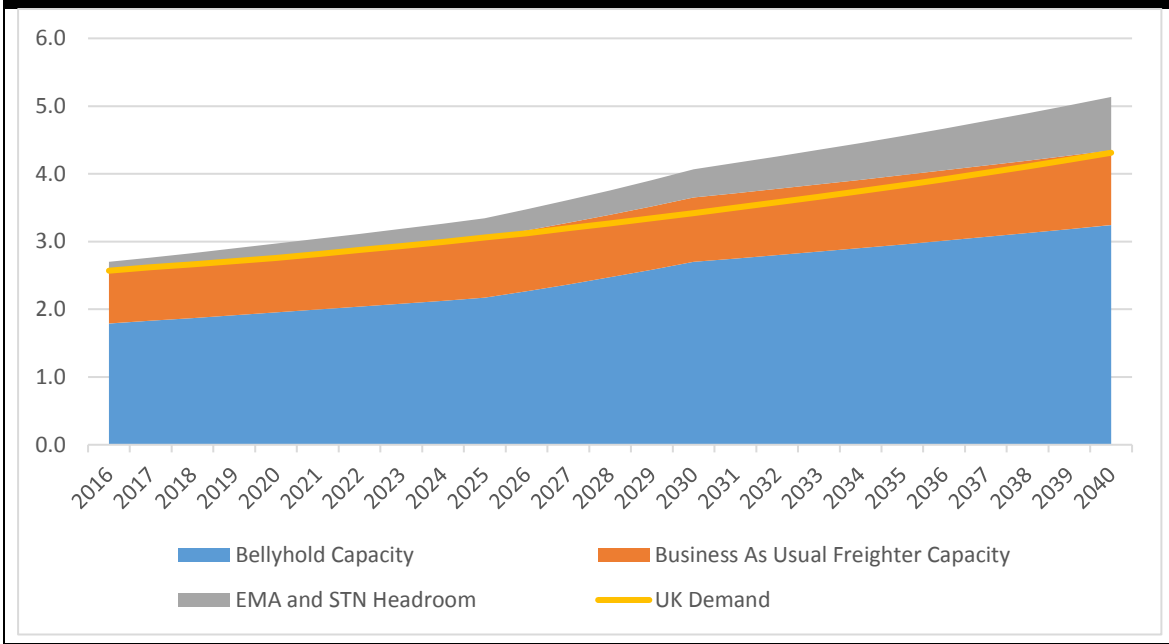
[45] https://www.gov.uk/government/publications/airports-commission-documents-and-data.
[46] The exception to this is the small number of freighter movements at Heathrow, which are not allowed to grow until the Third Runway is opened.
[47] Department for Transport, *UK Aviation Forecasts*, October 2017, 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

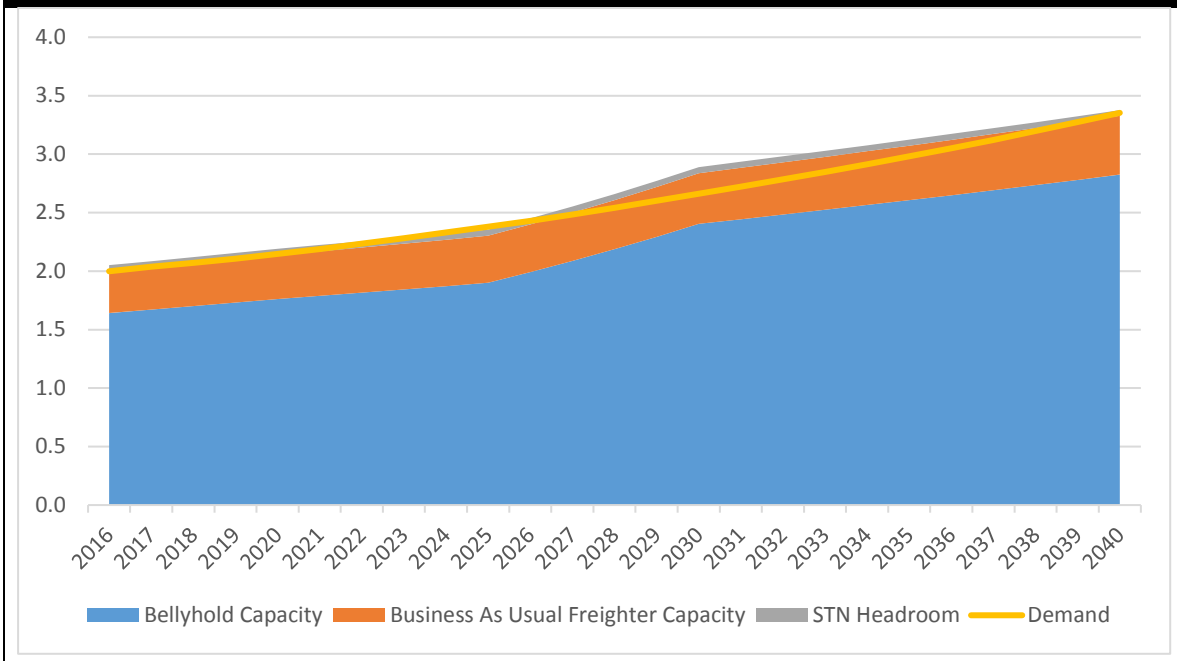


Source: York Aviation

[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

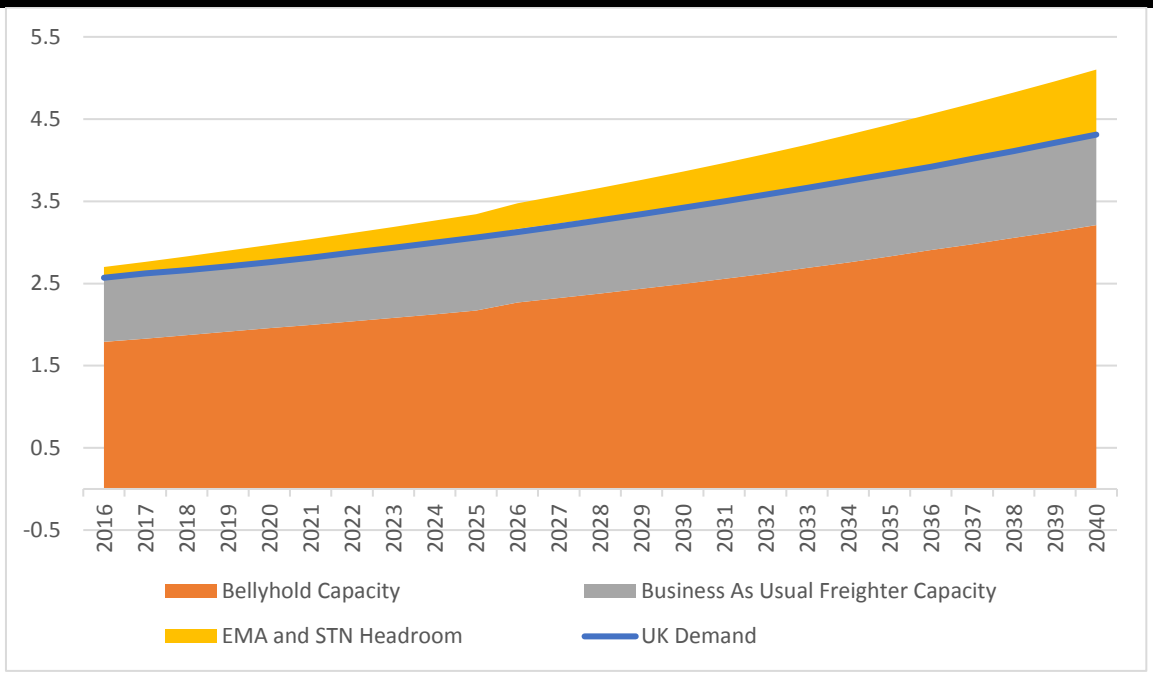
3.32 The situation at the London airports is slightly different if we assume that London maintains its market share of the overall market and there is no natural 'clawback' to the regions. With Heathrow's bellyhold growth relatively constrained, there are potentially some limited capacity constraints 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.

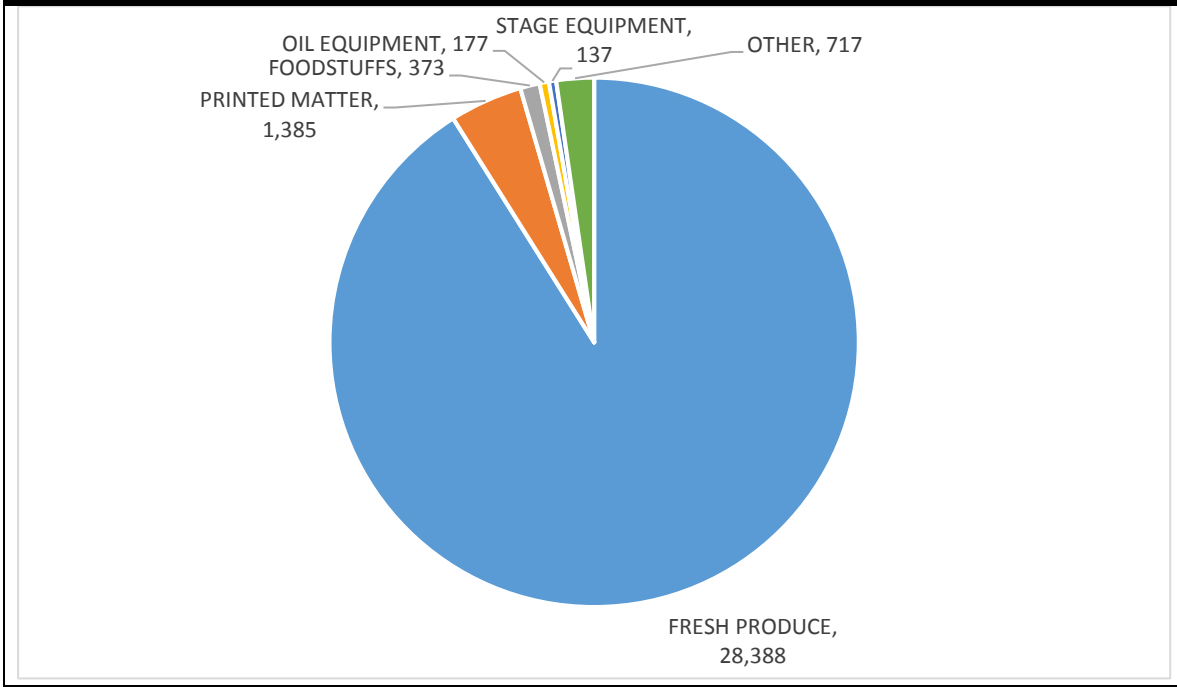
Figure 3.8: UK Air Cargo Capacity with No Third Runway at Heathrow



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

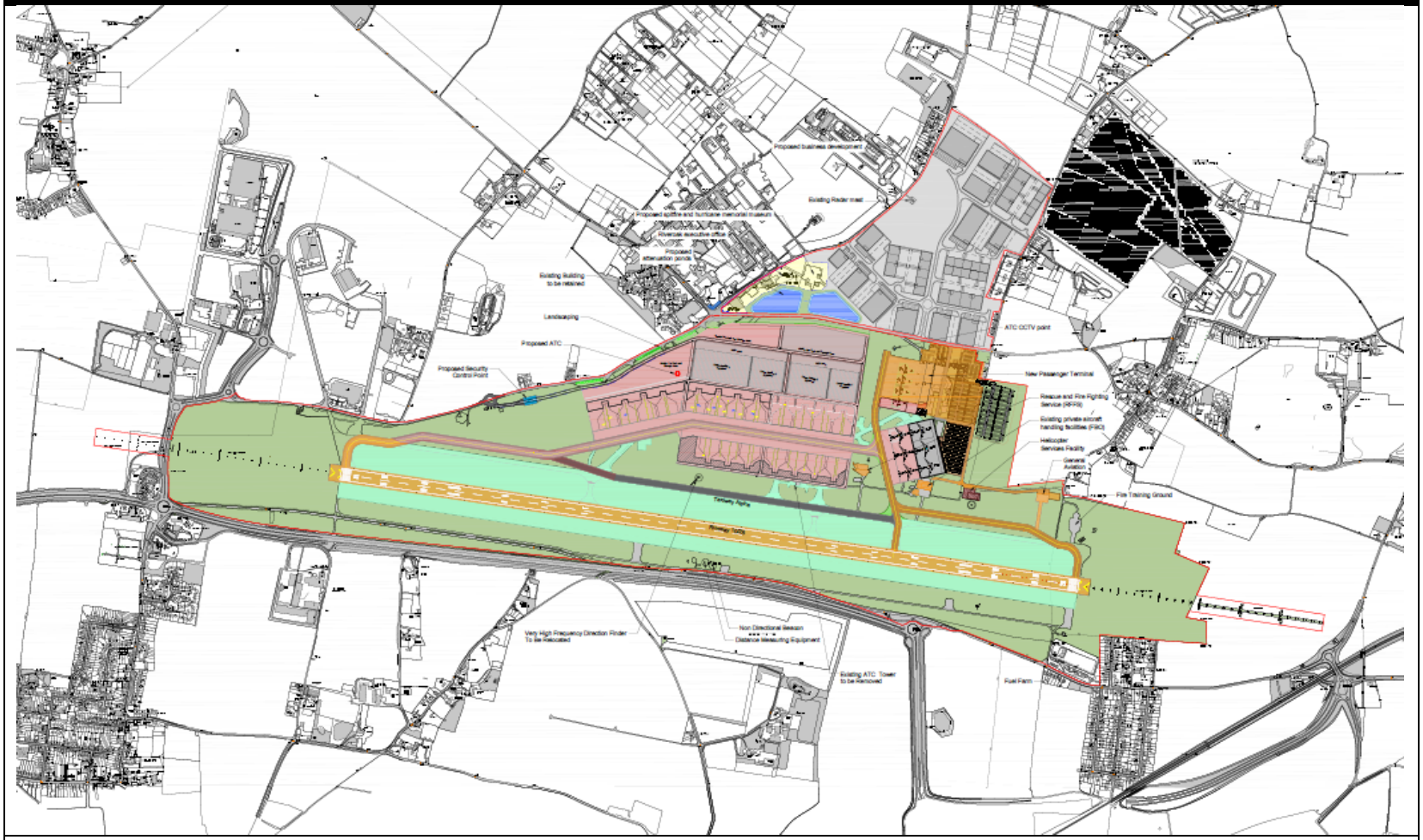
4.8 The Master Plan presented by RSP for the Manston Airport site is shown at **Figure 4.1**. It makes use of the full length of the runway and provides a full length parallel taxiway. The western side of the site is dedicated to freight handling activity and has 19 Code E aircraft stands for cargo flights 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

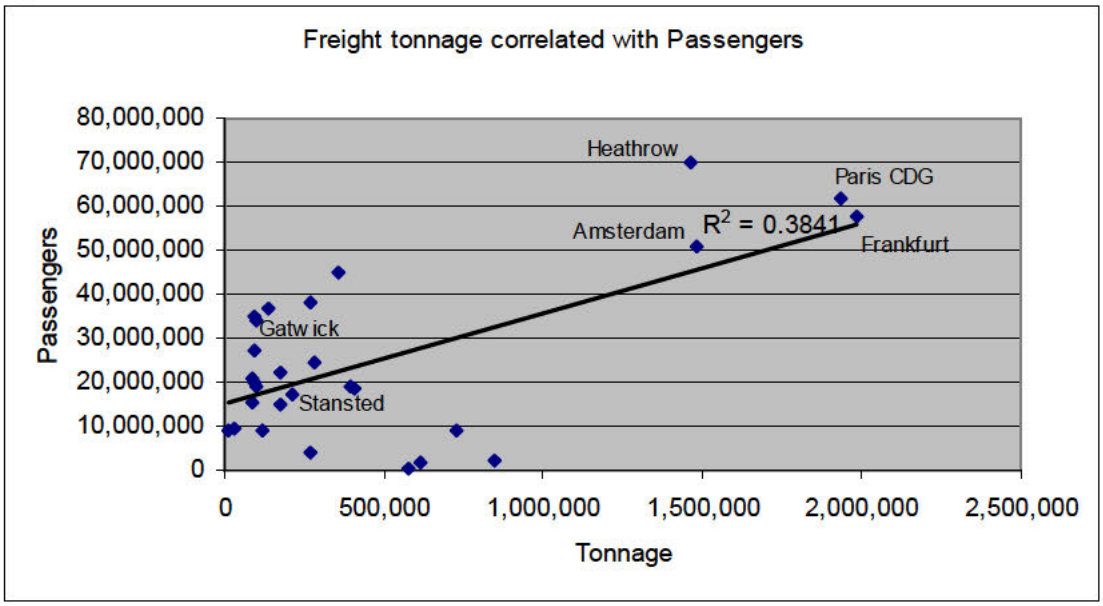
	Tonnes
Manchester	97,215
East Midlands	267,350
Cologne	730,040
Munich	272,203
Dusseldorf	86,729
Leipzig	846,086
Rome	135,777
Liege	577,226

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

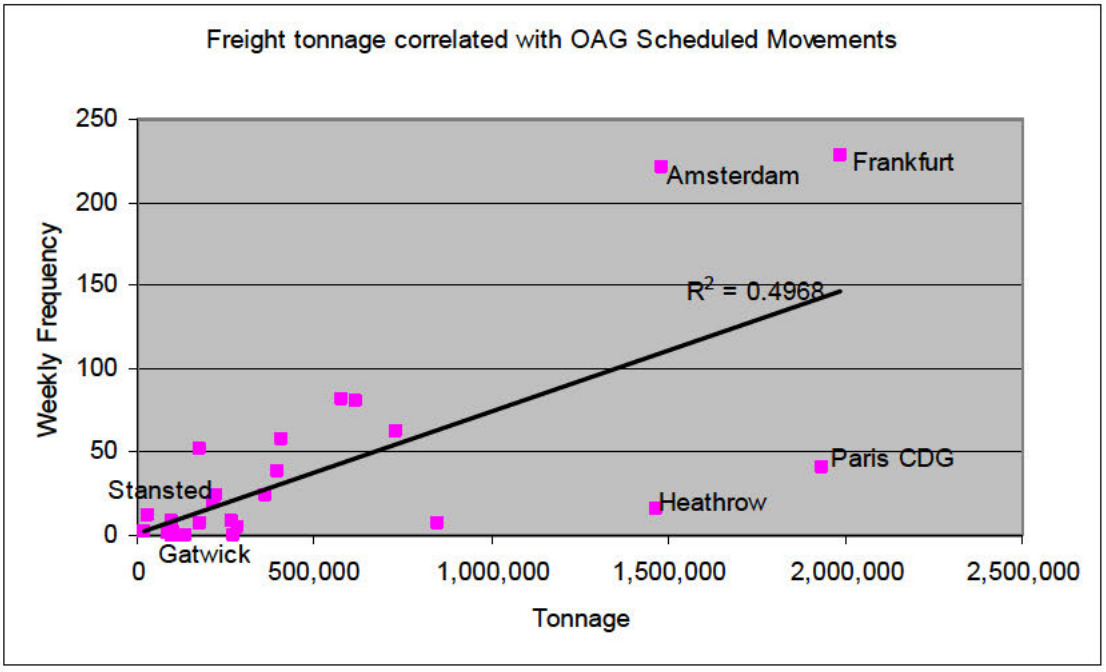


Table 3

	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	onwards to			
	Frankfurt	1	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			

	Milan	1	originates in Jeddah			
	Mumbai	1	orginates in Los Angeles and Chicago, onwards to Singapore			
	New Guinea	1	onwards to Seoul			
	New York	1	originates in Jeddah			
	New York	1	originates in Jeddah, onwards to 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			
	Sharjah	2	originates in Dallas, onwards to Singapore			
	Sharjah	1	originates in Chicago and Dallas, onwards to Singapore			
	Taipei	1				
	Tianjin	1	onwards to Seoul			
	Vienna	2	originates in Riyadh	36	36	118
Liege	Accra	2	onwards to Lagos and Addis Ababa			
	Addis Ababa	5				
	Bahrain	11	originates in New York			
	Bucharest	1	onwards to Tel Aviv			
	Dubai	12	onwards to Hong Kong			
	East Midlands	4	onwards to Keflavik			
	Entebbe	1				
	Istanbul	5				
	Keflavik	4				
	Keflavik	1	onwards to New York			
	Lagos	2	onwards to Addis Ababa			
	Lagos	1	onwards to Ougadougou			
	Lagos	1	onwards to Port Harcourt			

	Lome	2	onwards to Congo, Addis Ababa			
	Luxembourg	1	originates in Tel Aviv			
	New York	1	originates in Tel Aviv			
	New York	2				
	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 Chicago			
	Atlanta	1				
	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

Key Findings of York Aviation Report

Is a Nationally Significant Air Freight Hub a realistic prospect at Manston?

York Aviation

York Aviation is a highly experienced specialist air transport consultancy offering a range of services to airports, airlines, governments, economic development organisations, investors and other parties.

We were appointed by SHP in September 2017 to undertake an independent review of the evidence presented by RiverOak Strategic Partners (RSP) in connection with its proposal to redevelop and re-open Manston as a hub for international freight services. A summary of our report's findings is provided here (the full report is available on the Stone Hill Park website:

http://www.stonehillpark.co.uk/images/uploads/documents/SHP-York-Aviation-Summary-Report-Final.pdf)

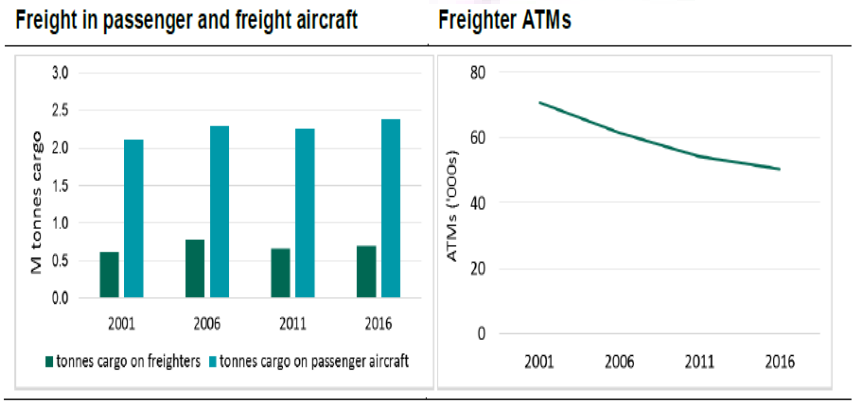


Figure 4.5 Historic freight carried at all modelled airports

Key Findings:

LACK OF UNDERSTANDING OF THE AIR FREIGHT MARKET:

- RSP rely on analysis by Azimuth Aviation of the need for more airport capacity in the South East of England. This analysis relates to the need for more passenger flights offering capacity for passengers and bellyhold freight. It does not relate to the need for more flights by freighter aircraft.
- The only freight forecasts upon which Azimuth seek to rely are those produced by York Aviation for Transport for London and the Freight Trade Association. These have been completely misinterpreted by Azimuth and do not support RSP's case for the re-opening of Manston as a freight hub.

THERE IS NO NEED FOR MORE FREIGHTER FLIGHTS TO/FROM THE UK:

- RSP is targeting the pure freighter market. In the UK, this is a niche and declining market with shippers clearly preferring bellyhold (combined passenger and freight flights) over pure freighters because of cost, flexibility and access to global route networks, even where some trucking is required as part of the journey.
- The official figures show the number of freighter flights to/from the UK has declined by over 20% over the last 15 years (see graphs on the left) and the latest Government (DfT) forecasts (October 2017) project no growth in pure freighter aircraft movements across the UK to 2050. This means that Manston would have to compete with established freight airports, such as East Midlands and Stansted, to attract any traffic at all in what is a declining market.

