

**From:** [REDACTED]  
**To:** [Manston Airport](#)  
**Subject:** Manston: Additional Evidence: Noise  
**Date:** 03 May 2019 15:37:07  
**Attachments:** [Teddington Action Group SONAWHOPBN etc.pdf](#)  
[CAP1748 - CAA Noise Impact Survey.pdf](#)  
[Airspace Information NATS 2019.pdf](#)  
[Gatwick webtrak 1142019 16.29 .tiff](#)  
[Gatwick webtrak 1142019 16.24 HeverCowden.tiff](#)

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Dear Sirs,

From: Chris Lowe. Interested party: 20014275

In compliance with your plea for evidence of which you may not be aware, the following may be relevant for the Noise issue.

Best wishes,

Chris

Chris Lowe



#### 1 Impact of Heathrow Proposed Airspace Changes

The proposed airspace changes for Heathrow illustrate how congested our airspace is, and that trying to fit in more flights means that more flights will be lower and also that more people will be affected.

In the case of North Surrey, CPRE Surrey and Epsom & Ewell Borough Council show how the changes reduce flight paths down to 3,000 feet from the previous average of 12,000 feet.

[www.cpresurrey.org.uk/2019/03/heathrows-new-flightpaths-are-unacceptable/](http://www.cpresurrey.org.uk/2019/03/heathrows-new-flightpaths-are-unacceptable/)

"CPRE Surrey has expressed "serious concerns" about the potential impact of proposed new Heathrow flight paths on the environment of North Surrey, particularly on Green Belt countryside. CPRE Surrey's Tim Murphy says: "The consequences of an expanded Heathrow will be that North Surrey residents and visitors will be subject to far more flights at much lower altitudes than they experience at present. For example, here in Epsom & Ewell, the constituency of Transport Secretary Chris Grayling, we will experience up to 47 additional flights per hour for arrivals and an additional 17 flights per hour for departures, at heights as low as 3,000 feet, whereas the current average altitude of Heathrow flights over the Borough is around 12,000 feet. As many as 25 additional planes would overfly the Borough between six and seven in the morning."

Mr Murphy says that CPRE welcomes the "robust" submission made by Epsom & Ewell Borough Council to Heathrow Airport's recent consultation. "The borough council are right to highlight the scale of increase in flights that people in this area will have to endure, but not only will these proposed changes to flight paths have an unacceptable impact on residents, they would also affect the natural environment across the whole of North Surrey, especially the tranquillity and air quality of our countryside and green spaces."

He adds: "CPRE has serious concerns about the negative environmental impact of the flightpath changes in terms of noise and air pollution. Here in Epsom & Ewell this also threatens our vitally important horse-training industry. We fully support the statement made by Councillor Eber Kington, the Chairman of Epsom & Ewell's Strategy & Resources Committee, who said that '[Epsom and Ewell Council] will continue to argue in the strongest possible terms against any proposal for airport expansion that impacts so negatively on our borough.' CPRE agrees with Cllr Kington and will be campaigning against any increase in flights over North Surrey."

#### 2 Teddington Action Group Noise Report: "Understanding the implications of changes in air space WHO, SoNA and the missed evidence"

This report suggests the reasons for differences between the CAA SoNA and WHO noise Guidance. It also highlights the huge health costs if noise is not properly accounted for, and this completely changes the economics of air transport.

This is because at Heathrow a 1 dB increase in Leq can increase population affected by 150,000. Although populations around Manston are somewhat smaller the same principle applies, showing the importance of health impacts in the consideration of the proposal.

The report (Page 18) also highlights the serious noise problems of Performance Based Navigation (PBN).

Heathrow Airport itself objected in 2016 to the proposed introduction of PBN because: The 'social impact of PBN trials in the UK has been enormous'.

So any PBN proposal for Manston will generate huge anger simply because there is no way of avoiding Ramsgate, not to mention the other populated areas.

### 3 CAP1748 - CAA Noise Impact Survey

This survey was used to gather feedback on the different aviation noise concerns and activities that the CAA might prioritise in their work programme.

Alongside asking people to rank their priorities for the CAA's noise related activity, they also asked several questions to help them locate and understand more about people's concerns relating to noise, such as where the respondent lives and what sources of aviation noise affect them.

Obviously responses depended on concerned people being made aware of the survey and also whether they thought that responding would make any difference, bearing in mind that the CAA is not seen as a body independent of the air transport industry.

I have selected what I think is significant for this examination.  
Numbers in brackets refer to the relevant paragraph numbers.

As might be expected, most respondents were in the over-crowded south east (2.2). The main clusters of responses came from around the major airports, but some came from areas not close to commercial airports, indicating effects from over-flights of commercial airlines or general aviation (2.4). Most respondents were concerned about commercial airlines, but helicopters were a significant concern with light aircraft and military aircraft causing fewer responses (2.9). The main concerns of respondents were aircraft numbers increasing without them being able to have a say, aircraft flying lower than they should, and flights early in the morning or late at night (2.12). The latter was also the top concern thier free text reponse (2.22). Clearly the latter two categories show the impact of flights during the period which should be free of flights in the Night period, and that these are particularly noticeable because they wake you up earlier than normal, or they stop you going to sleep as quickly as normal. This reinforces the World Health Organisation's latest guidelines (2018) which show that a 10 hour 'Night Period' enables 80% of people achieve adequate sleep. There is plenty of evidence that sleep is a biological necessity and disturbed sleep is associated with a number of health problems, but the Applicant is only offering a 7 hour period.

A strong theme in the responses was of frustration (2.23 et seq). This included lack of information and poor communications, inability to have a say or to affect proposed changes, such as airspace. Great frustration was also felt about night noise and health impacts. Concerns included frustration with general aviation, helicopters as well as the commercial flights(2.28). Frustration was also felt about inadequacy of effective management by the Department for transport, CAA and NATS to reduce the impacts of flights - the industry seemed to have a greater priority than people on the ground (2.29 et seq).

Chapter 3, page 20, covers what the CAA and others have done about some of these issues, with a revised Airspace Change process being introduced last year (2018) (3.1). There is also new guidance on transparency for airports and information on airspace around them (3.3). The information on Gatwick is particularly relevant for Manston, so Item 4 below explores this in more detail. Footnote 9 gives links to airspace transparency and gives the NATS link, and NATS now have an App (for iOS devices) called Airspace Explorer which may be more helpful than Flightradar 24 for showing UK airspace activity. The other tool from NATS: [www.nats.aero/news/videos-imagery/airspace-plus-videos/](https://www.nats.aero/news/videos-imagery/airspace-plus-videos/) Using UK 24 hrs setting, shows flights over UK over a 24 hour period and clearly shows several routes above or close to Manston. In addition it shows how traffic varies through the 24 hours. NATS also gives a link: <https://nats.aero/blog/2014/07/measuring-reducing-aviation-noise/> which refers to the Envirowatch Ltd range of environmental monitors. Apparently there is a network setup in Medway of these to monitor air pollution and noise, so if Manston were to be given permission, a condition needs to be added to the DCO for the airport to fund a network in East Kent of these, or similar devices to monitor noise and air

pollution to ensure compliance and also reassure the public. So please amend DCO accordingly.

The CAA expect stakeholders to use the evidence from this report in responding to the 'Aviation 2050, Future of UK aviation' (3.4), so the recommendations of good practice are likely to be implemented by Government.

#### 4 Gatwick Airspace and noise

##### 4.1 Gatwick Noise and Track Monitoring

The information for Gatwick given by NATS Airspace Information is now out of date: Gatwick inform me: "On the 1st April 2019, Gatwick changed its system provider from Casper to EMS Brüel & Kjær which brought a number of new capabilities to both internal and external systems. The document you have referenced: 'Airspace Information: Transparency about airspace use and aircraft movements', is produced by the UK Civil Aviation Authority (CAA) and we have been in discussions to update this document following our change of system supplier. Whilst we are awaiting the update of this document, I wanted to share the link to the new flight tracker: <https://webtrak.emsbk.com/lgw2>".

The new webtrak shows the real time noise at the noise monitors, of which there are several. The Four operational noise monitors at each end of the runway, Oritons and Russ Hill at the west, and Moat House and Bell Hill at the east, show the sort of noise levels that would be suffered in Ramsgate.

The Screen Grab: Russ hill noise for Aircraft type 3TQ arrival at 700 feet above sea level, shows the 300 second recording of noise at Russ Hill, to the west of the runway. The three peak noise levels shown are 84.1, 80.7 and 82.8 dB, the latter being from a Boeing 737-300 version Q32 twin engine aircraft at 700 feet above sea level, so actually lower relative to the ground. This aircraft has a Medium Wake Turbulence Category (WTC).

The Second Screen Grab: Hever Castle and Cowden for Aircraft Type 789 departure at 6,500 ft asl, shows the two monitors to the east: Hever Castle, 12 miles from the airport, a major tourist destination, experienced 61.2 dB from the Boeing Dreamliner 789 aircraft at 6500 feet above sea level. This aircraft has 'High' Wake Turbulence Category (WTC).

For Cowden the peak was 57.8 dB because it is slightly further away from the flightpath.

This flightpath also illustrates how the expected flightpaths swathes are not an accurate representation of routes actually followed, so Manston's 'illustrative flightpaths' are just that - by no means representative of the routes that all aircraft will fly.

##### 4.2 Noise and Track Monitoring at Manston

The continuous noise monitoring shows what is required for Manston.

So the draft DCO needs to include a requirement:

"A noise and Track Monitoring system will be implemented to show the recommended flightpath swathes and the live actual flightpaths of aircraft in the air, together with the actual noise produced at the noise monitor locations. This information is to be available at all times via the internet, with the continuous record available for at least the previous year.

The noise monitoring network will have at least Ten noise monitors in total. Two monitors at each end of the runway (that is four in total), at a distance of 3.5 (+or- 0.5) km from the nearest end of the runway, and three other monitors between 10 and 20 km from the west end of runway, with the other Three monitors located at sensitive locations as agreed with the Airport Consultative Committee."

Wikipedia tells me that: "Wake turbulence is especially hazardous in the region behind an aircraft in the [takeoff](#) or [landing](#) phases of flight. During take-off and landing, aircraft operate at high [angle of attack](#). This

flight attitude maximizes the formation of strong vortices. In the vicinity of an airport there can be multiple aircraft, all operating at low speed and low altitude, and this provides extra risk of wake turbulence with reduced height from which to recover from any upset. “

Two examples are:

7 January 2017 – a private [Bombardier Challenger 604](#) rolled three times in midair and dropped 10,000 ft (3,000 m) after encountering wake turbulence when it passed 1,000 ft (300 m) under an [Airbus A380](#) over the Arabian Sea. Several passengers were injured, one seriously. Due to the G-forces experienced, the plane was damaged beyond repair and was consequently written off.

[“Flight from Los Angeles sent into nosedive for 10 seconds after hitting vortex: report”. news.com.au](#)

14 June 2018 – At 11:29 pm, [Qantas](#) passenger flight QF94 en route from Los Angeles to Melbourne suffered a sudden freefall over the ocean after lift-off as a result of an intense wake vortex. The event lasted for about ten seconds, according to the passengers. The turbulence was caused by the wake of the previous Qantas flight QF12, which had departed only two minutes prior to flight QF94. [“Repository Notice - Bureau of Transportation Statistics” ntl.bts.gov.](#)

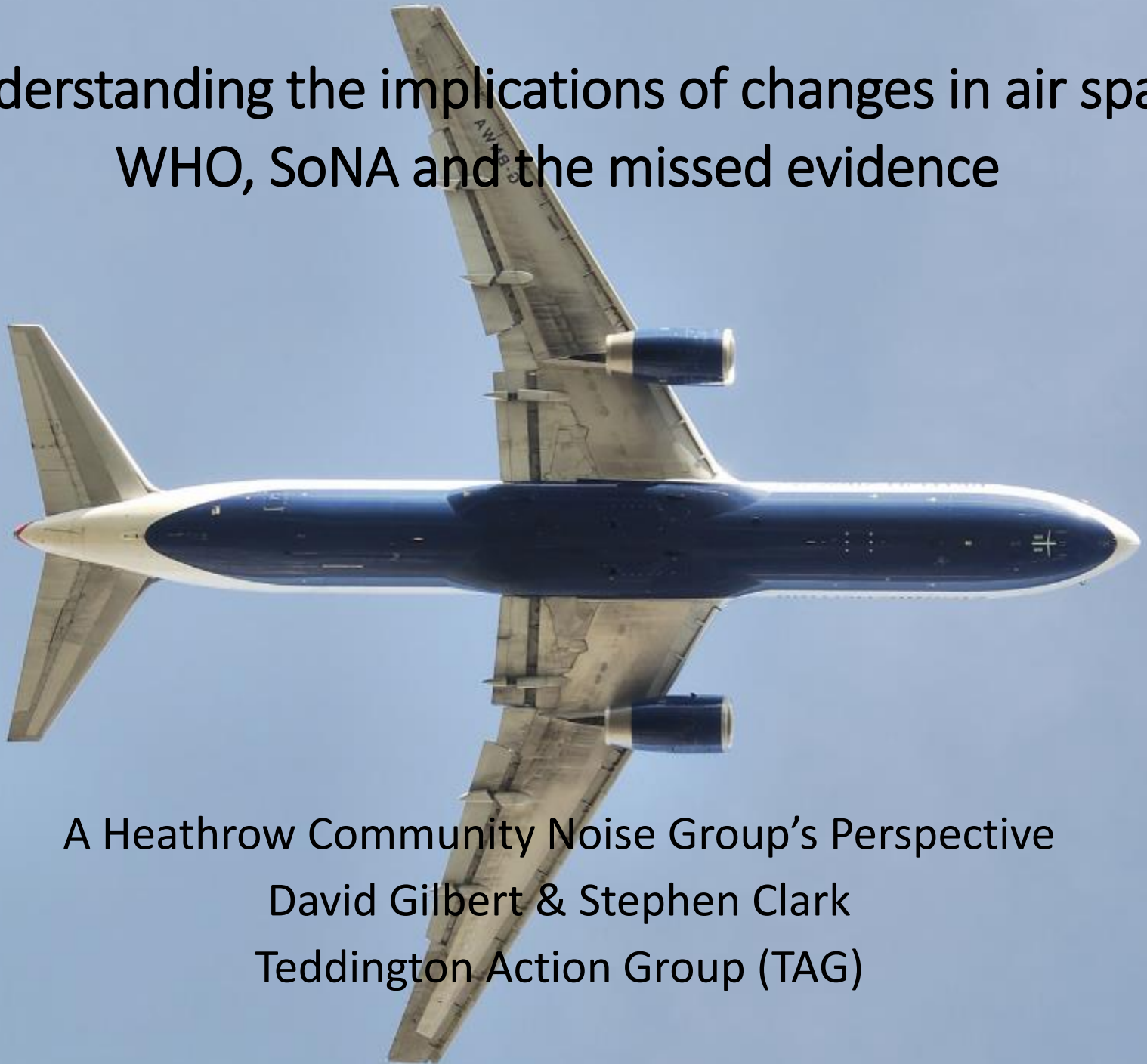
The WTC has implications for the spacing of aircraft, but also for residents in Ramsgate where roof tiles have been removed by turbulence/vortices in the past.

First Screen Grab: Russ hill noise for Aircraft type 3TQ arrival at 700 feet above sea level

Second Screen Grab: Hever Castle and Cowden for Aircraft Type 789 departure at 6,500 ft asl



# Understanding the implications of changes in air space WHO, SoNA and the missed evidence



A Heathrow Community Noise Group's Perspective  
David Gilbert & Stephen Clark  
Teddington Action Group (TAG)

# Scope of presentation

This presentation sets out the views and conclusions of members of TAG, which has attended Heathrow's Community Noise Forum since its inception after the Airspace Trials in 2014.

We have worked with Heathrow's consultants in devising community noise reports and in addition undertaking analysis, verification and validation of key data.

We have responded to every Heathrow expansion related consultation and have given evidence to the Transport Committee and the All Party Parliamentary Group on Heathrow.

The views and analysis included in this presentation are based on this experience and provided in good faith.

Our presentation covers the following topic areas;

- A comparison of WHO and SoNA
- The vital evidence that has been missed by the DfT and CAA
- The Heathrow 2014 PBN trials and their implications
- The importance of change on people – and getting the metrics right
- How the health impacts of a third runway have been massively underreported
- What should follow next

# Key environmental objectives for aviation noise

Air Navigation Guidance (ANG) 2017;

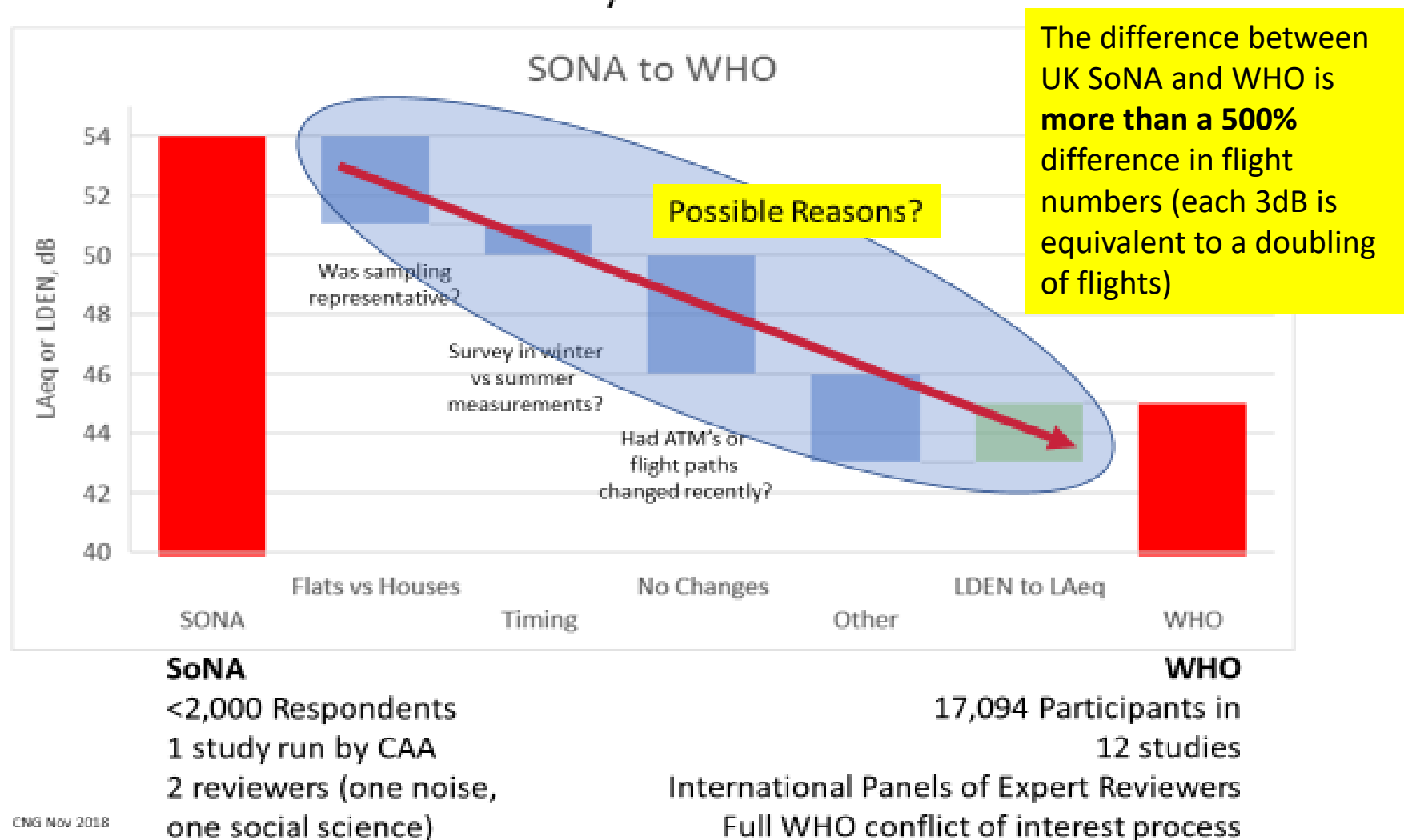
- Must reduce/limit/mitigate **significant adverse impacts** of aircraft noise.
- Advises adverse impacts are **health and quality of life** - not the number of people in any particular **noise contour**
- Adverse impacts **grow as noise increases**

Health impact costs are **not nebulous** – they impact the health and quality of life of real people, create urban blight and are a drain to the UK's economy, with costs falling back on the NHS and social services.

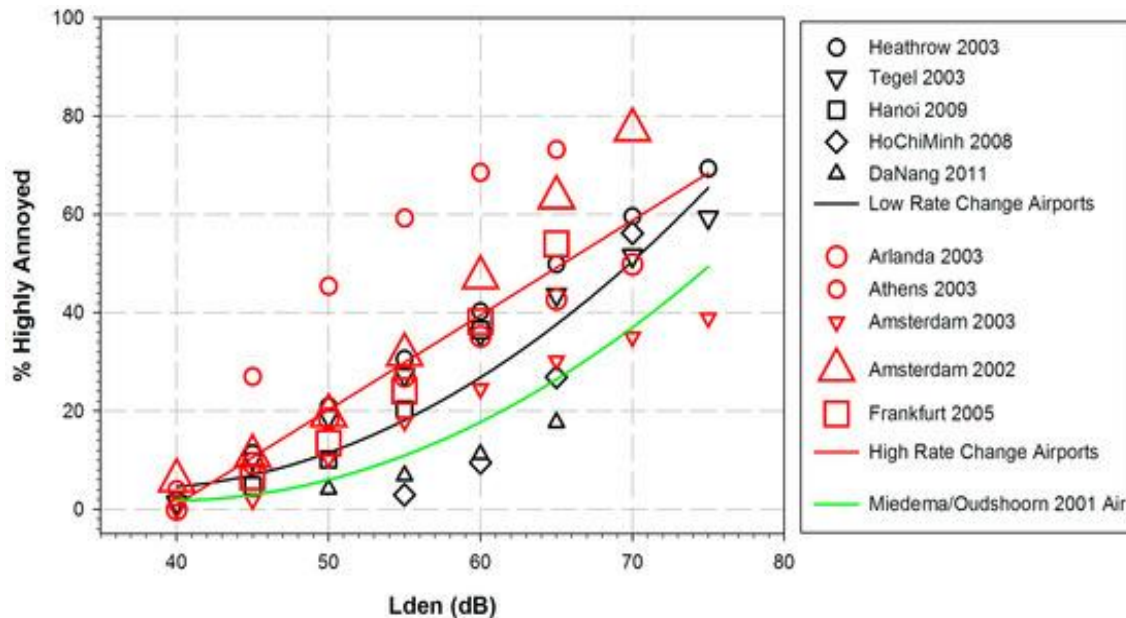
**Reduction in aviation's health impacts is a moral as well as an economic imperative.**

# The enormous differences between SoNA and WHO findings

## Proposed Project – Part 1. Independent Consultant to advise most likely reasons for differences



# A possible explanation – reviews of noise studies show that **CHANGE** increases noise impacts



From; Int. J. Environ. Res. Public Health 2017, 14(12), 1539  
Rainer Guski, Dirk Schreckenber and Rudolf Schuemer  
WHO Environmental Noise Guidelines for the European  
Region: A Systematic Review on Environmental Noise and  
Annoyance

The **red symbols** indicate the airports where change has taken place, the 'high-rate change' airports.

The **black symbols** indicate 'low-rate change' airports.

At the time of the SoNA survey Heathrow & other UK airports were low change airports. It is inappropriate to use data based on no or low change situation to assess the impacts of change.

The use of a 'low/no change' UK SoNA position in 2014 is likely to massively underestimate the impact of a new runway at Heathrow by anywhere between 3-6dB  $L_{Aeq}$ .

Even other 'low rate change' studies suggest SoNA may have underestimated noise sensitivity by 3dB  $L_{Aeq}$ . (See Int. J. Environ. Res. Public Health 2018, 15(12), Truls Gjestland, A Systematic Review of the Basis for WHO's New Recommendation for Limiting Aircraft Noise Annoyance)

# Key evidence not considered by SoNA

**Anderson's report contains crucial evidence for identifying realistic noise level thresholds, what metrics to use and the impact of the introduction of PBN over highly populated areas**



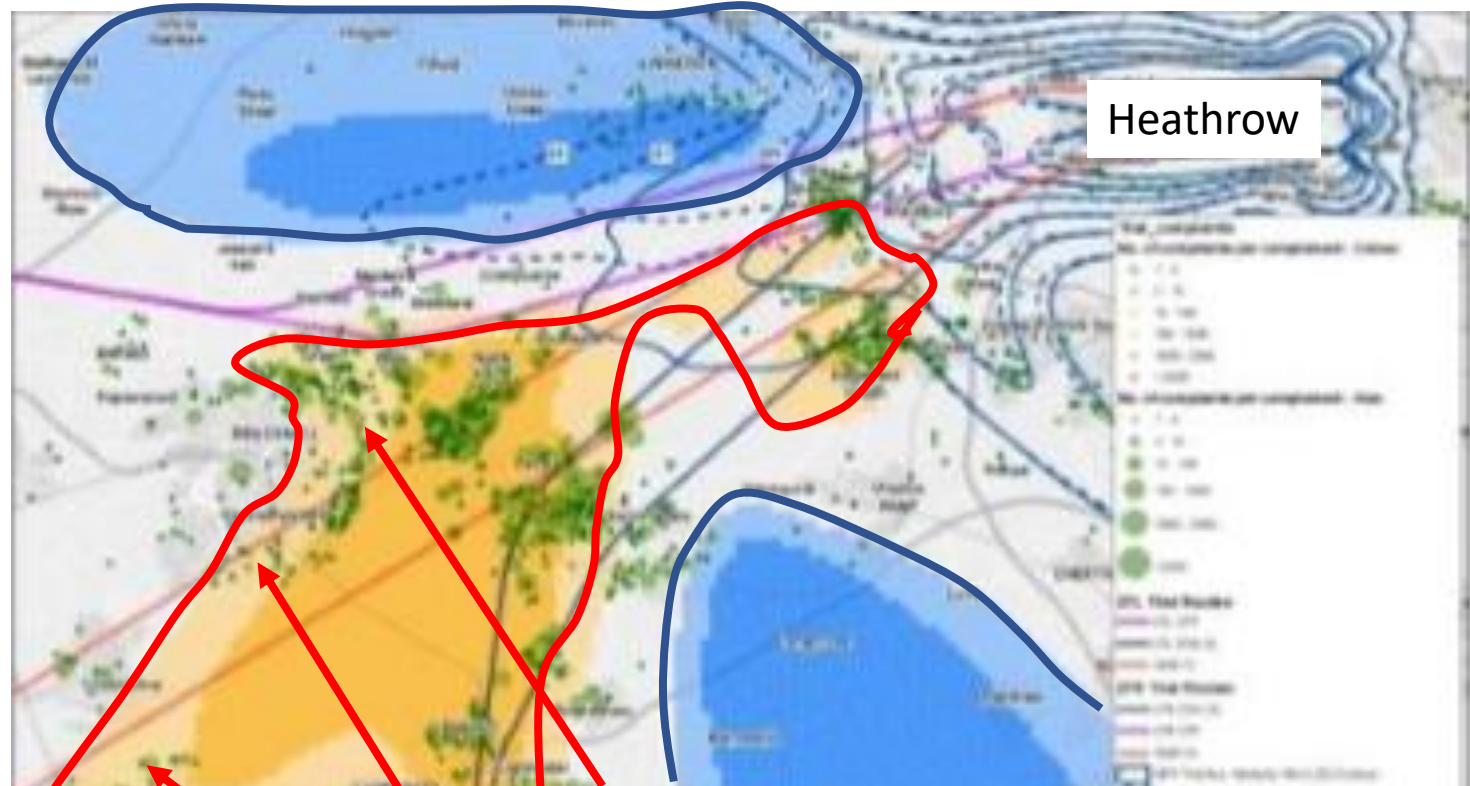
## **WESTERLY AND EASTERLY DEPARTURE TRIALS 2014 - NOISE ANALYSIS & COMMUNITY RESPONSE**

**HEATHROW AIRPORT LTD**

**JULY 2015**

# West side impact shown by complaints

(Blue areas less noise; Orange/Red area more noise)



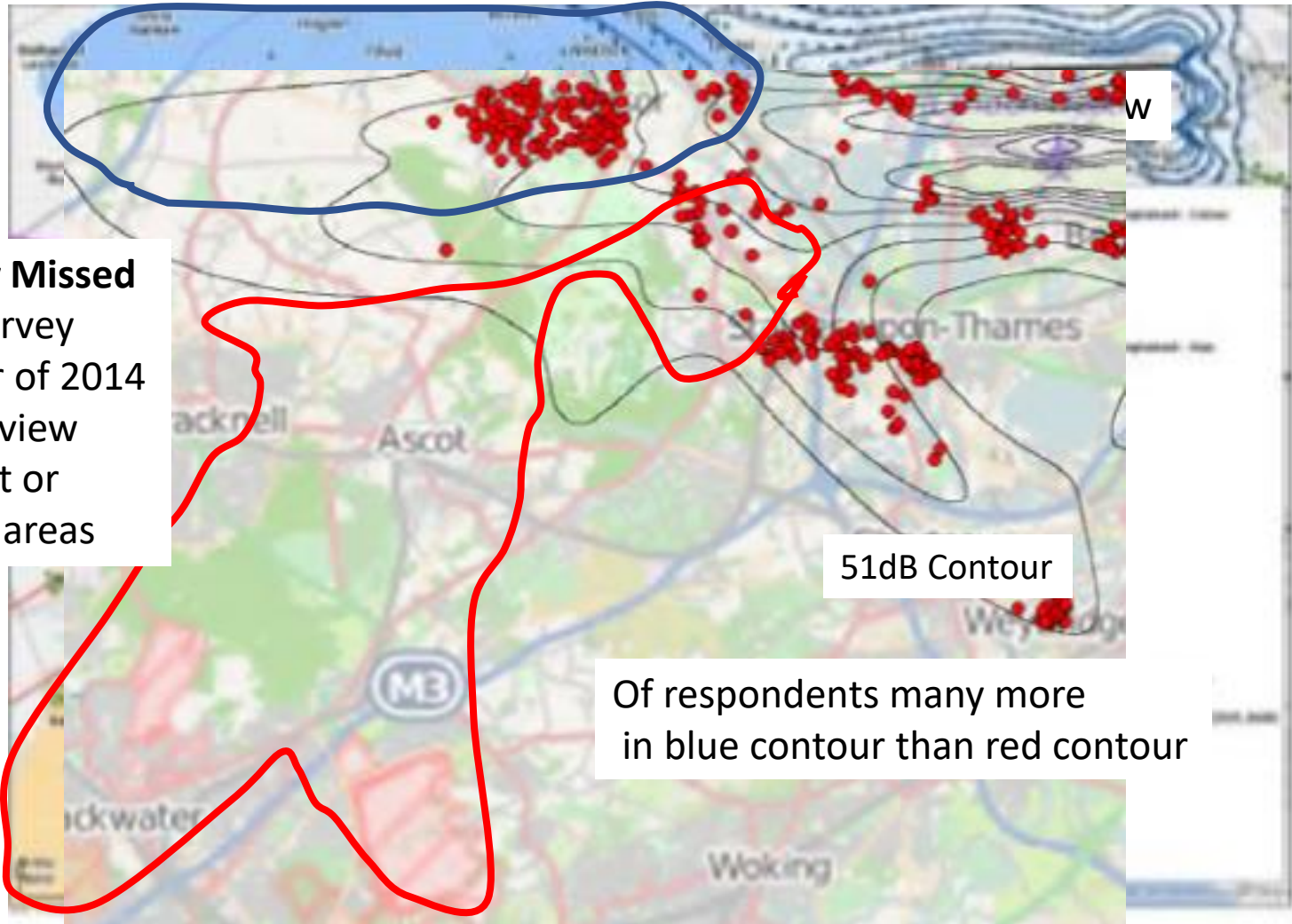
● Green spots are complaints

Large amounts of people were complaining at 49dB  $L_{Aeq}$  Single Mode – This is equivalent a 47.5dB average at 70% Compared to the '54dB  $L_{Aeq}$  annoyance threshold' this would be a 6-7dB impact due to a change People were complaining well below this level



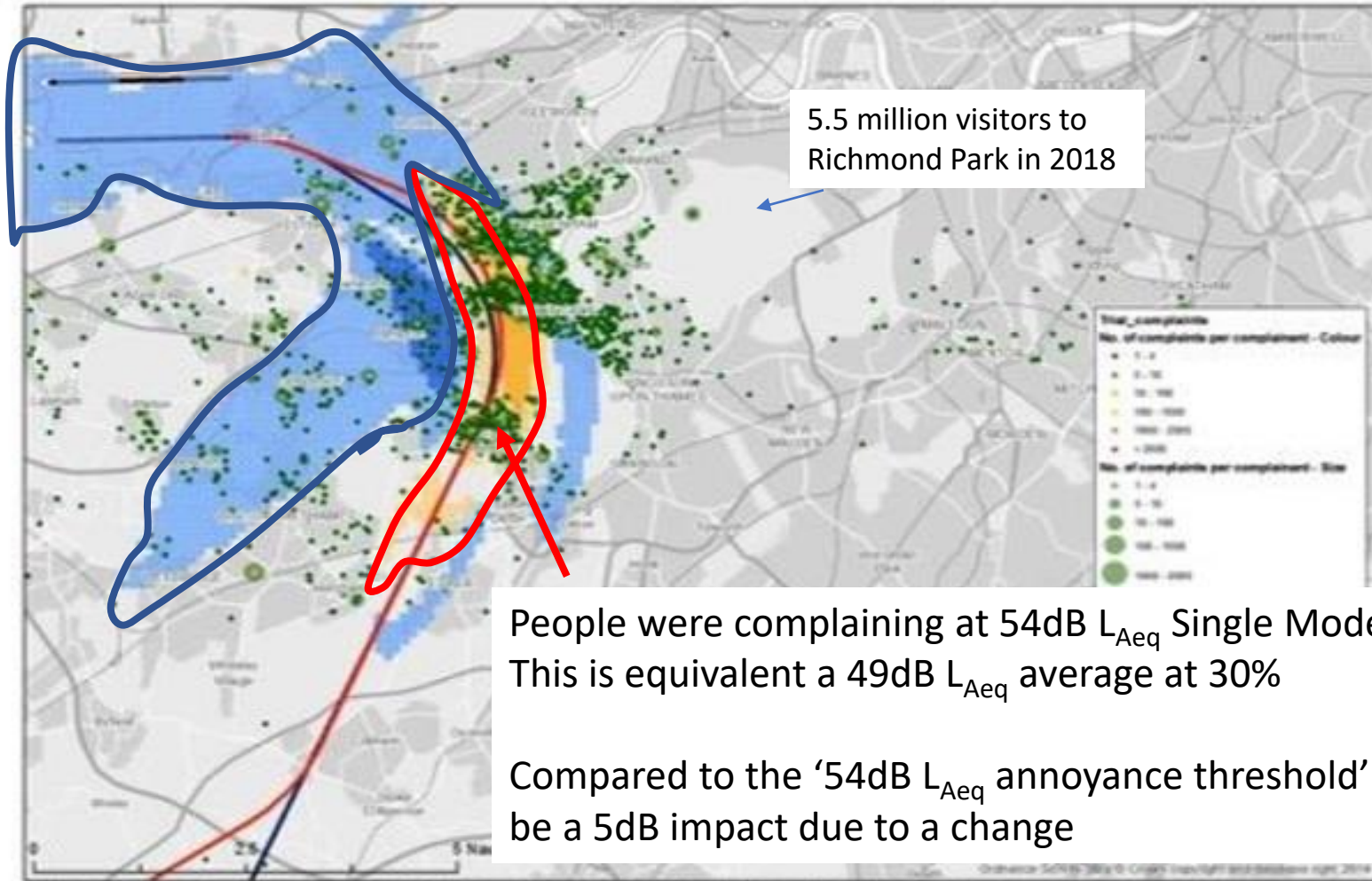
# SoNA survey respondents (red dots)

Focussed on areas that received less noise in 2014 (base year for survey which coincided with the trials)



# East side impact shown by **complaints**

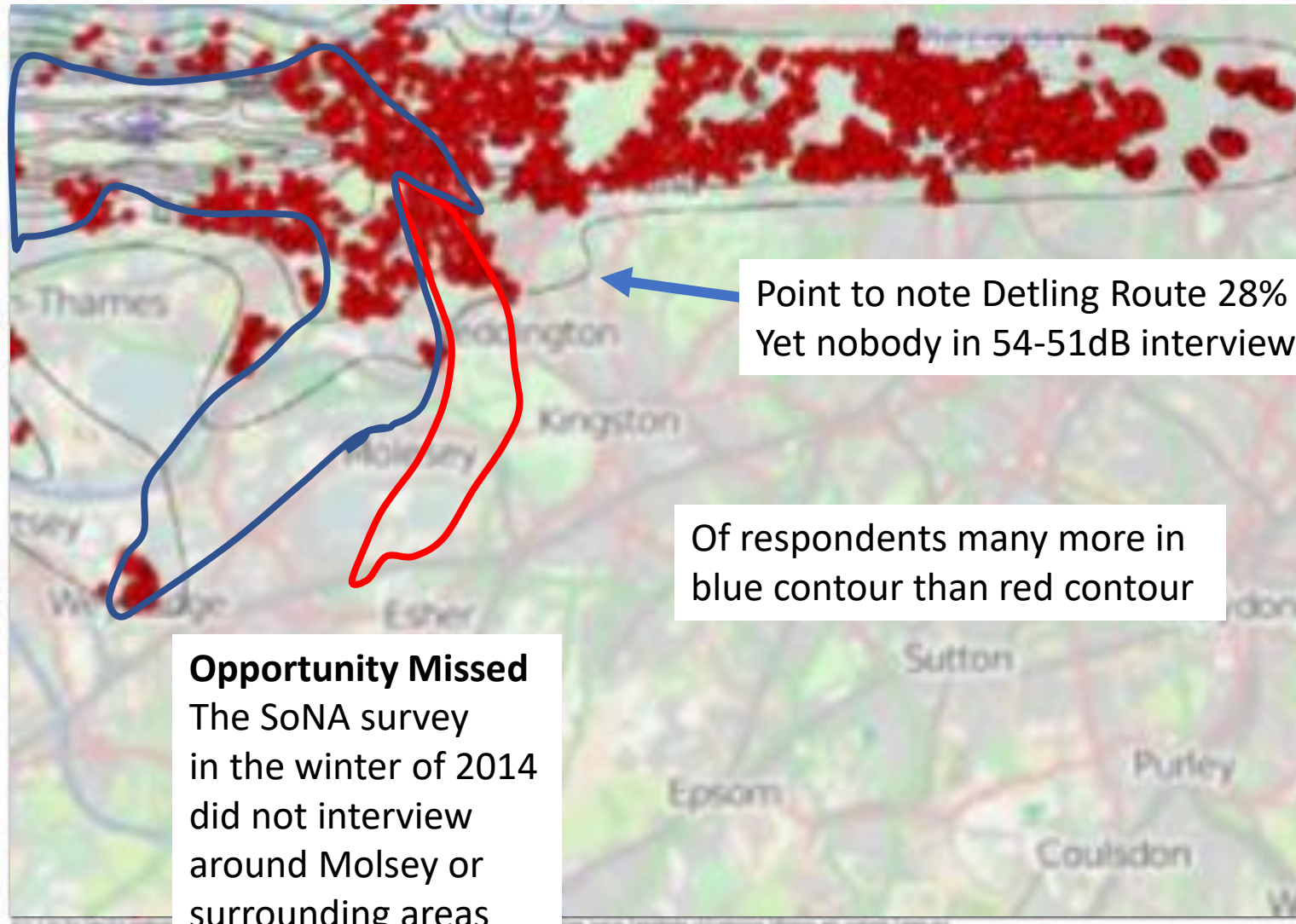
No change identified in  $L_{Aeq}$  levels but  $N > 65dB L_{Amax}$  reveals the true picture  
(Blue areas less noise, Orange/Red areas more noise)



● Green spots are complaints

# SoNA survey respondents (red dots)

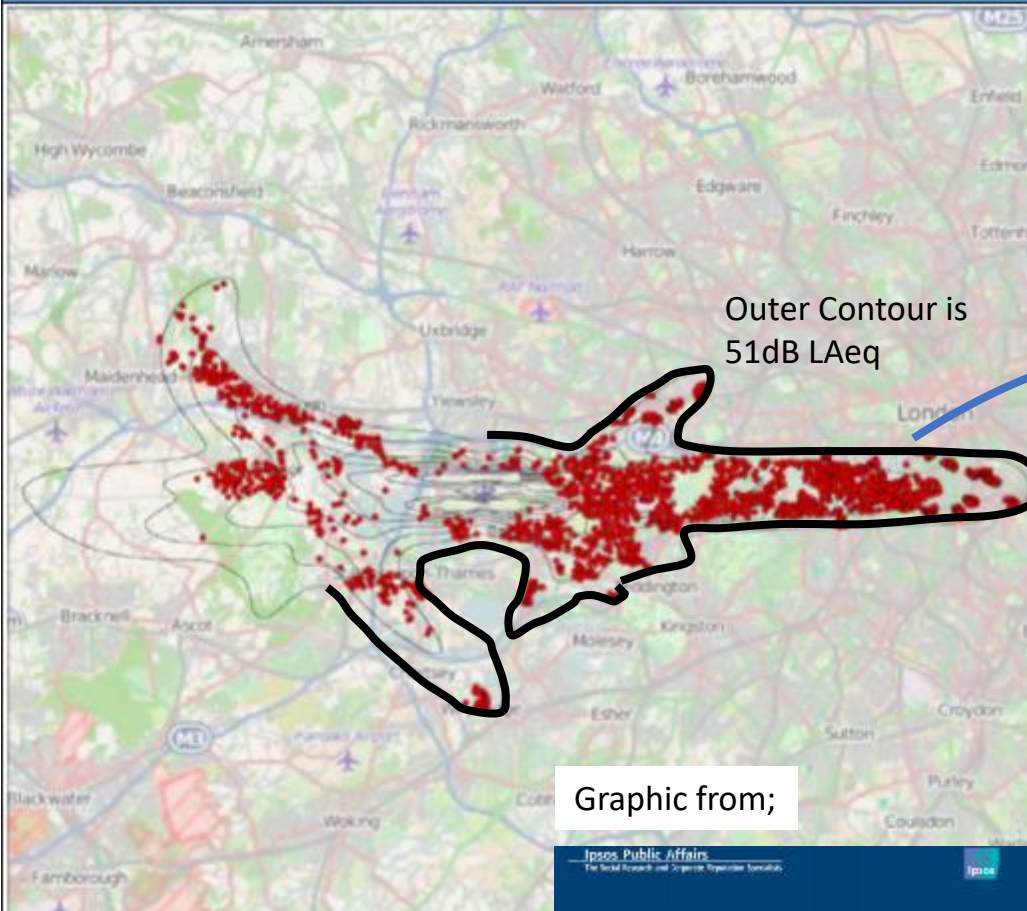
Many respondents received less noise in 2014 (base year for survey which coincided with the trials)





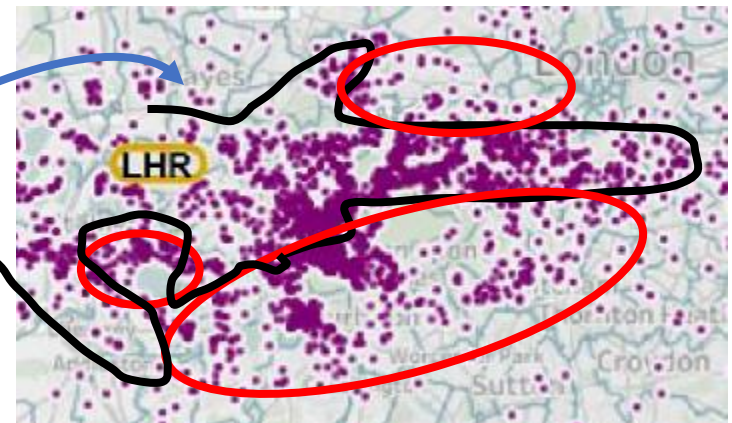
# Was the population sampling in SoNA appropriate?

Figure 14 - Total Achieved Interviews –Heathrow Airport



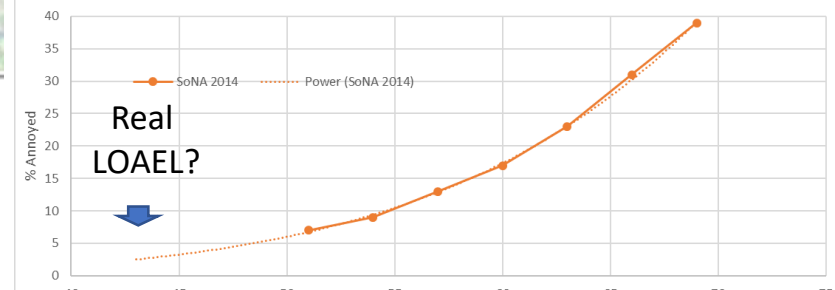
**SoNA did not plan to cover any areas where there was noise below 51dB.**

Extract from Complaints (purple spots) mapping (to support feedback we request LHR provide contours on these complaints maps – black line is indicative)



Even at 51dB it found 7% annoyance levels which is therefore not a LOAEL level. As 792 people were interviewed in this band it would have taken only 16 more people to make this the significantly annoyed level

SONA - % Annoyed vs LAeq, dB



**Logic shows LOAEL must be lower**

This level is important as the DCO judges adverse effect on numbers impacted between SOAEL (Significant Observable Adverse Effect Level) and LOAEL (Lowest Observable Adverse Effect level)

# East side – evidence average $L_{Aeq}$ metrics do not work

The assessment of 'adverse effects' is fundamentally flawed over the most impacted population by Heathrow

## 6.2.2 There were no people exposed to a substantial increase in average noise level from flights using the easterly trial routes.

Table 6.5 below presents the change in population exposed to noise levels from aircraft on the trial specific routes during easterly operations. During use of the easterly trial routes, 0% of people experienced a substantial increase in noise level.

Table 6.5: Population exposed to change in noise levels for flights using trial routes

Noise level change	Change description	Easterly trial routes (MID, SAM)		
		> 48 dB	> 54 dB	> 57 dB
-5-10dB		0%	0%	0%
-3-5dB		10%	7%	1%
-3 to +3 dB		90%	93%	99%
+3-5dB		0%	0%	0%
+5-10dB		0%	0%	0%

Note: there were no areas where noise levels were greater than 48 dB  $L_{Aeq}$  in the baseline or the trial periods where the change was greater than +/- 10dB

$L_{Aeq}$  contours showed no increase in population negatively impacted – Health impacts due to Noise used in Environmental assessment and webTAG would show no negative changes

Notes – Reduce single mode  $L_{Aeq}$  by 5dB to get average at 30% days overflown  
Change descriptions need correction – blanked out

Figure 8.1: Complaints and complainants about departures by day during the trial period.

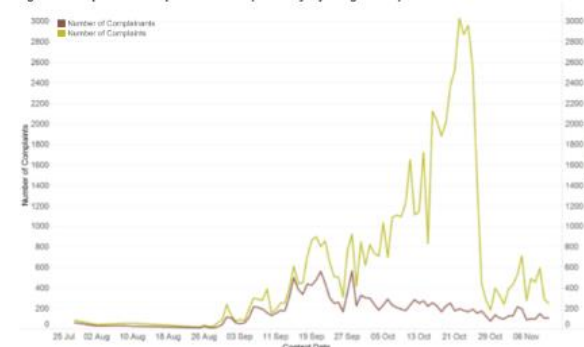


Table 8.1: complaints and complainants about departure

Complaints		Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Total
Overall <sup>[1]</sup>	No. of complaints	63	507	12,987	42,927	4,652	61,136
	No. of complainants	43	201	4,587	1,928	540	5,887
Westerly <sup>[2]</sup>	No. of complaints		382	4,236	34,986	3,515	43,119
	No. of complainants		145	1,344	1,416	384	2,410
Easterly <sup>[4]</sup>	No. of complaints	63	21	5,721	789	219	6,813
	No. of complainants	43	13	2,911	204	89	3,095
Both	No. of complaints		104	3,030	7,152	918	11,204
	No. of complainants		55	1,294	909	267	2,026

Table notes:

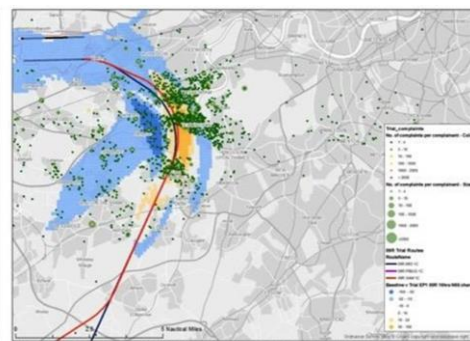
[1] The total number of complainants in each month is the number of unique people that have complained. This does not sum across to the total column - the total is the number of unique people complaining across the whole trial.

[2] The easterly operations trial began on the 28 July 2014 and ended on the 12 November 2014.

[3] The westerly operations trials began on the 25 August and ended on the 12 November 2014.

[4] Complaints are reported in the table for the period 28 July to 12 November 2014.

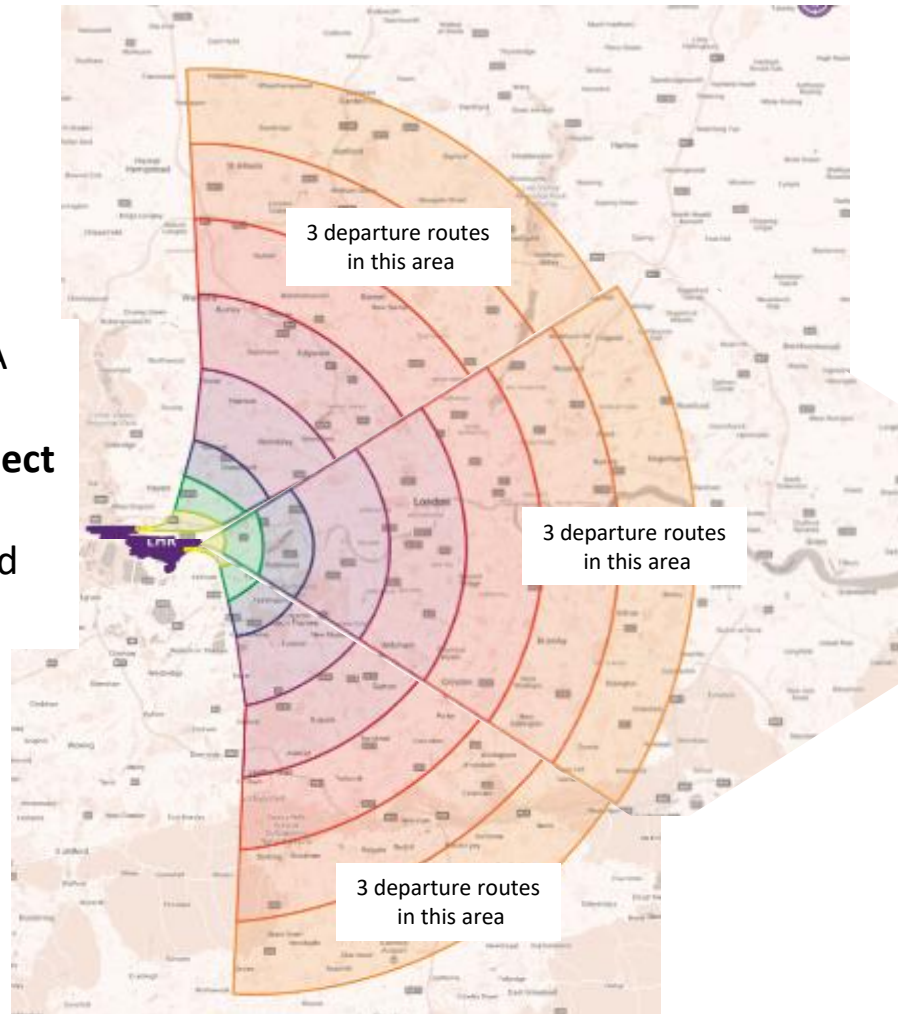
## Yet complaints rocketed!



The metric that AA found that showed some correlation with complaints was single mode N65 event changes

# SoNA has led to inappropriate metrics and thresholds being adopted in UK aviation policy

The measures that the CAA have to assess airspace change impacts **do not reflect sensitivity to airspace changes** for these proposed 11 departure routes



2 Departure routes to avoid planes having to cross runways on the ground. If on the ground much less fuel used, less pollution and less noise produced.



Potentially affected area is at least half of London



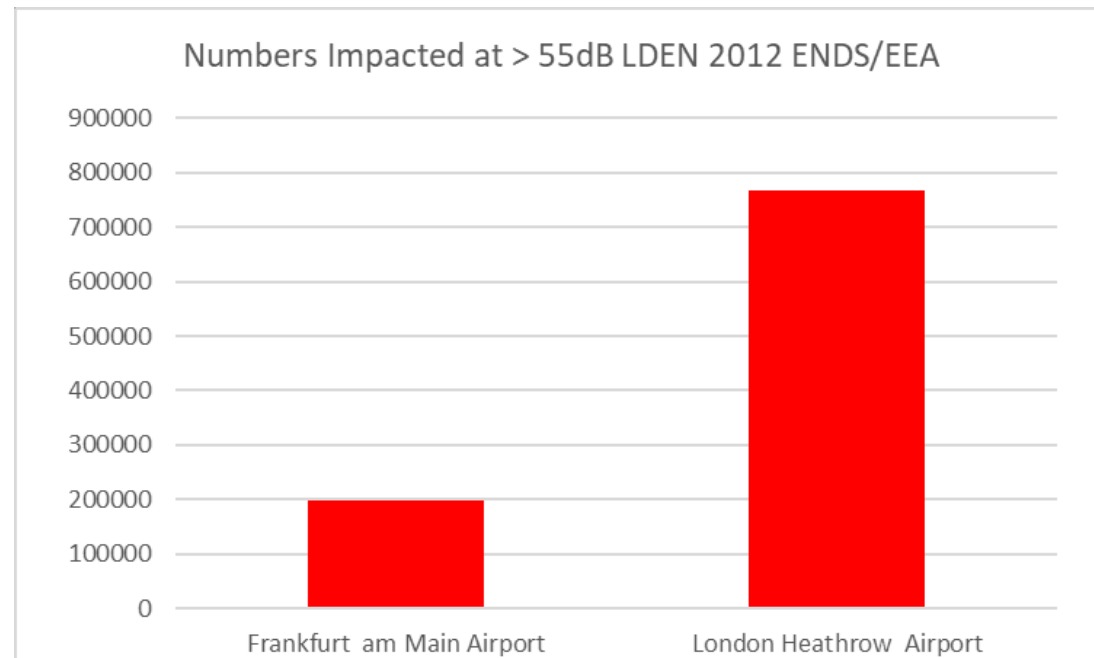
# How long does increased sensitivity last?