THE WRONG PLACE FOR A CARGO AIRPORT:

- Manston is in the wrong location to serve the freight market in any event, being located at the far south east at the end of a peninsula, away from the main centres of population and distribution in the UK.
- The key freight forwarders are all heavily concentrated around Heathrow and the main freight distribution hubs are in the Midlands.

SIGNIFICANT SPARE CAPACITY ELSEWHERE:

- There are much more efficient alternatives elsewhere for any air freight that may be displaced due to specific capacity constraints at Heathrow both now and in the future.
- There is also ample spare capacity at East Midlands, Stansted and other airports to accommodate future pure freighter activity. There is no rationale for part of the freight industry to relocate operations to Manston from better located and more efficient alternatives.

RSP'S DEMAND PROJECTIONS ARE NOT TRANSPARENT OR CREDIBLE:

- The demand projections for Manston lack any transparency there can be no confidence that they can be delivered. In the absence of any hard evidence of the need for Manston, the projections are based on information gained from a very small sample of interviewees, dominated mainly by local stakeholders with only ONE cargo airline included.
- It is simply not credible that Manston would be the 3rd busiest airport in the UK for pure freighter activity within 1 year of opening.

LACK OF VIABILITY:

- Airport operations at Manston were never viable despite investment by previous owners (including Wiggins and Infratil). More realistic forecasts of usage are that Manston might re-capture its previous niche perishables and specialist cargo business and might reach up to 2,000 such aircraft movements by 2040 (compared to the >17,000 forecast by RSP) but even growth to this level would mean regular night flights most days of the week. On any realistic projection of demand, Manston Airport is unlikely to ever be viable and would certainly not qualify for the threshold to be a DCO.

LACK OF UNDERSTANDING ON HOW SOCIO-ECONOMIC BENEFITS SHOULD CALCULATED:

- RSP's plans massively overstate the economic benefits for the area, even going so far as including in the calculations global employment where the aeroplanes are made as well as other effects arising well outside Kent or even the UK.
- Even on its own forecasts of cargo and passenger activity (which are neither robust nor credible), Manston is realistically only likely to support around 16% of the employment claimed by RSP. If the airport is not viable then the jobs supported would be zero.

CONCLUSION:

- Like Thanet District Council's own consultants, Aviasolutions, we agree that there is no realistic prospect of the re-opening of Manston Airport being a commercially viable proposition. 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.
- RSP's forecasts for the use of Manston lack credibility and the likely outcome would be a repeat of the previous failed attempts to establish viable airport operations.

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.

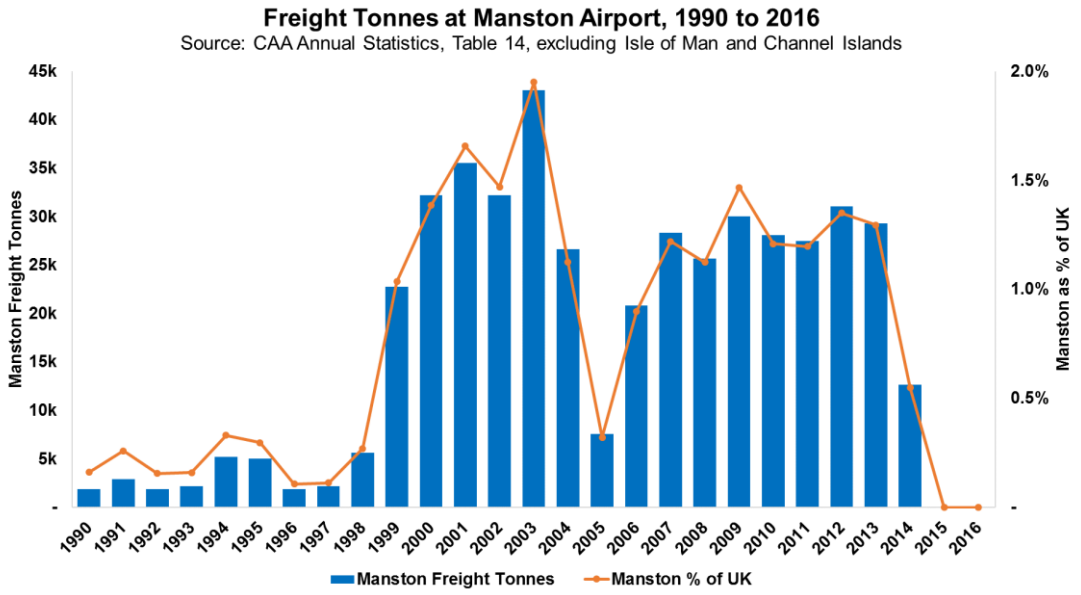


Figure 1 - Manston Airport Freight Tonnes 1990-2016



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.

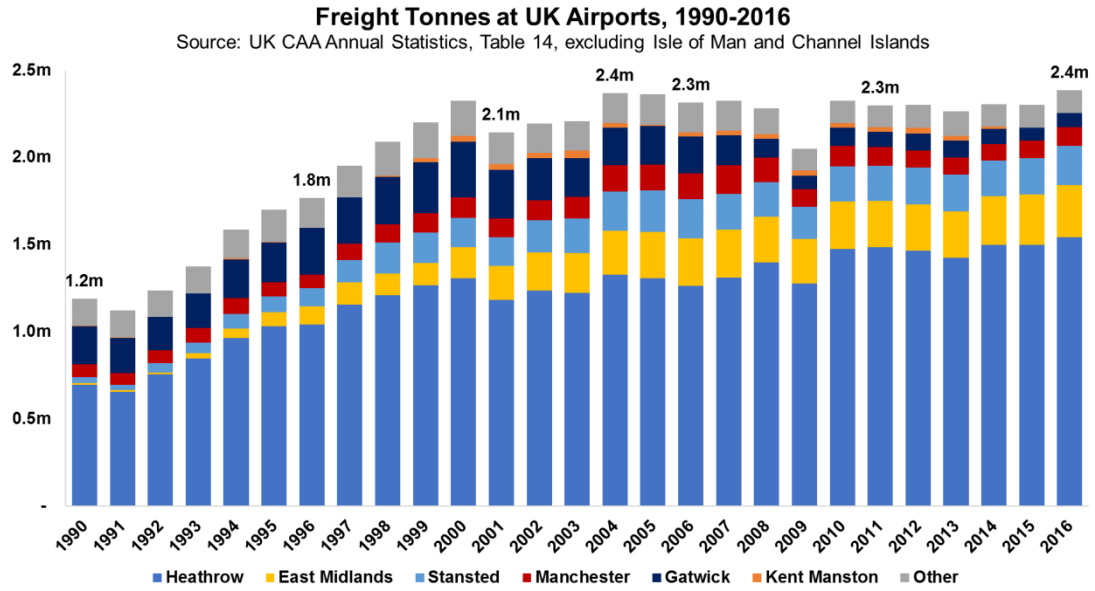


Figure 3 – Timeseries of UK freight tonnage

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].

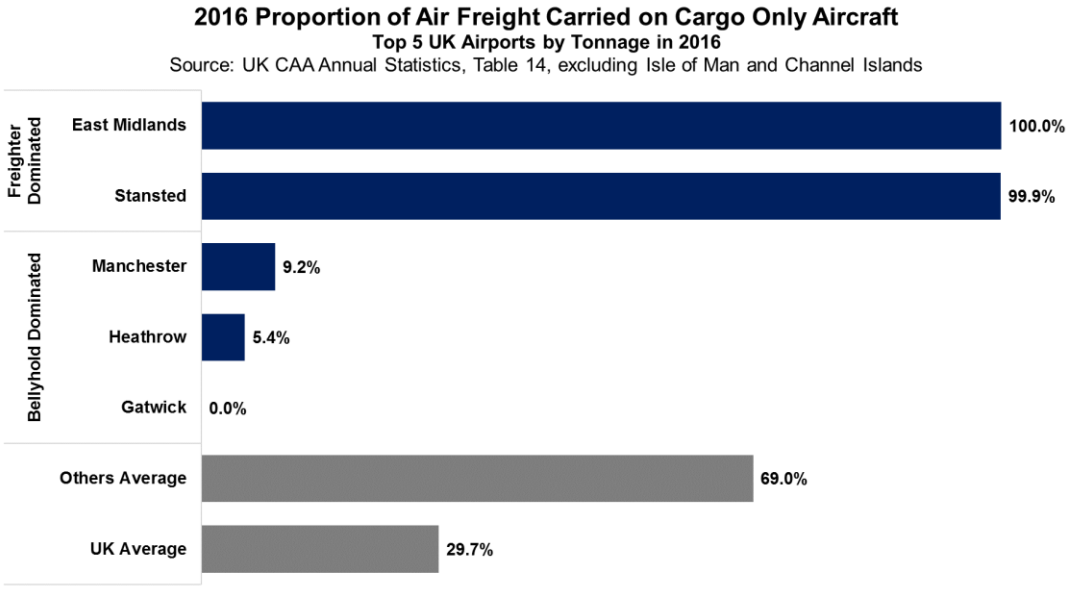


Figure 4 – Freighter/Bellyhold split at selected UK airports

[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.

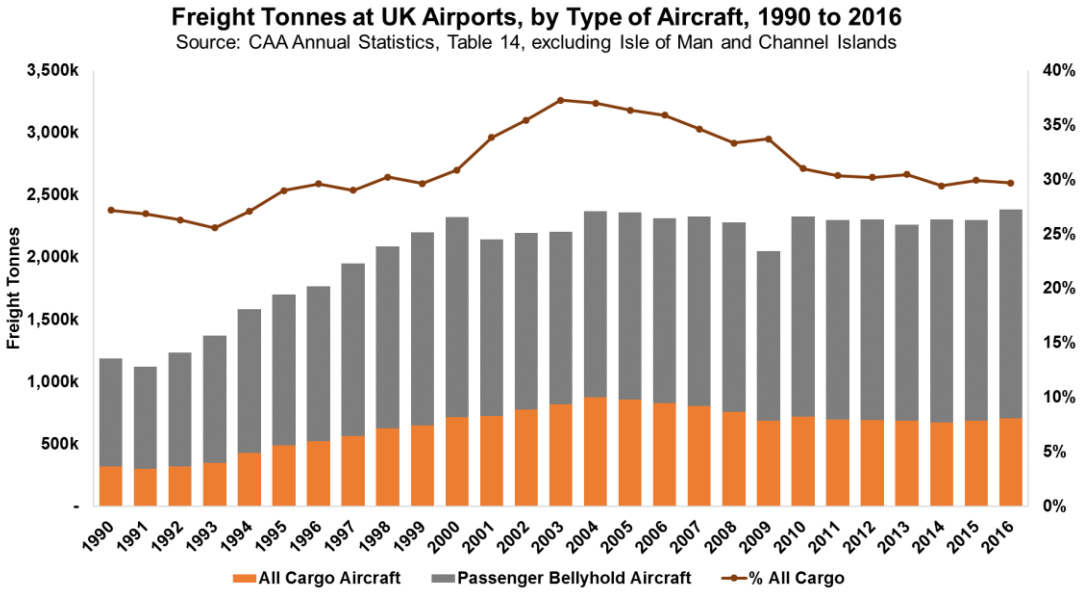


Figure 5 – Split of UK air freight between bellyhold and dedicated freighter aircraft

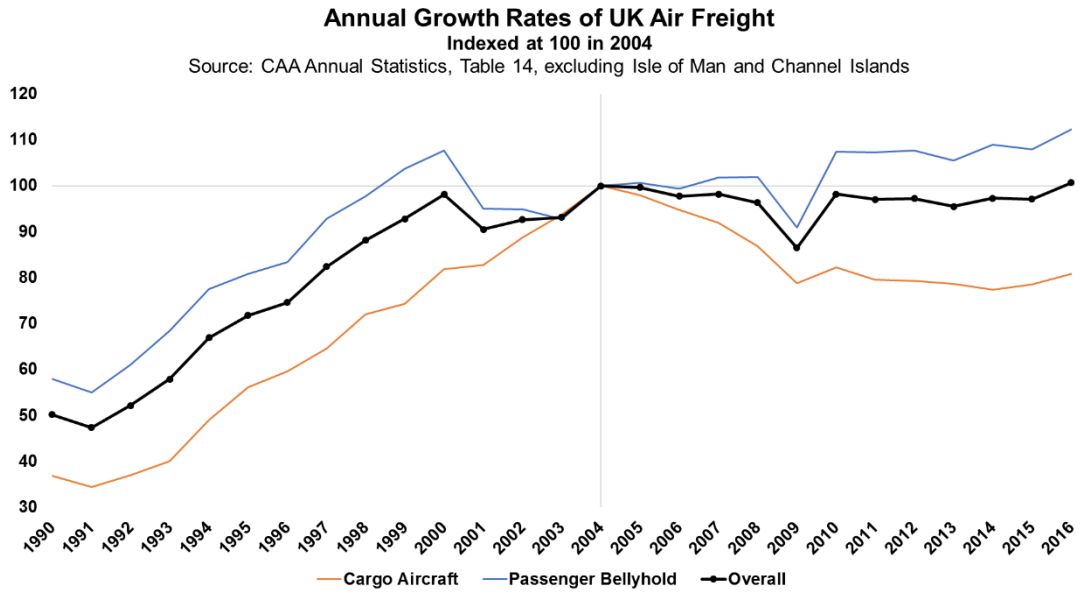


Figure 6 – Annual growth rates of UK freight

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.

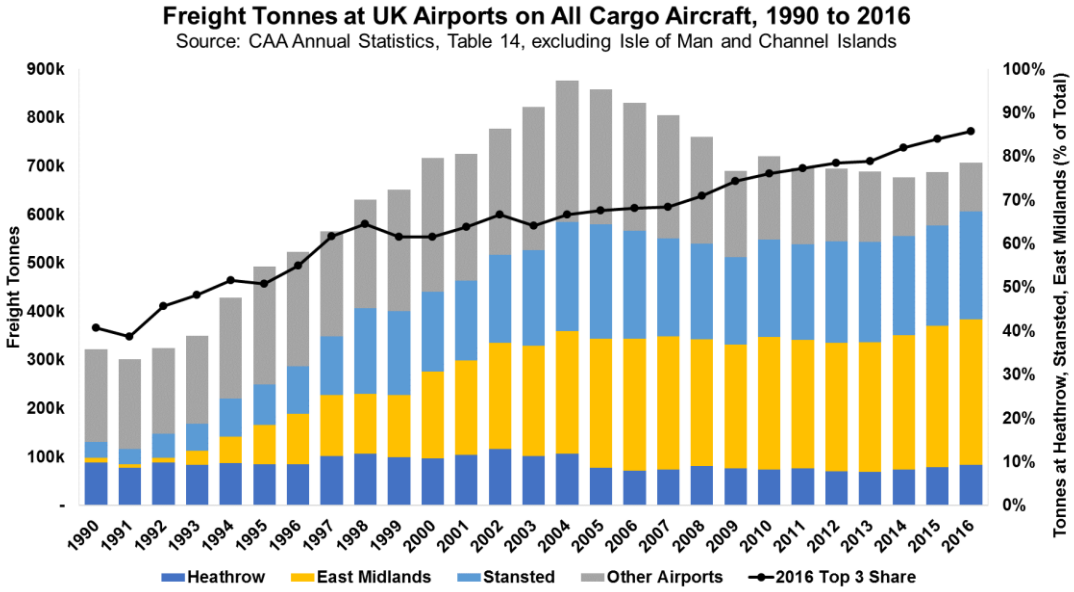


Figure 7 – Timeseries of UK freight on cargo-only aircraft

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).

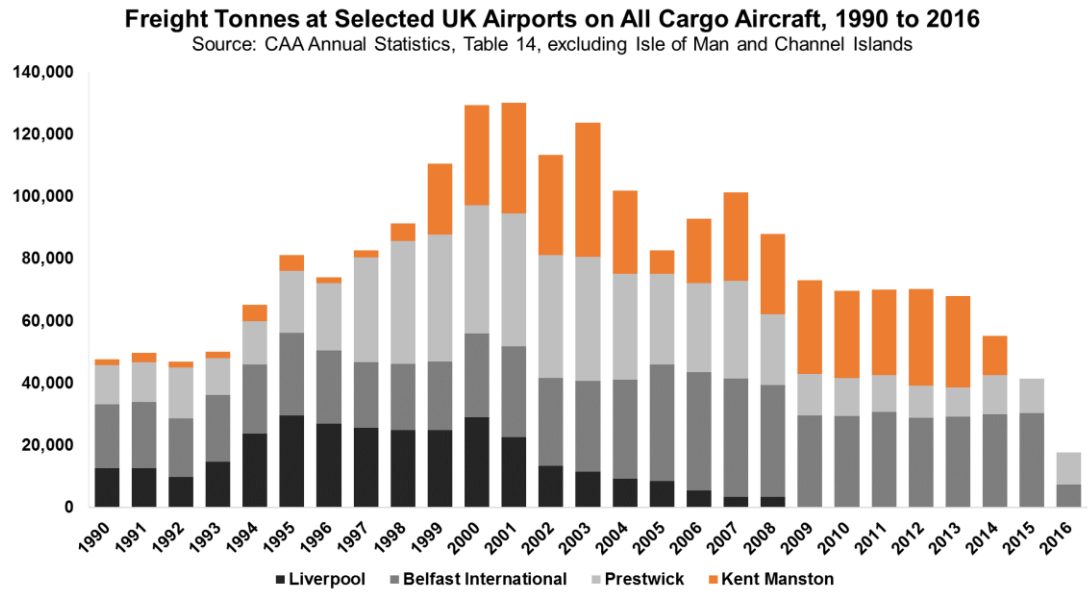


Figure 8 – Reduction of freight on cargo-only aircraft at selected airports

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.

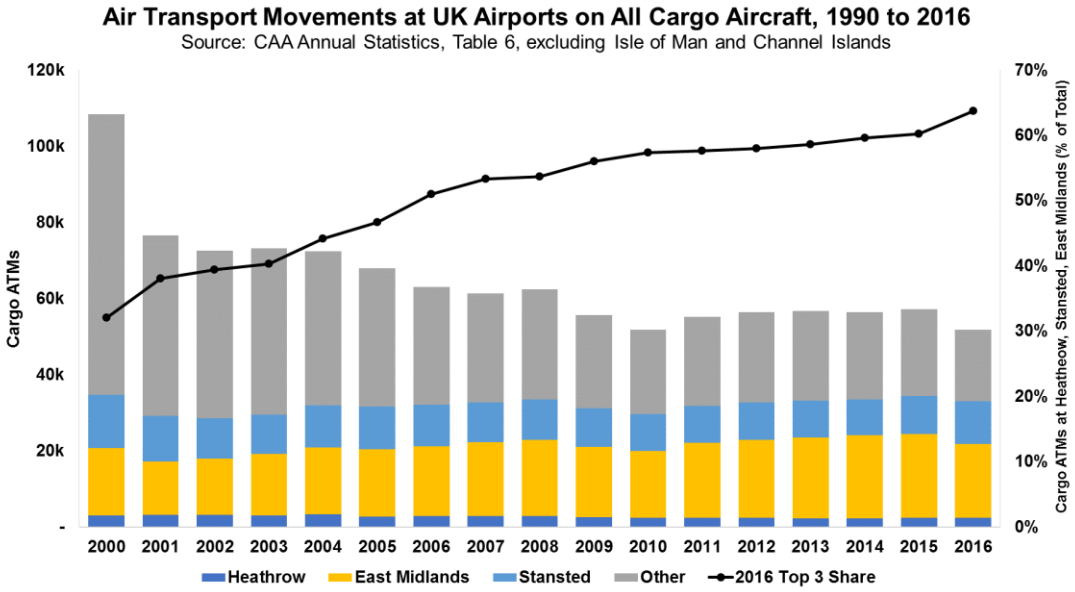


Figure 9 – Consolidation of freight on cargo-only aircraft at Heathrow, East Midlands and Stansted

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.

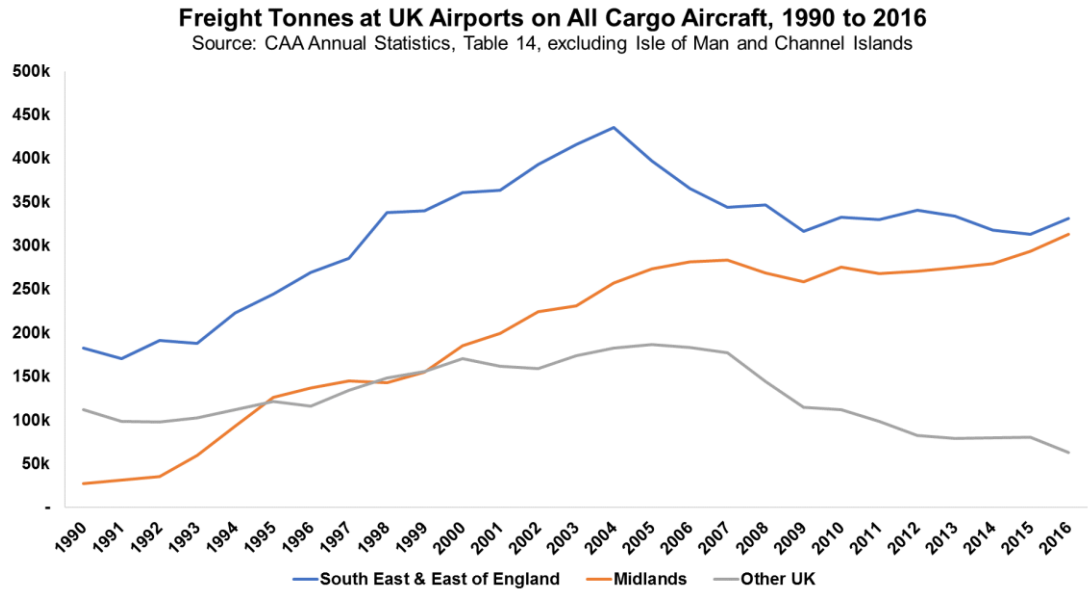


Figure 10 – Breakdown of UK freight on cargo-only aircraft, by region.

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.

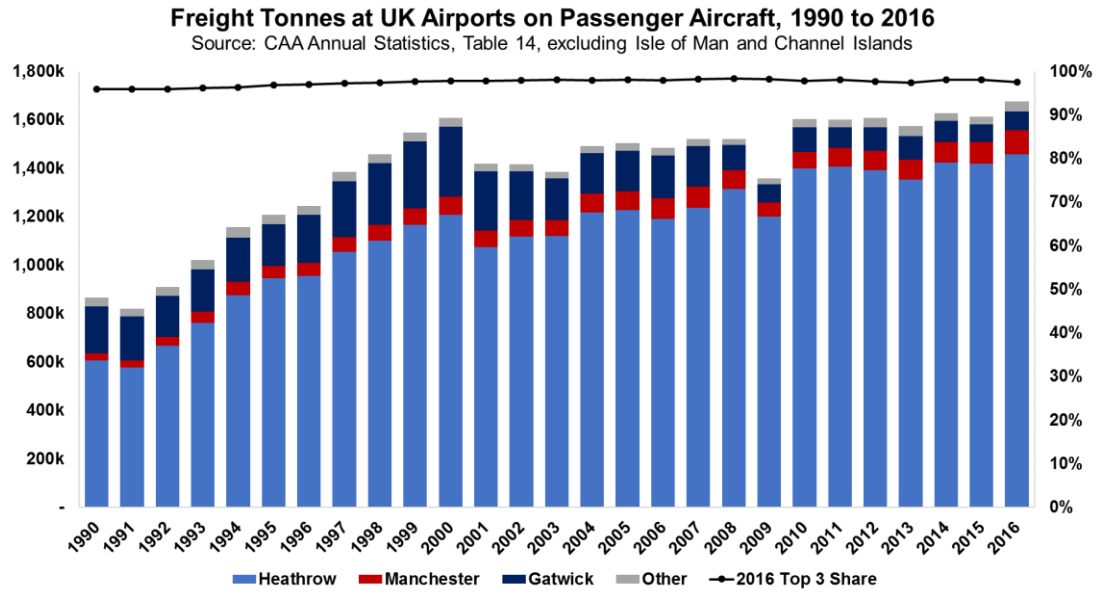


Figure 11 - Timeseries of UK freight on passenger aircraft

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.

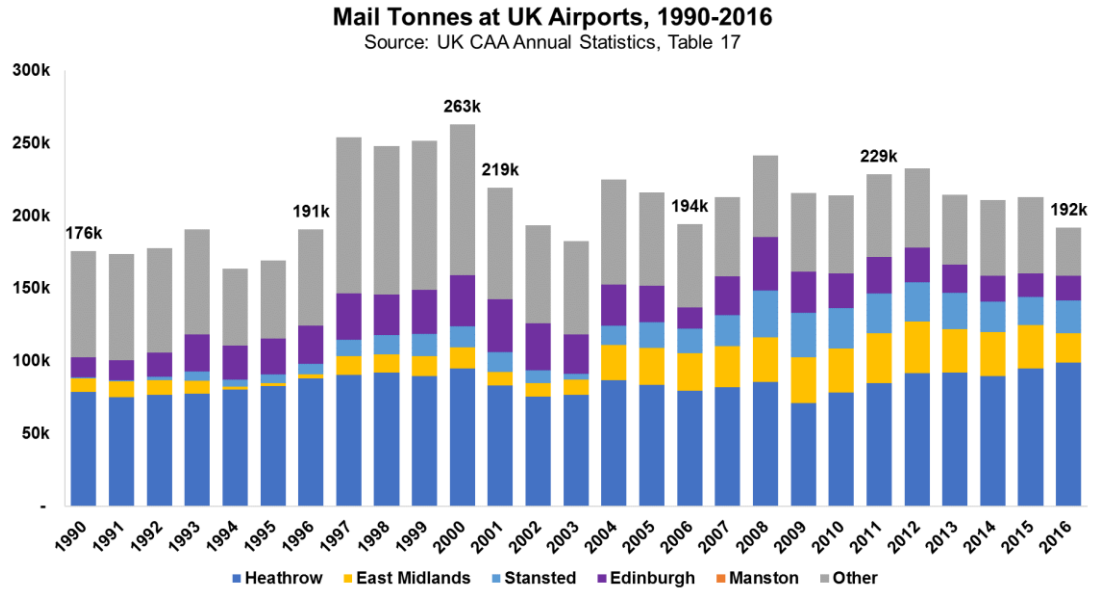


Figure 12 – Timeseries of UK Mail tonnage

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.

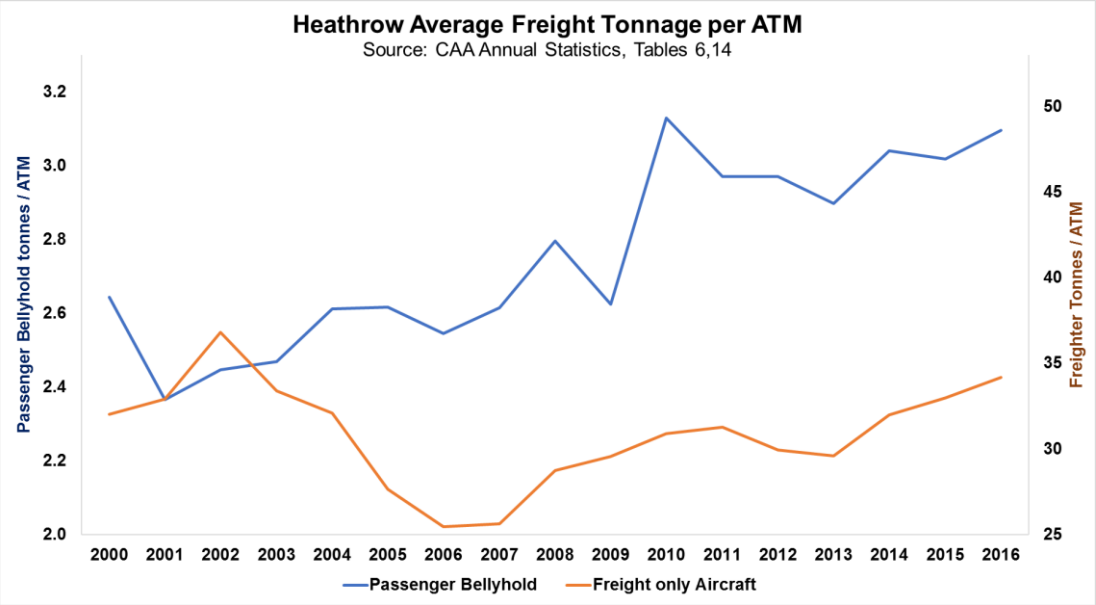


Figure 13 – Change over time of average tonnage per ATM at Heathrow

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.

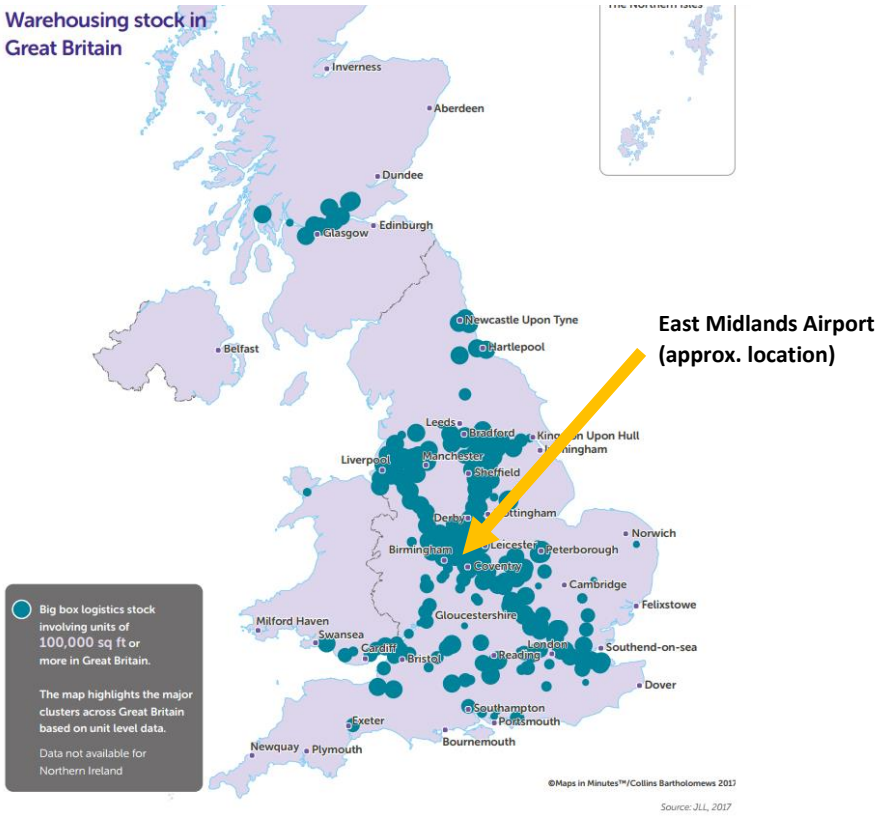


Figure 14 – Locations of large warehousing units in the UK, Source: Freight Transport Association

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%.

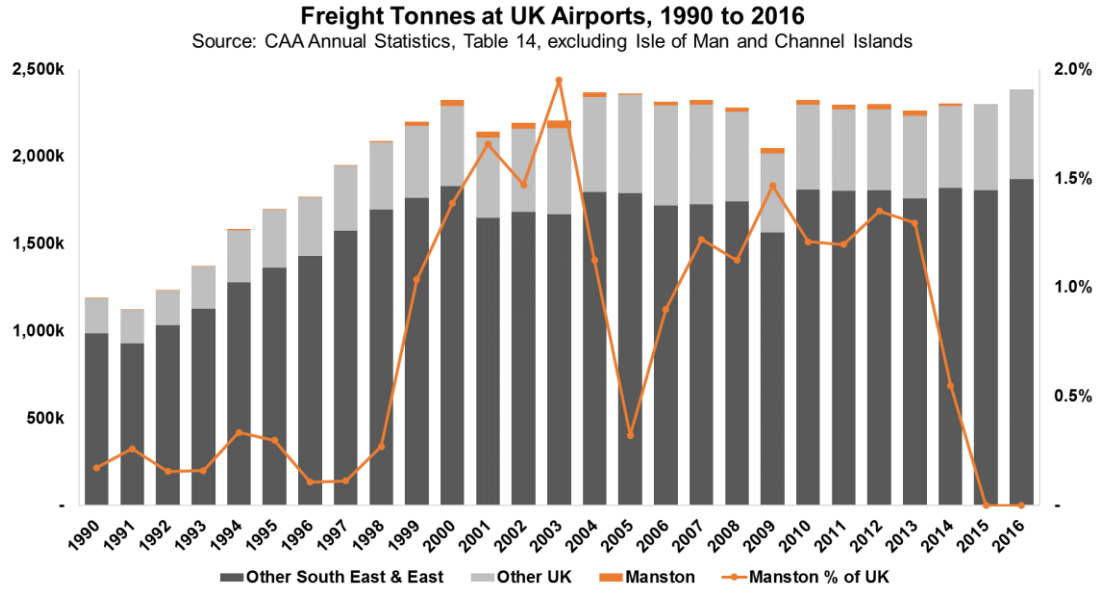


Figure 15 – Timeseries of UK freight, including that handled at Manston

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.

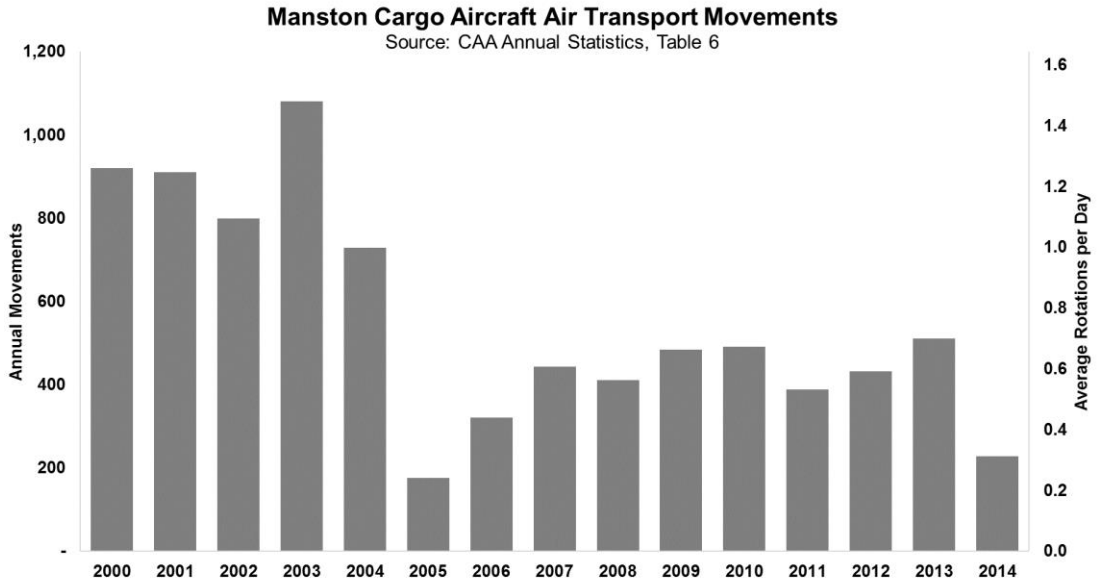


Figure 16 – Manston cargo-only aircraft movements

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.

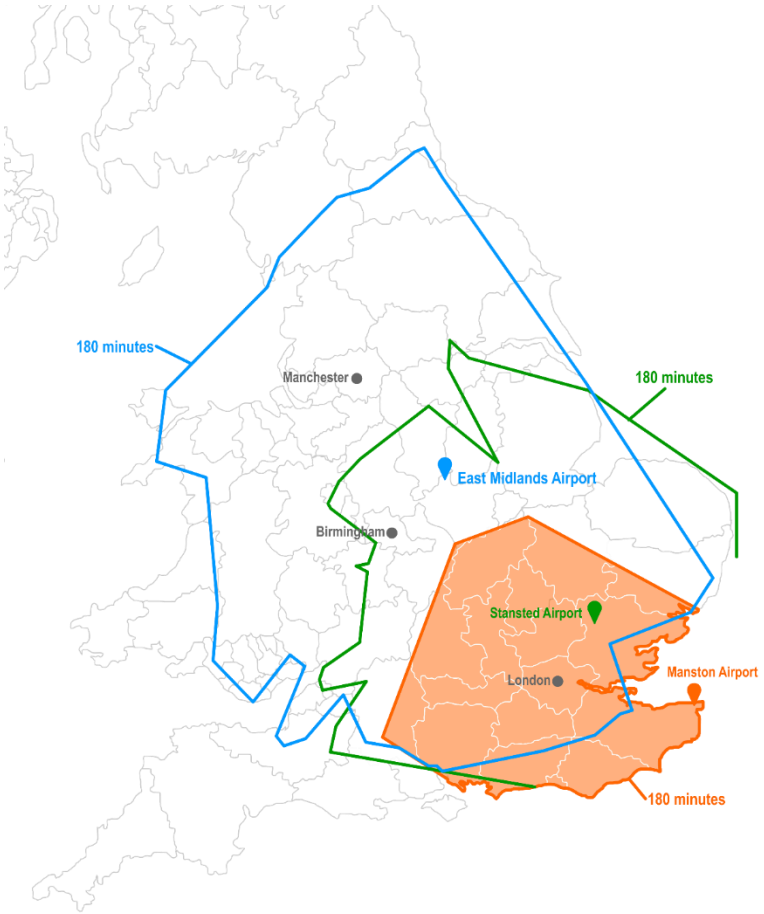


Figure 17 – 3-hr catchment region of Manston in comparison with those of East Midlands and Stansted
Source: Altitude analysis, Google Maps (truck speed set at 55 miles per hour)

[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)

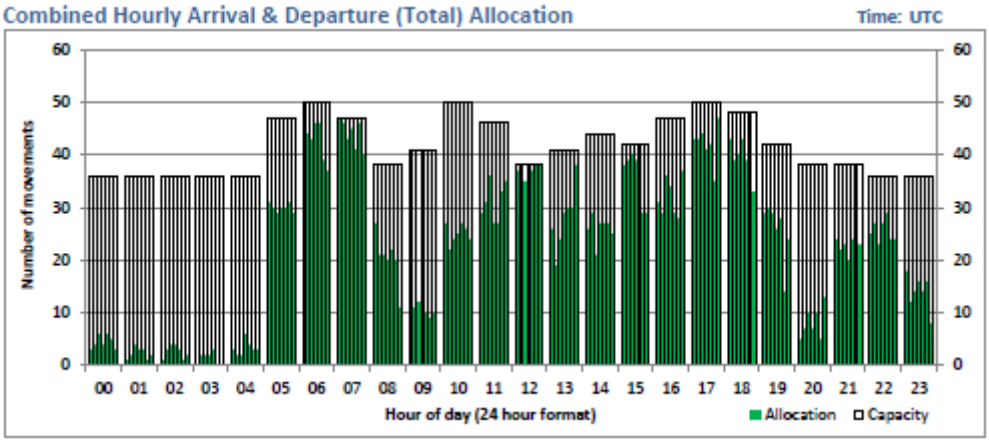


Figure 18 - Peak Week, Hourly Runway Allocation, Stansted Airport, Summer 2017. Source Airport Coordination Limited[78]

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)

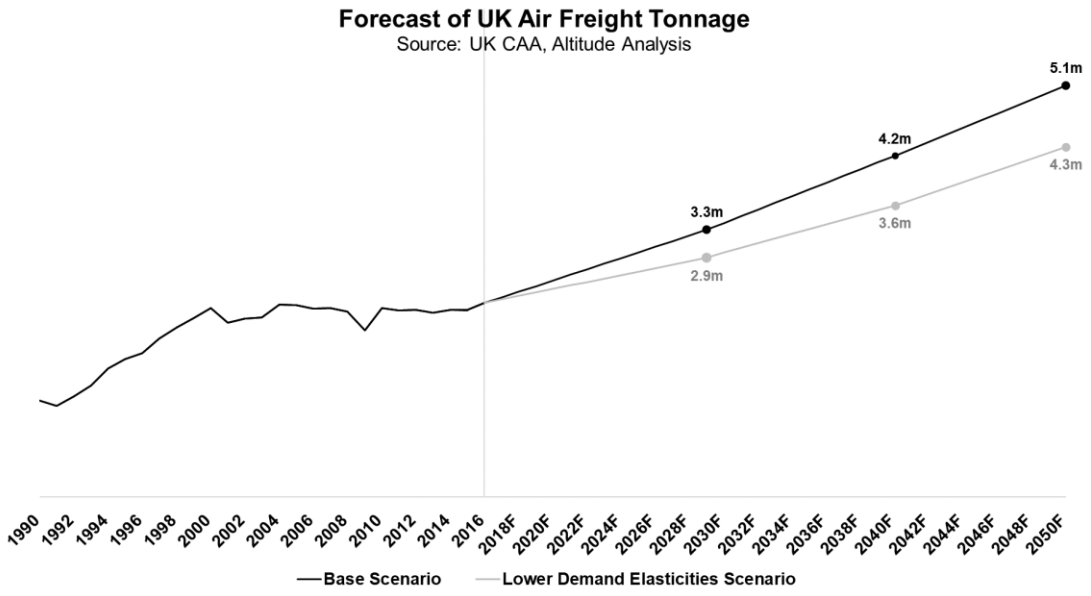


Figure 19 – Altitude forecast of UK air freight demand to 2050

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)

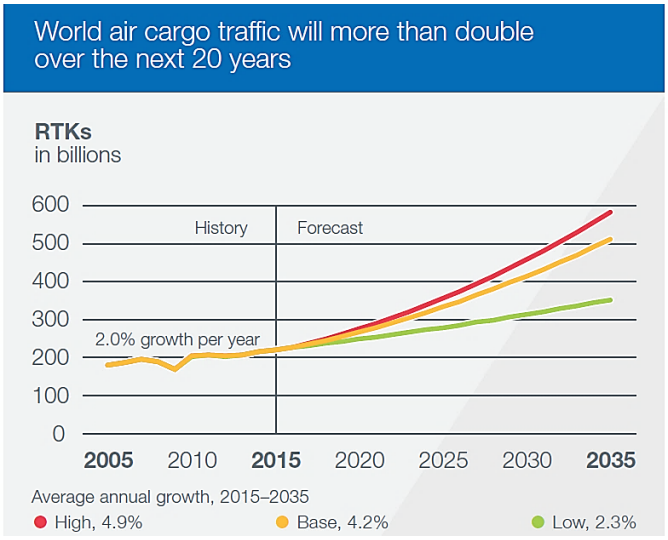


Figure 20 – Global 20-year air cargo forecast - timeseries of high, base and low forecasts

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.

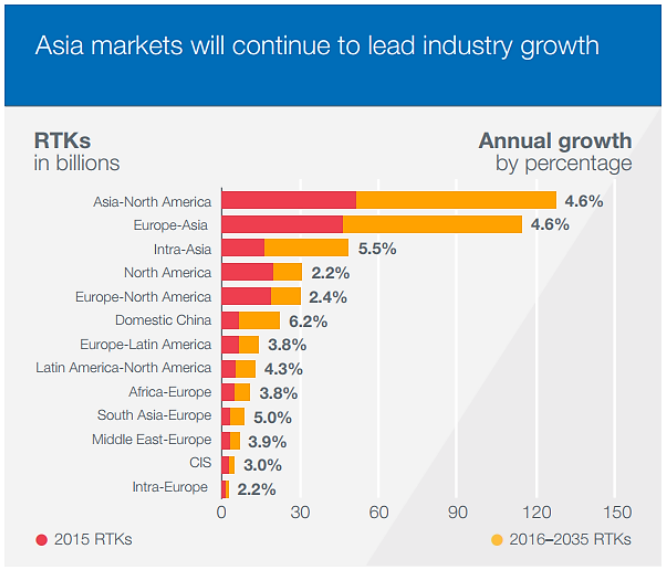


Figure 21 –Global 20-year air cargo forecast – size, and growth rates, of key flows

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)

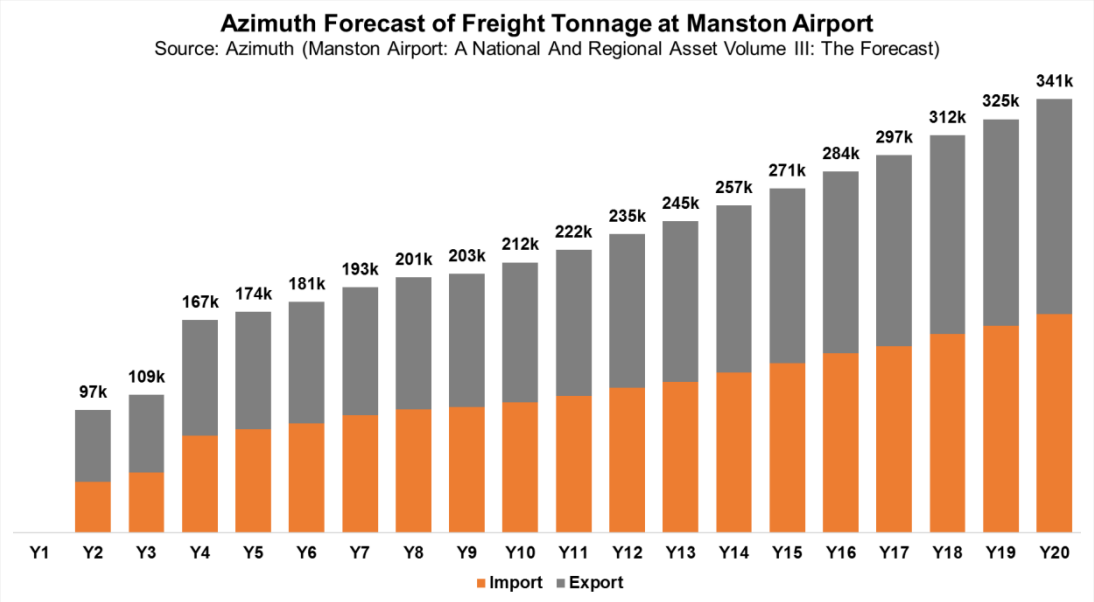


Figure 22- Azimuth Forecast of Freight Tonnage at Manston Airport

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.