- Since the 2014 Heathrow trials communities have become more sensitive to noise and have continued to complain in high numbers
- Protests continue at Frankfurt – 7.5yrs after operation

AEF January 7, 2017; *'The 4th runway at Frankfurt was opened in October 2011. Due to re-alignment of flight paths, with thousands of people either newly overflown, or with more flights than before, there was uproar.'*

The 270th protest took place on Monday 14th January 2019 the protestors message is 'Our protest is getting louder'

Heathrow impacts 3x as many people as Frankfurt (without expansion);

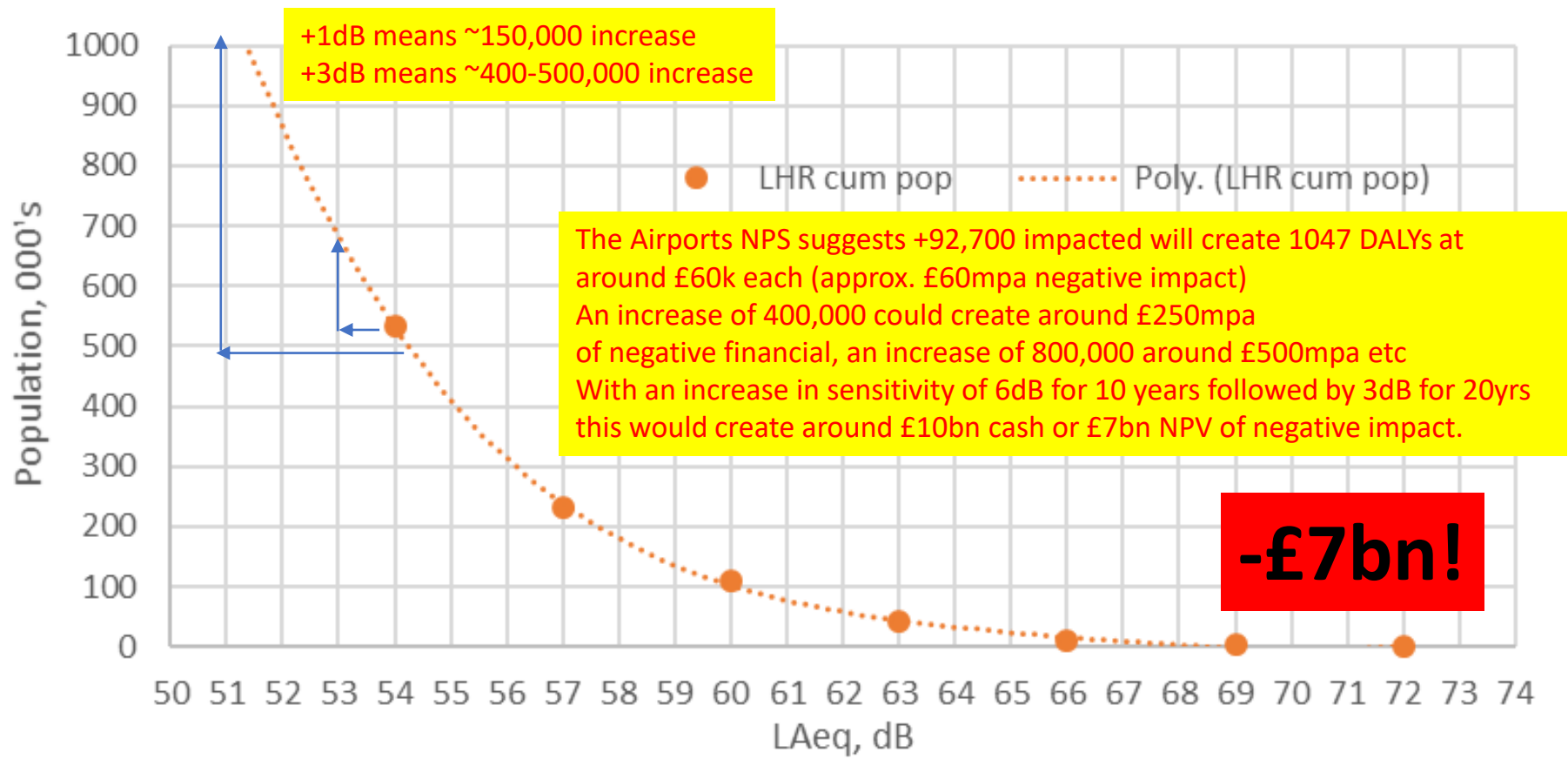




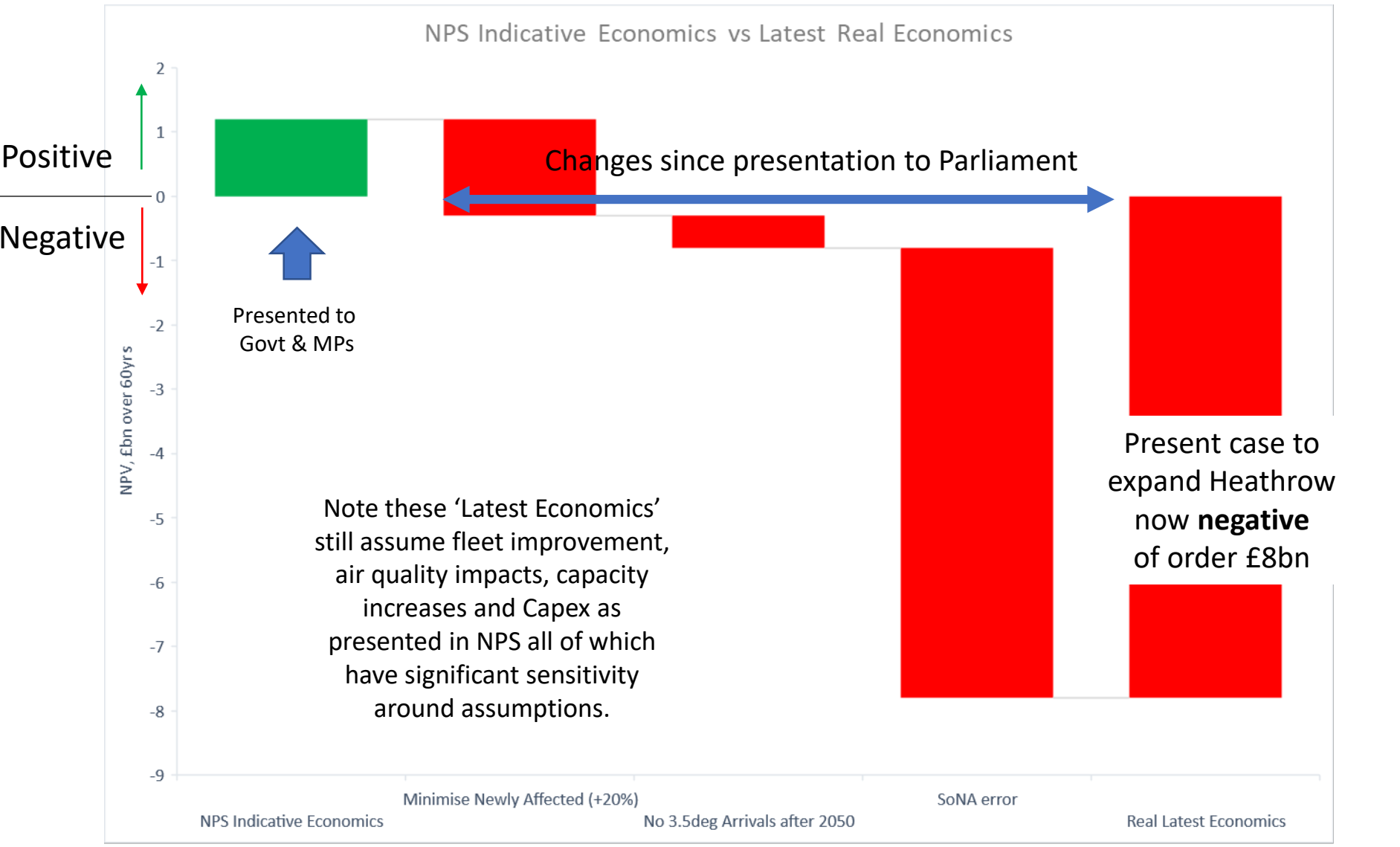
# Financial Impacts & Sensitivity

Context – Consider what either a 6dB  $L_{Aeq}$  increase due to change sensitivity which reduces with time will do to population impacted around Heathrow (noting WHO is around 9dB different to SoNA)

LAeq vs Population, LHR 2017



# Impact of realistic health costs on the economics of LHR Expansion, NPV basis as in NPS £bn



# And the introduction of PBN will make Heathrow's impacts so much worse

There are no successful precedents over densely populated areas such as Heathrow anywhere in the world

## Phoenix Noise



Mayor of Phoenix Greg Stanton and his representatives explain FAA's policy of disregard for United States citizens.

## Boston Noise



U.S. Rep. Steve Lynch in dogfight with FAA over NextGen aircraft noise and pollution. Calls FAA most unresponsive agency in government.

## Santa Cruz Noise



Santa Cruz attorney cites destruction of pristine natural habitat by FAA's dirty NextGen transportation system.

## Washington, D.C.



Arizona Senator John McCain sends letter to FAA Administrator Huerta urging changes to noisy flight tracks.

## California



California Bay Area Resident files lawsuit against Federal Aviation Administration for unbearable aircraft

## Chicago Noise



Chicago political activist Jac Charlier challenges Mayor Emanuel to come out from hiding re: O'Hare jet noise.

## San Diego Noise



San Diego taxpayers give FAA hell over NextGen aircraft noise and pollution. FAA sits stone-faced, deaf and mute.

## Chicago



Chicago political activist John Kane says meeting with Mayor Rahm Emanuel over aircraft noise a waste of time.

## Chicago



Convenient for Chicago Mayor Rahm Emanuel: Air traffic over his home delayed until 2021.

## Chicago



Chicago residents sing their

## New York Noise



N.Y. Rep. Grace Meng introduces "Quiet Communities Act of 2015" to benefit all communities across U.S.

## New York



New York Congressman Steve Israel calls the FAA the "Federal Arrogance Administration."

## Brooklyn Noise



Park Slope, Brooklyn resident says FAA and Port are green-washing filthy NextGen air transportation system.

## Air France



Air France sponsors Paris UN climate conference, but who are they really kidding?

## Washington, D.C.



Washington, D.C. Congresswoman Eleanor Holmes

## Chicago



Congresswoman Schakowski says if you are not at the table then you are baby on the menu re: aircraft noise.

## Maryland



Maryland residents in for rude awakening from FAA's NextGen aircraft noise and aircraft pollution strategy.

## Toronto



Toronto residents unite to fight for their airspace saying Nav Canada appears accountable to the airline industry.

## Germany



German protesters flow into the streets opposition to airport expansion and aircraft noise and pollution.

## Germany



German protesters protest against aircraft noise terror in the busy airport terminal. Loudly, just like the jets disturb their peace and quiet.

Chicago residents living beneath constant air traffic and loss of quiet enjoyment from FAA's NextGen.

## Chicago



Chicago residents join forces to reduce property tax due to O'Hare aircraft noise and FAA's NextGen.

## Santa Cruz



Santa Cruz Save Our Skies: "An incessant assault... you feel helpless... you can't stop it... you can't go outside"

## Chicago



Chicago residents break U.S. record, logging more than 1 million O'Hare noise complaints!

## Charlotte, N.C.



Charlotte, North Carolina residents bombarded by FAA NextGen noise and pollution.

is a bad neighbor for Queens' residents.

## New York



New York State Senator Tony Avella from Queens to Federal Aviation Administration: "This is not acceptable!"

## Washington, D.C.



New York's U.S. Senator Charles Schumer sells out New Yorkers and all of America in his 2012 FAA Reauthorization bill vote.

## New York



Queens, NY jet engine sound monitors reveal residents suffer from levels of jet noise considered unhealthy.

## New York



NYC Councilman Dromm together with Queens environmental groups, criticize FAA NextGen aircraft noise and misery.

## New Zealand



Auckland, New Zealand families starting to feel the pain and misery of living under NextGen aircraft noise flight tracks.

# This is what Heathrow said about the introduction of PBN in 2016 – nothing has changed

[https://www.easa.europa.eu/sites/default/files/dfu/CRD%202015-01\\_0.pdf](https://www.easa.europa.eu/sites/default/files/dfu/CRD%202015-01_0.pdf)

comment

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comment by: *Heathrow Airport Limited*

Whilst Heathrow Airport Limited fully supports airspace modernisation, this document does not support current UK CAA guidance and is not in line with current UK airspace projects such as LAMP. The time scale suggested here is unrealistic and could jeopardise these projects. In addition, as subsequent comments highlight, we have the following concerns:

- The Social Impact of PBN trials in the UK has been enormous, therefore this should be considered and not dismissed in one sentence.
- There does not appear to be an environmental assessment of this proposed change in terms of noise.
- The Benefit section takes no account of the cost of airspace consultation which results in an incomplete assessment.
- Mixed conventional and PBN operations are not supported by the UK CAA.

Consequently, this NPA is not supported by Heathrow Airport Limited.

response

*Noted.*

# Why change is so important to the impact of the NPS

The NPS sought to play down the impact of expanding Heathrow by the use of inappropriate noise thresholds and metrics, quieter plane assumptions, use of a single inappropriate flight path assumption, only considering net numbers of people affected (92,700 at 54 dB by 2030) and lack of rigorous sensitivity testing

The Transport Select Committee exposed the full impact of the proposals in its March 2018 report. However, the final NPS essentially ignored these or put them into the long grass. Key findings in working with the TSC included;

- By 2030 1.15 million people exposed to 51 dB LOAEL; 654,000 at 54 dB
- Over 300,000 brought into 54 dB level for the first time; more than 420,000 already at 54 dB to receive an extra 3 dB (equivalent to doubling flight numbers)
- By 2060 (after quieter planes) the DfT accepts over 2.2 million to have experienced more noise at above 45 dB (compared to WHO 43 dB equivalent)

**These are all people who will experience change – an increase – in noise, way above WHO strong recommendations. No amount of mitigation will change that.**

The implications for UK society if these proposals are allowed to proceed will be profound.  
**The UK is truly ‘flying blind’ towards an environmental, economic and human catastrophe**

# Implications for Heathrow expansion and UK aviation policy

- **SoNA has not addressed the impact of change of airspace usage**, notwithstanding this has massive health costs and financial impacts. SoNA uses static measures which should not be applied to a dynamic change situation.
- ICCAN needs to immediately review the existing evidence relating to airspace change impacts and advise the Government on the range of possible outcomes.
- The Government needs to perform a Treasury Green Book financial risk analysis using this evidence, and reconsider its policy decisions as a matter of the highest priority.
- **Nobody has identified a way to introduce PBN over high density populations.** The industry needs to find and demonstrate with successful trials, **acceptable solutions to introducing PBN** over dense populations, prior to making changes.

# **Thank you and questions**



# Backups

# Questions – the DfT did not answer

We met senior officials of the DfT on 20 February 2019 and posed these questions;

## **1. Given UK & international evidence, on balance does the DfT accept that airspace change will increase the level of noise health impacts?**

*- For us this seems obvious given the evidence and should have been part of any risk assessment as it has significant financial implications. We understand the Government 'Green Book' policy requires (and any business would want) to understand the key financial risks in any decision.*

## **2. If so what range of changes in noise annoyance and for how long do the DfT think these might persist?**

*If one accepts change increases health impacts there is an open question on how long this would continue – we have evidence that this will be for many years.*

# Context - What does a 51dB $L_{Aeq}$ level of noise mean?

## Event Types (25%)

Single events  
All 65dB  $L_{Amax}$  / SEL of 75dB

Indicative Mix  
65dB (75%) & 70dB

SELs of 75 & 80dB

*Planes an hour*

14

9

*Minutes between planes*

4.3

6.5

*Planes in a 16hr day*

224

149

## Planes only 70% of the time (e.g. arrivals scenario)

*Planes an hour*

20

13

*Minutes between planes*

3

4.6

*Planes in a 16hr day*

320

208

## With 50% respite, during time with planes (e.g. arrivals scenario)

*Planes an hour*

40

26

*Minutes between planes*

1.5

2.3

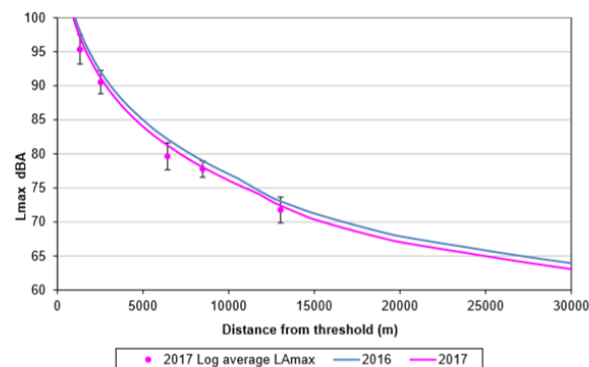
*Planes in 8hr period*

320

208

According to CAA modelling  
a 777 (twin engine wide bodied  
long haul plane) on arrival creates  
a loudness ( $L_{Amax}$ ) event of 65dB  
even at 25km from touchdown and  
70dB 16km from touchdown

Figure E8 Boeing 777-300ER/GE engines arrival  $L_{max}$



# Recent examples from USA referred to by Heathrow

Heathrow has referred to San Francisco and Los Angeles at the last HCNF



Breaking News > Featured Breaking > The City > San Francisco News > Politics > The City > San Francisco News > Transit

## Airport called on to silence 'unrelenting' airplane noise



An Air France Airbus A380 heads past the control tower shortly after take off at San Francisco International Airport on Tuesday, Sept. 4, 2018. (Kevin N. Hume/S.F. Examiner)

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By EMILY ALPERT REYES OCT 22, 2017 | 5:00 AM



A jet descends into Los Angeles International Airport. New flight paths into LAX, redrawn by the FAA to save fuel and reduce delays, have triggered complaints from once tranquil South L.A. neighborhoods. (David McNew / Getty Images)

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# Legal Challenges are mounting; Schiphol, Holland

<https://nltimes.nl/2018/04/03/local-residents-sue-schiphol-failing-noise-management>

## LOCAL RESIDENTS SUE SCHIPHOL OVER FAILING NOISE MANAGEMENT

By Janene Pieters on April 3, 2018 - 11:30



A plane approaches Schiphol Airport. Photo: @Schiphol / Twitter

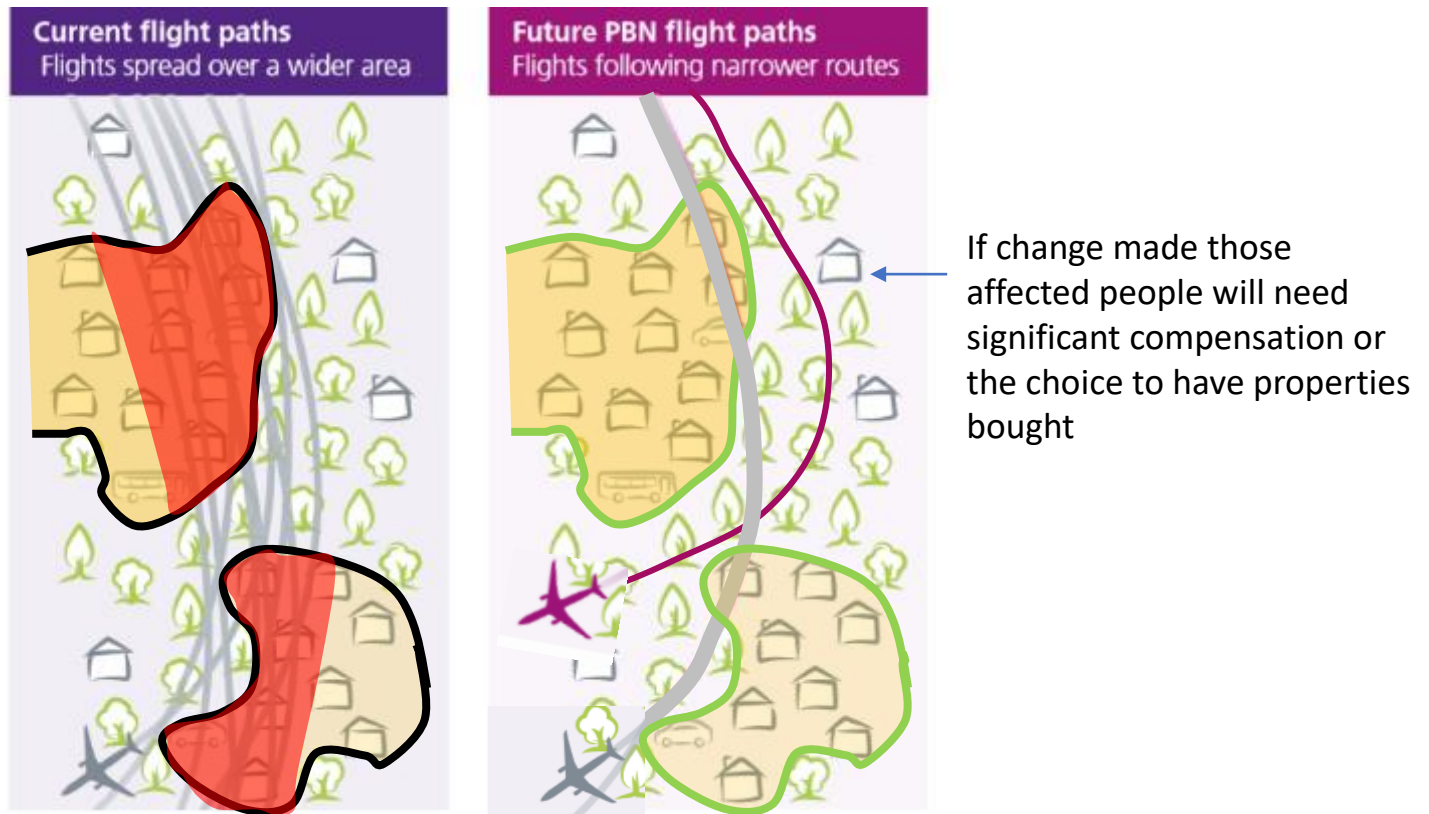
People living around Schiphol are taking the airport to court. They want the court to force Schiphol to properly monitor noise pollution caused by air traffic, and for violations to be punished, a spokesperson for the Human Environment and Transport Inspectorate confirmed to NU.nl after reports in the Volkskrant.

According to the Inspectorate, currently violations are mainly monitored and recorded according to the new standards and enforcement system that was implemented in 2015. But at this stage, the airport is not penalized for violations. This is "the result of the application of the rules from the new system", which have not yet been formally laid down in the law, the spokesperson said to NU.nl.

Local residents now call on the court to force the Inspectorate to take action against violations when it comes to noise pollution. How many noise pollution violations the Inspectorate recorded for Schiphol since the introduction of the new system, is not clear.

The number of flight movements at Schiphol increased significantly over the past years, and the airport is very close to reaching its 500 thousand flight movements per year limit, which is in place until 2020. According to local residents, the noise pollution around the airport increased with the number of flights.

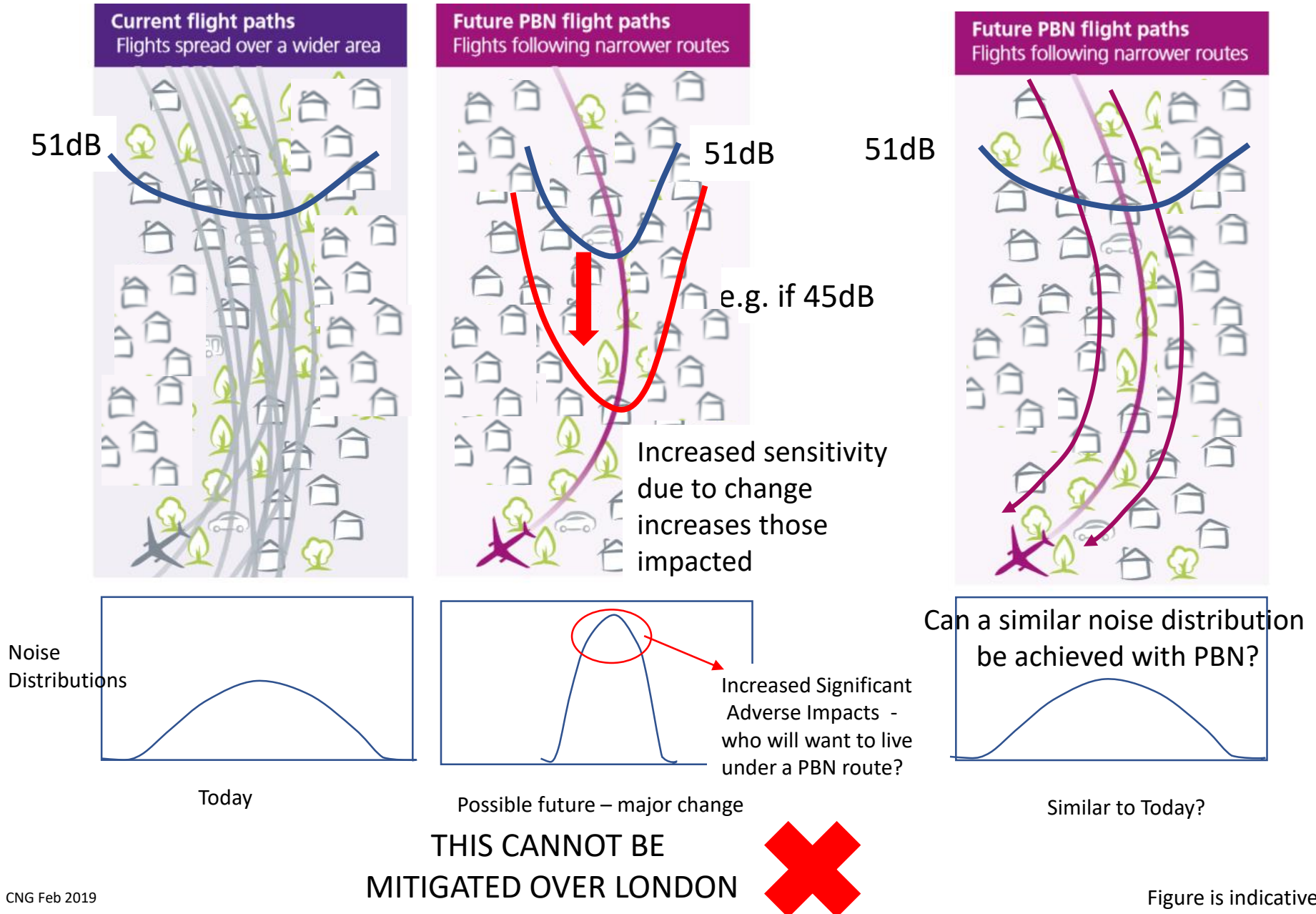
# Where can PBN work?



Opportunity to use PBN over Rural setting to manage noise impacts  
If villages and towns can be avoided



# Why PBN does not work over high population densities





# Noise Impact Survey Summary of Responses

CAP 1748



**Published by the Civil Aviation Authority, 2019**

Civil Aviation Authority  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

You can copy and use this text but please ensure you always use the most up to date version and use it in context so as not to be misleading, and credit the CAA.

First published February 2019  
Second edition

The latest version of this document is available in electronic format at: [www.caa.co.uk](http://www.caa.co.uk)

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## Chapter 1

## We asked

---

- 1.1 The CAA ran a Noise Impact Survey from July 2017 to January 2018 to gather feedback on the different aviation noise concerns and activities we might prioritise in our work programme.
- 1.2 Alongside asking people to rank their priorities for the CAA's noise related activity, we also asked several questions to help us locate and understand more about people's concerns relating to noise, such as where the respondent lives and what sources of aviation noise impact them.
- 1.3 This survey was an engagement opportunity for us to hear more about the priority concerns of stakeholders who want the CAA to act on aviation noise. It was not intended to be a statistically representative piece of research, and can only be seen to represent the views of a self-selected sample of people, but we feel it contains useful information nonetheless. We will consider the survey responses alongside other sources of evidence, the CAA's strategic aims, and the role the government sets for us in policy and legislation.