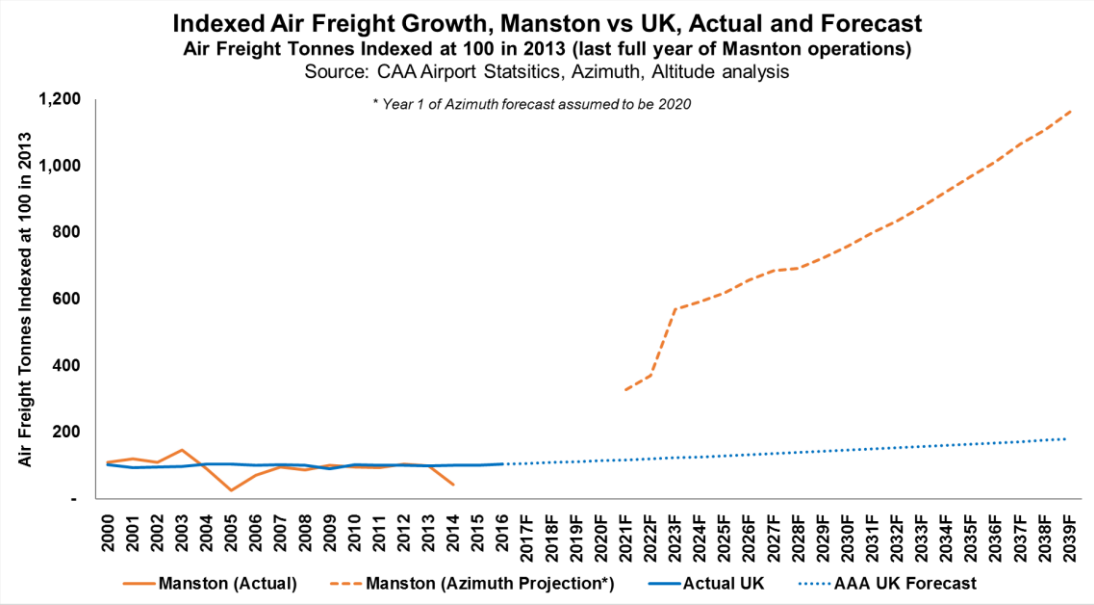


Figure 23- Azimuth Forecast Compared to Historic Growth and UK Forecast

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.

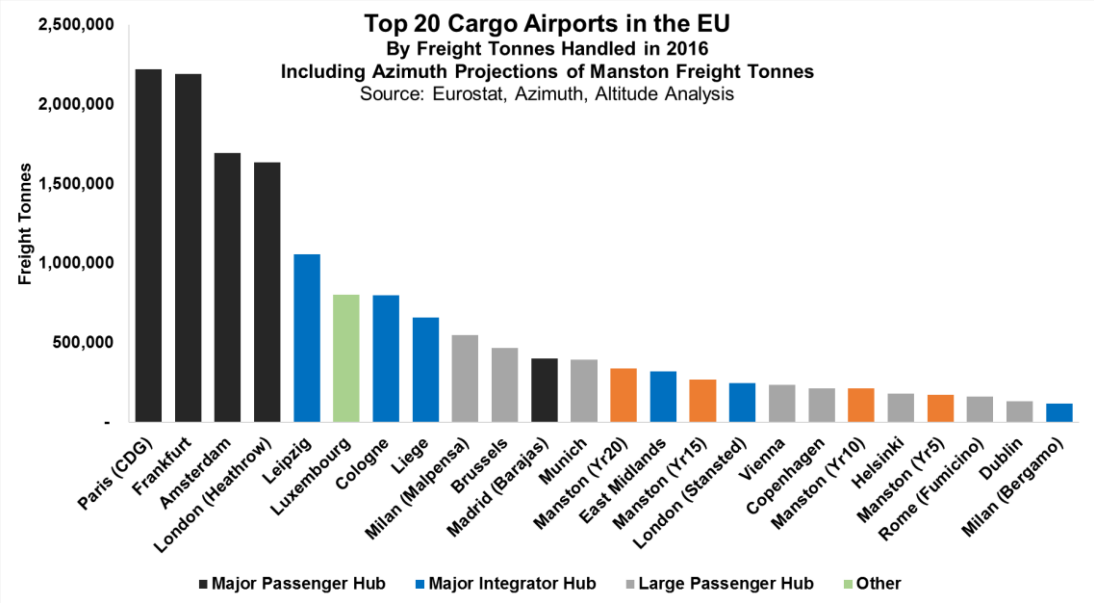


Figure 24- Azimuth Forecast Compared to EU Air Freight Benchmarks

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.

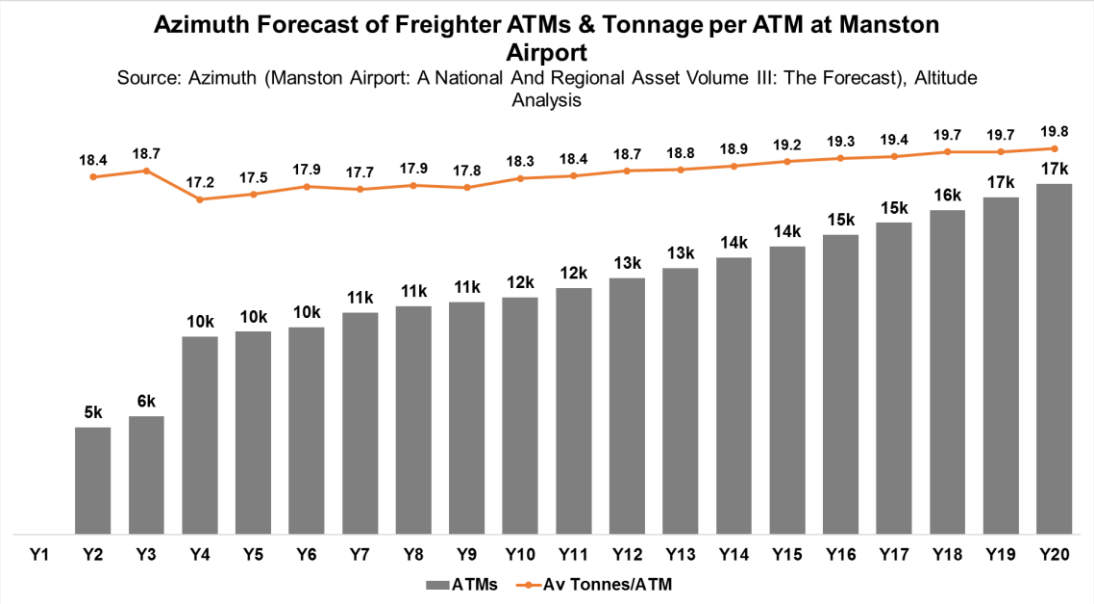


Figure 25- Azimuth Forecast of Freighter ATMs & Tonnage per ATM at Manston Airport

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.

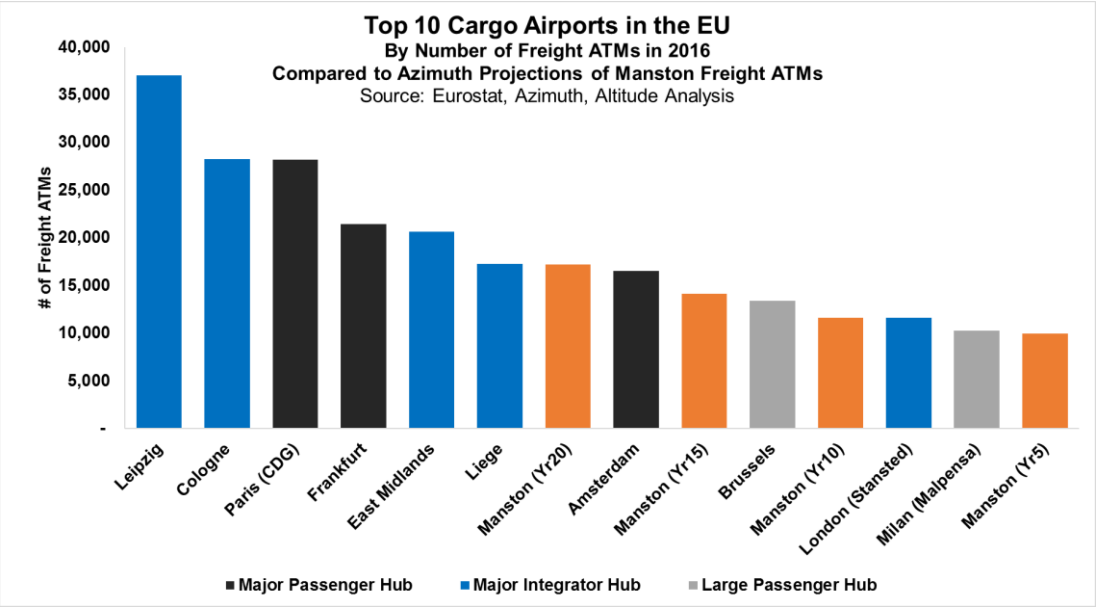


Figure 26- Azimuth Forecast Compared to EU Freighter ATM Benchmarks

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.

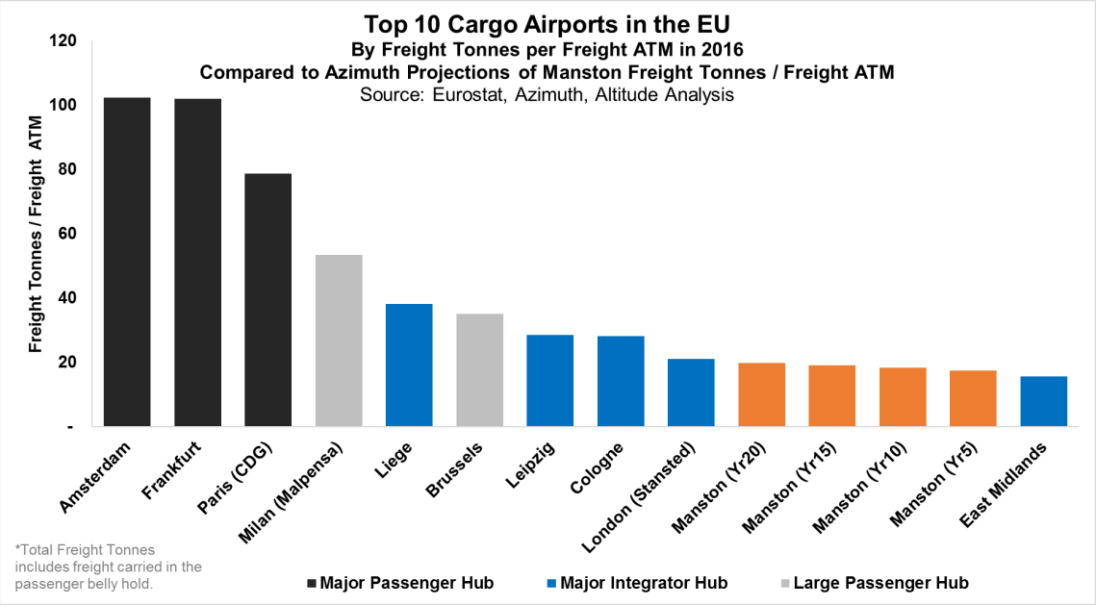


Figure 27- Azimuth Forecast Compared to EU Air Freight Tonnes per Freighter ATM Benchmarks

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].

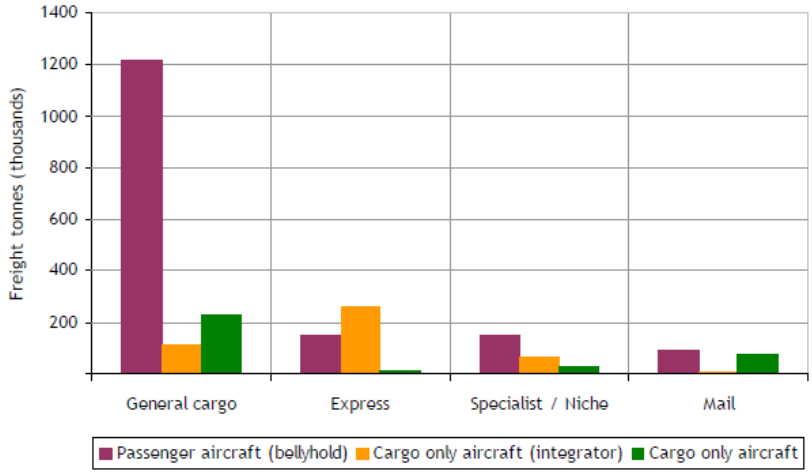


Figure 28 - UK air cargo in 2008 by type of cargo and type of carrier

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).

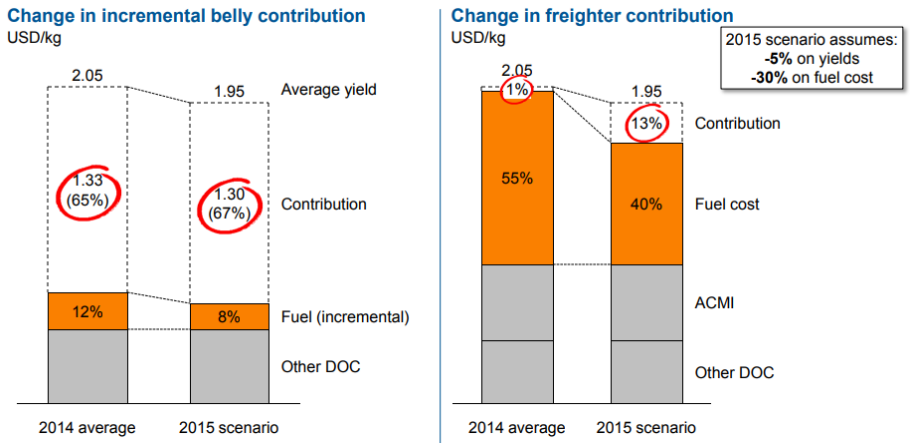


Figure 29 - Freighter vs bellyhold profitability, and impact of fuel price

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%.

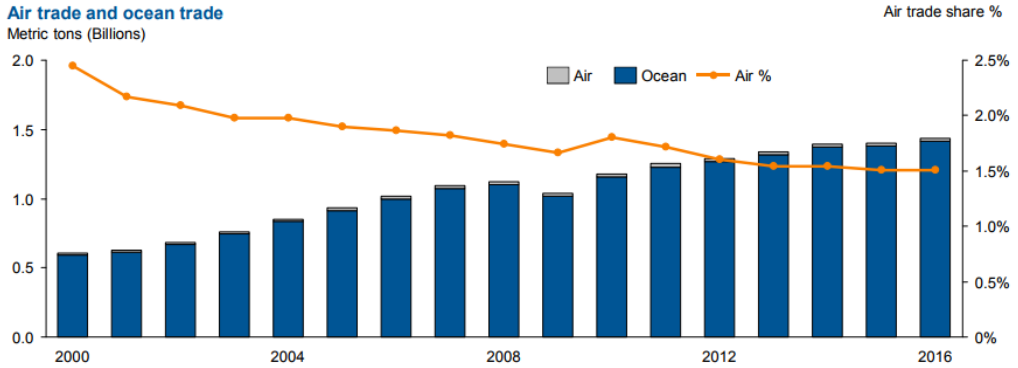


Figure 30 – Evolution of air and ocean freight tonnage with time

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].

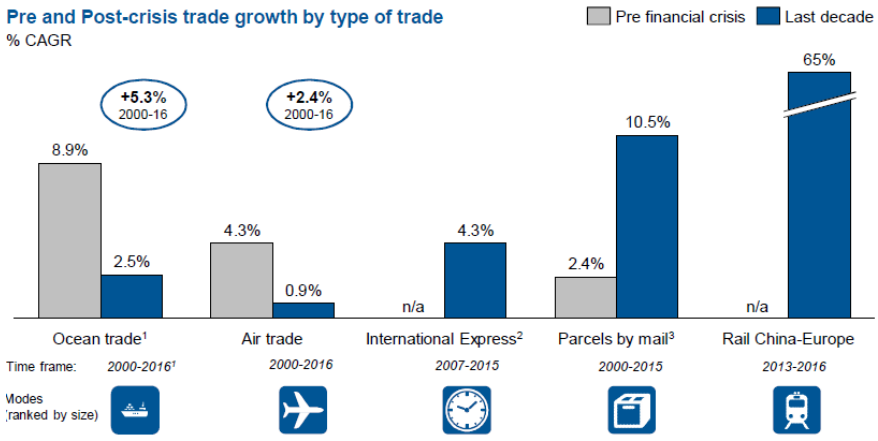


Figure 31 – Cargo growth rates by mode (pre- and post- financial crisis)

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"*

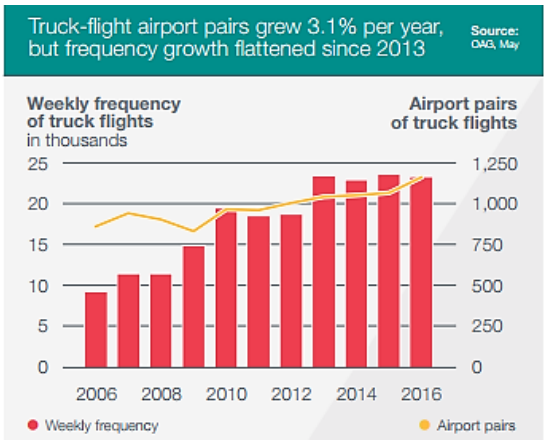


Figure 32 – Example of the growth of trucking within Europe

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]:

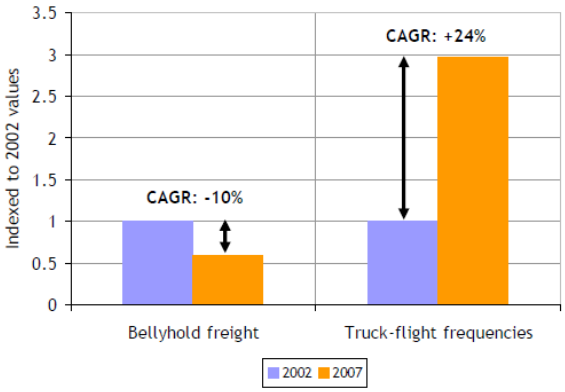


Figure 33 – Comparison of bellyhold airfreight tonnage and truck-flight frequency growth

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).

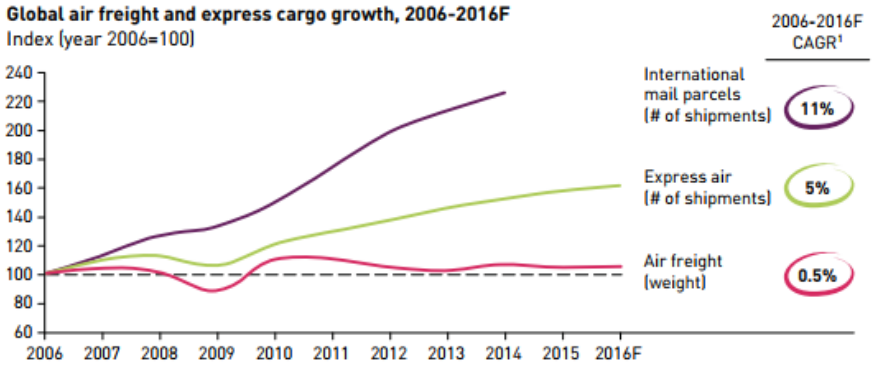


Figure 34 – Air cargo growth rates by type of cargo

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]:

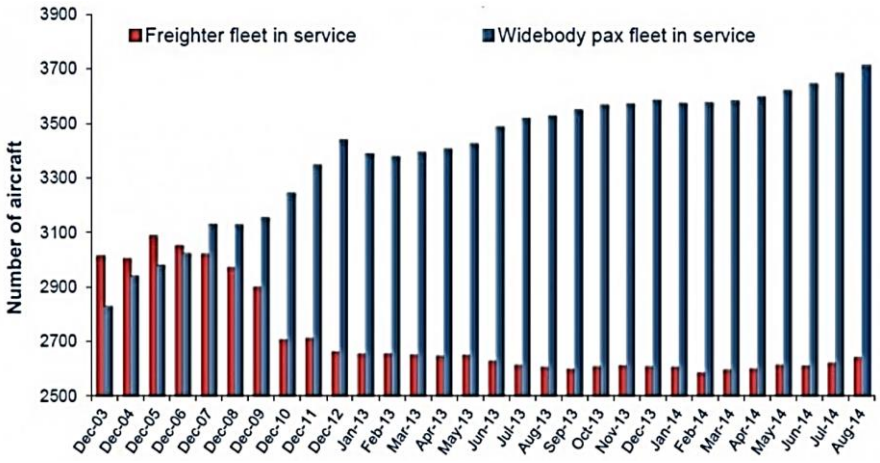


Figure 35 – Number of freighters and widebody passengers aircraft in service globally, Source: CAPA

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].

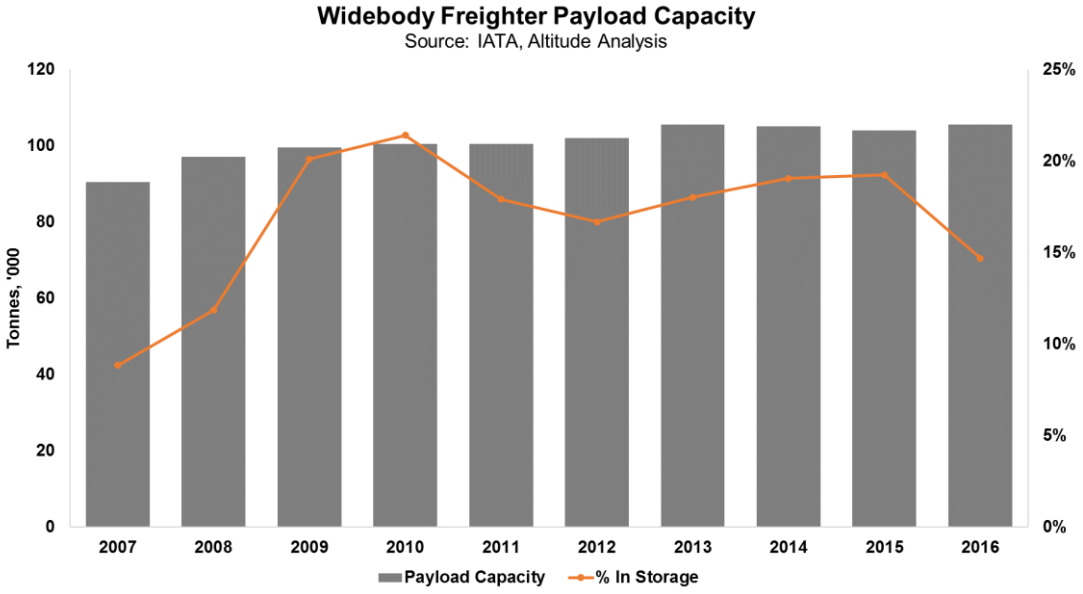


Figure 36 – Change in widebody freighter payload capacity with time

[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.

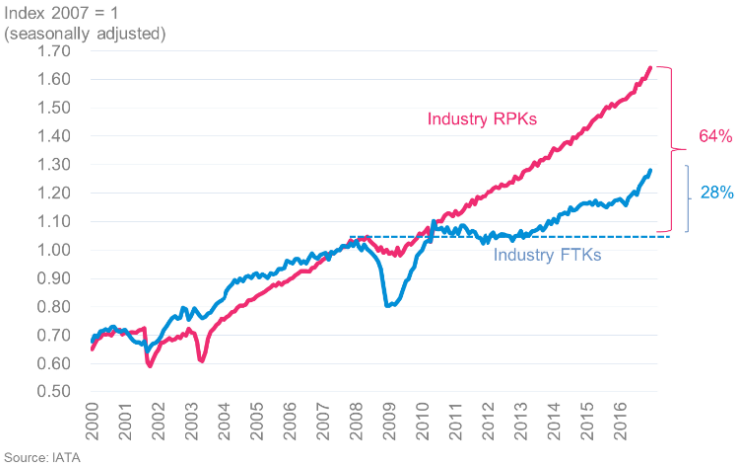


Figure 37 – Passenger growth compared with air freight growth, Source: IATA

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

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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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.

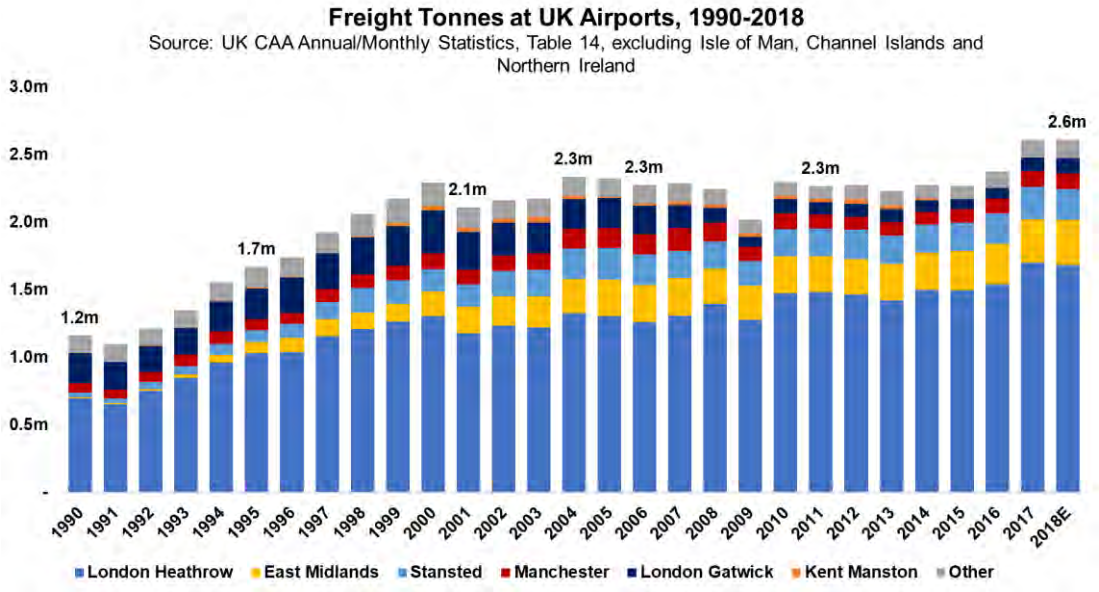


Figure 1 – Timeseries of mainland UK freight tonnage[38]

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.

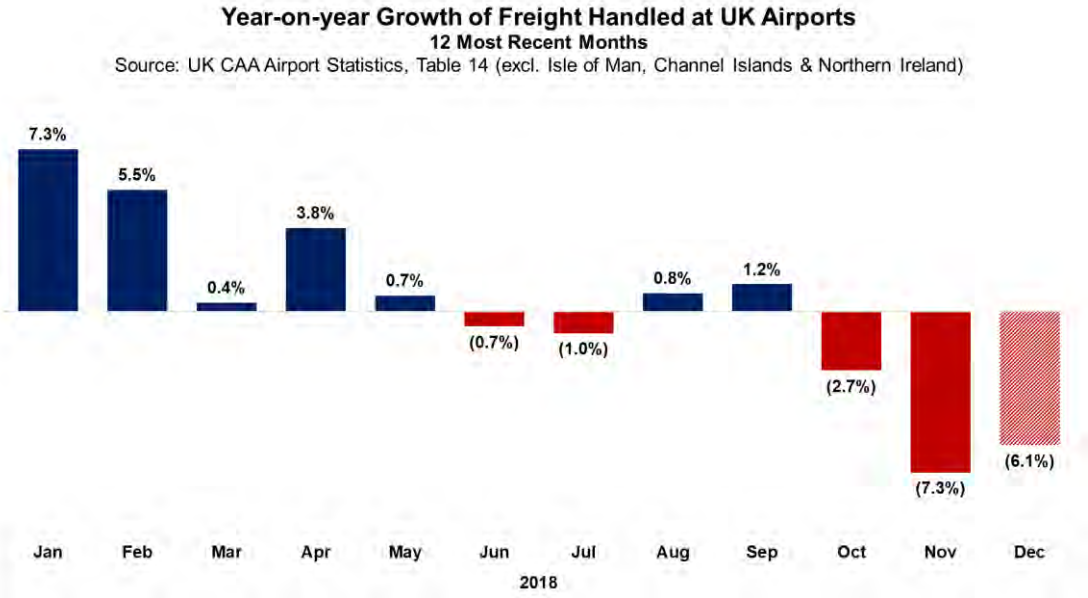


Figure 2 – Monthly freight tonnes at mainland UK airports (December estimated from preliminary results)

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.

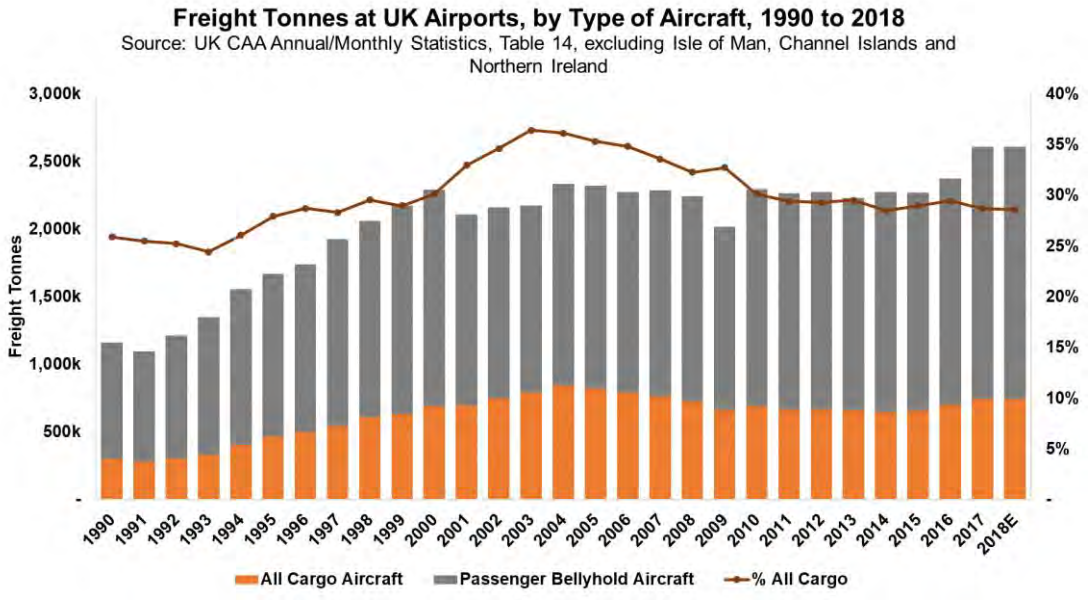


Figure 3 – Annual freight tonnes at mainland UK airports by type of aircraft

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.

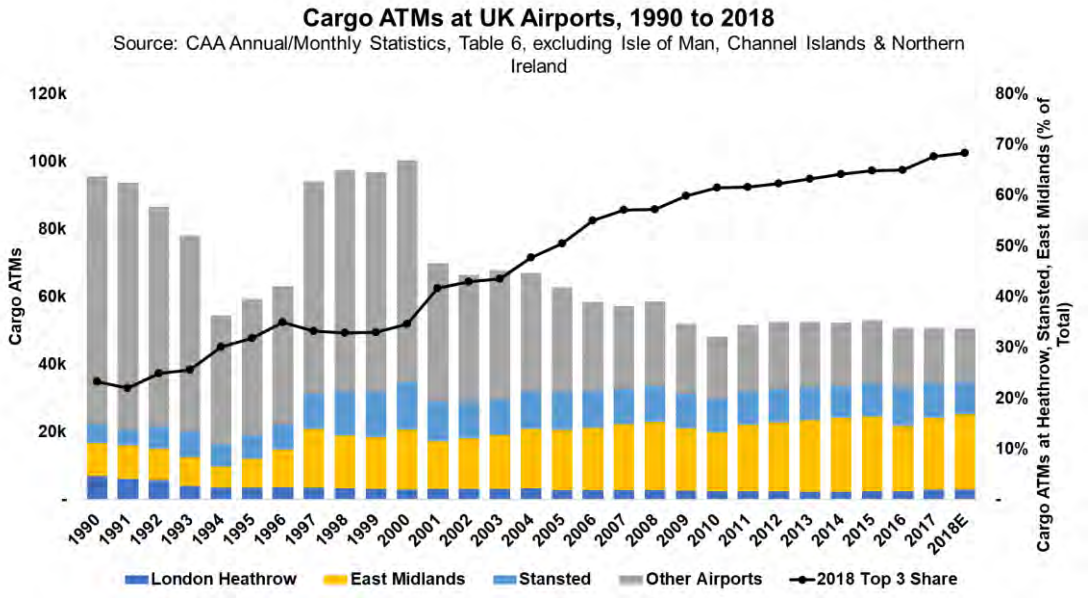


Figure 4 – Annual cargo flights at mainland UK airports

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.

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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.

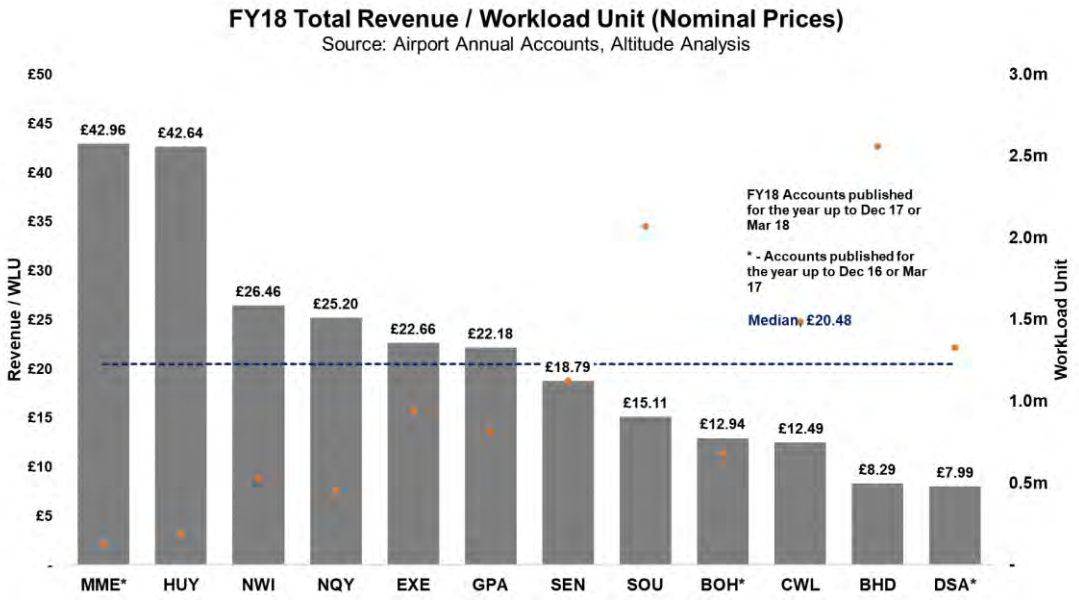


Figure 7 - Total Revenue Yield / WLU

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.

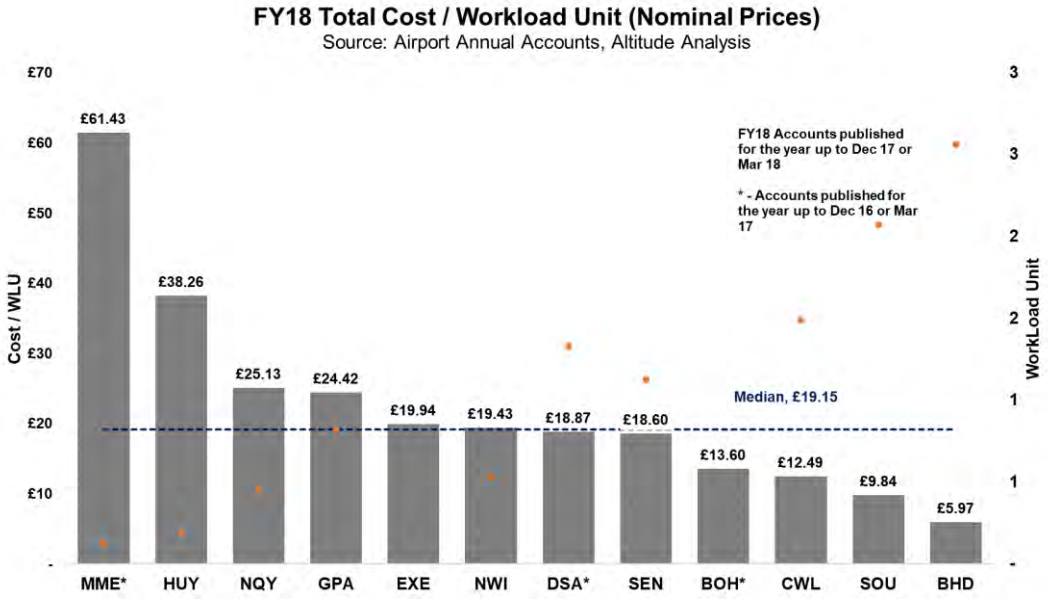


Figure 8 - Total Unit Cost

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.

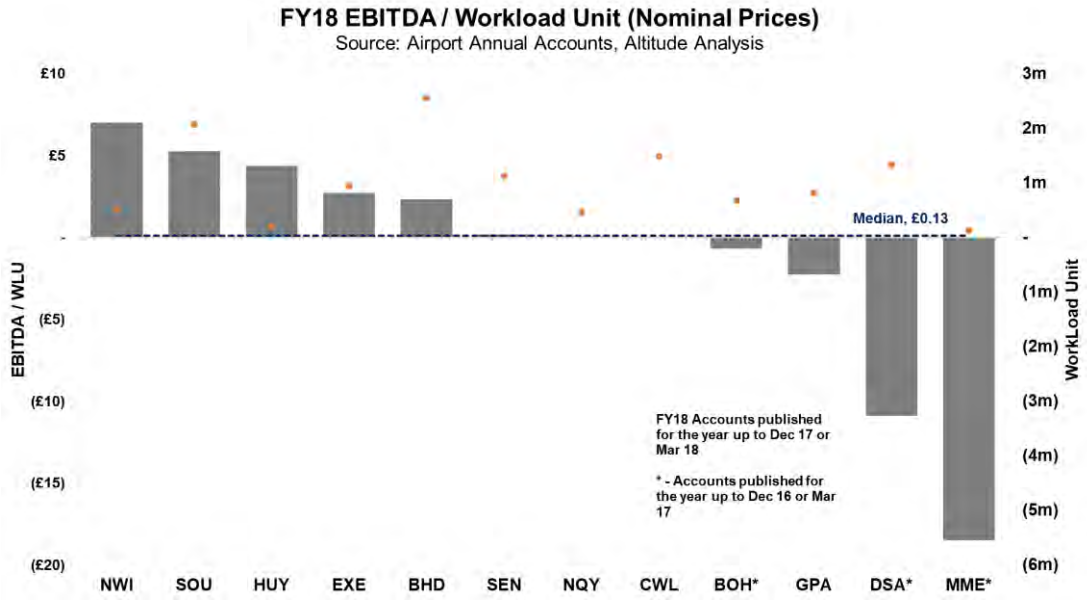


Figure 9 - EBITDA / Pax

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.

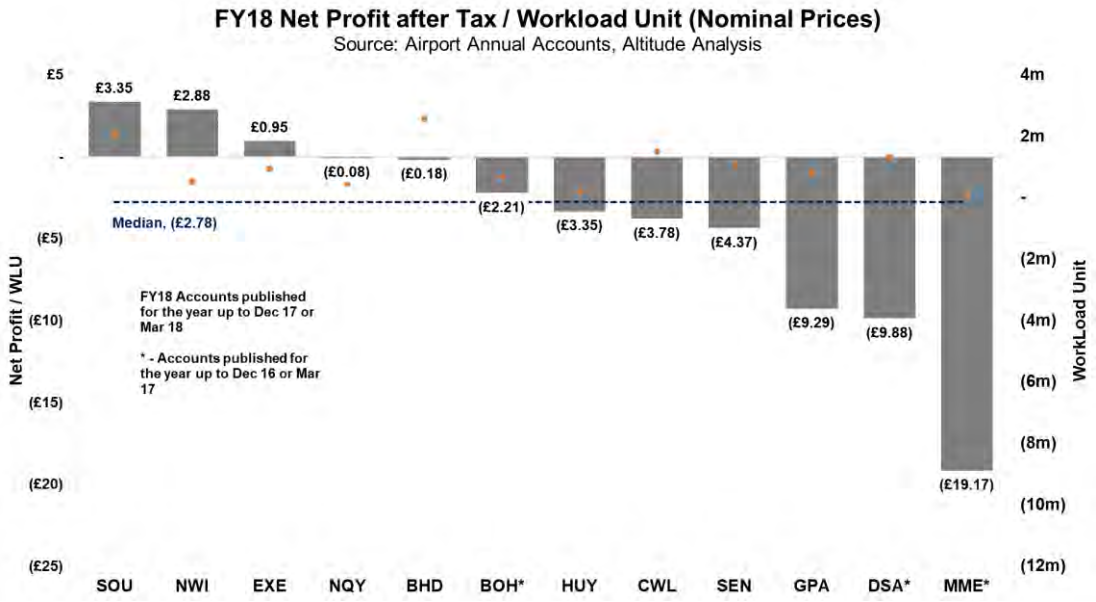


Figure 10 - Net Profit / Pax

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.

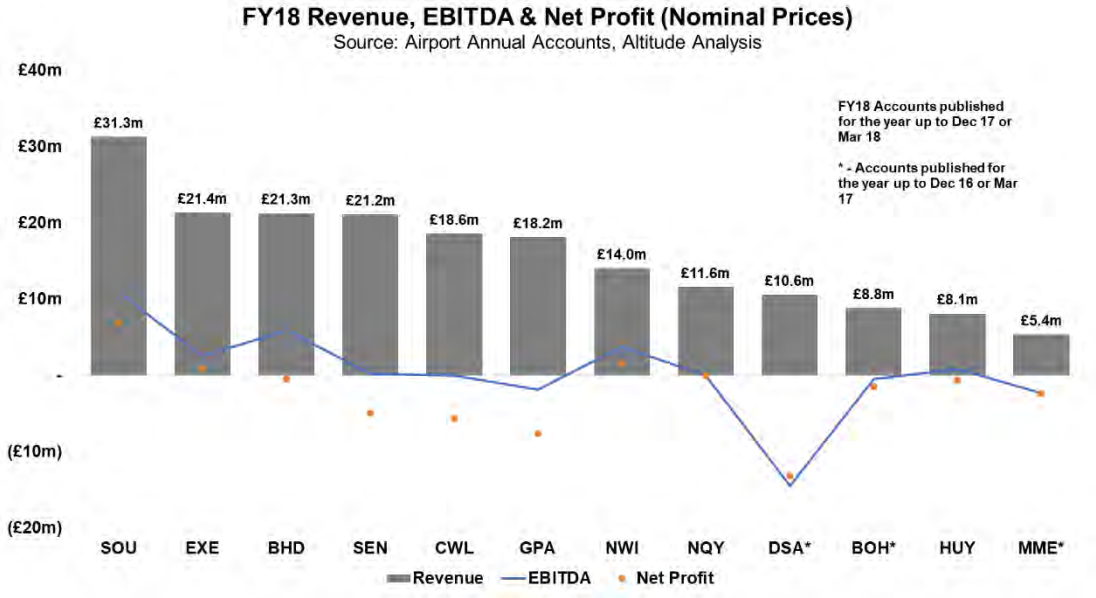


Figure 11 - Revenue, EBITDA & Net Profit

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).

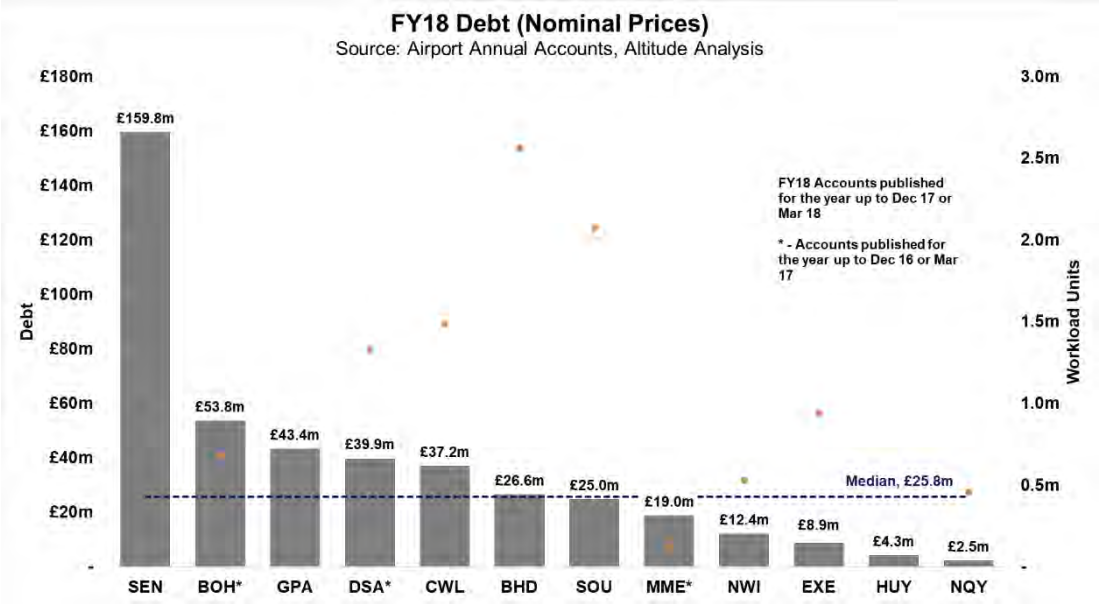


Figure 12 – Debt Levels

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.

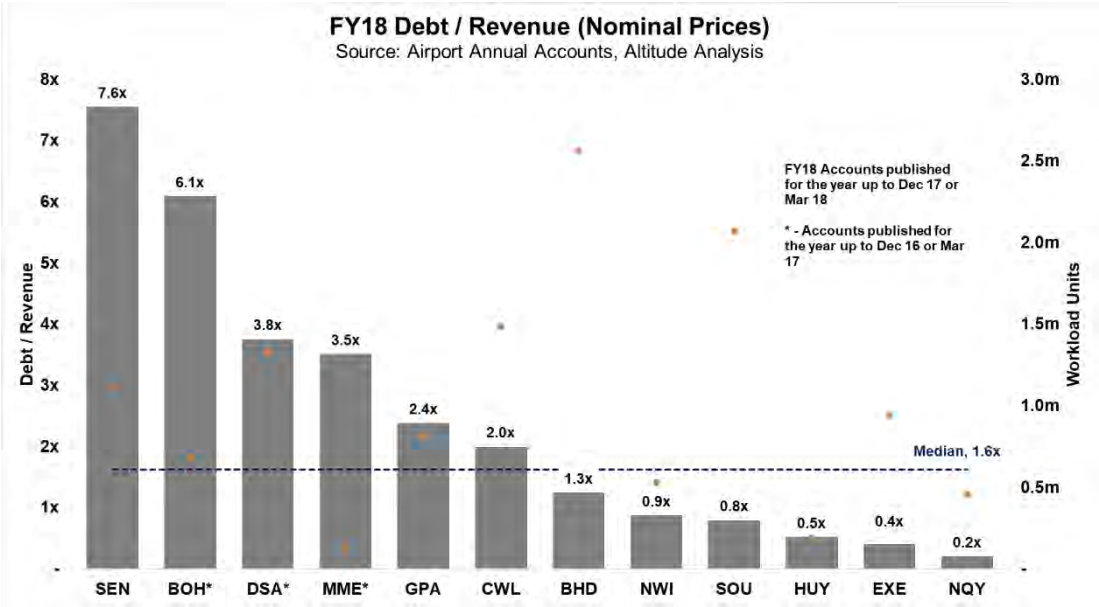


Figure 8 - Debt / Revenue Ratio

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.