## Chapter 2

## You said

- 2.1 In total, the Noise Impact Survey received 4,175 responses, which has provided us with information about impacted communities' views of aviation noise and the CAA's role. This was a voluntary engagement exercise and we would not expect the sample to be representative of the population as a whole, since the views it captures are only from those who found out about the survey and had the time and inclination to complete it. However, we believe it provides a good picture of those views<sup>1</sup>.

### Question 1. To help us understand which issues affect which areas, please select the country or region where you live.

- 2.2 Nearly 70 per cent of responses came from London and the South East, although there was representation in the sample from all other parts of the UK.

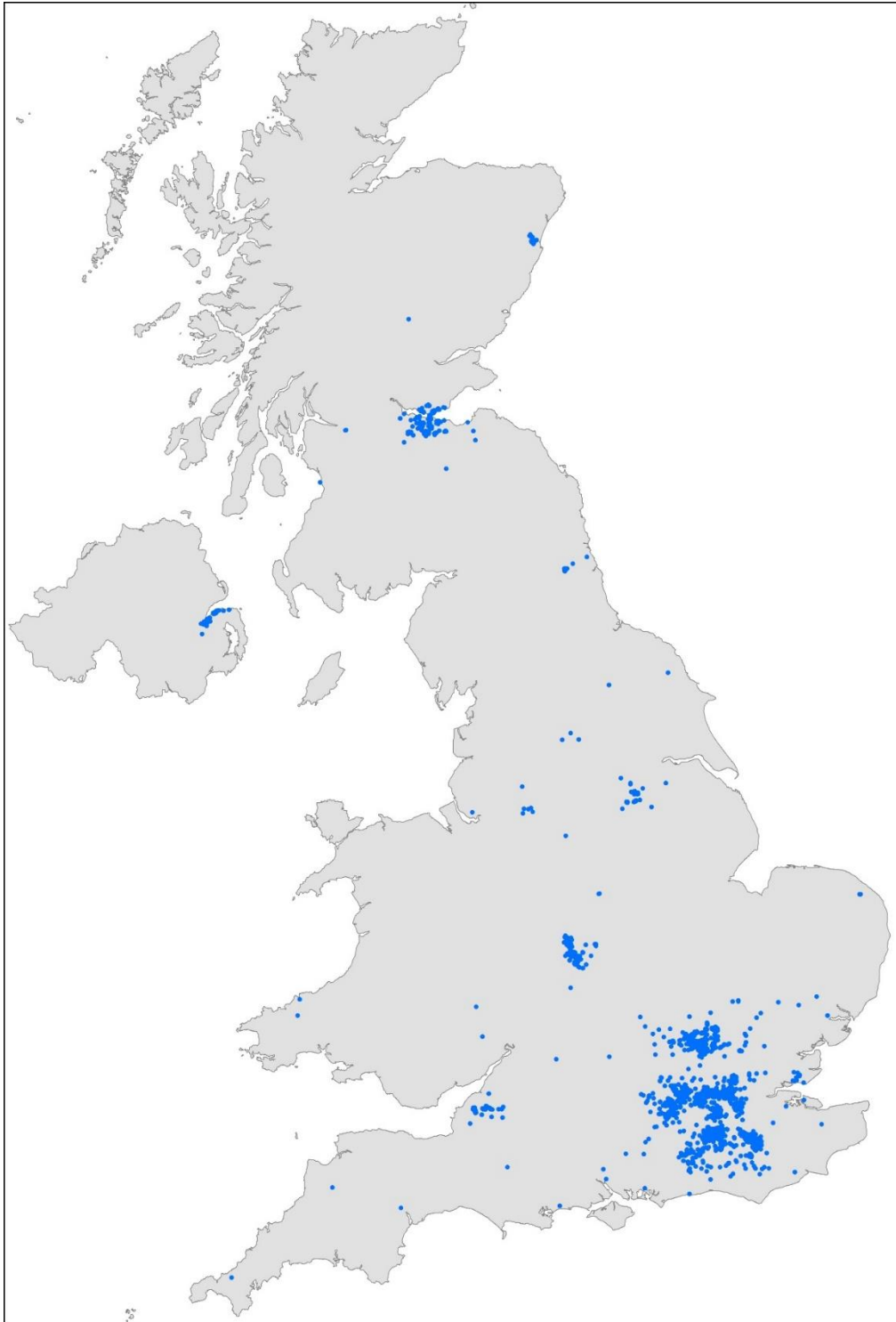
Region	Respondents
South East	1,934
London	949
East of England	350
Scotland	332
West Midlands	294
South West	118
Northern Ireland	87
Yorkshire and the Humber	51
North East	27
East Midlands	19
North West	10
Wales	4
Total	4,175

<sup>1</sup> For example, having reviewed the data collected, we do not believe that the output has been affected by any respondents submitting multiple responses to the survey.

## Question 2. Please enter your postcode

---

2.3 The responses we received have been plotted below:



2.4 Plotting the full postcode data reveals that there are clusters of responses around the UK's major airports, particularly those in London and the South East. However, some responses come from areas not close to commercial airports

(such as Cardigan in Wales, Pitlochry in Scotland or Ipswich in East Anglia), which reflects that some respondents were affected by noise from overflights, helicopters or General Aviation<sup>2</sup>.

- 2.5 In the annexes to this report, we consider airport specific results and will present a mapping of the responses in the vicinity of the airport and tables giving numbers of responses for the largest postcode district or post towns<sup>3</sup>.

### Question 3. It can sometimes be hard to tell, but which of the following airport(s) do you believe impact(s) you:

- 2.6 Respondents were allowed to make multiple selections for this question, which is why the total in the table below exceeds the 4,175 responses to the survey. In fact, 58 respondents identified none of the airports in our list as affecting them, and 31 identified five or more. However, by far the majority of respondents (3,201) only selected one airport as a source of noise affecting them. In the comments section, respondents also identified Biggin Hill (18 respondents) and Farnborough (12) airports as well as a handful for each of Redhill, Battersea Heliport, Northolt, Southend, Norwich, Bournemouth and Blackbushe airports.

Airport	Respondents identifying airport as impacting them	Percentage of respondents identifying airport
Aberdeen	49	1.2%
Belfast City (George Best)	88	2.1%
Belfast international	8	0.2%
Birmingham	291	7.0%
Bristol	65	1.6%
Cardiff	6	0.1%
Doncaster Sheffield	41	1.0%
East Midlands International	12	0.3%
Edinburgh	279	6.7%
Gatwick	975	23.4%
Glasgow	17	0.4%

<sup>2</sup> General Aviation includes business jets and private leisure flying.

<sup>3</sup> For a postcode AA1 2BB, the 'postcode district' would be AA1 and the 'post town' would be AA.

Airport	Respondents identifying airport as impacting them	Percentage of respondents identifying airport
Heathrow	1,763	42.2%
Leeds Bradford	8	0.2%
Liverpool (John Lennon)	2	<0.1%
London City	419	10.0%
Luton	957	22.9%
Manchester	14	0.3%
Newcastle	20	0.5%
Southampton	17	0.4%
Stansted	205	4.9%
Don't know	202	4.8%
Total	5,438	

2.7 Heathrow was the airport which most respondents identified as affecting them, followed by Gatwick and Luton airports. The next highest selected airport, London City, was unusual in that over 85 per cent of respondents which identified it also nominated another London airport as affecting them<sup>4</sup>. The fourth and fifth highest ranked airports for this question were from outside the London area and were Birmingham and Edinburgh, each being chosen by about 7 per cent of respondents. There are many reasons why an airport could have a large number of respondents to our survey, including:

- A dense population inside its noise contour, i.e. a high number of people affected by noise;
- Recent airspace changes or air traffic changes, which may have resulted in stronger community concern about or interest in noise; or
- Areas with active local groups, local media or politicians that drew more attention to the survey or communicated it more widely.

---

<sup>4</sup> This was also true for respondents who identified Stansted airport.



- 2.8 Only 202 (4.8 per cent of) respondents selected Don't Know as one of<sup>5</sup> their responses, indicating that most respondents were confident they know which airport was the source of noise affecting them.

## Question 4. What type of aircraft noise do you think impacts on you most?

- 2.9 Respondents were only allowed to make one selection for this question, but many used a free text field<sup>6</sup> to identify that they were affected by more than one category or, for a small number of respondents, categories which were not included in the original list. The table summarises the selections of the 4,175 respondents along with the effect of adding these free text comments onto the results.

Type of aircraft noise	Number of respondents	Others	Total	percentage
Commercial airlines	3,508	81	3,589	86.0%
Helicopters	476	80	556	13.3%
Light aircraft	44	69	113	2.7%
Military aircraft	27	15	42	1.0%
Not Answered	19		17	0.5%
Other (please state)	101			2.4%
Unscheduled flights		1	1	<0.1%
None		13	13	0.3%
Ground Operations		3	3	0.1%
Total	4,175	262	4,334	

Note: see footnote for explanation of how 101 'Other (please state)' responses lead to 262 entries in the 'Others' column

- 2.10 86 per cent of respondents said that they thought commercial aviation noise impacted them the most (about two percentage points of which came from respondents who made multiple selections). 13 per cent of respondents selected helicopter noise (of which about two percentage points came from

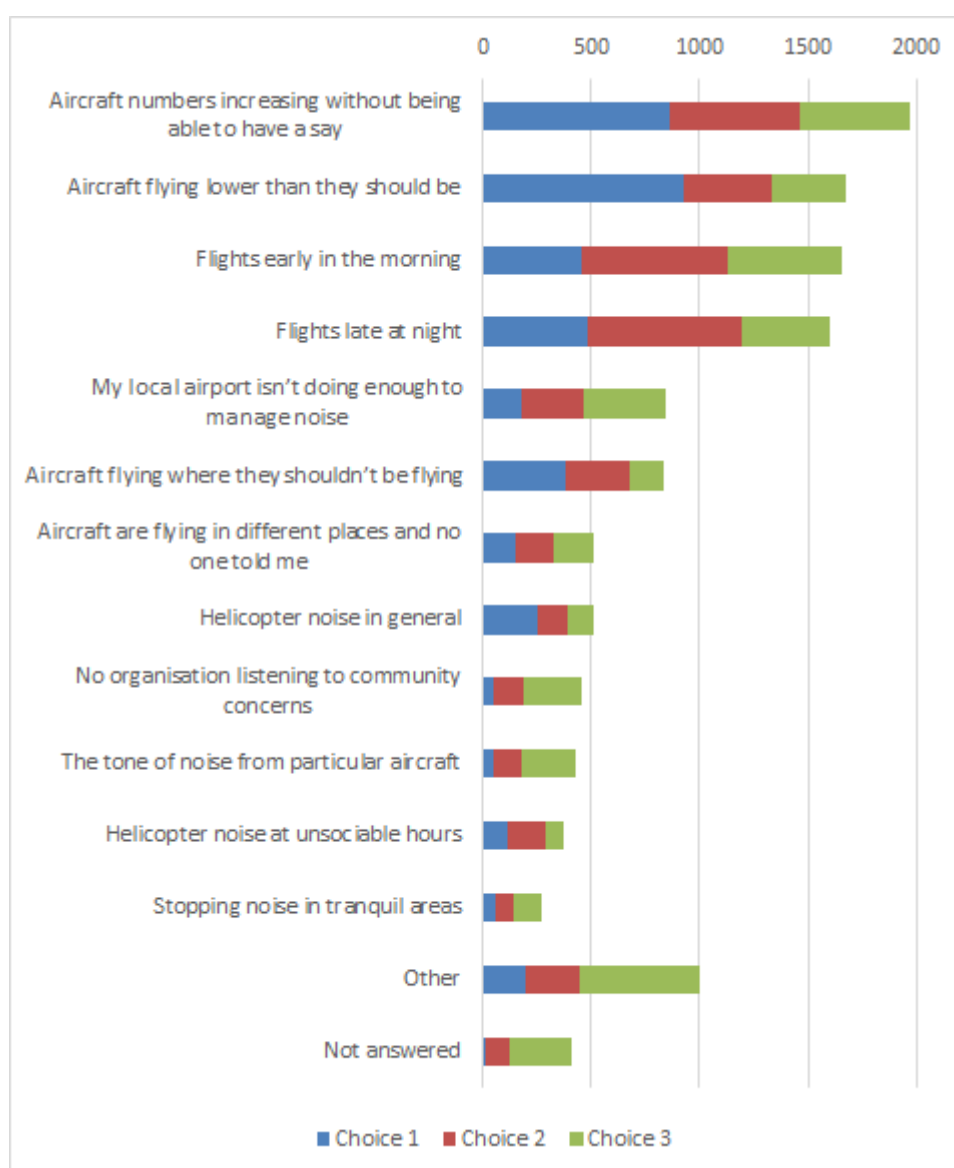
<sup>5</sup> 175 selected only Don't Know – the other 27 also selected other airports.

<sup>6</sup> Some respondents used the free text field even though they had not chosen the 'Other (please state)' option, which is why 262 extra responses are added in the table (including from two respondents who did not make any selection from the list) even though 'Other (please state)' was selected only 101 times.

respondents who made multiple selections). 0.7 per cent of respondents did not answer the question or said that they were not affected by aircraft noise.

### Question 5. If the CAA was to tackle just three of the aviation noise issues that concern you, which would you like to see us focus on? (select up to three things)

- 2.11 The opinions of respondents to this question represented the CAA's main reason for establishing the survey.
- 2.12 The chart below shows the responses for all those issues which garnered at least 50 first choices or 250 choices overall.



- 2.13 The top four issues – aircraft numbers increasing, aircraft flying low, flights early in the morning and flights late at night – all attracted over 1,500 choices and over 450 first choices. Behind those, two issues – my airport isn't doing enough and

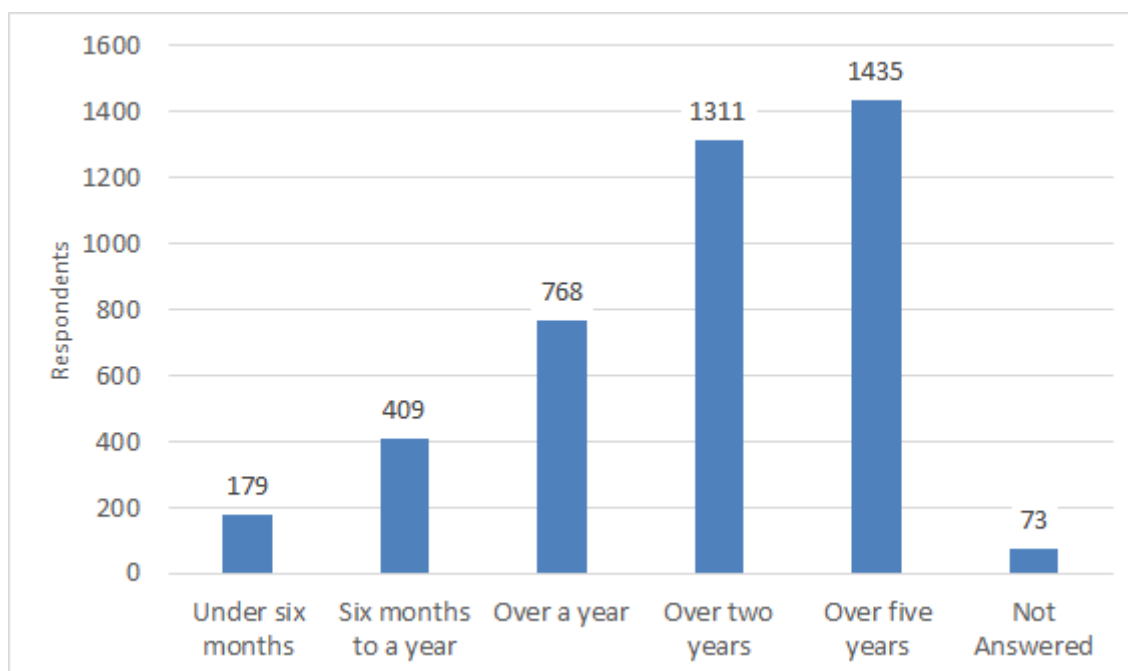
aircraft flying where they shouldn't – both attracted over 800 choices, about the same as the combined total of the two options which involved helicopter noise.

- 2.14 Of the answers grouped in the 'Other' category in the chart above, which includes those not on the list of choices in the survey but nominated by respondents, the most popular were:

Issue	Respondents
Nobody represents my interests to my local airport	132
Noise from aircraft when they are on the ground	109
Concentration of aircraft*	109
Not being given enough information about aircraft noise when I moved house	105
There is no national planning policy that guides against new homes being built under flight paths	97
Flight path changes*	76
Aircraft having their landing gear down	75
The information my local airport provides is difficult to understand	60
Noise from light aircraft	59
All others	138

Note: \* issues not on list of choices in CAA survey

## Question 6. Thinking of where you live now, how long have you been annoyed by aviation noise?

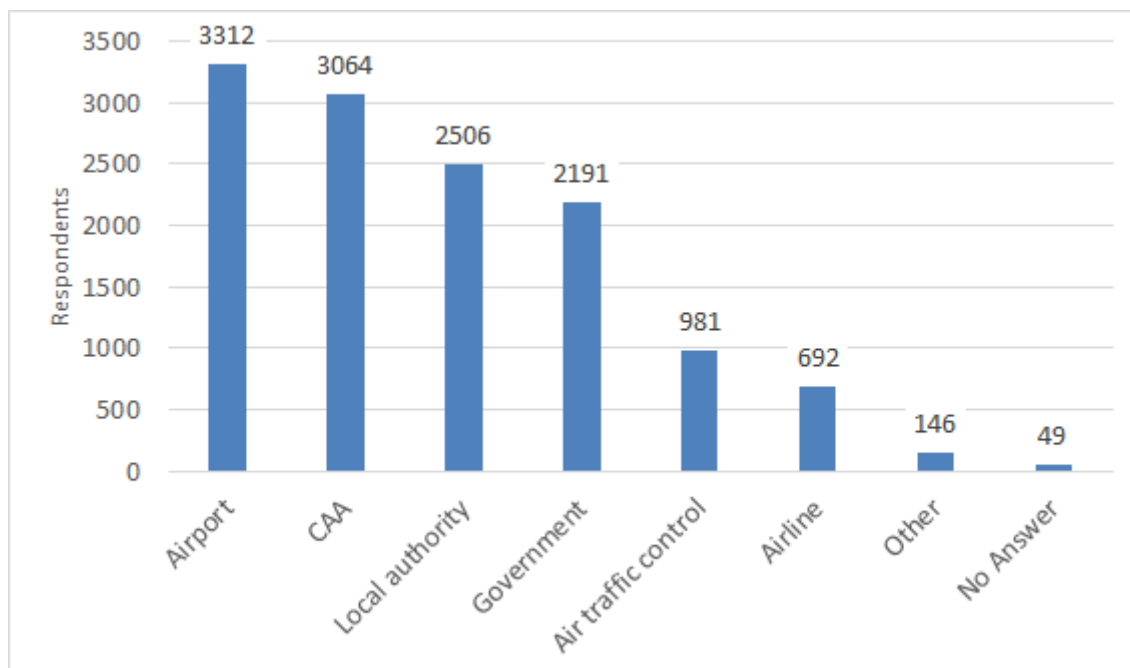


- 2.15 We asked this question to help understand how long people had been annoyed by aircraft noise, and to see if more recent changes and movement increases could be part of the cause for this annoyance. As shown above, of the total options offered, a slight majority have been annoyed for over five years, but most respondents have been annoyed by aviation noise where they currently live for less than five years. This could be because they have only moved to their current home within the past five years, because their perception of aviation noise has changed in that period of time, or because airspace usage has changed in that time (whether because of formal airspace changes or trials, or due to increases in air traffic movements, or other changes).

## Question 7. Which of these organisations would you expect to provide information relating to aviation noise? Select all that apply.

- 2.16 This question allowed respondents to make as many selections as they wished from a list of organisations. Current legislative and regulatory responsibilities for provision of environmental information focus on the role of airports, overseen by guidance from the CAA. The CAA also currently provides information on its website<sup>7</sup> relating to noise both directly and indirectly.

<sup>7</sup> [www.caa.co.uk/noise](http://www.caa.co.uk/noise)

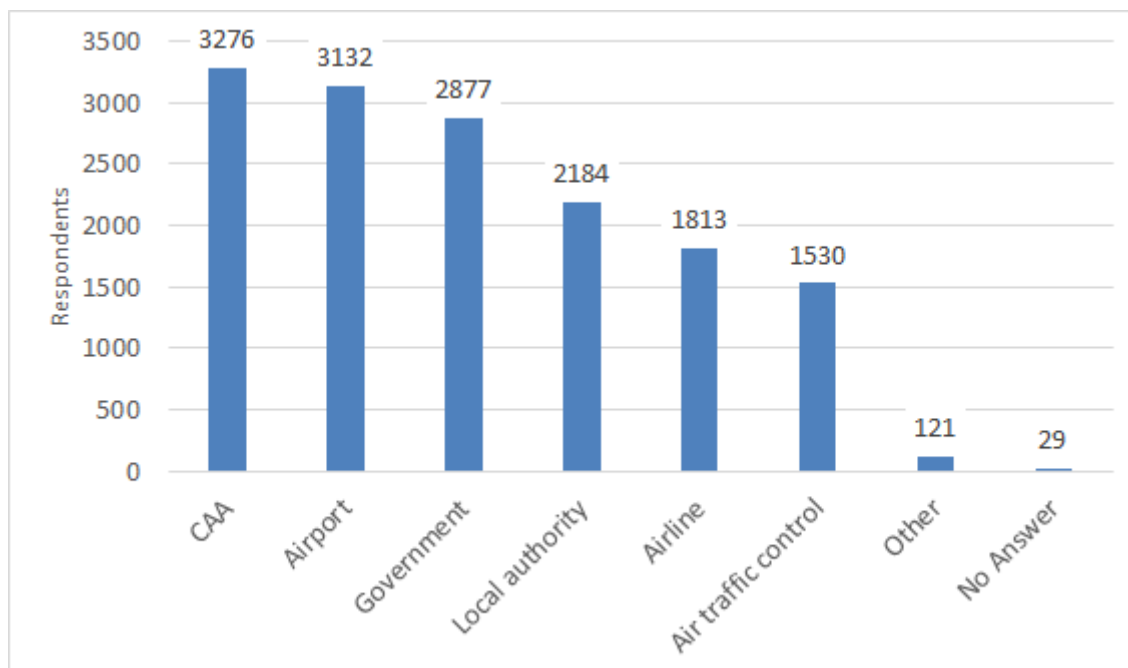


- 2.17 The majority of respondents gave multiple selections to this question, with the most common response being three selections (31% of respondents). 23 respondents (1%) selected all seven options and 49 respondents did not answer the question (1%).
- 2.18 The two most popular answers were the Airport (selected by 79% of respondents) and the CAA (73%), the two bodies which currently provide some information on aviation noise, followed by Local Authorities (60%) and Government (52%). Fewer respondents felt that Air Traffic Control<sup>8</sup> (23%) or the Airlines (17%) should provide information on noise. Of the 146 'Other' answers, over half (77) suggested an independent body should provide information on noise.

### **Question 8. Which of these organisations would you expect to act to reduce aviation noise? Select all that apply.**

- 2.19 This question allowed respondents to make multiple selections from the same list of organisations as in Question 7.

<sup>8</sup> For example, NATS or the airport tower air traffic control body.



- 2.20 Once more, the majority of respondents gave multiple selections to this question, with the most common response again being three selections (26% of respondents). 34 respondents (1%) selected all seven options and 29 respondents (1%) did not answer the question.
- 2.21 This time, the most popular answer was the CAA (selected by 78% of all respondents), with Airports (75%) and Government (69%) also scoring very highly. Just over half of respondents expected Local Authorities (52%) to act to reduce aircraft noise, while fewer still expected it of Airlines (43%) or Air Traffic Control (37%). Of the 121 'Other' answers, the most popular suggestion (with 55 responses) to reduce noise was an independent body, followed by manufacturers (17).

## Question 9: Is there anything else you would like to say about aircraft noise?

- 2.22 We offered a final opportunity for people to provide free text responses on any other information they felt relevant about their experience of aviation noise. In total over 2,500 people chose to answer this question, providing nearly 150,000 words of feedback. We read all of the responses to this question and analysed them by grouping them into different themes. The results are given in the table below (some answers were assigned to more than one theme).

Theme	Number of respondents	Percentage of all respondents
Flights at night / early morning / late evening	490	11.7%
Changes (to aircraft routes)	459	11.0%



Theme	Number of respondents	Percentage of all respondents
Frustration	428	10.3%
Changes (to numbers of aircraft)	330	7.9%
Health / pollution impact concerns	321	7.7%
Low flying	311	7.4%
Concentration of flight paths – bad	243	5.8%
Helicopters	232	5.6%
Distrust Industry	228	5.5%
Respite from noise / dispersal	207	5.0%
Recommendation for change	187	4.5%
Airport expansion – against	163	3.9%
(need for) stronger regulation / enforcement	162	3.9%
Cargo / old / noisy aircraft	104	2.5%
Distrust Government / local authority	97	2.3%
Distrust CAA	87	2.1%
Not concerned by aviation noise	82	2.0%
Flying outside flight paths	76	1.8%
Noise metrics	68	1.6%
(need for an) Independent Authority	65	1.6%
Concentration of flight paths – good	59	1.4%
GA / light aircraft noise	40	1.0%
Ground Operations	22	0.5%
No Answer	1,434	34.3%

- 2.23 Many of the responses helped to clarify and underline the quantitative questions, especially answers given to question 5. For instance, strong themes relating to dissatisfaction with perceived changes to airspace or use of airspace were expressed by many respondents. This took the form of frustration at such changes occurring without the ability to provide feedback, or without a

mechanism to reverse a change if it was believed to have too severe an impact on the public. One respondent told us,

*"We lived here for fifteen years and were never remotely inclined to complain. Then, overnight, things changed, with no warning."*

- 2.24 An inability to have a say was a similar commonly expressed sentiment. For instance,

*"There has been zero consultation with local residents on these proposals from official bodies, only some informal events promoted by the airport in inconvenient locations, and an application for planning permission for expanding the terminals which was not widely consulted on..."*

And

*"We were not consulted about the change in routes and it affects the quality of life and ability of our family to sleep."*

- 2.25 A sense of frustration at this perceived lack of say was clear in many responses:

*"I cannot believe this is allowed to happen. We were not aware of the changes happening and were not given a chance to oppose them."*

- 2.26 For many, the greatest frustration was due to the effect of noise at night, early morning or late evening which affected sleep patterns. For instance,

*"It blights our lives, on a bad day from about 5am to near midnight and sometimes wakes us at about 2 or 3 in the morning. Sleep deprivation and noise pollution has an adverse affect on mental health."*

And

*"Flights coming over our house every 2 minutes at peak times make sleeping impossible, the noise severely affects my life for over 6 months of the year. There should be restrictions on flights between 10pm and 7am coming into Gatwick, often the busiest time of the day is 10pm-12."*

- 2.27 Health impacts were raised by some respondents, in particularly relating to night flights, and a lack of respite from noise. For instance,

*"It affects our sleep. Meaning it affects our health."*

- 2.28 Although many respondents were concerned with noise from commercial operations at large airports, others felt equally if not more affected by noise from helicopters or small aircraft. These comments were typical:

*"We've only recently moved to this address but the noise from helicopters is really interfering with our quality of life. They fly very, very low over our house frequently and often very late at night and very early in the morning. Police*

*helicopters are a nuisance but I appreciate they're doing a job, the private helicopters however are completely unnecessary and are the main culprits of the noise disruption. We get a lot of aircraft noise with planes coming into land at Heathrow, several an hour, but even this isn't as intrusive as the helicopters!"*

And

*"We are particularly affected by very low flying corporate and charter jets turning over us for final approach into Farnborough. Numbers of air movements and size of aircraft appear to have increased markedly in the past 6 months."*

- 2.29 We observed a general sentiment of frustration across a significant number of responses. This took several forms – frustration with the CAA's role as regulator; with airports in relation to their perceived motivations or engagement; or with government in terms of the wider policy context for aviation noise. Some examples were,

*"The CAA and the Dept of Transport have allowed the current situation to develop through complacency and a lack of expertise."*

And

*"The biggest frustration is that no one seems to care. Those who took decisions now just pretend it didn't happen and won't take responsibility, residents are given facts and figures which are impossible to understand unless you work in aviation. A complete and utter shambles with no accountability."*

And

*"CAA/NATS/airports are so slow to move as they are defensive and stuck in old ways of thinking and attitudes which historically have put airlines first and communities at the bottom of their 'concern' list"*

And

*"You are destroying our lives. The evidence of the devastating impact of aircraft noise is well documented. The landing approach flight paths to Heathrow have been a disaster for the populations now trapped in noise ghettos. We've had no say and our views are always ignored."*

- 2.30 A further strong theme expressed by many of the respondents related to trust. A lack of trust in each or all parties was expressed by some respondents. For instance,

*"Don't trust Heathrow or the government - both have lied to us too often. Should probably include CAA, too."*

- 2.31 Some responses focussed on the CAA:

*“Who do we complain to? The CAA? What powers do you have to help us? Can we even trust you - you seem to be on the side of the industry and its consumers.”*

And

*“The CAA as currently constituted, is not independent of the industry and therefore cannot be trusted to oversee such a regime. A new truly independent body should be established to undertake this role.”*

2.32 And the government more generally:

*“It has completely eroded any trust or respect for the UK government and official agencies as they regularly bow to private foreign owned business demands... at the detriment of the uk citizen and taxpayer. Spineless.”*

2.33 Lack of trust also extended to industry:

*“we cannot trust the information we are given and that the measuring criteria is inadequate. NO ONE seems to be able to provide any answers about NOISE in relation to plane altitudes, respite periods etc.”*

And

*“The airports themselves cannot be trusted, there must be Governmental policy and proper representation of communities.”*

2.34 Several responses highlighted a lack of confidence that the CAA and government can hold industry to account. For instance

*“I don't know why Government and the CAA are so frightened of industry and not able to set limits to growth.”*

And

*“Government should protect the happiness and welfare of the people of the UK, not just those who pay most taxes and most into party funds.”*

And

*“The CAA and the national Government should take on more responsibility for protect its citizens from noise.”*

2.35 Another theme that was expressed by many respondents related to how recent changes introduced greater concentration of aircraft, and provided the overflowed with less of what might be referred to as natural respite. We heard from one response for instance that,

*“Introduction of concentrated flight paths is inhumane and has destroyed the peace of our neighbourhood.”*

And another which said,

*“They are now in a concentrated pattern which means they fly directly over my house. There is no respite from the noise.”*

2.36 Some responses proposed mechanisms to develop respite:

*“NATS need to organise flightpaths so that aircraft follow a wide range of paths without congregating in one area.”*

And

*“Almost everyone benefits from commercial aviation, so it's only fair that the disadvantages should be spread widely too.”*

2.37 A lack of clarity about who to complain to, or how to complain featured in some responses:

*“The feeling I get as a citizen is that the CAA is not interested in addressing noise complaints of citizens.”*

2.38 Finally, some respondents used the free text box to tell us that they were not annoyed by, or concerned about aviation noise. These responses have been noted, even though the survey was specifically designed to enable us to gather feedback from those who are frustrated by aircraft noise.

## Chapter 3

# We did

---

- 3.1 At the beginning of 2018, the CAA introduced revisions to its airspace change process to ensure that consultation and engagement is at its heart, and that transparency is strengthened to allow all those who may be affected by changes to understand what the options are and why they have been developed, and to have their say about them. More information about the airspace change process can be found at: [www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-Change/](http://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-Change/).
- 3.2 The top four answers to question 5 – what are the issues you would like the CAA to focus on – were: Aircraft numbers increasing without being able to have a say, Aircraft flying lower than they should be, Flights early in the morning and Flights late at night. Of these, three – Aircraft numbers increasing, Flights early in the morning and Flights late at night – relate to national policy set by Government and, in some cases, the planning process.
- 3.3 For the fourth – Aircraft flying lower than they should be – the government and CAA have introduced new guidance on transparency for airports around information relating to the use of airspace – for instance offering guidance on the type of information communities may find useful when flight numbers utilising particular routes have changed. This guidance can be found from page 96 of CAP 1616 ([www.caa.co.uk/CAP1616](http://www.caa.co.uk/CAP1616)) and the CAA has recently collected and published information on which elements of this guidance are currently being fulfilled by 10 airports and one Air Navigation Service Provider<sup>9</sup>.
- 3.4 In December 2018, the Department for Transport (DfT) published 'Aviation 2050, the future of UK aviation' its consultation on a future UK Aviation Strategy. We will share the results of this survey with the DfT as evidence which it can use in formulating its Aviation Strategy and, by publishing this report, we hope that stakeholders (community groups, airports or others) will also be able to use the data here in their own responses to the DfT if they wish.

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<sup>9</sup> This can be found on the CAA website at <https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-information--transparency-about-airspace-use-and-aircraft-movements/>



## APPENDIX A

# Analysis by airport

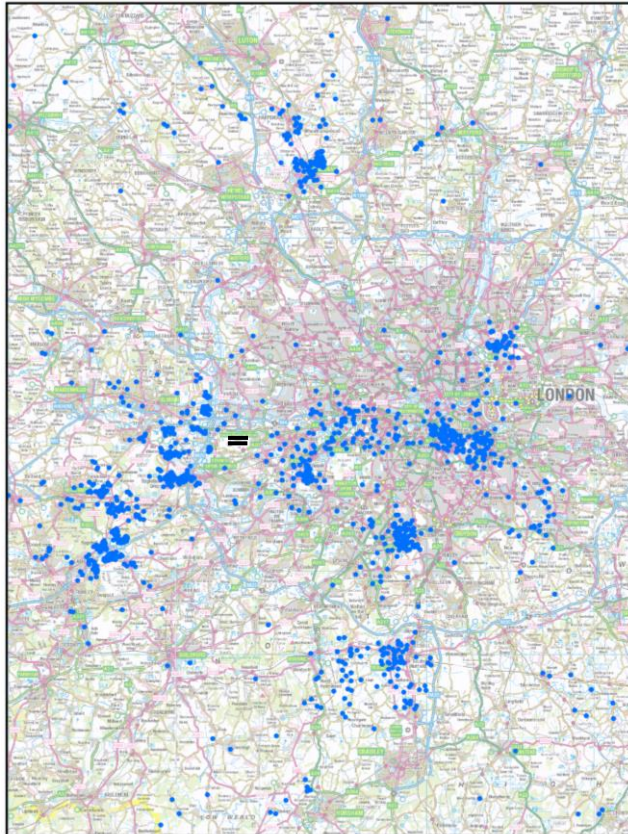
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1. In this appendix, we present a breakdown of the key responses to the survey for those airports which attracted more than 50 responses. These are:
  - Heathrow (1,763 responses)
  - Gatwick (975 responses)
  - Luton (957 responses)
  - London City (419 responses)
  - Birmingham (291 responses)
  - Edinburgh (279 responses)
  - Stansted (205 responses)
  - George Best Belfast City (88 responses)
  - Bristol (65 responses)

## Noise impact survey results for all respondents identifying Heathrow Airport as affecting them

Sample size: 1,763 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



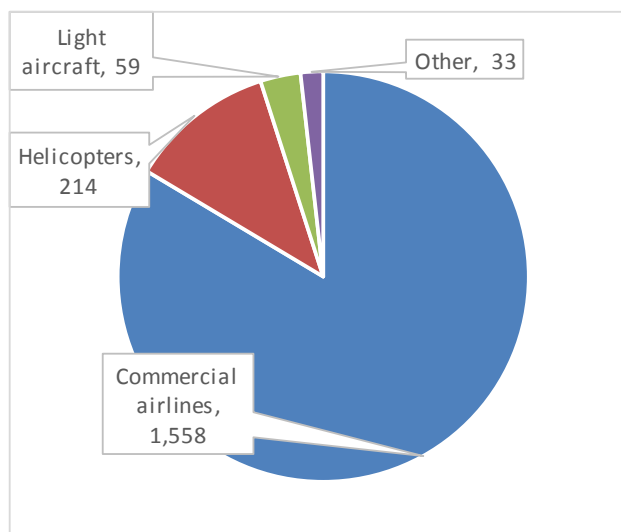
Contains OS data © Crown copyright and database right 2018

Post Town	Respondents
TW	273
SL	251
GU	208
SE	196
RH	150
AL	142
SM	106
SW	87
E	73
Others	270
No Answer	7
<b>Total</b>	<b>1,763</b>

### Airports affecting respondents

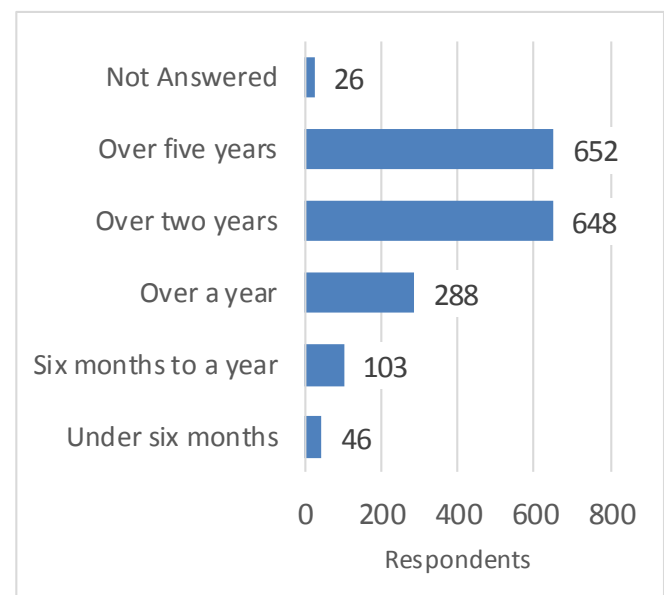
Airport	Respondents
Heathrow	1,763
Gatwick	427
London City	335
Luton	233
Stansted	145
Others	67

What type of aircraft noise annoys you most?



Note: multiple answers allowed

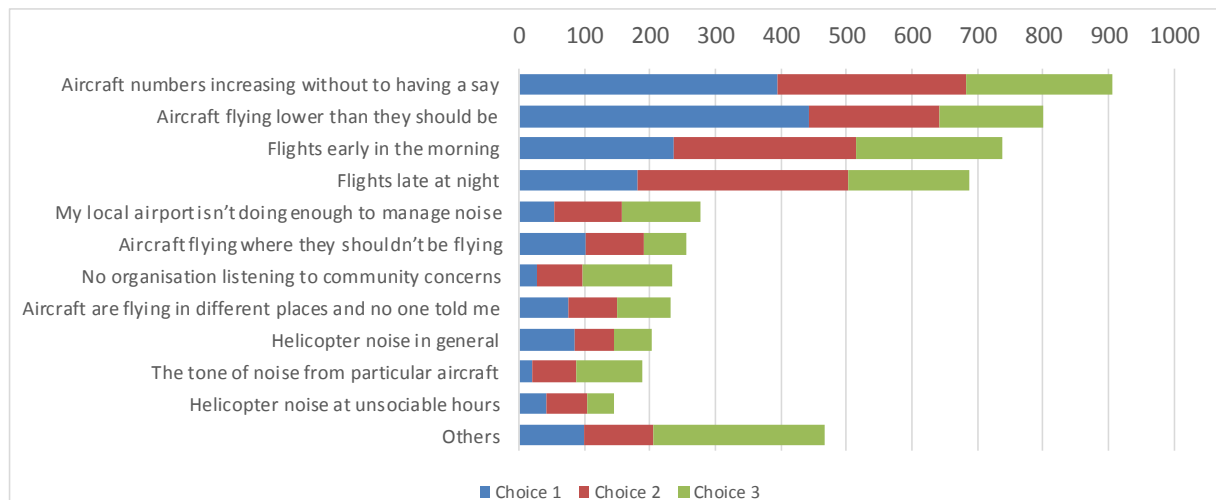
How long have you been annoyed by aviation noise?



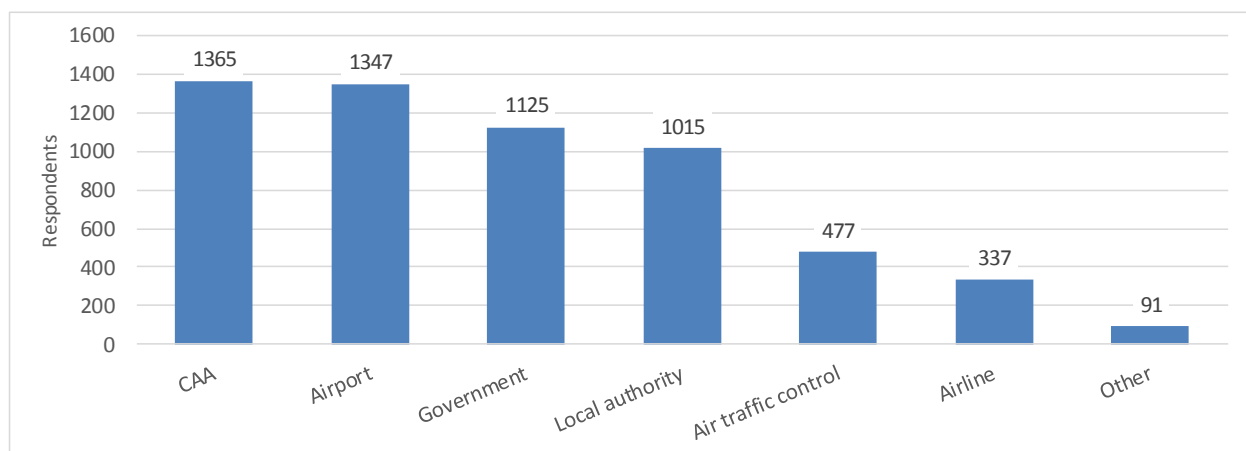
## Noise impact survey results for all respondents identifying Heathrow Airport as affecting them

Sample size: 1,763 out of 4,175 responses

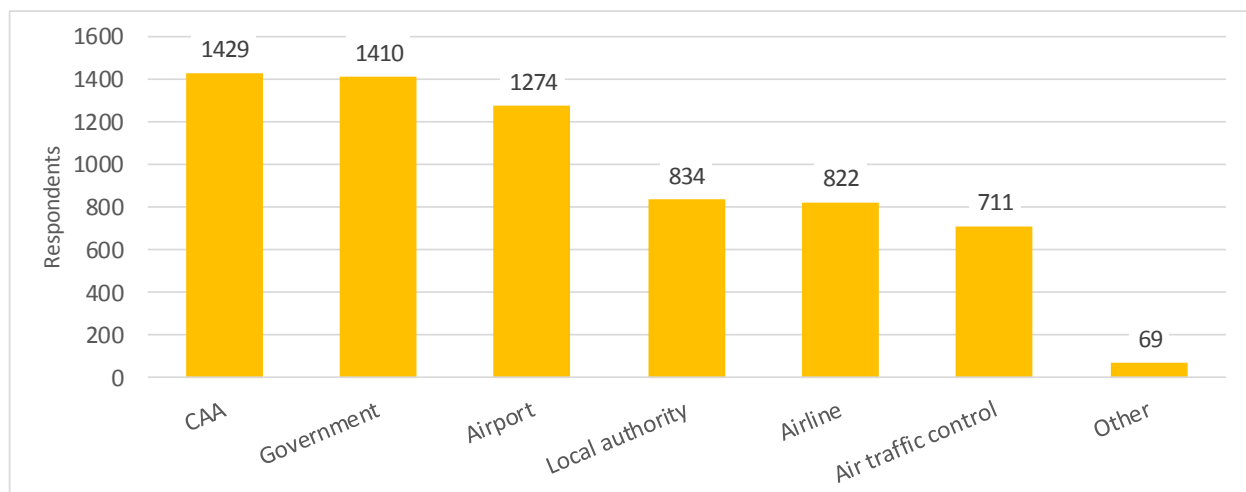
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



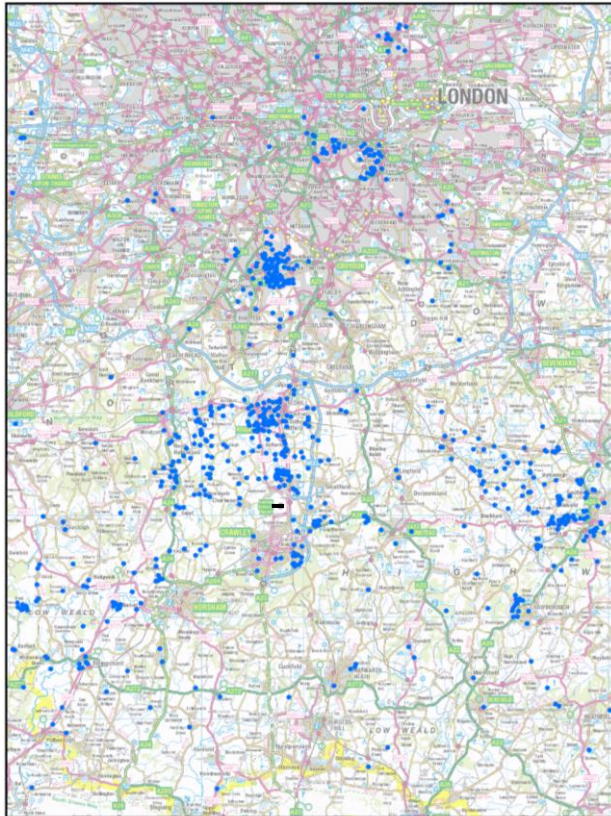
Who would you expect to reduce aviation noise?



## Noise impact survey results for all respondents identifying Gatwick Airport as affecting them

Sample size: 975 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



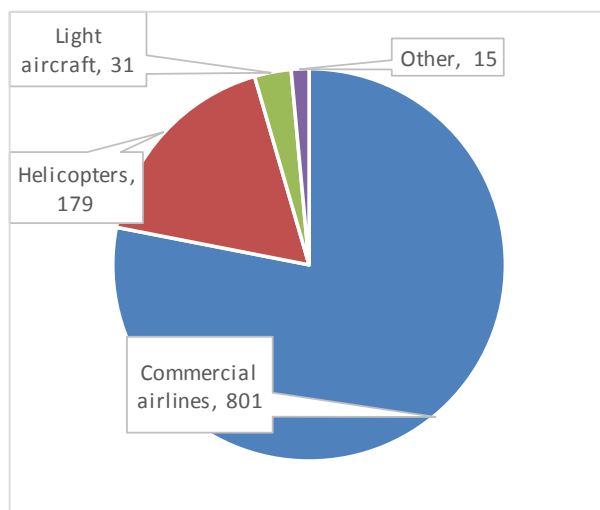
Contains OS data © Crown copyright and database right 2018

Post Town	Respondents
RH	458
TN	193
SM	113
SE	57
GU	40
Others	107
No Answer	7
<b>Total</b>	<b>975</b>

### Airports affecting respondents

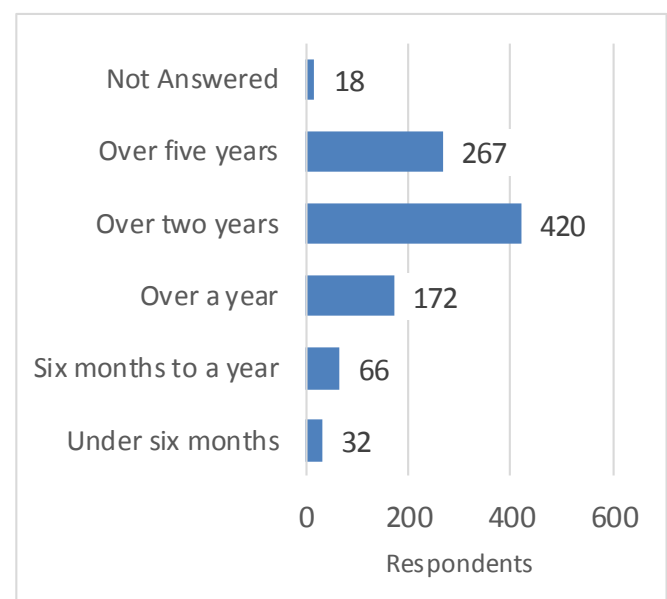
Airport	Respondents
Gatwick	975
Heathrow	427
London City	148
Stansted	62
Luton	53
Southampton	13
Others	23
Don't Know	15

What type of aircraft noise annoys you most?



Note: multiple answers allowed

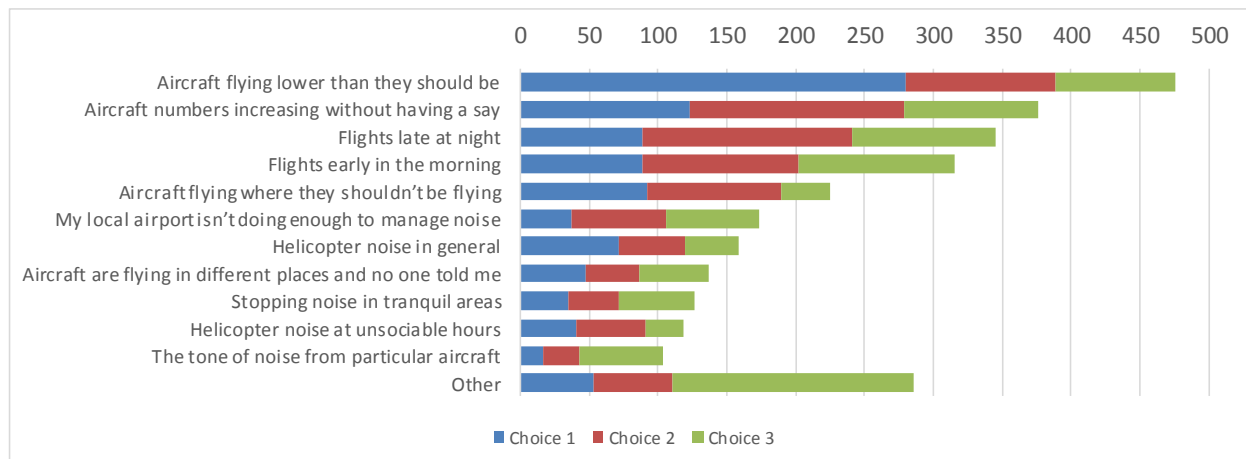
How long have you been annoyed by aviation noise?



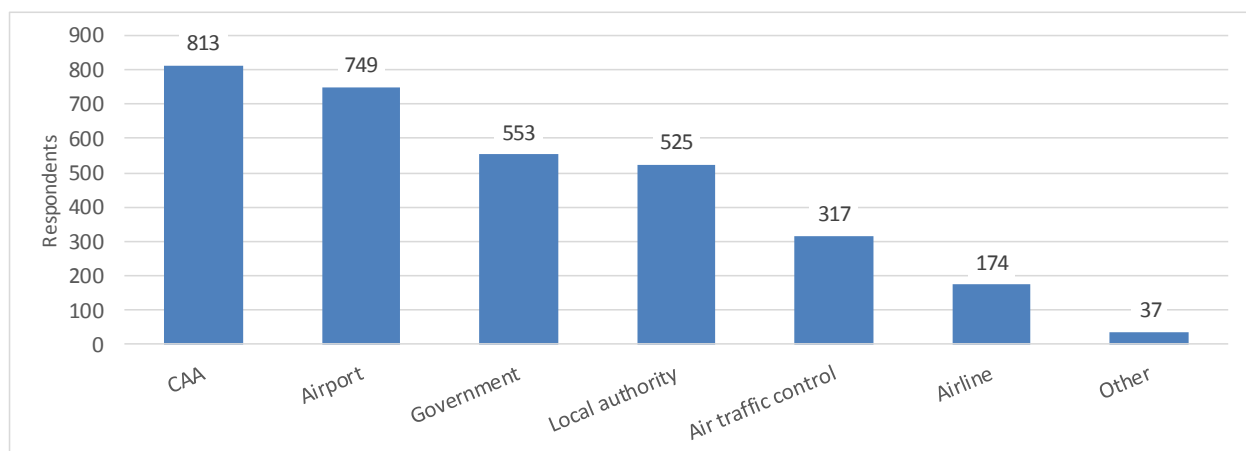
## Noise impact survey results for all respondents identifying Gatwick Airport as affecting them

Sample size: 975 out of 4,175 responses

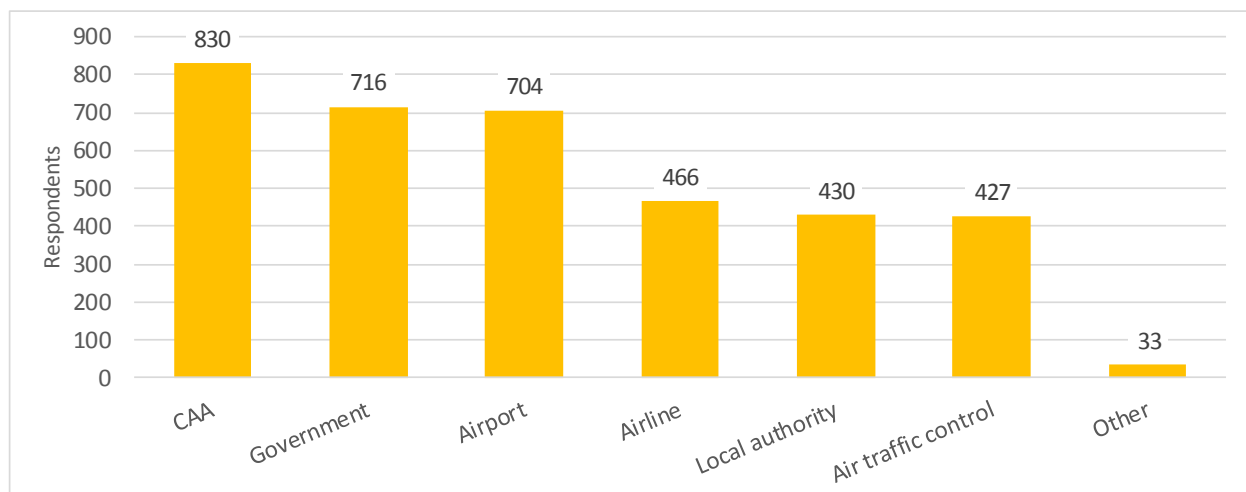
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



Who would you expect to reduce aviation noise?