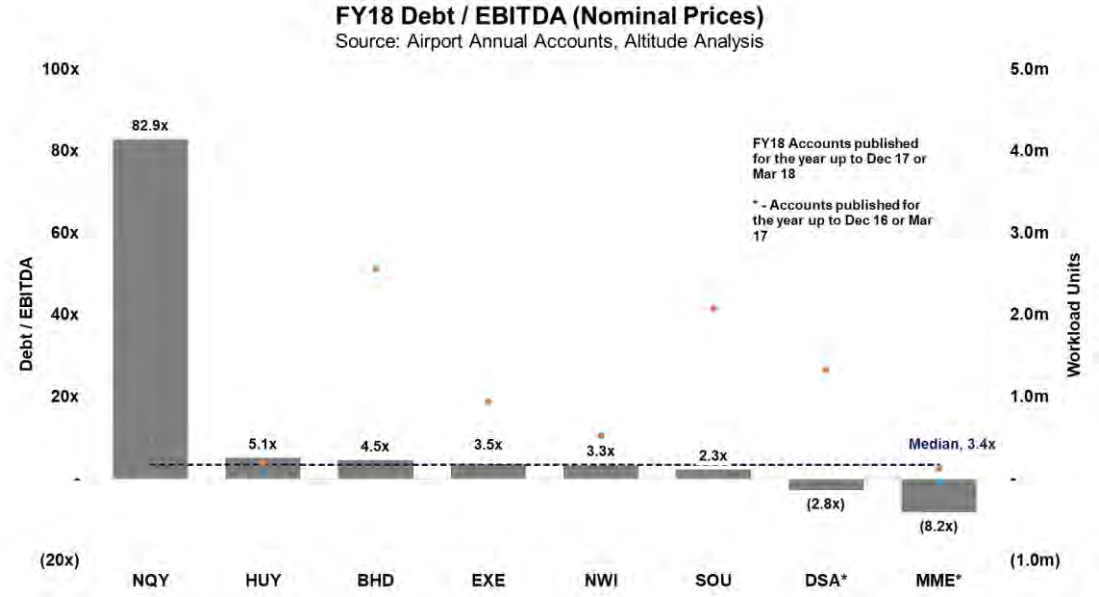


Figure 9 - Debt / EBITDA Ratio

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.

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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.

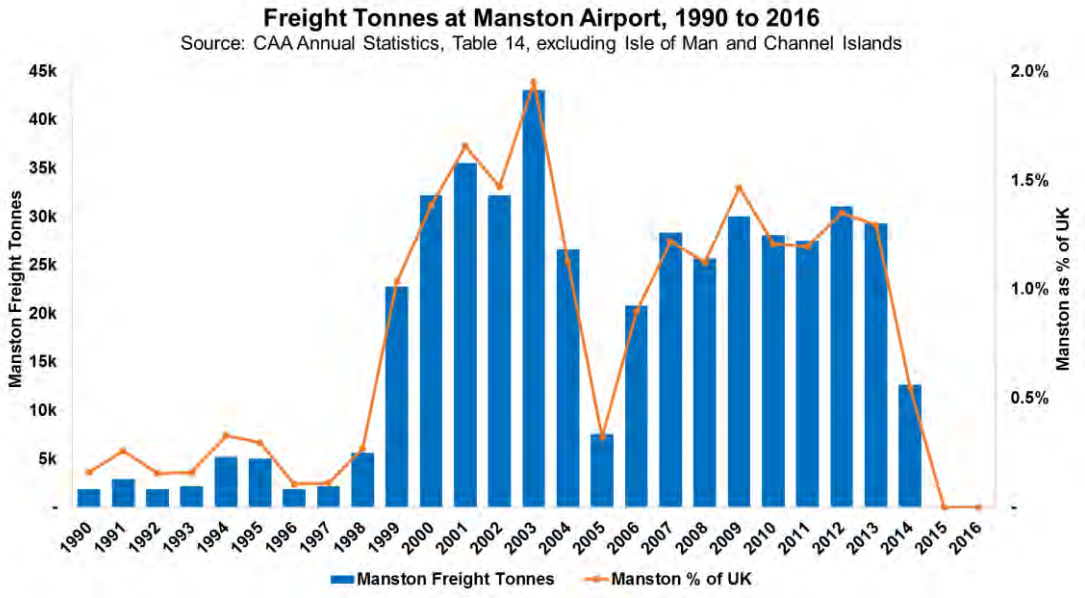


Figure 1 - Manston Airport Freight Tonnes 1990-2016

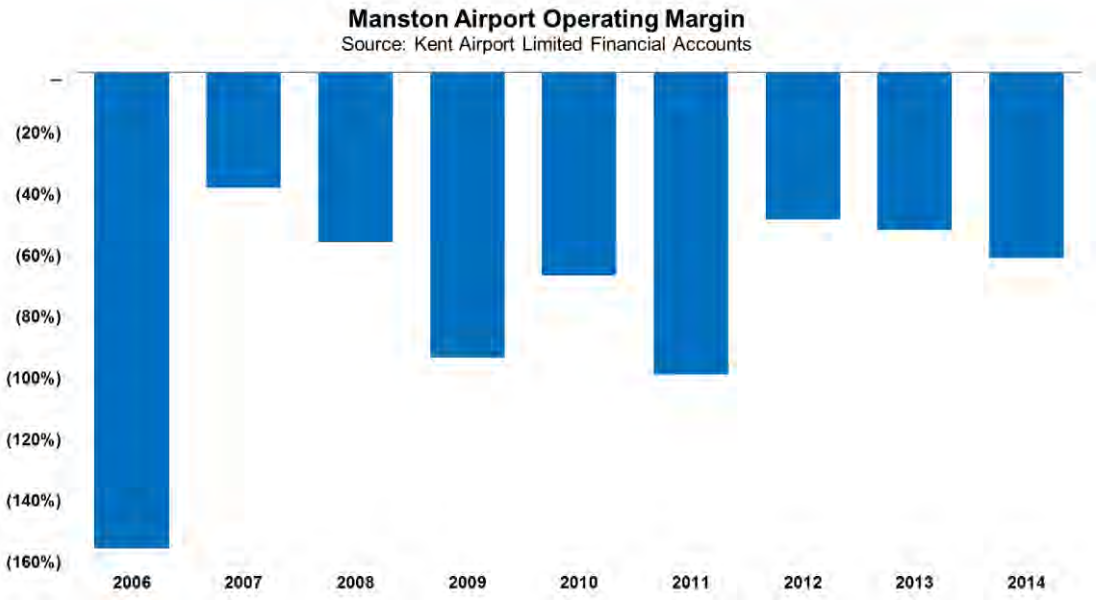


Figure 2 - Manston Airport Operating Margin (Operating Profit / Revenue) 2006-2014

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.

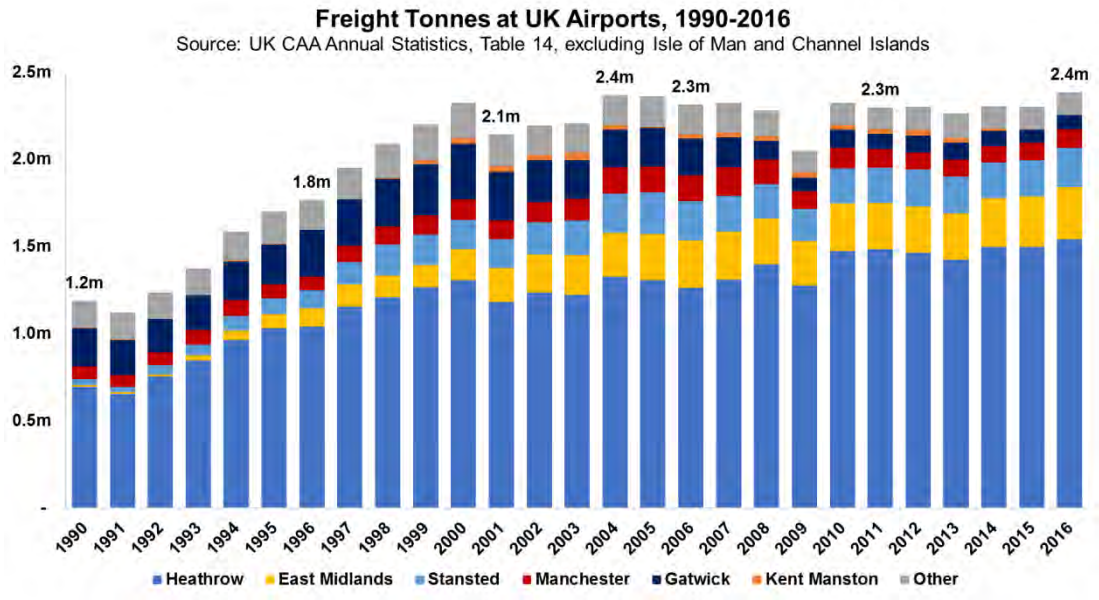


Figure 3 – Timeseries of UK freight tonnage

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].

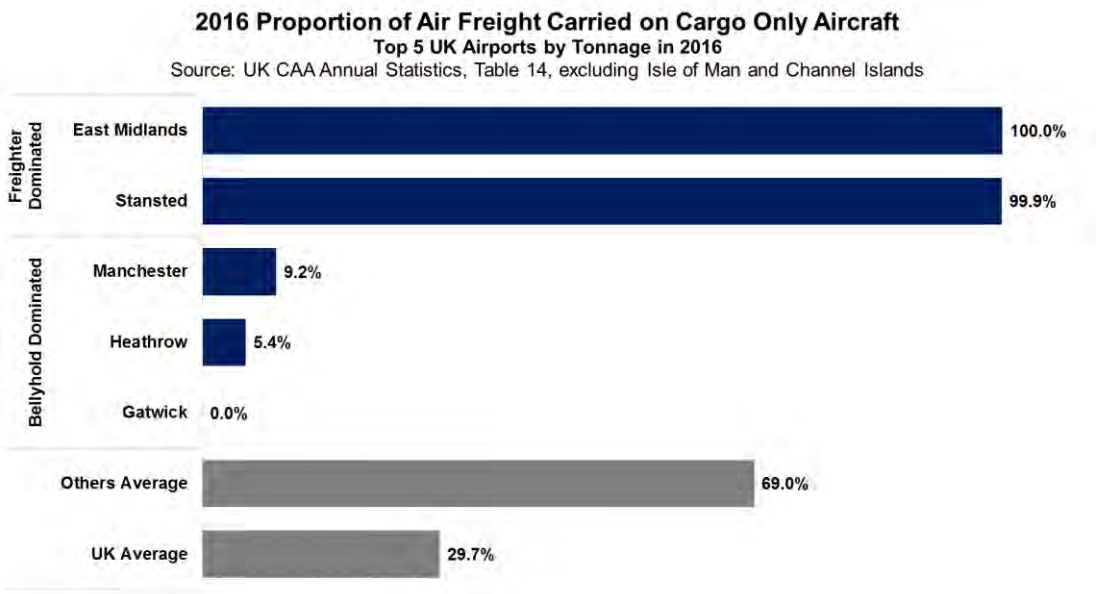


Figure 4 – Freighter/Bellyhold split at selected UK airports

[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

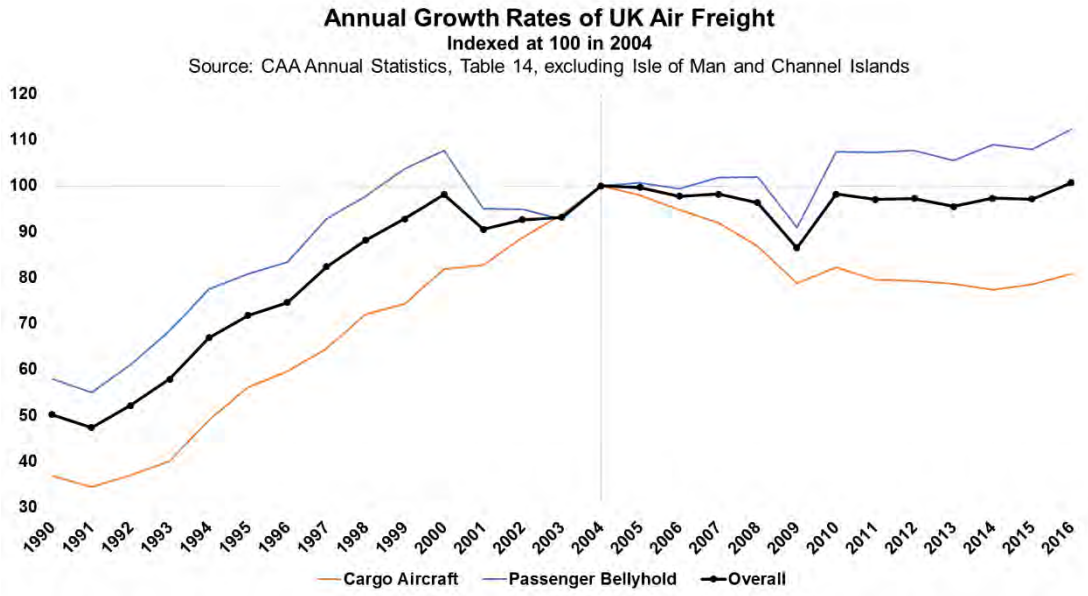


Figure 6 – Annual growth rates of UK freight

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.

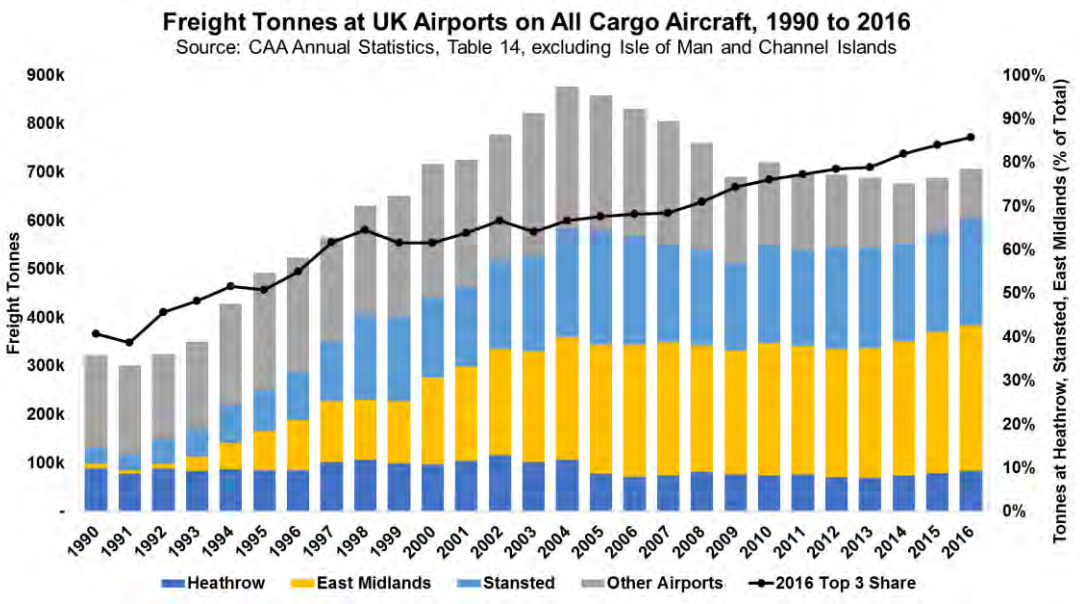


Figure 7 – Timeseries of UK freight on cargo-only aircraft

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).

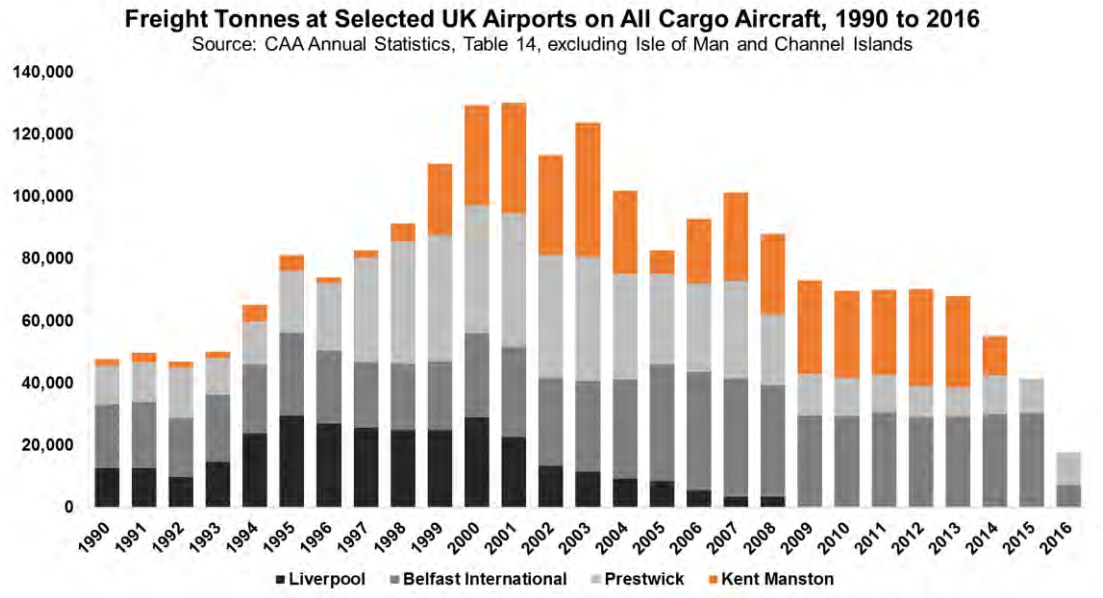


Figure 8 – Reduction of freight on cargo-only aircraft at selected airports

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.

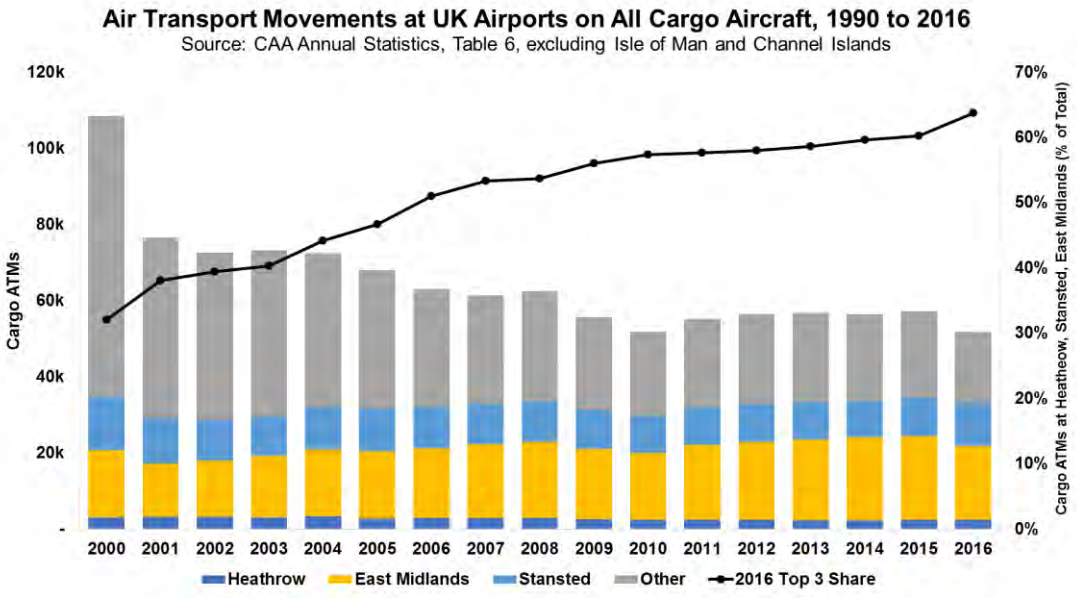


Figure 9 – Consolidation of freight on cargo-only aircraft at Heathrow, East Midlands and Stansted

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.

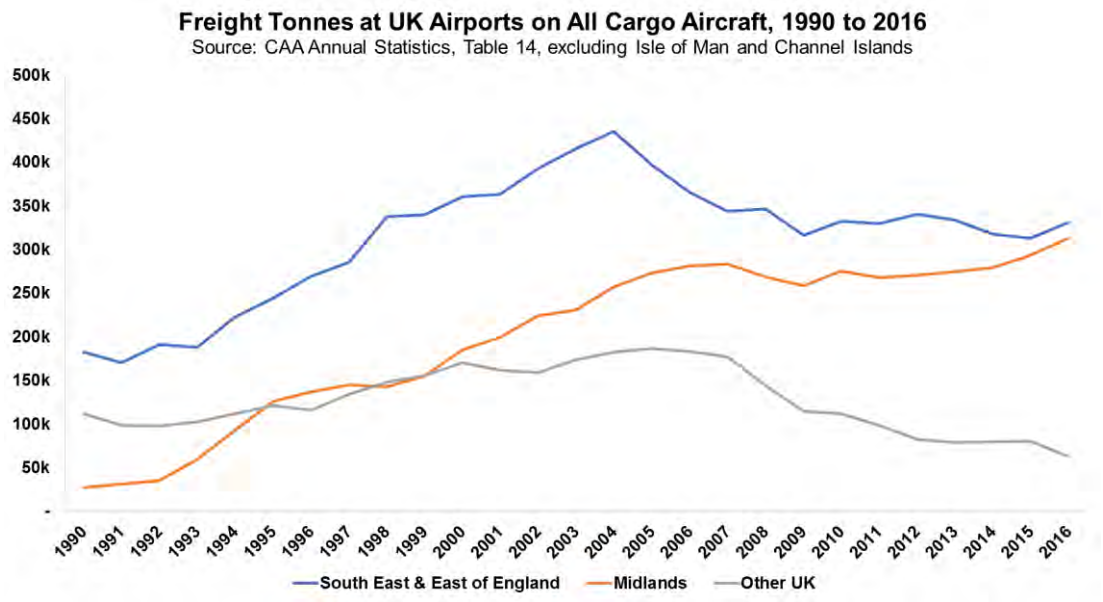


Figure 10 – Breakdown of UK freight on cargo-only aircraft, by region.

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.

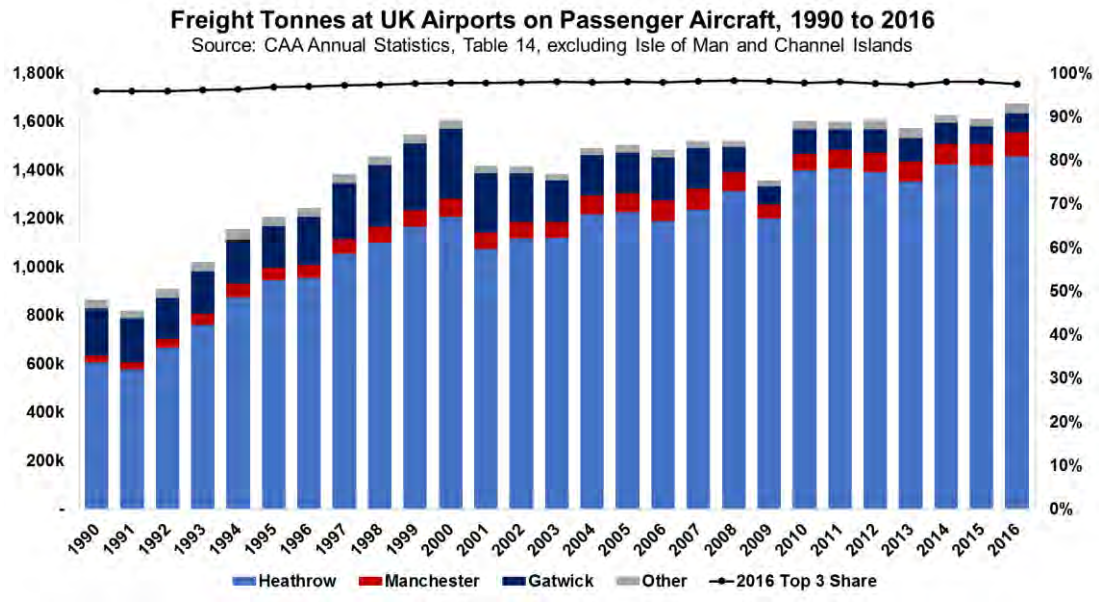


Figure 11 - Timeseries of UK freight on passenger aircraft

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.

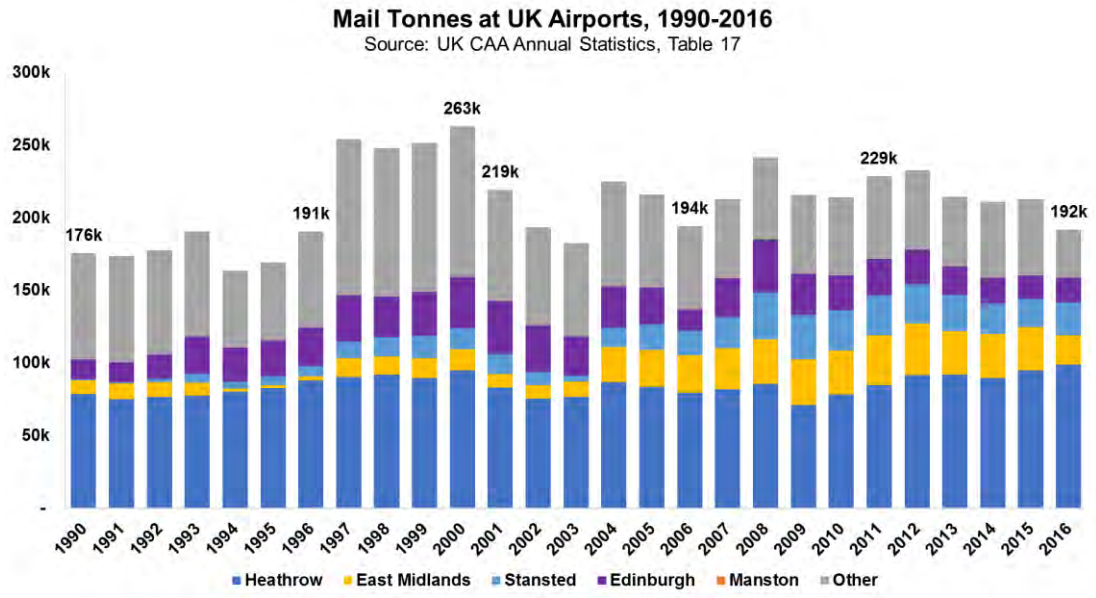


Figure 12 – Timeseries of UK Mail tonnage

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.

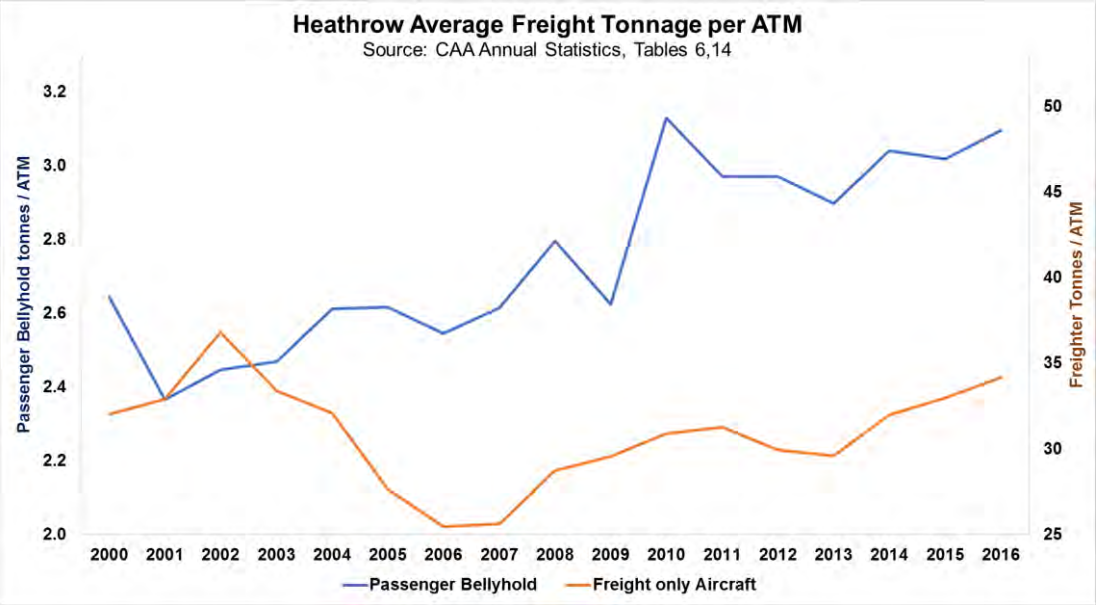


Figure 13 – Change over time of average tonnage per ATM at Heathrow

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.

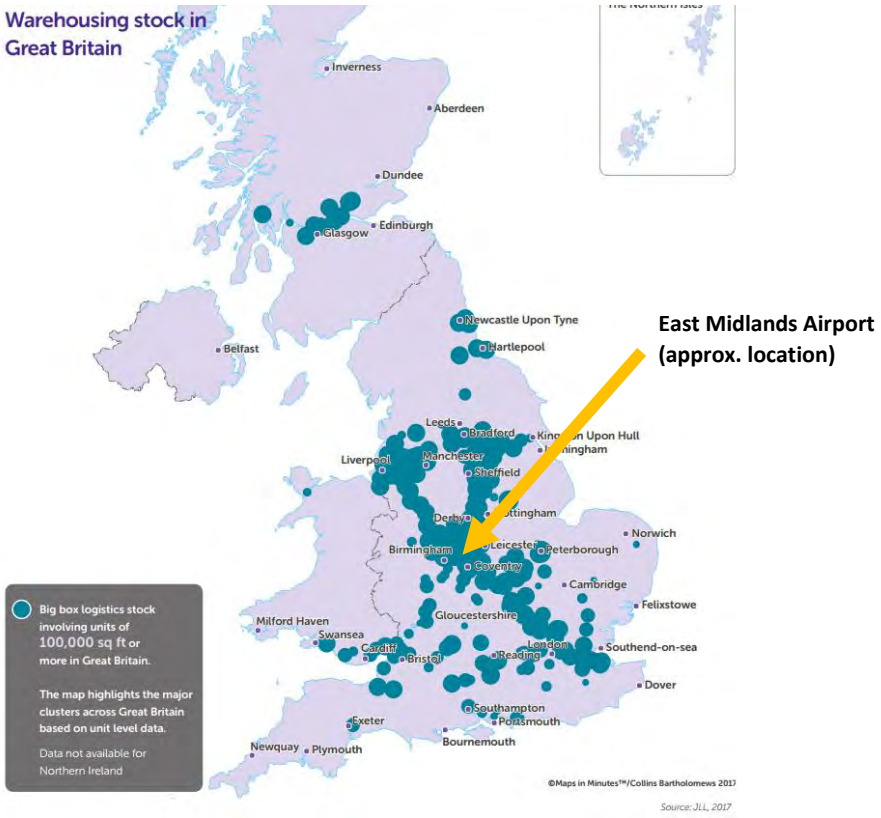


Figure 14 – Locations of large warehousing units in the UK, Source: Freight Transport Association

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%.

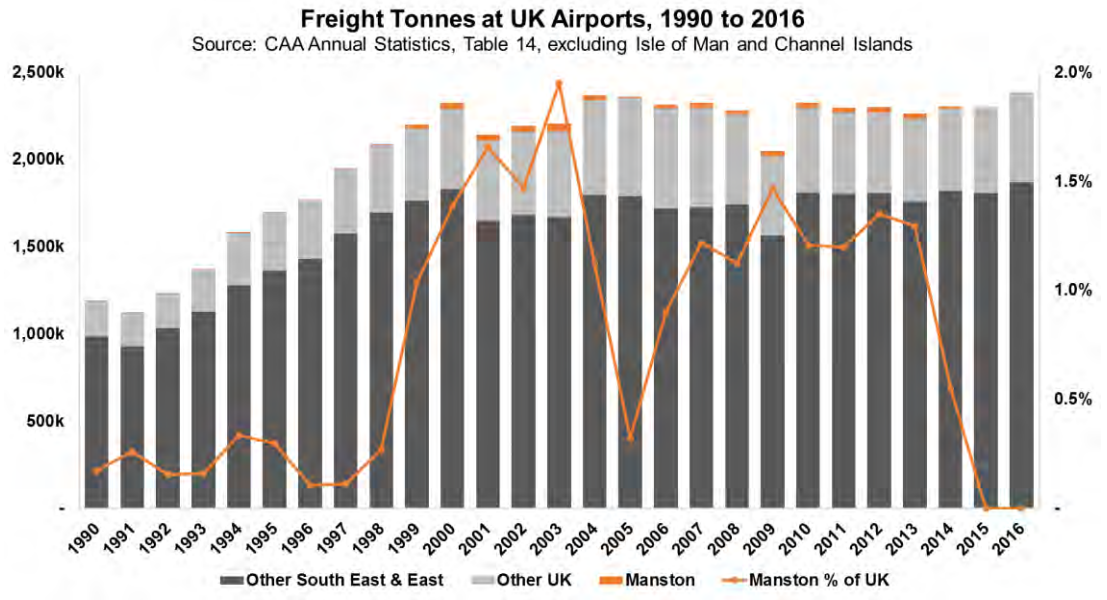


Figure 15 – Timeseries of UK freight, including that handled at Manston

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.

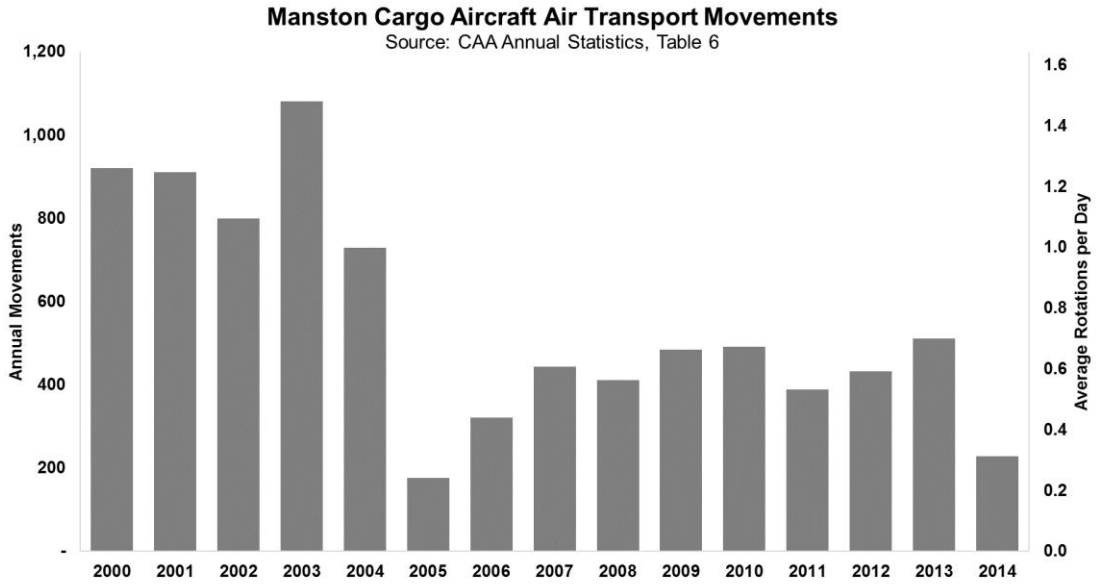


Figure 16 – Manston cargo-only aircraft movements

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.

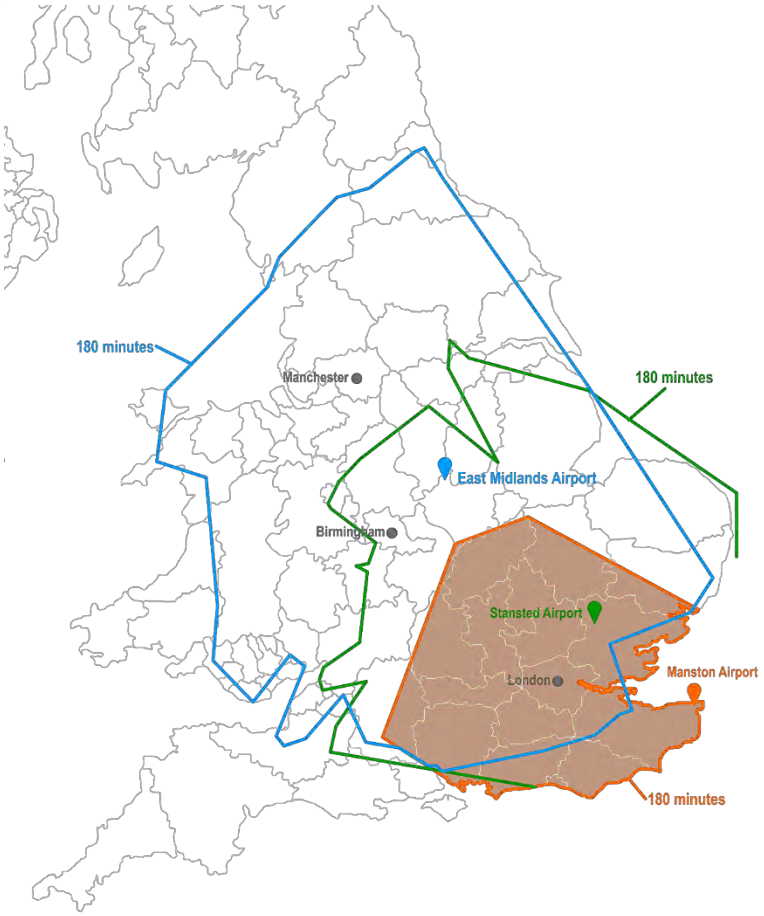


Figure 17 – 3-hr catchment region of Manston in comparison with those of East Midlands and Stansted
Source: Altitude analysis, Google Maps (truck speed set at 55 miles per hour)

[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)

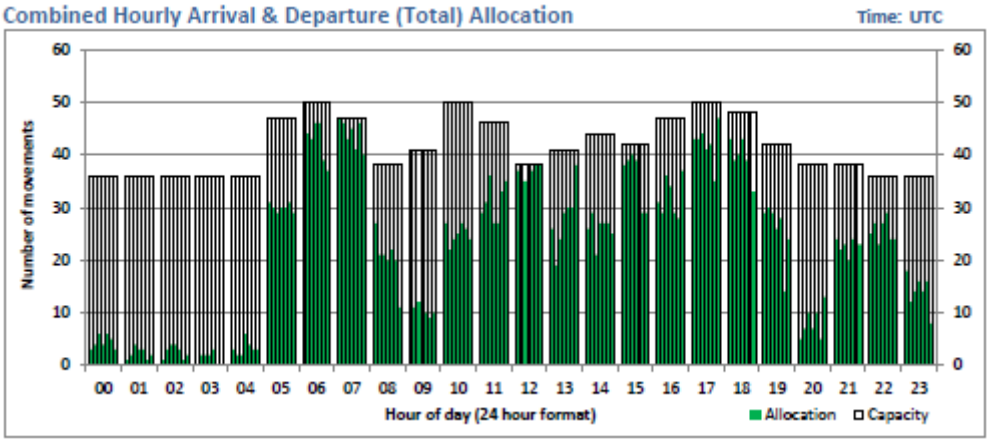


Figure 18 - Peak Week, Hourly Runway Allocation, Stansted Airport, Summer 2017. Source Airport Coordination Limited[78]

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)

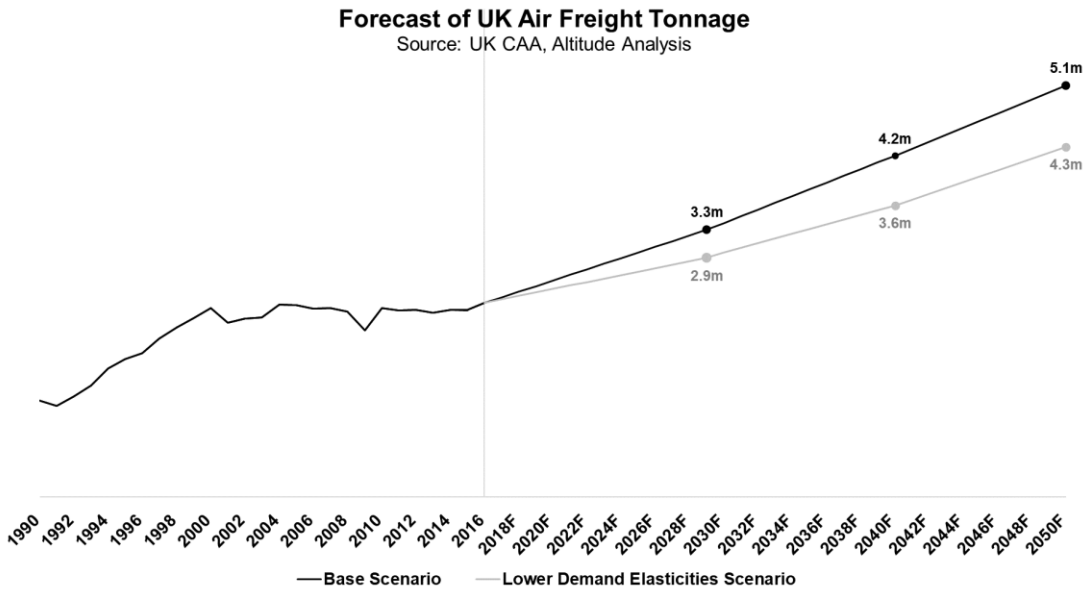


Figure 19 – Altitude forecast of UK air freight demand to 2050

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)

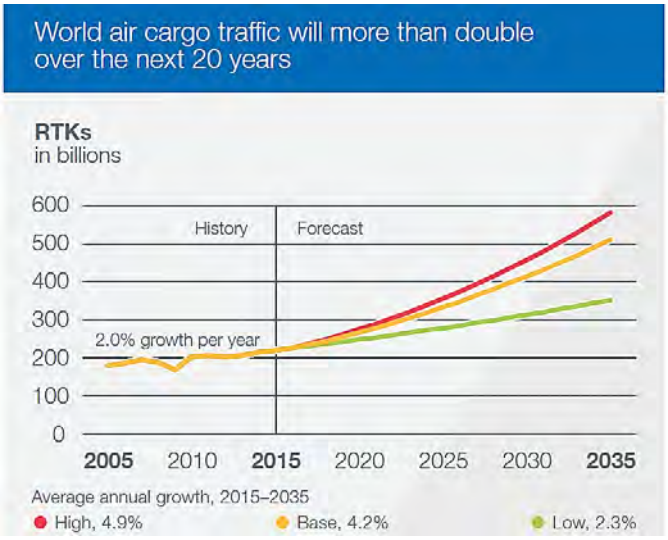


Figure 20 – Global 20-year air cargo forecast - timeseries of high, base and low forecasts

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.

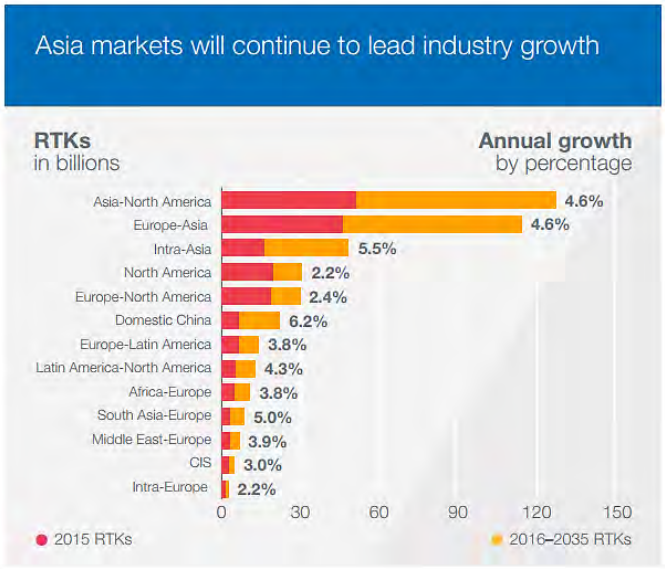


Figure 21 –Global 20-year air cargo forecast – size, and growth rates, of key flows

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)

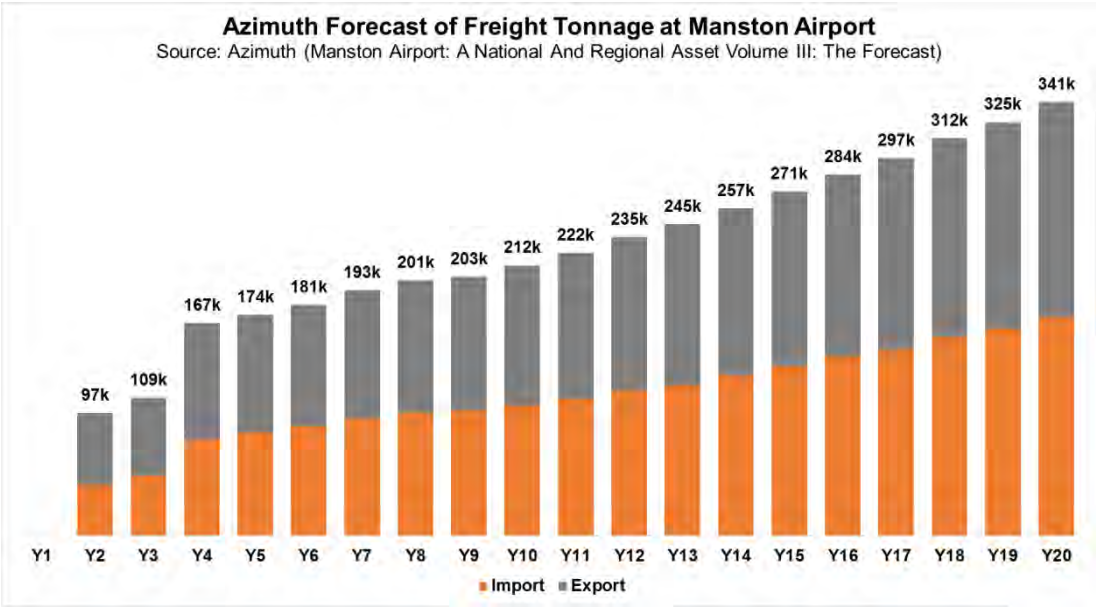


Figure 22- Azimuth Forecast of Freight Tonnage at Manston Airport

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.

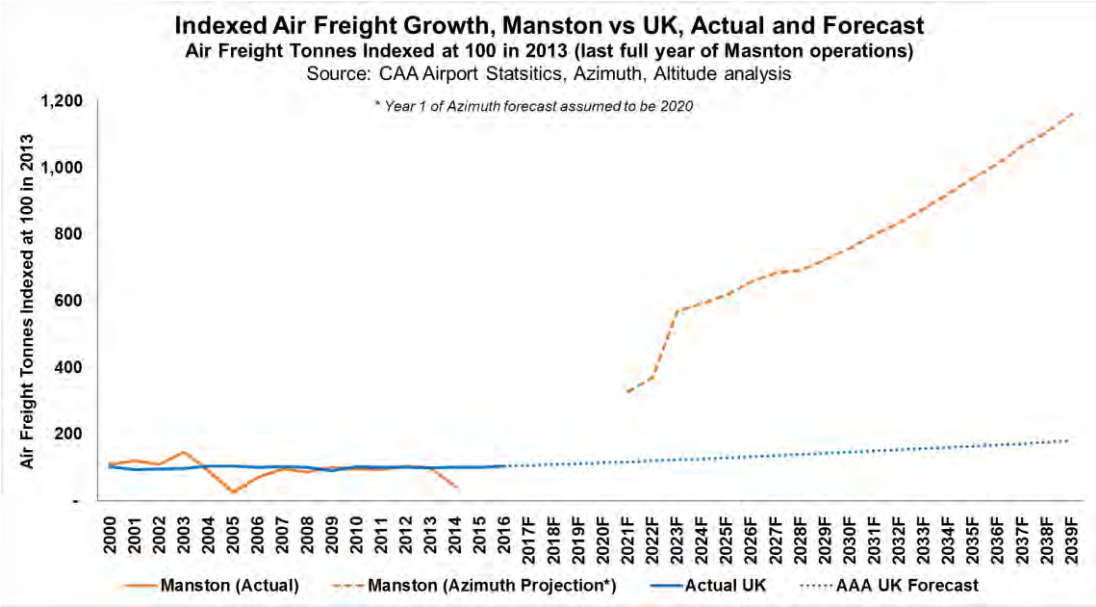


Figure 23- Azimuth Forecast Compared to Historic Growth and UK Forecast

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.

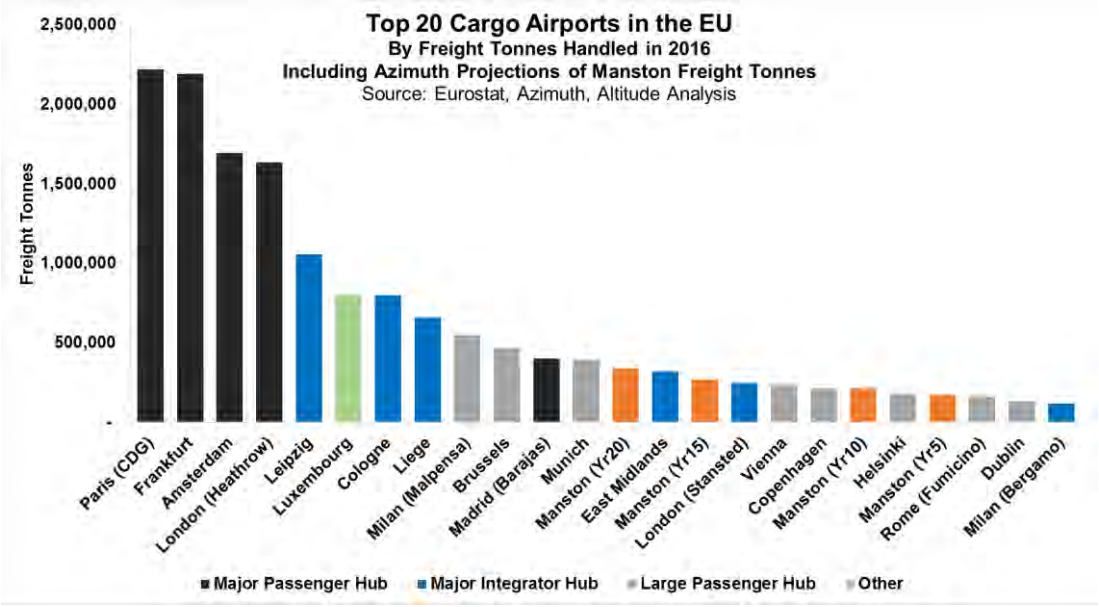


Figure 24- Azimuth Forecast Compared to EU Air Freight Benchmarks

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.

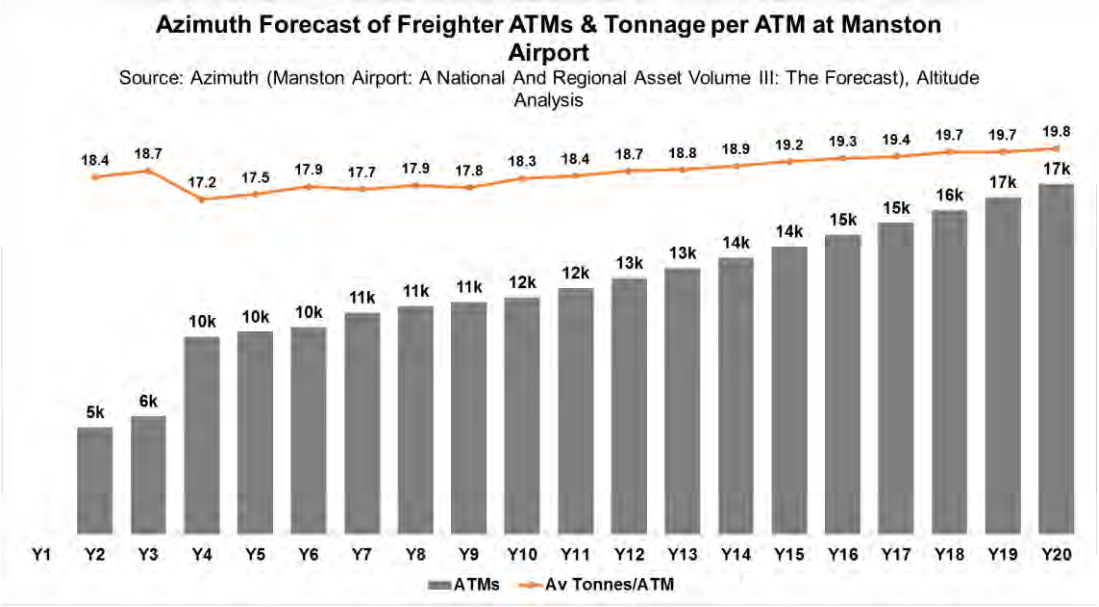


Figure 25- Azimuth Forecast of Freighter ATMs & Tonnage per ATM at Manston Airport

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.

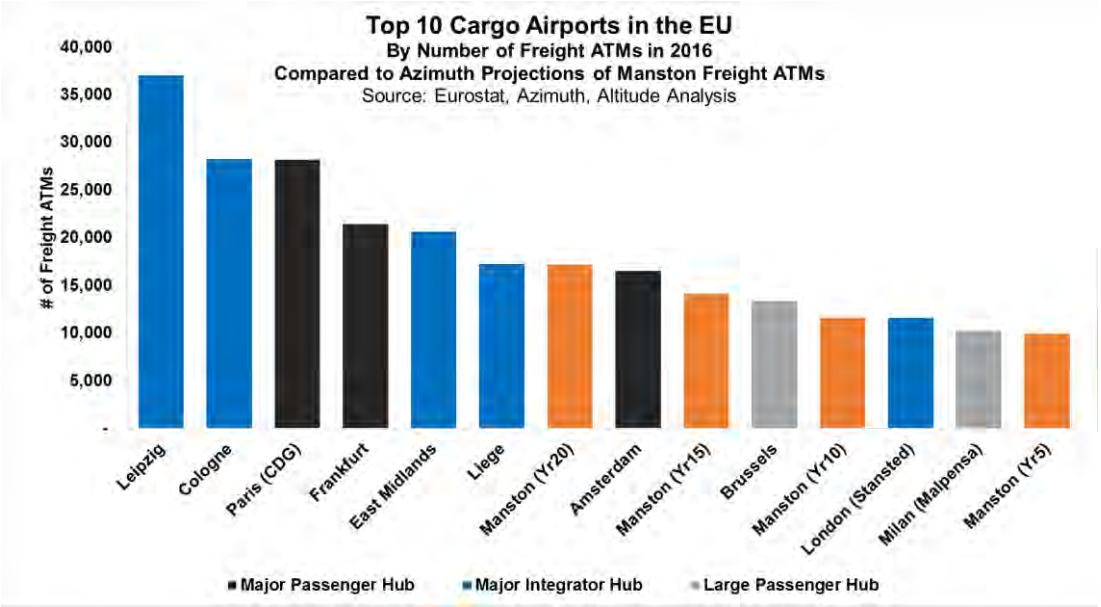


Figure 26- Azimuth Forecast Compared to EU Freighter ATM Benchmarks

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.

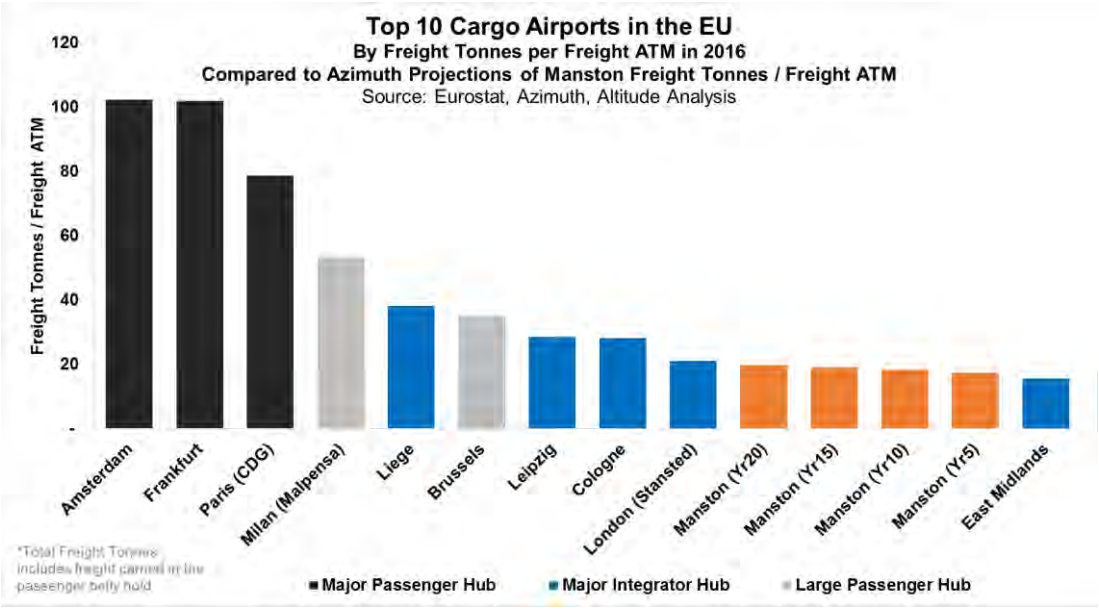


Figure 27- Azimuth Forecast Compared to EU Air Freight Tonnes per Freighter ATM Benchmarks

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].

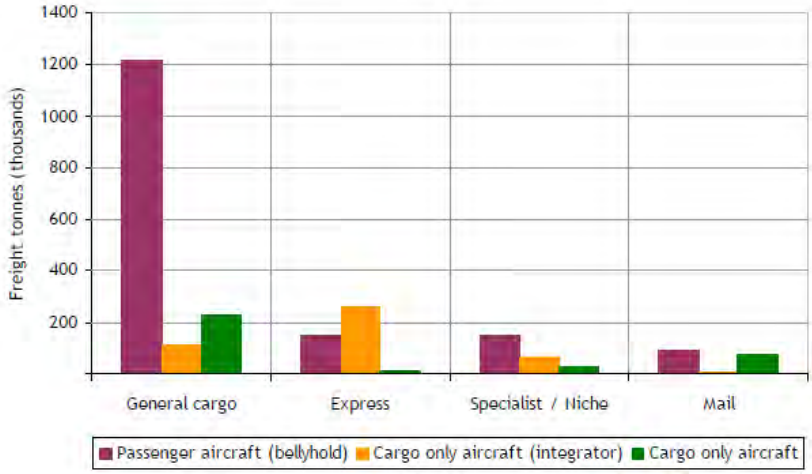


Figure 28 - UK air cargo in 2008 by type of cargo and type of carrier

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).

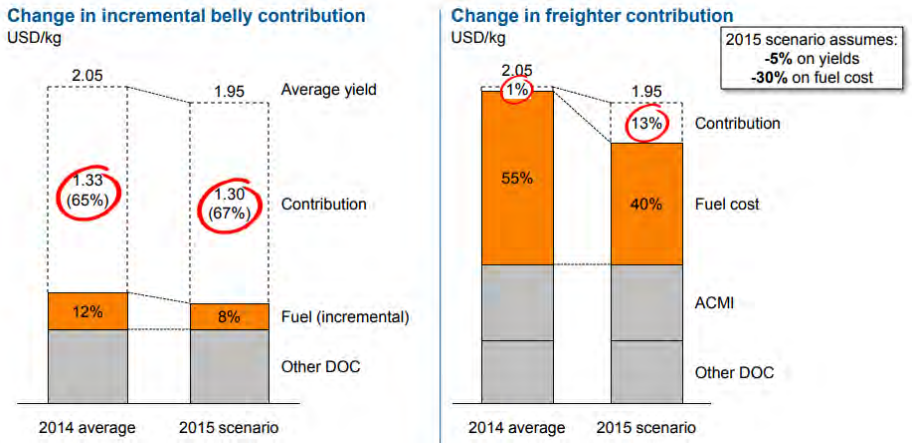


Figure 29 - Freighter vs bellyhold profitability, and impact of fuel price

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%.

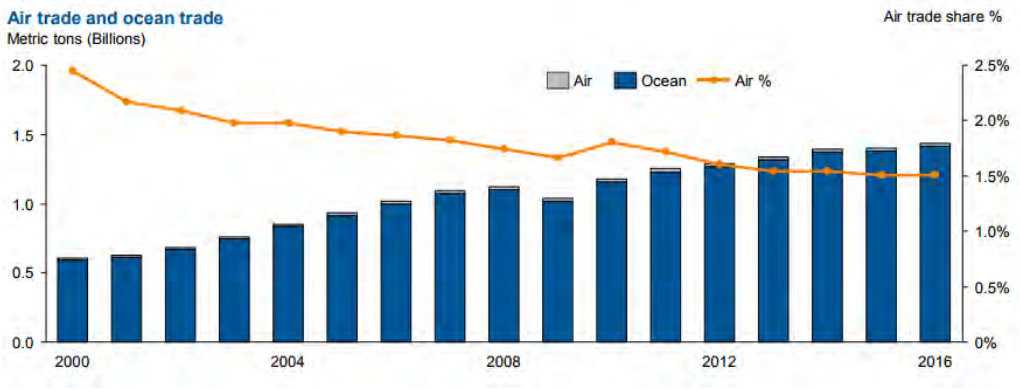


Figure 30 – Evolution of air and ocean freight tonnage with time

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].

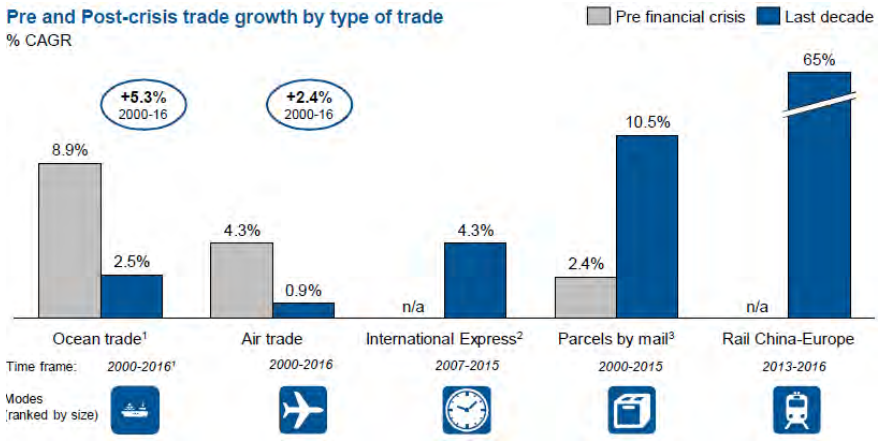


Figure 31 – Cargo growth rates by mode (pre- and post- financial crisis)

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]:

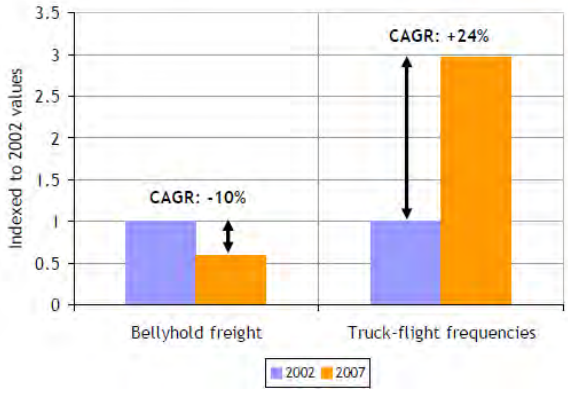


Figure 33 – Comparison of bellyhold airfreight tonnage and truck-flight frequency growth

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).

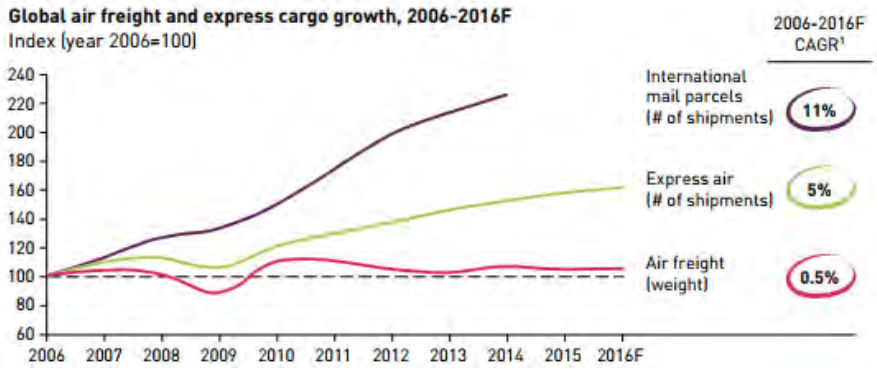


Figure 34 – Air cargo growth rates by type of cargo

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]:

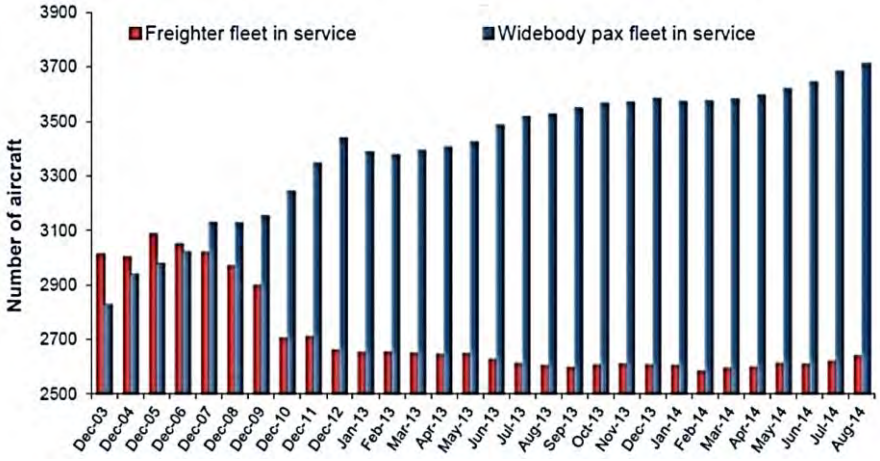


Figure 35 – Number of freighters and widebody passengers aircraft in service globally, Source: CAPA

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].

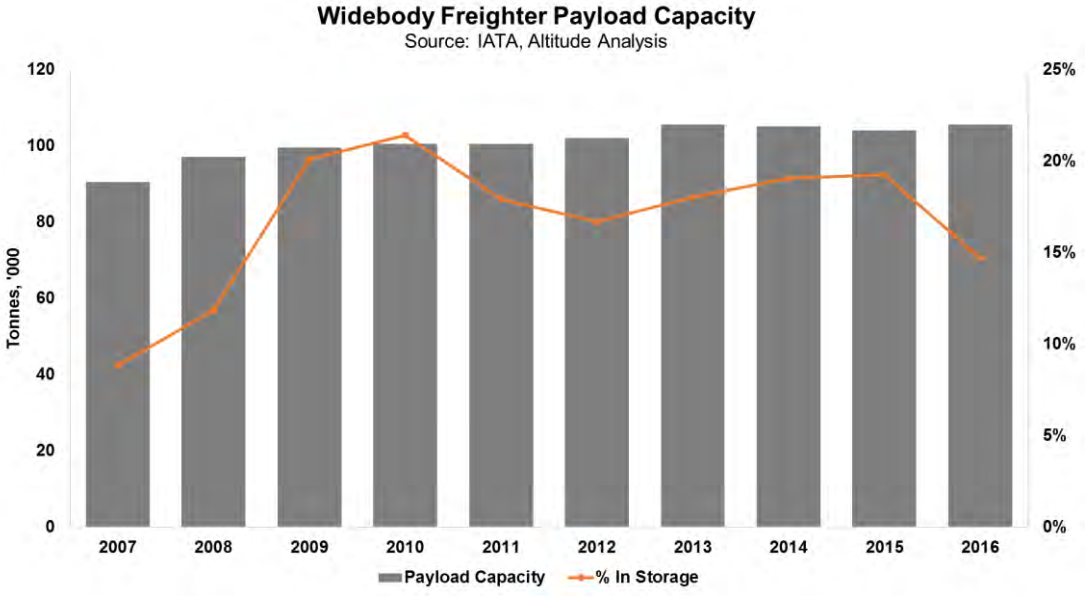


Figure 36 – Change in widebody freighter payload capacity with time

[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.

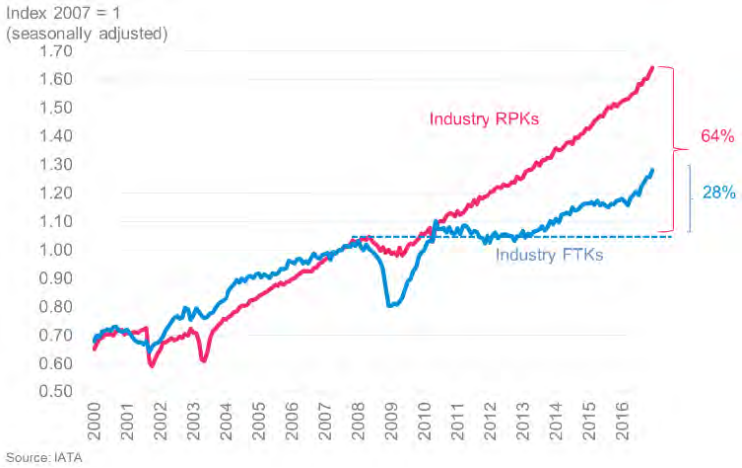


Figure 37 – Passenger growth compared with air freight growth, Source: IATA

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]*

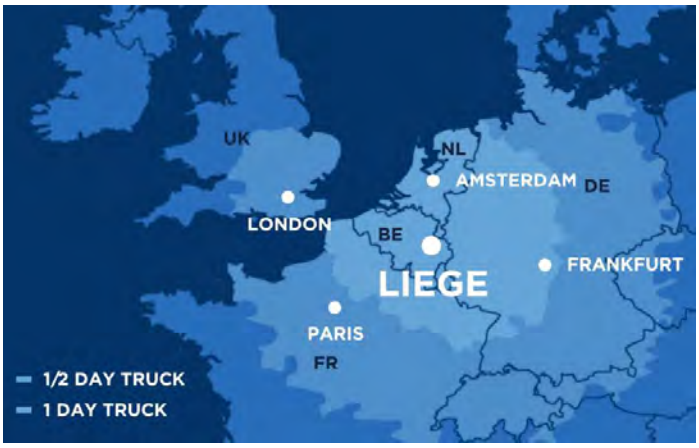


Figure 39 - ½ day & full-day trucking isochrones from Liege airport

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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