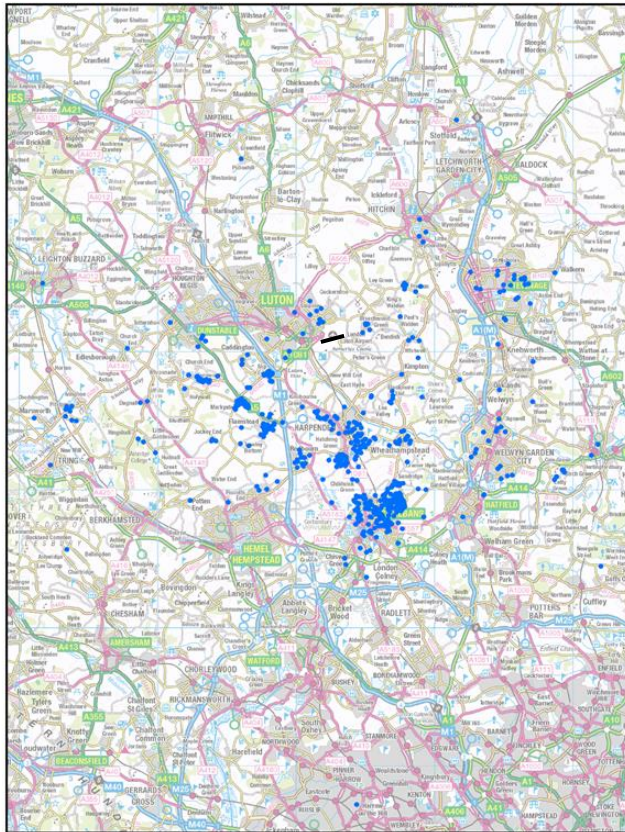




## Noise impact survey results for all respondents identifying Luton Airport as affecting them

Sample size: 957 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



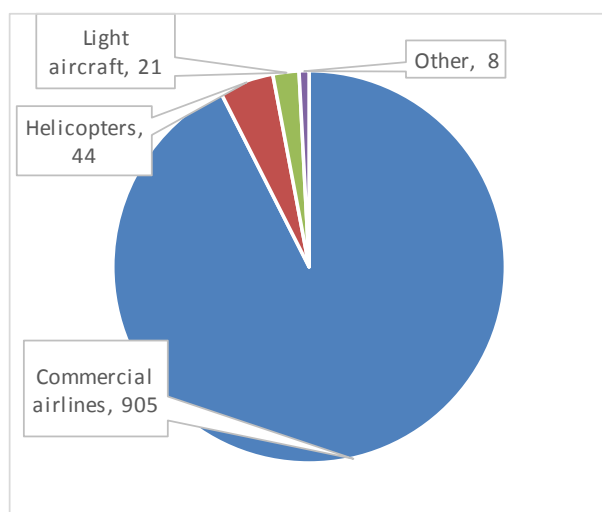
Contains OS data © Crown copyright and database right 2018

Post Code District	Respondents
AL3	236
AL4	184
AL5	120
AL1	74
LU1	56
LU6	50
SG4	43
Others	187
No Answer	7
<b>Total</b>	<b>957</b>

### Airports affecting respondents

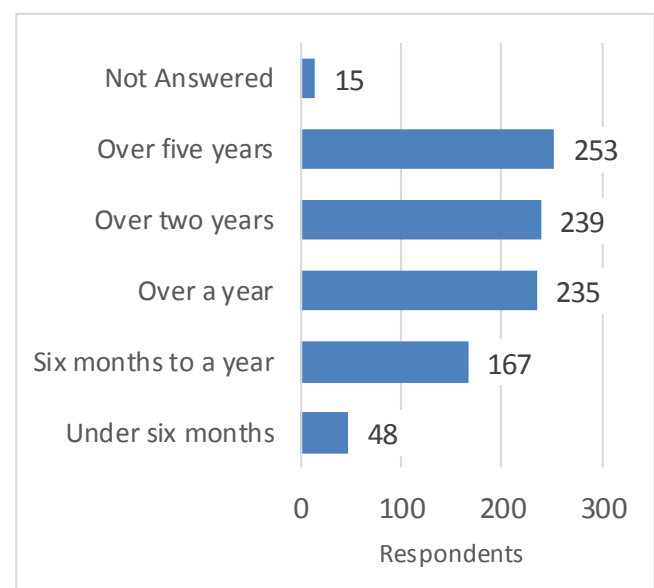
Airport	Respondents
Luton	957
Heathrow	233
Stansted	144
London City	54
Gatwick	53
Others	20
Don't Know	2

What type of aircraft noise annoys you most?



Note: multiple answers allowed

How long have you been annoyed by aviation noise?

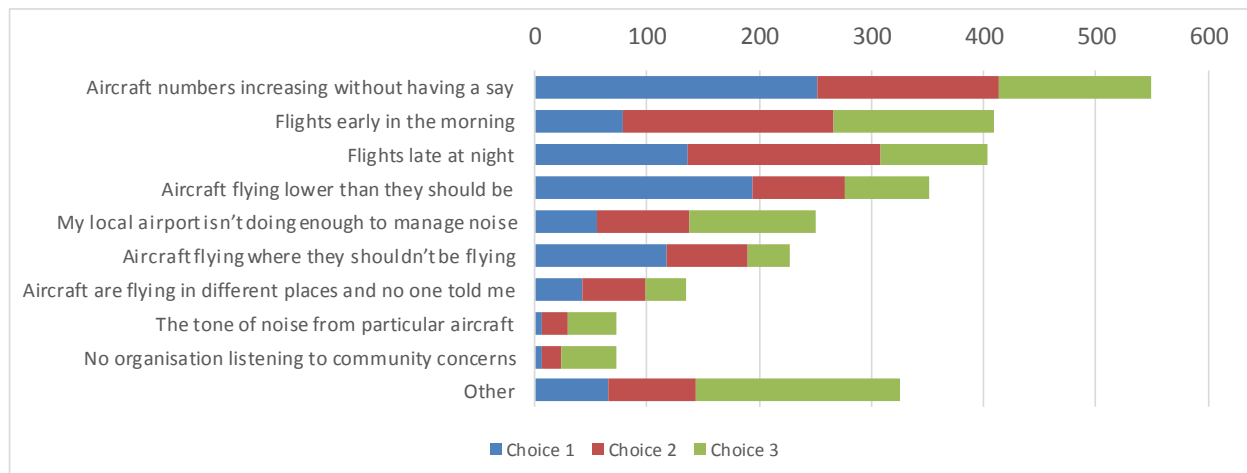




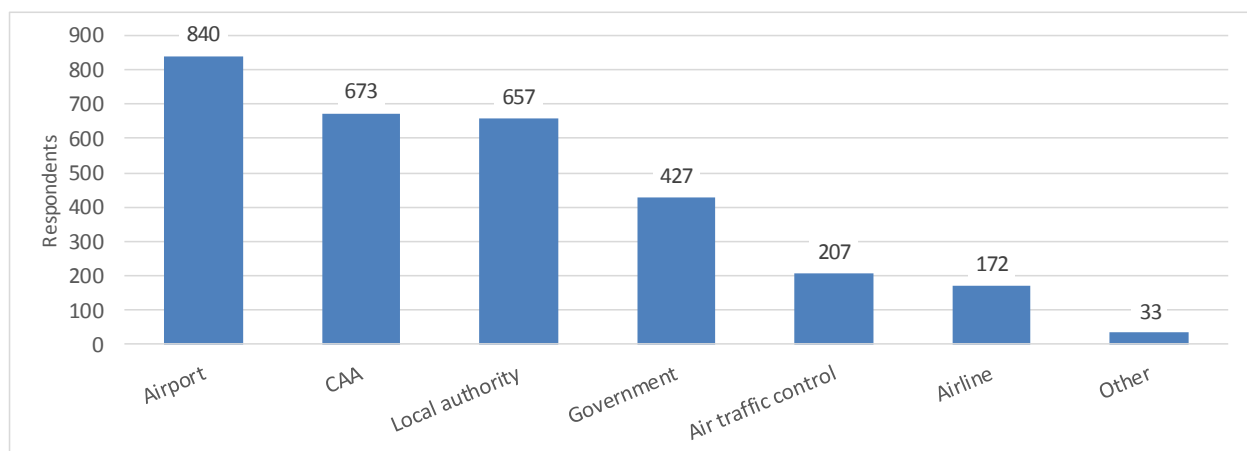
## Noise impact survey results for all respondents identifying Luton Airport as affecting them

Sample size: 957 out of 4,175 responses

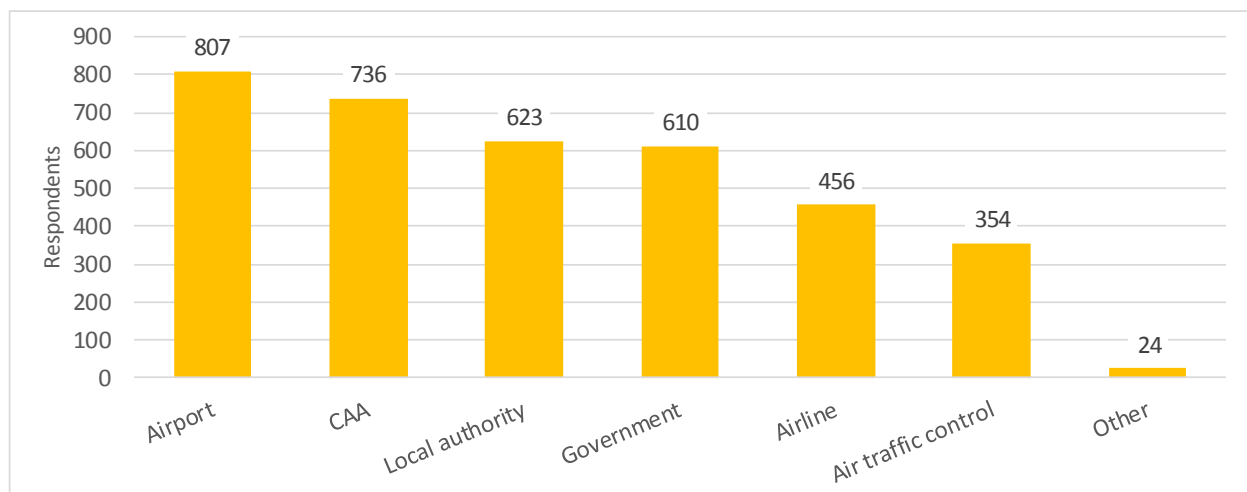
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



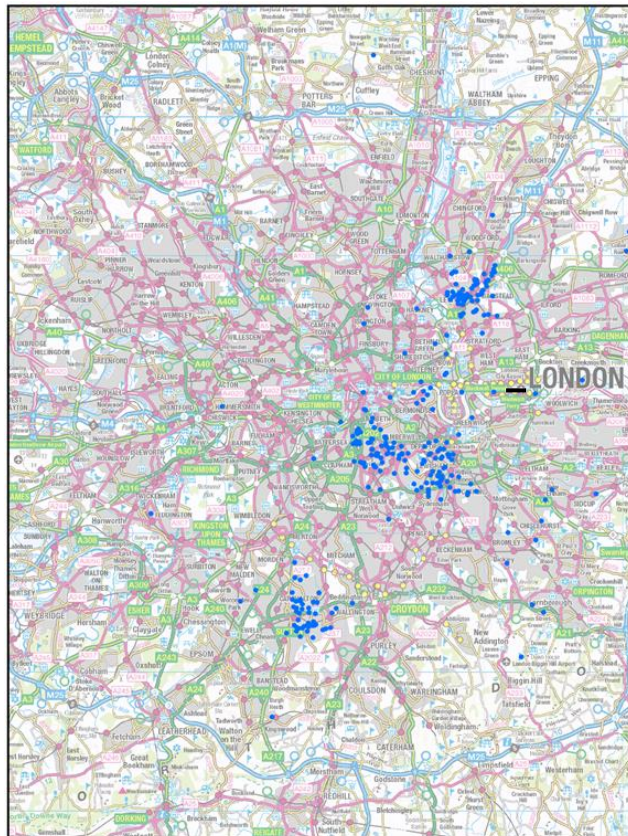
Who would you expect to reduce aviation noise?



## Noise impact survey results for all respondents identifying London City Airport as affecting them

Sample size: 419 out of 4,175 responses

Location of respondents (note: some respondents outside map area)

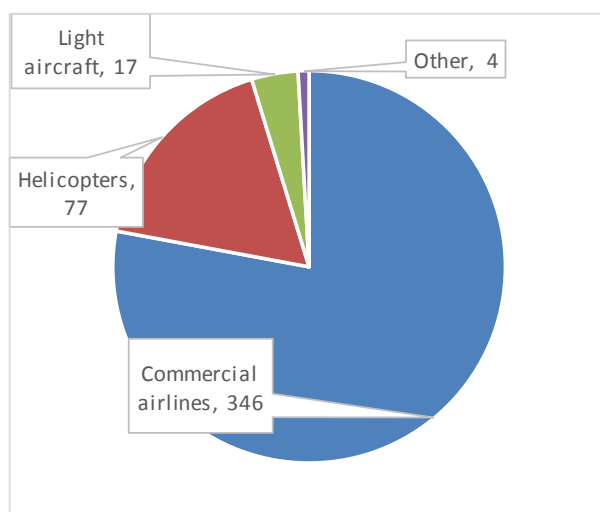


Post Town	Respondents
SE	144
E	108
SM	50
SW	29
AL	17
SG	12
RM	8
BR	7
Others	43
No Answer	1
<b>Total</b>	<b>419</b>

### Airports affecting respondents

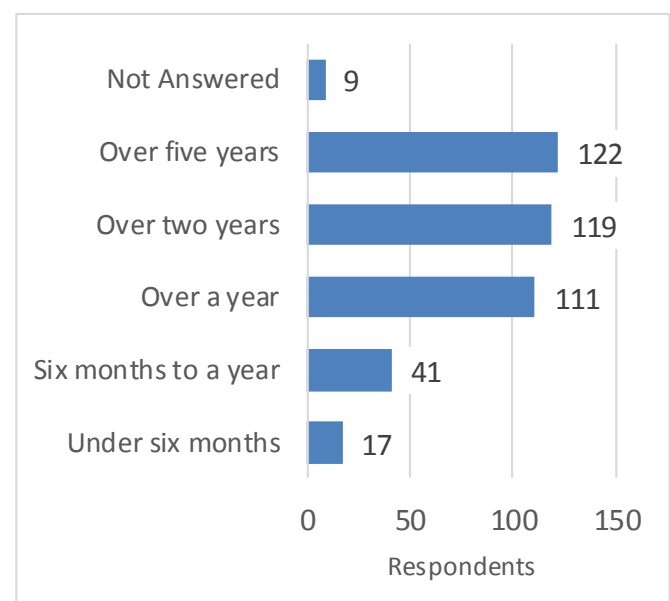
Airport	Respondents
London City	419
Heathrow	335
Gatwick	148
Stansted	86
Luton	54
Others	18
Don't Know	12

What type of aircraft noise annoys you most?



Note: multiple answers allowed

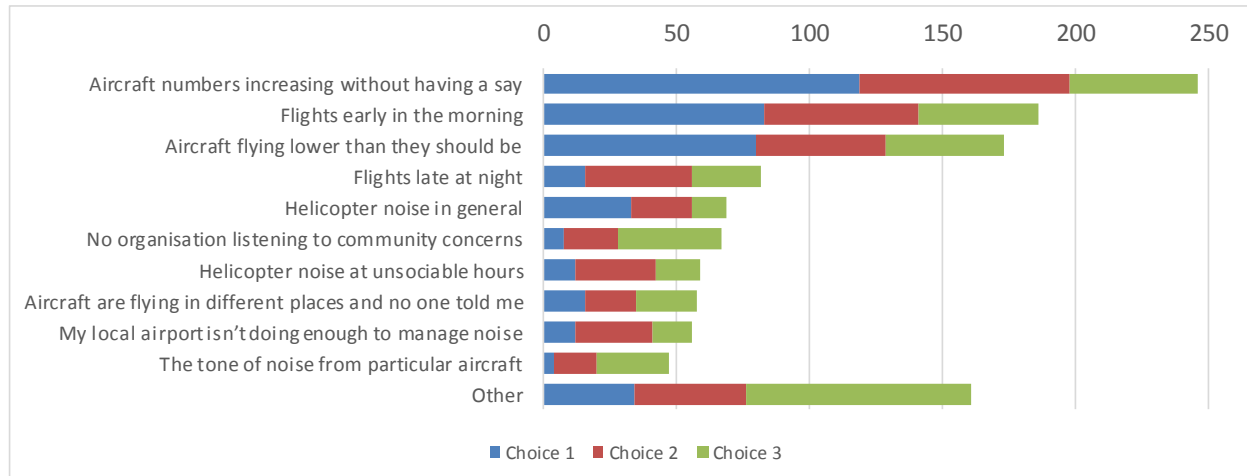
How long have you been annoyed by aviation noise?



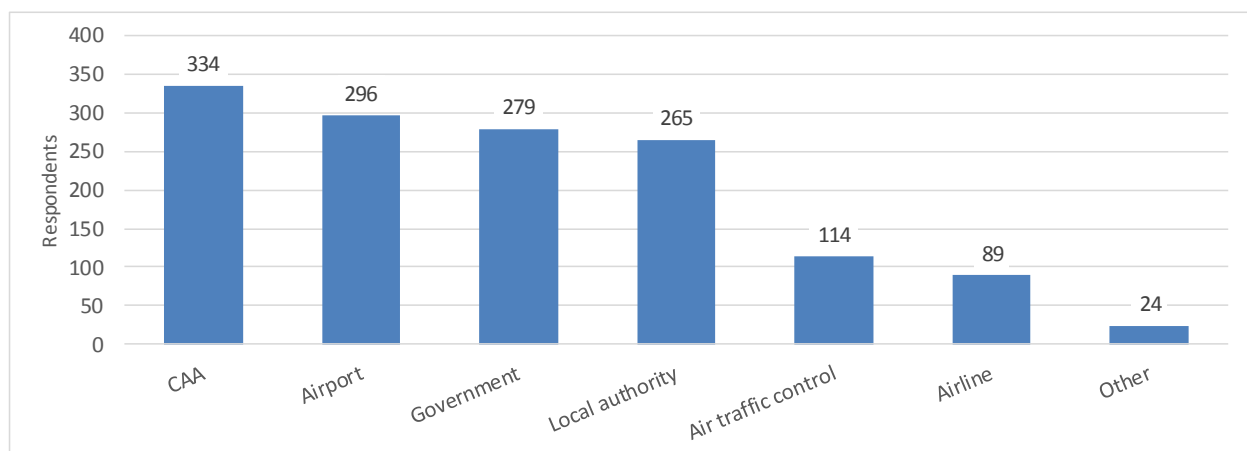
## Noise impact survey results for all respondents identifying London City Airport as affecting them

Sample size: 419 out of 4,175 responses

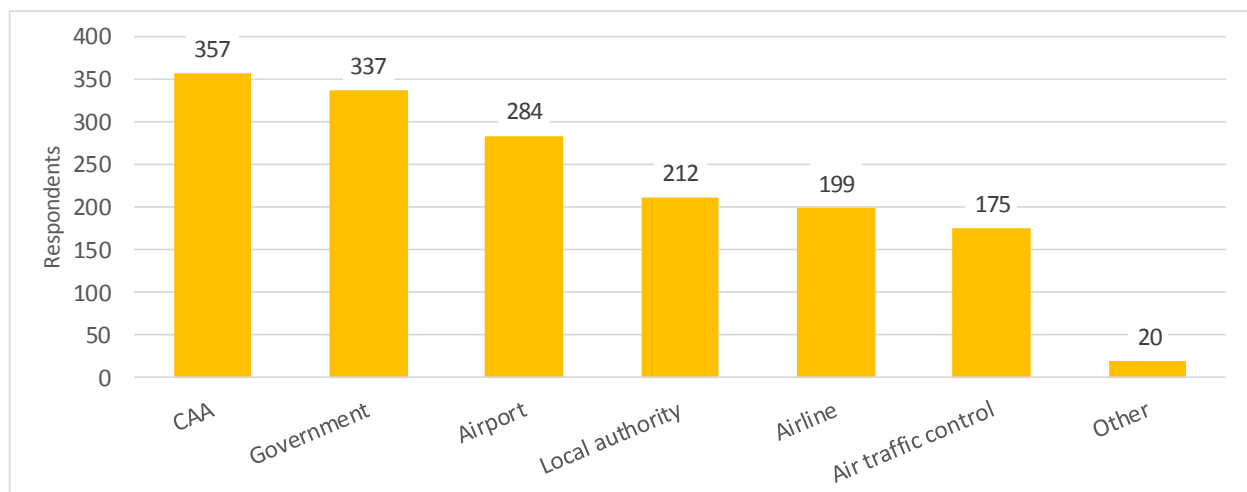
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



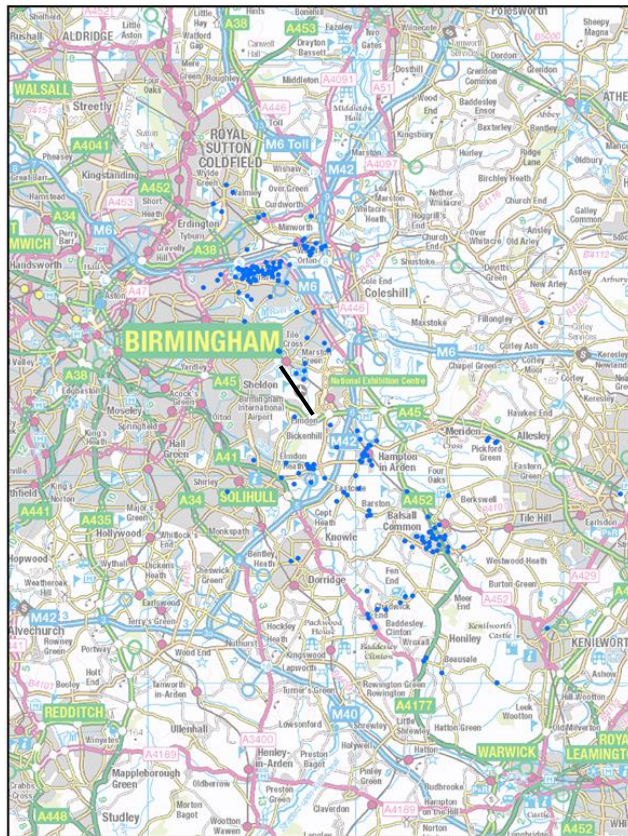
Who would you expect to reduce aviation noise?



## Noise impact survey results for all respondents identifying Birmingham Airport as affecting them

Sample size: 291 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



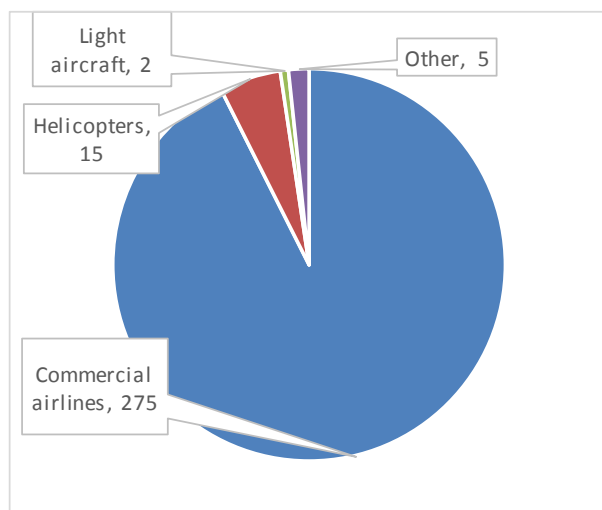
Contains OS data © Crown copyright and database right 2018

Post Code District	Respondents
B36	101
B92	36
B91	35
CV7	34
B46	16
B93	14
B37	9
B76	8
CV8	8
CV5	7
Others	21
No Answer	2
<b>Total</b>	<b>291</b>

### Airports affecting respondents

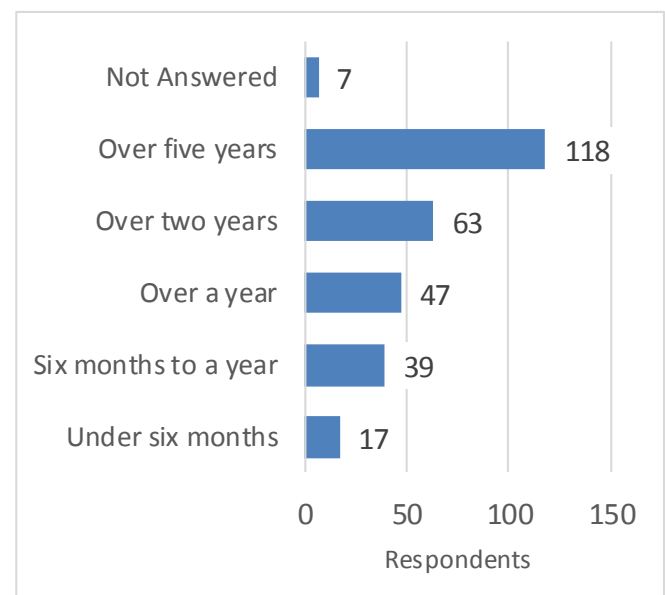
Airport	Respondents
Birmingham	291
East Midlands	7
Heathrow	4
Others	8
Don't Know	1

What type of aircraft noise annoys you most?



Note: multiple answers allowed

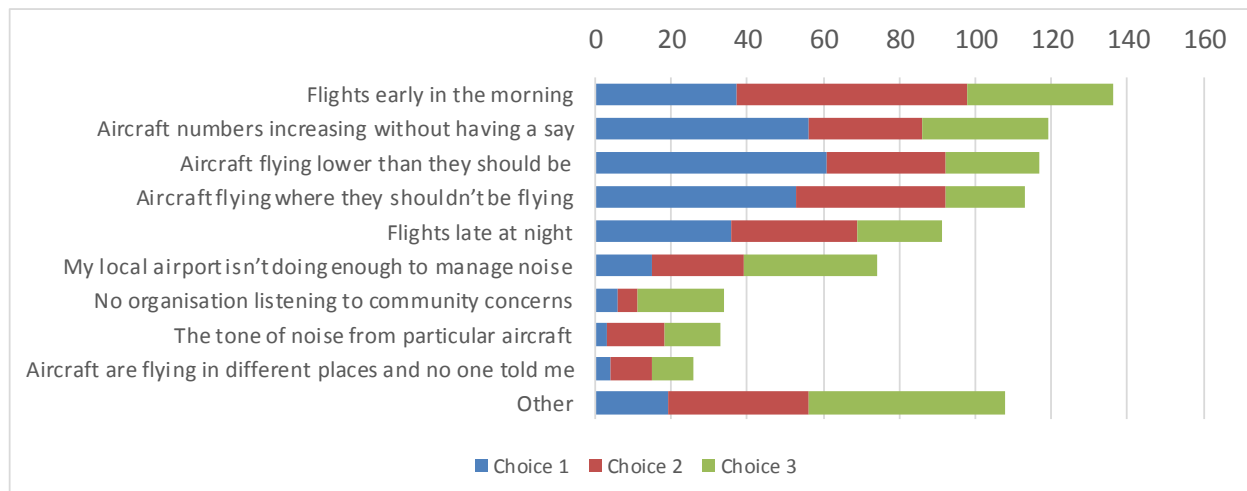
How long have you been annoyed by aviation noise?



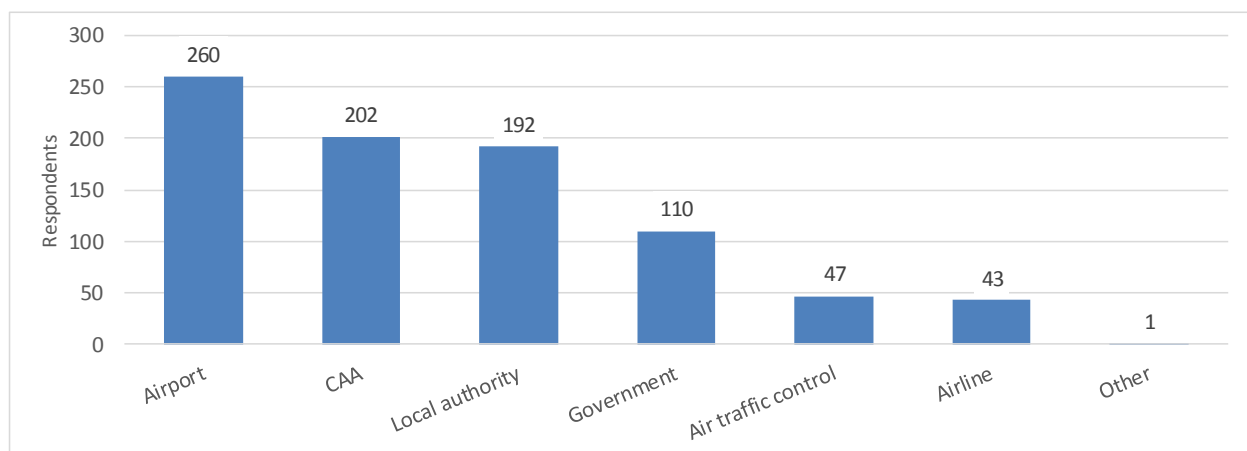
## Noise impact survey results for all respondents identifying Birmingham Airport as affecting them

Sample size: 291 out of 4,175 responses

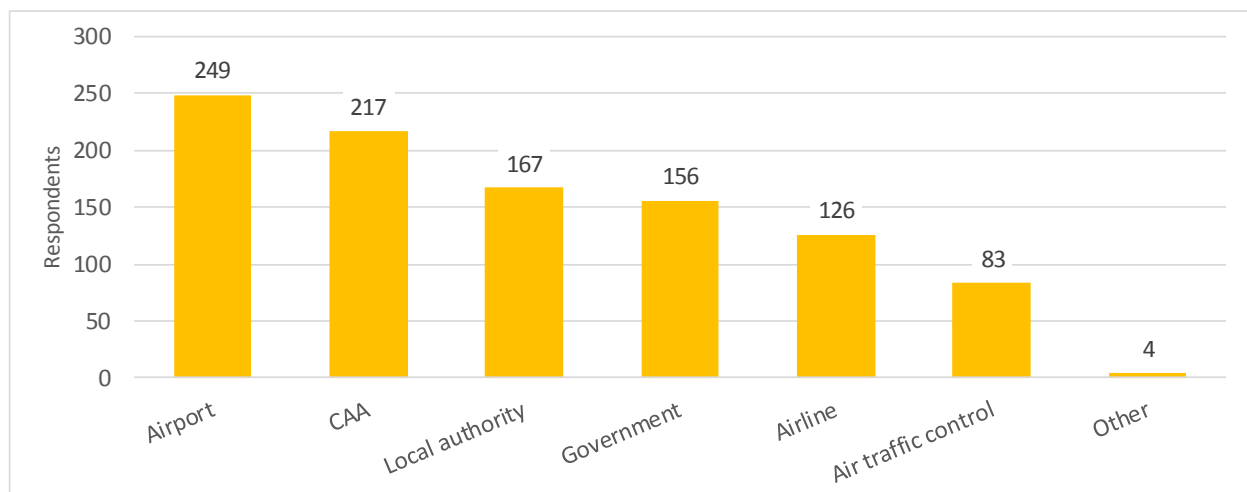
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



Who would you expect to reduce aviation noise?

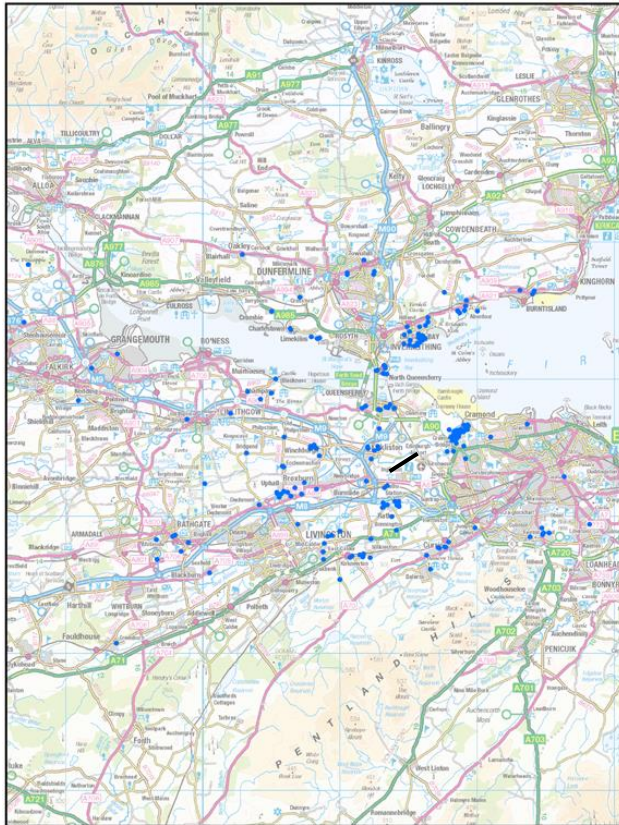




## Noise impact survey results for all respondents identifying Edinburgh Airport as affecting them

Sample size: 279 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



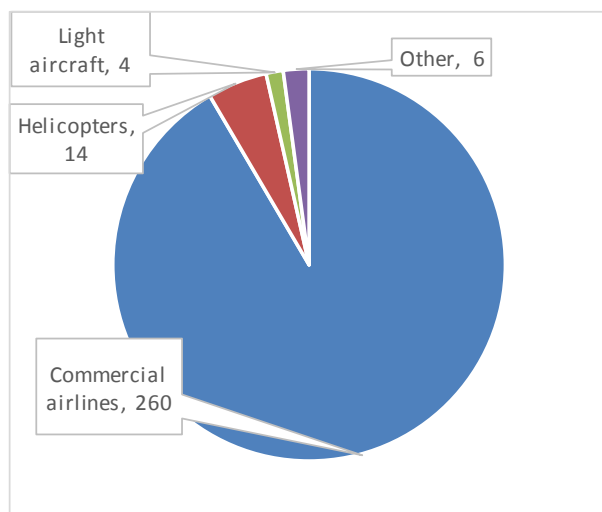
Contains OS data © Crown copyright and database right 2018

Post Code District	Respondents
EH4	51
KY11	43
EH52	35
EH28	20
EH53	17
EH30	15
EH49	13
KY3	13
EH27	12
EH48	10
Others	50
No Answer	0
<b>Total</b>	<b>279</b>

### Airports affecting respondents

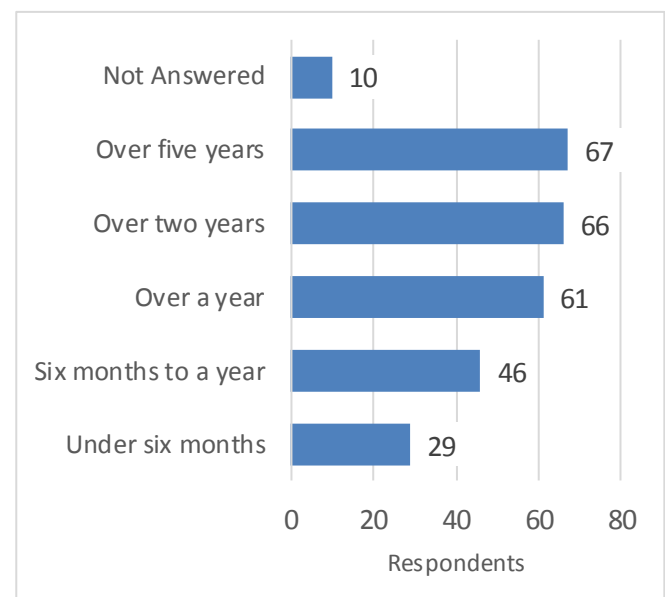
Airport	Respondents
Edinburgh	279
Glasgow	6
Aberdeen	4
Others	11
Don't know	1

What type of aircraft noise annoys you most?



Note: multiple answers allowed

How long have you been annoyed by aviation noise?

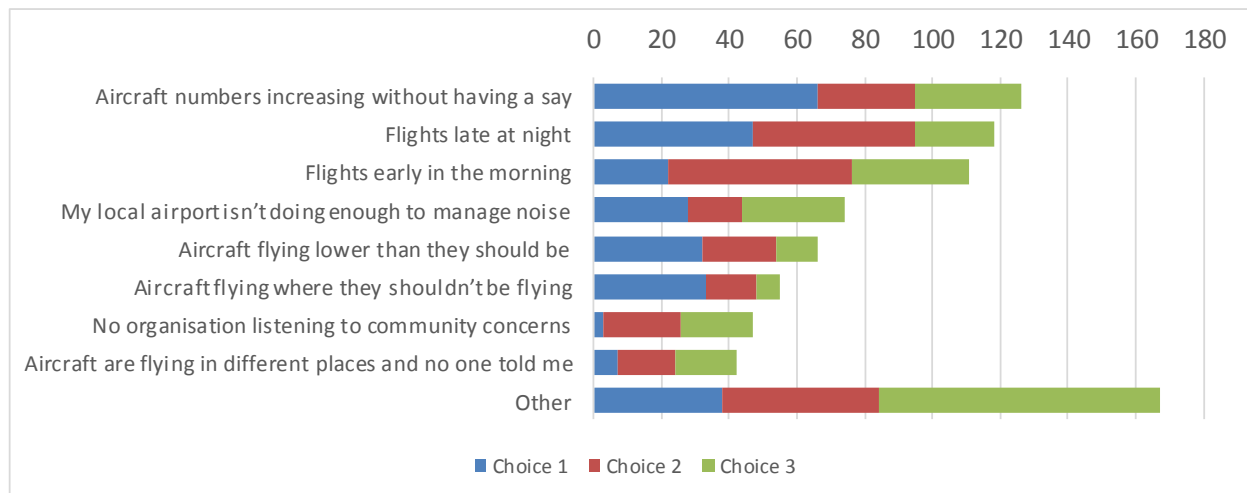




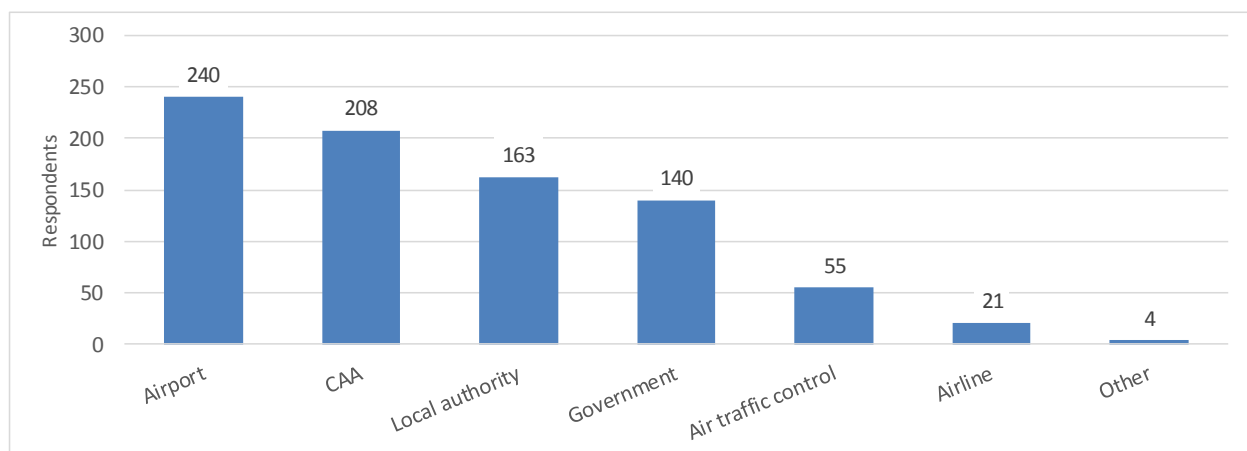
## Noise impact survey results for all respondents identifying Edinburgh Airport as affecting them

Sample size: 279 out of 4,175 responses

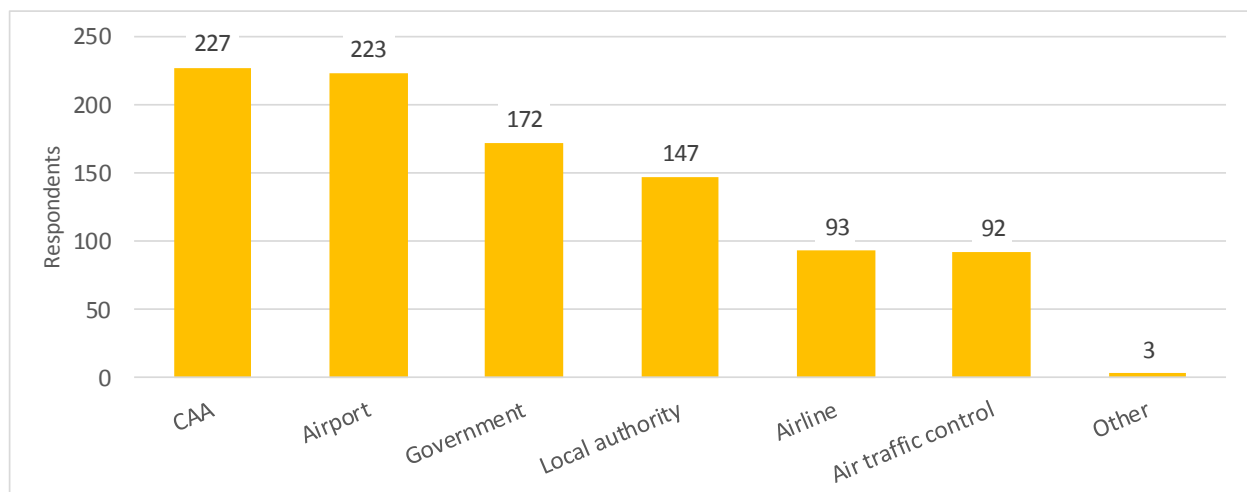
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



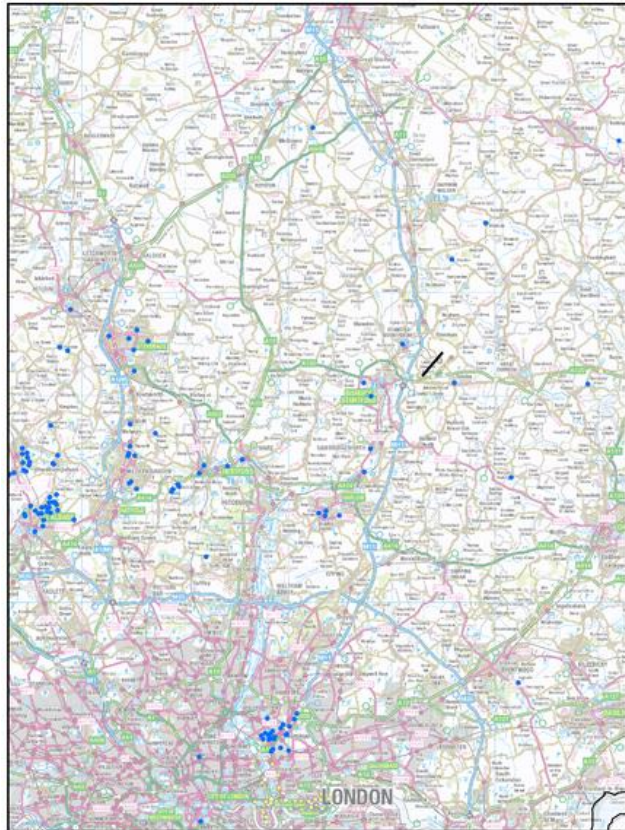
Who would you expect to reduce aviation noise?



## Noise impact survey results for all respondents identifying Stansted Airport as affecting them

Sample size: 205 out of 4,175 responses

Location of respondents (note: some respondents outside map area)

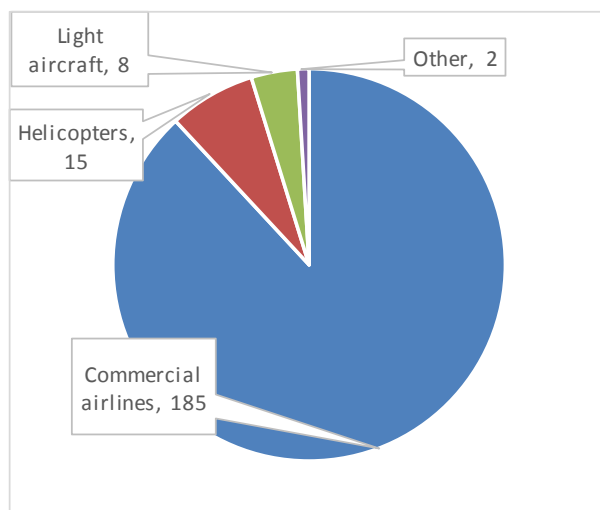


Post Town	Respondents
AL	58
SG	31
E	23
SE	17
CM	15
TW	8
RH	7
CO	7
Others	39
No Answer	0
<b>Total</b>	<b>205</b>

### Airports affecting respondents

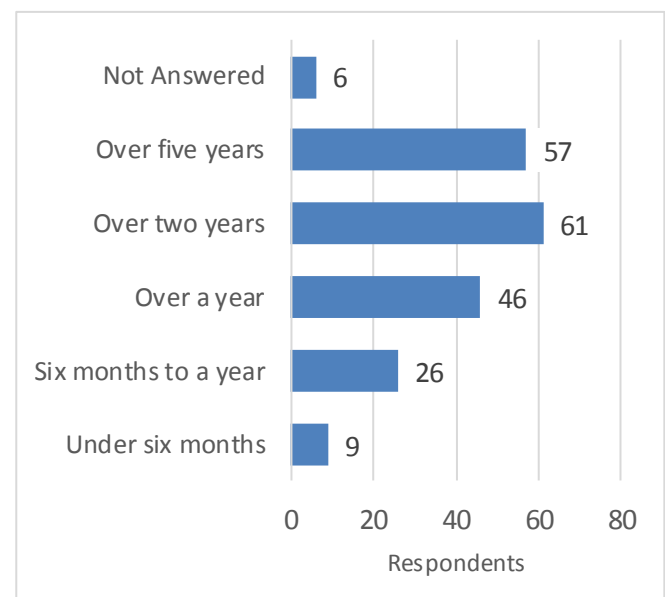
Airport	Respondents
Stansted	205
Heathrow	145
Luton	144
London City	86
Gatwick	62
Others	18
Don't know	4

What type of aircraft noise annoys you most?



Note: multiple answers allowed

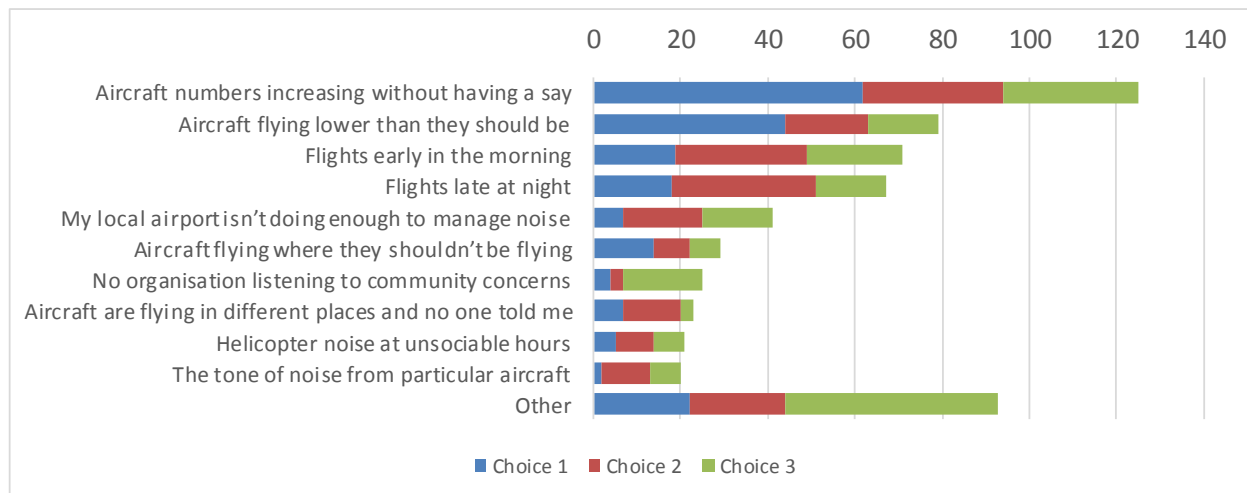
How long have you been annoyed by aviation noise?



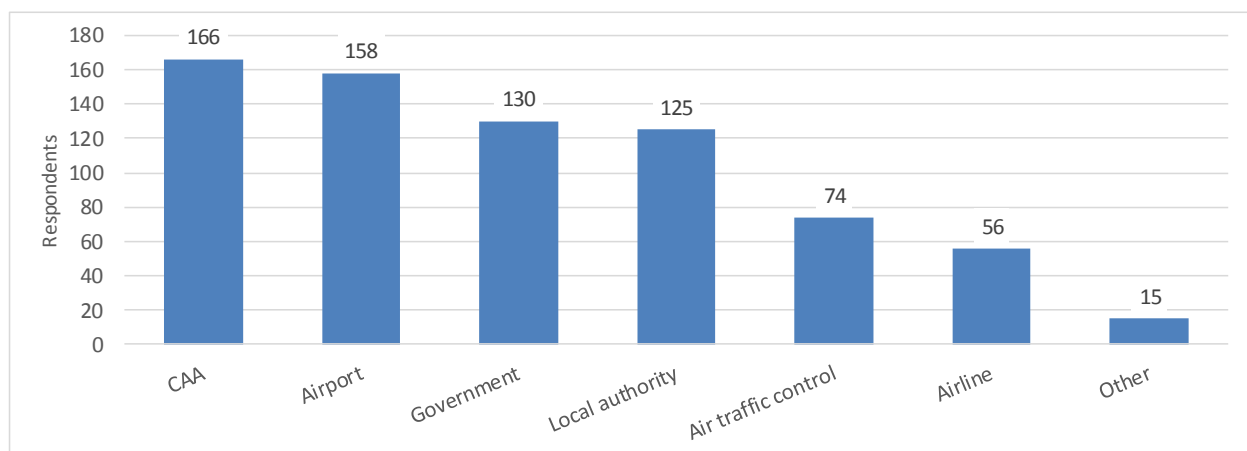
## Noise impact survey results for all respondents identifying Stansted Airport as affecting them

Sample size: 205 out of 4,175 responses

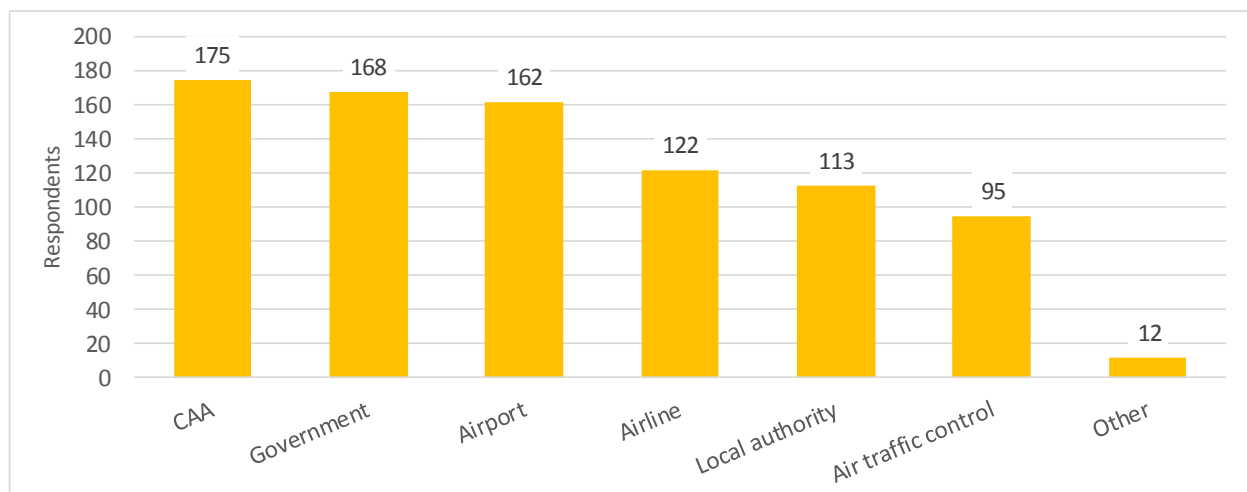
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



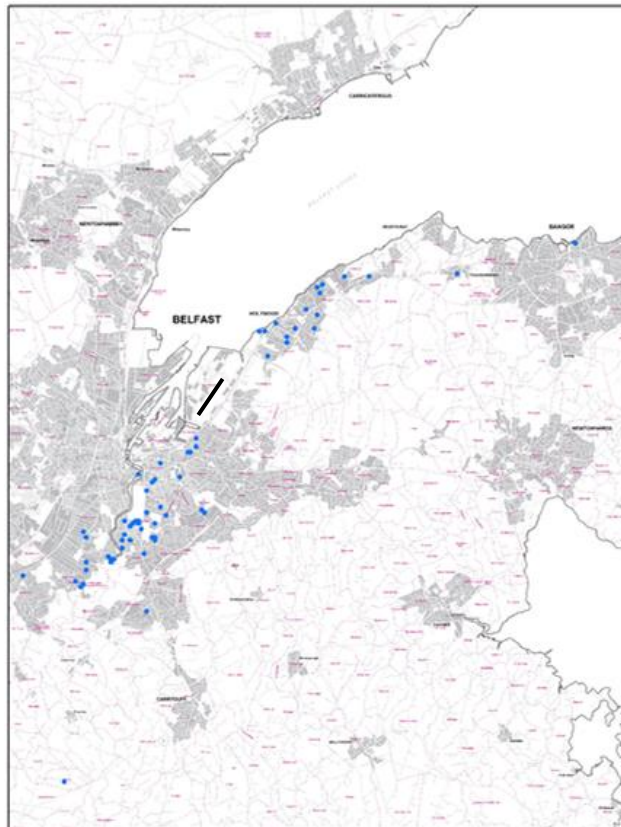
Who would you expect to reduce aviation noise?



## Noise impact survey results for all respondents identifying George Best Belfast City Airport as affecting them

Sample size: 88 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



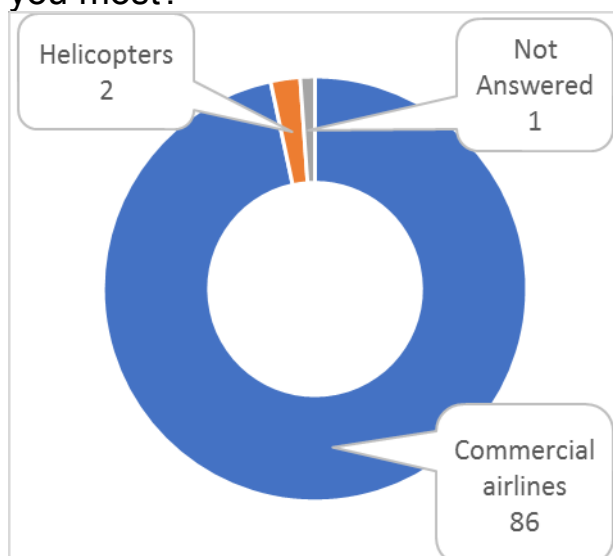
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Post Code District	Respondents
BT7	22
BT18	21
BT9	15
BT6	13
BT5	5
BT4	4
Others	7
No Answer	1
<b>Total</b>	<b>88</b>

### Airports affecting respondents

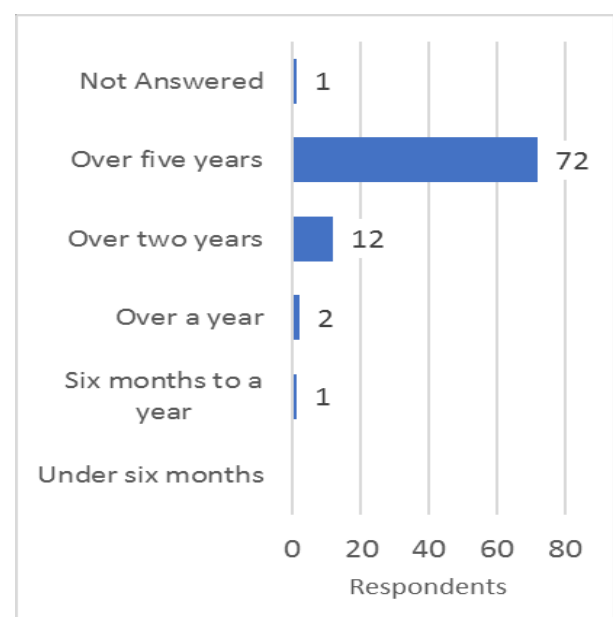
Airport	Respondents
Belfast City	88
Belfast International	7

What type of aircraft noise annoys you most?



Note: multiple answers allowed

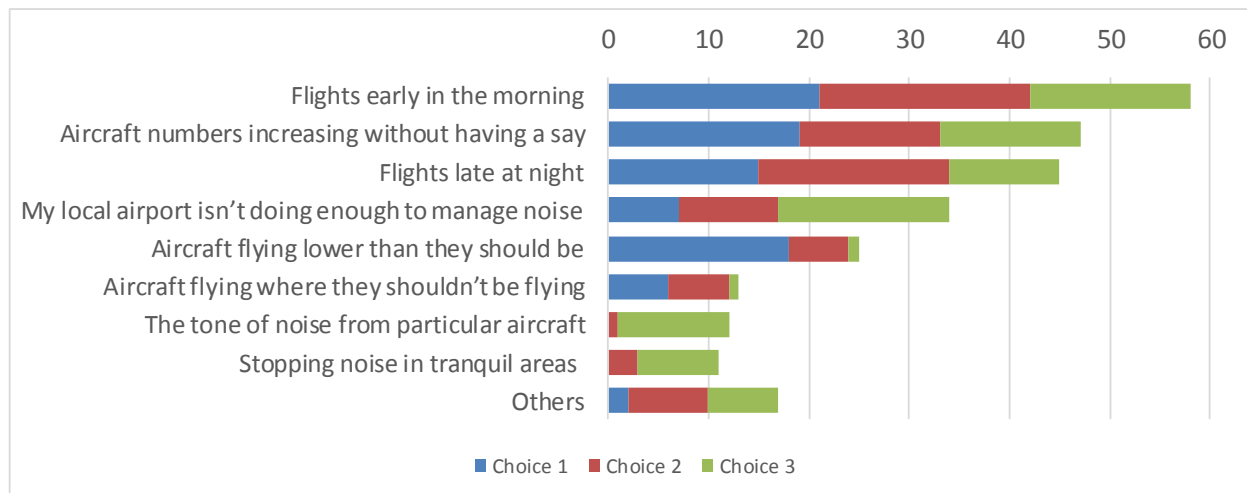
How long have you been annoyed by aviation noise?



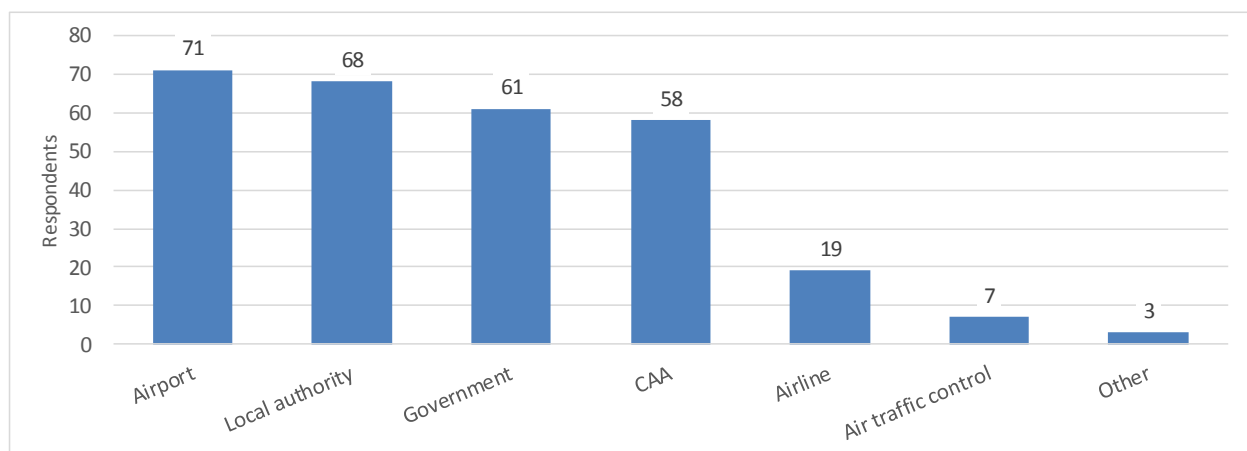
## Noise impact survey results for all respondents identifying George Best Belfast City Airport as affecting them

Sample size: 88 out of 4,175 responses

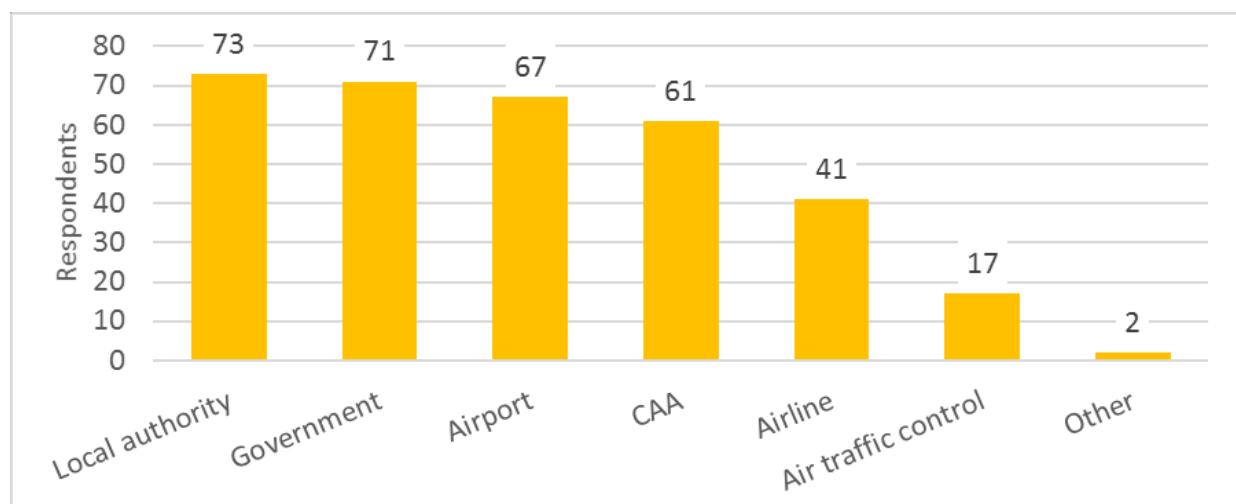
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



Who would you expect to reduce aviation noise?





## Noise impact survey results for all respondents identifying Bristol Airport as affecting them

Sample size: 65 out of 4,175 responses

Location of respondents (note: some respondents outside map area)



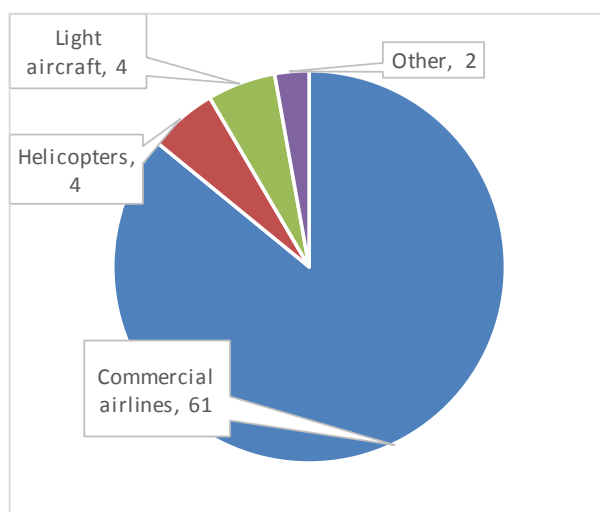
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Post Code District	Respondents
BS49	20
BS41	14
BS40	13
BS39	5
BS31	2
BS9	2
Others	9
No Answer	0
<b>Total</b>	<b>65</b>

### Airports affecting respondents

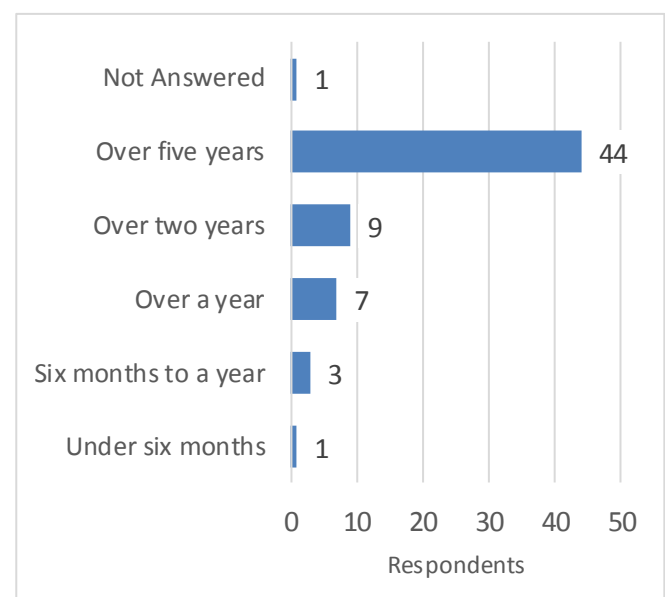
Airport	Respondents
Bristol	65
Heathrow	7
Gatwick	5
Stansted	4
Luton	4
Others	9
Don't know	1

What type of aircraft noise annoys you most?



Note: multiple answers allowed

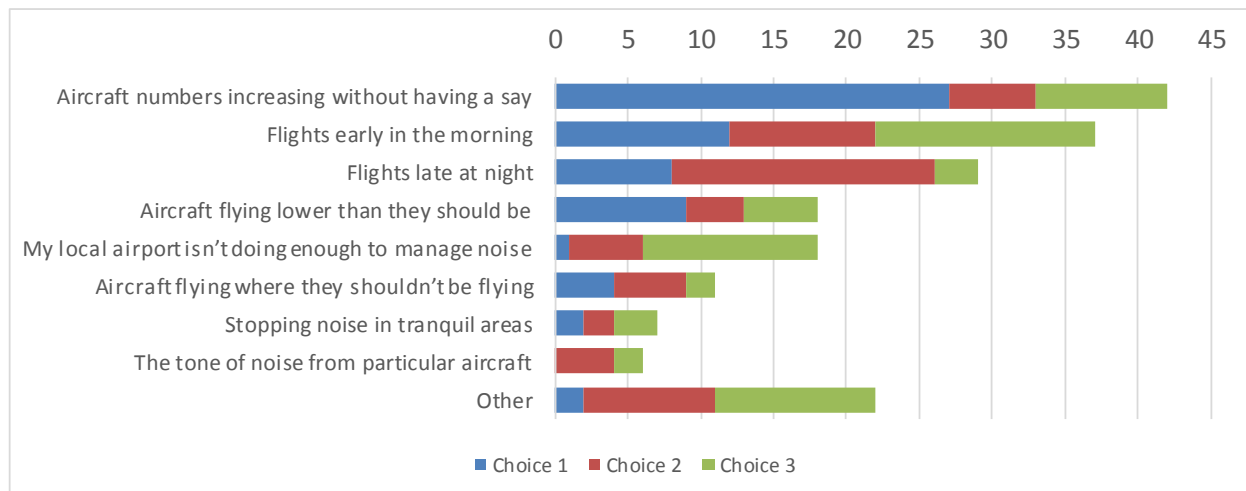
How long have you been annoyed by aviation noise?



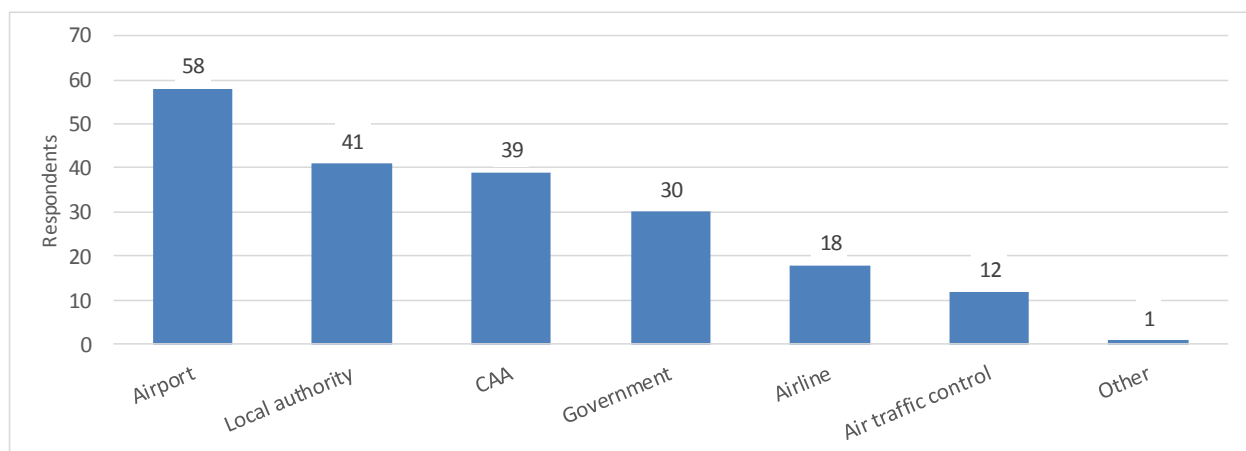
## Noise impact survey results for all respondents identifying Bristol Airport as affecting them

Sample size: 65 out of 4,175 responses

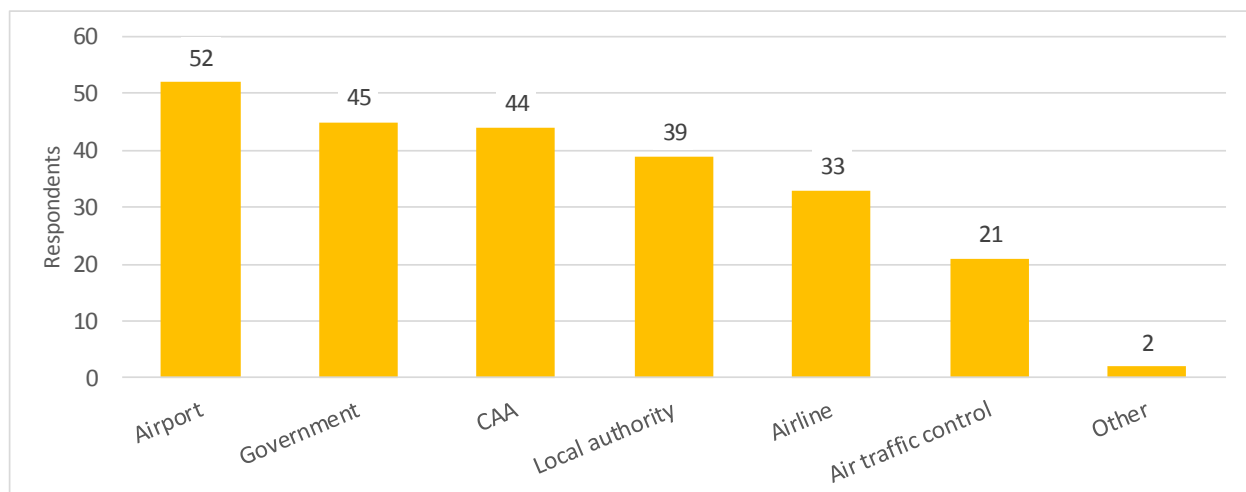
What three issues would you like to see CAA focus on?



Who would you expect to provide information on aviation noise?



Who would you expect to reduce aviation noise?





## NATS

Currently undertaking this activity

Partially undertaking this activity

Not currently undertaking/not applicable to airport

Information provision/data type	Fulfil CAA/Air Navigation Guidance 2017	Additional comments	Link to webpages that contain this information
<b>Runway utilisation and operations</b>		Runway utilisation data may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Standard Instrument Departure (SID) utilisation</b>		Standard Instrument Departure (SID) utilisation data may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Arrivals data</b>		Arrivals data may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Continuous Descent Approach (CDA) &amp; Continuous Climb Operations (CCO)</b>		<p>NATS led the launch of the Sustainable Aviation Continuous Descent Operations (CDO) campaign.</p> <p>CDA and CCO data may be obtained directly from the 13 UK airports NATS provides air traffic control services to.</p>	<a href="https://nats.aero/blog/2015/08/cleaner-quieter-and-smarter-continuous-descent-campaign-delivers-tangible-improvements/">https://nats.aero/blog/2015/08/cleaner-quieter-and-smarter-continuous-descent-campaign-delivers-tangible-improvements/</a>
<b>Flight tracking &amp; tools</b>		<p>NATS provides live flight tracking information via its freely available app Airspace Explorer. Airspace Explorer is a stripped down version of a more comprehensive app used internally at NATS for situational awareness and operational information. NATS decided to release Airspace Explorer, as it was thought it might be of interest to the general public and help explain how UK Airspace is structured and flights are operated. The app provides information on flights and airports as well as information on UK airspace. The app provides near real time indications of numbers and types of operations at any airport being viewed.</p> <p>Airspace+ is a web-based system NATS has produced to create visualisations of the air traffic in UK airspace. NATS uses Airspace+ primarily as an awareness and education tool which helps to explain issues related to Air Traffic Management.</p>	<a href="https://www.nats.aero/ae-home/">https://www.nats.aero/ae-home/</a>  <a href="https://www.nats.aero/news/videos-imagery/airspace-plus-videos/">https://www.nats.aero/news/videos-imagery/airspace-plus-videos/</a>

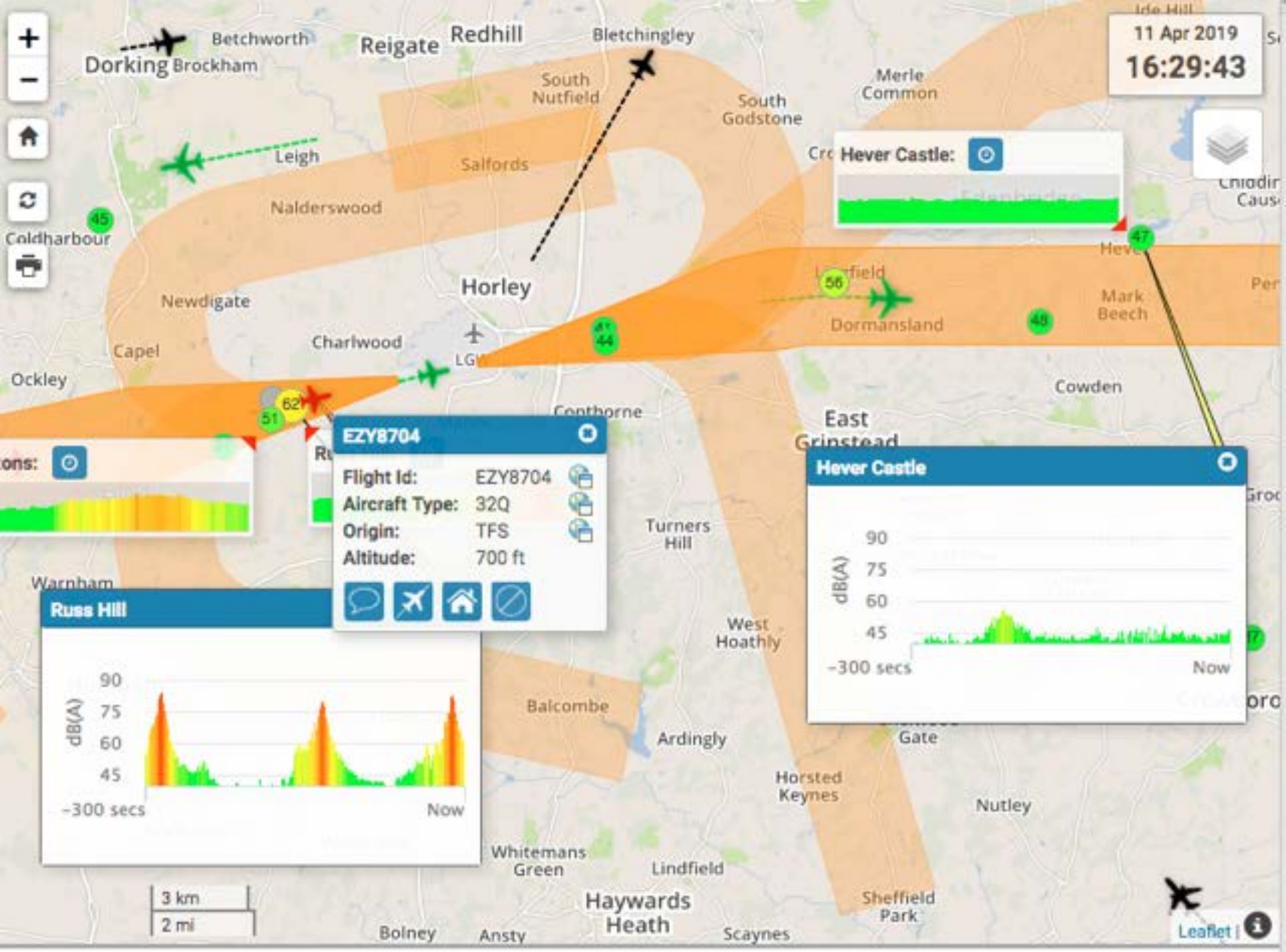
<b>Aircraft Traffic Movements</b>		Data for total flights handled in the UK, flights handled by centre and flights handled by airport from 2000-2015 are published online.  More recent traffic statistics are published on online in NATS' Operations Update.	<a href="https://www.nats.aero/news/facts-stats-reports/">https://www.nats.aero/news/facts-stats-reports/</a>  <a href="https://www.nats.aero/news/customer-report/">https://www.nats.aero/news/customer-report/</a>
<b>Night quota count</b>		Information on Night Quota Counts may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Slot allocation, transfers &amp; sales</b>		n/a	
<b>Air Traffic Control Practices</b>		Information on Air Traffic Control practices and procedures may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Weather-related conditions</b>		NATS have published an article on how bad weather can affect Air Traffic Control operations.	<a href="https://nats.aero/blog/2018/01/strong-wind-affect-air-traffic-control/">https://nats.aero/blog/2018/01/strong-wind-affect-air-traffic-control/</a>
<b>Aircraft types used by airlines</b>		To help stakeholders better understand the reality of aircraft flying overhead, NATS have produced a table with video clips of aircraft of different types at different heights. The aim of these clips is to be illustrative rather than scientific, as the noise experienced from an overflight will depend on a range of factors including how directly overhead the flight is, the weather, background noise and local environment.	<a href="https://www.nats.aero/environment/aircraft-noise/">https://www.nats.aero/environment/aircraft-noise/</a>
<b>Airline operators</b>		Information on airline operators may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Airline route networks/destinations (including changes)</b>		Information on airline route networks and their destinations may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Airline Standard Operational Procedures</b>		Information on airline Standard Operational Procedures may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Historic comparisons of route networks flown</b>		Historic comparisons of route networks flown may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>League tables of airline operational performance</b>		Information on airline operational performance leagues may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	

<b>Data on operations outside of normal operating hours</b>		Data on operations outside of normal operating hours may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Airport Consultative Committee (ACC)</b>		NATS is involved in numerous local airport consultative committees (Heathrow, Gatwick, Luton, Stansted, London City).	<a href="https://www.nats.aero/environment/aircraft-noise/">https://www.nats.aero/environment/aircraft-noise/</a>
<b>Airport noise forums/boards</b>		NATS is involved in noise forums/boards such as Gatwick's Noise Management Board and Heathrow's Community Noise Forum.	<a href="https://www.nats.aero/environment/aircraft-noise/">https://www.nats.aero/environment/aircraft-noise/</a>
<b>Community noise reports</b>		NATS publish annual factsheets on each of the 13 UK airport NATS provides air traffic control services to. Each fact sheet contains information on the different types of ATC services that NATS provide, annual flight movements and its destinations.	<a href="https://www.nats.aero/news/facts-stats-reports/">https://www.nats.aero/news/facts-stats-reports/</a>
<b>Community relations events</b>		<p>NATS engages with local communities and other interested parties (including but not limited to elected officials, airspace users) on the potential to mitigate the adverse impact of changes to operations. This takes various forms such as:</p> <ul style="list-style-type: none"> <li>- Regular briefings and Q&amp;A sessions with local and national elected officials</li> <li>- Focus groups through the Noise Working Group of Sustainable Aviation</li> <li>- Commissioned social research to more fully understand community views</li> </ul> <p>NATS is leading a task to explore best practice in community engagement in relation to airspace modernisation through ICAO CAEP's Working Group 2 (Airports and Operations). This task is looking at global examples of good practice in community engagement to learn how better to engage communities in the UK and understand their information and consultation needs.</p>	<a href="https://www.nats.aero/environment/aircraft-noise/">https://www.nats.aero/environment/aircraft-noise/</a>
<b>Noise Action Plan (NAP)</b>		n/a	
<b>Noise &amp; Track keeping performance (NTK)</b>		NTK data may be obtained directly from the 13 UK airports NATS provides air traffic control services to.	
<b>Noise Contour Mapping</b>		NATS is pioneering work with UK-based innovator in environmental sensing equipment, Envirowatch. NATS have jointly developed a self-powered sensor unit that is capable of being deployed wherever necessary to measure noise. These low-cost units require nothing more than daylight while gathering the facts under any flight path in both rural and urban neighbourhoods.	<a href="https://nats.aero/blog/2014/07/measuring-reducing-aviation-noise/">https://nats.aero/blog/2014/07/measuring-reducing-aviation-noise/</a>
<b>Noise complaints data, reports and handling</b>		<p>The NATS community engagement team regularly respond to enquiries about possible changes to flight patterns, perceived abnormal operations and other queries from members of the public, elected officials as well as airport operations and complaints handling teams. These investigations are carried out on an as required basis.</p> <p>Members of the public wishing to contact NATS with an enquiry or complaint can do so via a contact form.</p>	<a href="https://www.nats.aero/environment/aircraft-noise/">https://www.nats.aero/environment/aircraft-noise/</a> <a href="https://www.nats.aero/contact/">https://www.nats.aero/contact/</a>

<b>Information on permanent and temporary Airspace Change including trials</b>		<p>Permanent changes to airspace and or procedures which affect flight paths are publicly notified via the NATS.aero website. Since January 2018, most airspace changes are required to be consulted upon via the CAA Citizen Space Portal as well as being published on the CAA Airspace Change Portal. The information is designed to be accessible to laypersons, particularly if there are noise impacts to communities on the ground.</p>	<p><a href="https://www.nats.aero/environment/consultations/">https://www.nats.aero/environment/consultations/</a></p> <p><a href="https://consultations.airspacechange.co.uk/">https://consultations.airspacechange.co.uk/</a></p> <p><a href="https://airspacechange.caa.co.uk/">https://airspacechange.caa.co.uk/</a></p>
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11 Apr 2019

16:29:43





11 Apr 2019  
16:24:17

NRS7171

Flight Id: NRS7171  
Aircraft Type: 789  
Origin: LGW  
Altitude: 6,500 ft



Cowden



Haver Castle



Russ Hill



Cowden:

