

AIRPORTS COMMISSION

**DISCUSSION PAPER 05:
AVIATION NOISE**

RESPONSE BY UTTLESFORD DISTRICT COUNCIL

SEPTEMBER 2013



INTRODUCTION

1. This is Uttlesford District Council's response to the Aviation Commission's Discussion Paper 05: Aviation Noise. The District Council is the local planning authority for Stansted Airport. The Commission will be aware that the airport has planning permission to expand to 35 million passengers per annum (mppa). Current throughput is about 17.7mppa, having declined from just under 24mppa in 2008. Recently, throughput has started to increase again, albeit slowly. Stansted has been sold to the Manchester Airports Group (M.A.G), which aims to grow the airport to 32mppa by 2028. Stansted Airport therefore has sufficient unused capacity through to 2030 and beyond, depending upon the rate of growth that occurs.
2. Expansion of Stansted Airport has been a key local concern for many years. Amongst all the expansion issues, aviation noise is probably the most significant. Most recently, a suite of planning applications for the construction of a second runway and associated infrastructure (known as Generation 2) was submitted in 2008 to enable 68mppa to be reached by 2030. These applications were withdrawn in 2010 following the Coalition Government indicating that it did not support the then current aviation policy set out in the 2003 Air Transport White Paper.
3. This response is divided into sub-headings, but bears in mind the questions set out in Paragraph 6.2 of the Discussion Paper.

THE COUNCIL'S RESPONSE

Use of Averaging Contours

4. The 57dBLAeq 16 hour contour is used for assessment and comparison purposes, although it is discredited in most people's eyes. In the Aviation Policy Framework (APF), the Government has said that it will continue to treat this contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. However, the Government also says in the APF that it *"recognises that people do not experience noise in an averaged manner and that the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise"* (APF Paragraph 3.19). The Council agrees with this. If averaging contours are to be used, it is strongly recommended that the Commission requires modelling down to 54dBLAeq to accommodate theories that people have become more sensitive to aircraft noise since the 1980s. An option would be to use 55Lden, a 24-hour averaging metric that recognises the more intrusive effect of evening and night noise.

5. The Council welcomes the Government's statement in Paragraph 3.18 of the APF that it will keep its noise contour policy under review in the light of any new emerging evidence.

Use of Number Above or Frequency Contours

6. Whilst there is a case for at least continuing to use LAeq for historical comparison purposes, the Discussion Paper looks at "Number Above" or "Frequency" contours, which are more easily understood by the public. The main advantage of using these contours is that it is possible to work out how many noise events above a given threshold there will be at any location in any one day. With Frequency contours, no data is lost in an averaging process as the contours (which can be produced for a 16-hour day, an 8-hour night or any other desired period) are constructed purely from the number of noise events.
7. It is acknowledged that Frequency contours do not differentiate between the level of noise above a certain threshold or the duration of the noise event. A similar criticism can be raised about LAeq contours, because total averaged sound energy could be created by fewer noisier events, or more less-noisy events, but the contour would not show this. Frequency contours will at least tell the enquirer how many times a day disturbance is likely.
8. The Commission's attention is drawn to Annex B of the Discussion Paper which sets out a range of LAeq and Frequency contours for Brussels Airport. Picking any point within the noise affected area, the Commission is invited to consider how much easier it would be to explain to a member of the public the effect on a location using a frequency metric rather than an averaging one.
9. The Council strongly recommends that the Commission requires proposers to publish Frequency contours as part of all Phase 2 assessments. This recommendation stands even if the Commission decides to continue to use averaging contours.

Suitability of a Proposed Noise Efficiency Metric

10. In Paragraph 3.39 of the Discussion Paper, the Commission says that *"it is interested in exploring the idea of noise efficiency further, and would be interested to hear stakeholders' views on the suitability of these metrics for assessing and comparing noise impact"*.
11. Table 2.1 of the Discussion Paper gives details of populations within the 57LAeq contour for eighteen UK airports, based on 2006 CAA data. Table 3.5 then derives two noise efficiency measurements by dividing that population into either the total number of aircraft movements at the airport, or the total number of terminal and transit passengers passing through the airport. The higher the figure, the more "noise efficient" the airport is

presumed to be.

12. Based on 2006 figures, Stansted is the second most noise efficient airport in terms of movements per person affected, and the most noise efficient in terms of passengers per person affected. Heathrow is the least noise efficient using both measurements because of its large affected population, even though it is by far the busiest of all the eighteen airports.
13. Table 1 below repeats the Discussion Paper's Table 3.5 calculations for Stansted using actual throughput data from 2010 and 2012 drawn from the same CAA source. The 2006 figures are included for comparison purposes.

Table 1: "Noise efficiency" calculations for Stansted Airport using actual throughput data

<i>Year</i>	2006	2010	2012
<i>MPPA</i>	23,687,013	18,573,592 (-21.6%)	17,472,600 (-26.2%)
<i>ATMs</i>	206,693	155,140 (-24.9%)	143,511 (-30.6%)
<i>Population within 57LAeq contour</i>	1,900	1,750 (-7.9%)	1,200 (-36.8%)
<i>ATMs / person affected</i>	108.8	88.7 (-18.5%)	119.6 (+9.9%)
<i>Passengers / person affected</i>	12,467	10,613 (-14.9%)	14,561 (+16.8%)

2010 and 2012 MPPA and ATM data is sourced from CAA. 2010 and 2012 population within 57 LAeq contour is sourced from ECRD CAA data as supplied to the District Council by Stansted Airport Limited in compliance with Condition AN1 of the planning permission granted for expansion to 25mppa granted on 16/05/2003 (planning reference UTT/1000/01/OP).

All percentages are changes from the 2006 baseline.

14. Table 1 shows the effect of the economic downturn at Stansted from 2006 to 2012 by the reductions in passenger throughput and ATMs. Noise efficiency using both measurements is shown to decrease quite significantly in 2010 compared to 2006, yet increase sharply in 2012 due to the size of the reduction in the affected population within the 57LAeq contour. The reduction in throughput at the Airport from 2006 to 2012 actually shows that Stansted becomes more noise efficient as a result.
15. Increased efficiency with reduced throughput appears at odds with what the efficiency measurements are presumed to show, which is that airports which operate in areas of dispersed population become more noise efficient the busier they get. The unevenness of the affected population on the ground could therefore make these measurements unreliable when

comparing airports with similar efficiency scores.

16. The size of the 57LAeq contour depends on a number of factors. Firstly, there is the number of ATMs and the traffic mix. Secondly, there are aircraft technology and operational factors such as use of Continuous Descent Approach. Finally, there is the actual spread of the affected population on the ground.
17. Since 2006 the number of ATMs at Stansted has decreased significantly, and this will be the main reason why the 57LAeq contour has reduced to the extent it has. Looking at the geographical spread of the contour, it has pulled back from Spellbrook and parts of Little Hallingbury to the SW of the Airport, and from Thaxted to the NE. The significant reduction in the affected population in 2012 seems to be because of the contraction to the SW. As throughput starts to grow again, it can be expected that the 57LAeq contour will increase at an uneven rate, again picking up a larger affected population and reversing the trend shown in Table 1.
18. Table 2 below again repeats the Discussion Paper's Table 3.5 calculations for Stansted, but in this table it is presumed that there was no economic downturn and throughput continued to grow to 35mppa in 2014. This was the primary assessment scenario put forward by BAA Stansted in its Generation 1 Environmental Statement (ES) submitted in 2006. Generation 1 was the planning application for expansion from 25-35mppa. As a comparison, the ES also included a 25mppa throughput scenario in 2014 to represent what would be likely to happen at the airport should planning permission for 35mppa not be granted. Again, the 2006 data is included for comparison purposes.
19. Between 1991 (when Stansted's new terminal opened) and 2006, passenger throughput increased by about 1.5mppa every year. Growth to 35mppa by 2014 would have been at a comparable rate to that which occurred up to 2006, so is considered to be a reasonable assumption in a "no economic downturn world". The final italicised column contains headline data taken from the Mayor of London's outline proposal for a hub airport at Stansted.

(Table 2 is on next page)

Table 2: “Noise efficiency” calculations for Stansted Airport assuming no economic downturn

<i>Year</i>	<i>2006</i>	<i>2014</i>	<i>2014</i>	<i>2050 (Mayor's hub proposal)</i>
<i>MPPA</i>	23,687,013	25,000,000 (+5.5%)	35,000,000 (+47.8%)	180,000,000 (+759.9%)
<i>ATMs</i>	206,693	202,000 (-1.6%)	264,000 (+27.7%)	1,000,000 (+483.8%)
<i>Population within 57LAeq contour</i>	1,900	2,300 (+21.1%)	3,550 (+86.8%)	12,000 (+631.6%)
<i>ATMs / person affected</i>	108.8	87.8 (-19.3%)	74.4 (-31.6%)	83.3 (-23.4%)
<i>Passengers / person affected</i>	12,467	10,869 (-12.8%)	9,859 (-20.9%)	15,000 (+20.3%)

2014 25 and 35MPPA and ATM data is sourced from BAA Stansted's Generation 1 Environmental Statement Volume 2 Air Noise (April 2006). In the ES, 57LAeq contour data was provided by ECRD CAA. 2050 data is taken from the Mayor of London's outline submission to the Airports Commission of July 2013.

All percentages are changes from the 2006 baseline.

20. In Table 2, the 2014 25mppa scenario shows a significant drop in noise efficiency at Stansted for what is a relatively modest increase in passenger throughput. This is probably explained by the airport operator seeking to develop non-passenger related business (such as cargo) given the 25mppa limit on passenger operations which would remain (Generation 1 ES Volume 16: Air Traffic Data). Cargo aircraft tend to be noisier, more so than the relatively modern fleet of passenger aircraft currently operating at Stansted. It therefore appears to the Council that noise efficiency measurements could be distorted by whole-cargo movements, again making use of these measurements unreliable when comparing airports with similar scores.

21. Sustainable Aviation's Noise Road-Map theorises that total UK aviation noise output could reduce by 2050 compared to 2010 by:

- i) the introduction of quieter aircraft, and
- ii) the relative priorities given to aircraft designers of noise reduction against carbon reduction (low fuel burn).

In this scenario, which seems perfectly possible, there could be more flights and less noise. At Stansted, at least 84% of flights are already made by the least noisy aircraft (Boeing 737-8/900, Airbus A319/A320 and BAe 146). It is thought unlikely that improved technology will make a significant contribution to noise reduction at Stansted.

22. The 35mppa and hub scenarios in Table 2 show that using noise efficiency measurements to compare airports will always favour Heathrow because of the size of its affected population, and will be naturally biased against busy country airports which operate in areas of dispersed populations. Looking at Table 3.5 in the Discussion Paper, Stansted would remain within the top five most noise efficient airports at 35mppa and at hub status. This would be in spite of a near doubling of the affected population at 35mppa and a significant reduction in noise efficiency as the number of ATMs increases and the 57LAeq contour lengthens and thickens to take in more of Thaxted and Little Hallingbury. Comparing the 2014 25mppa and 2050 hub scenarios, the former would be regrettable but would have to be accepted, the latter would be totally unacceptable.
23. The Council does not know whether the Commission will be shortlisting the Mayor's outline hub proposal for Stansted, but the Commission has asked for any specific comments on the detail contained within any of the proposals by 27th September. It is likely that the Council will be submitting comments by the due date.
24. In relation to the Mayor's Stansted proposal, the efficiency scores in 2050 belie the fact that there would be a nearly six-fold increase in the land-take compared to the existing airport and a more than six-fold increase in the affected population. If the hub proposal does survive to Phase 2, the Council looks forward to seeing the evidence for the Mayor's statement that the *"hub airport would have a similar impact on the character of tranquil areas (mainly undulating countryside and agricultural fields) in the vicinity of Stansted as the existing airport"* (Paragraph 6.2, Page 26).
25. If noise efficiency is to be a prime determining factor for the Commission, it would not consider proposals to expand Heathrow under any circumstances, but clearly it must consider them against all the criteria set out in its Guidance Document 02 because it is the UK's busiest airport. Noise efficiency would also not favour the take up of unused regional capacity at either Birmingham or Manchester Airports, even though strong cases are being made to the Commission for expansion at these airports to rebalance the economy.
26. Noise efficiency measurements can only provide a snapshot in time. In the Council's view it would be unwise to rely on them for comparison purposes. Tables 1 and 2 above show that these measurements are unreliable because they can become skewed over even a short period of years due to uneven population spread and changes in traffic mix. In any case it would seem perverse to argue that, as an airport gets busier, it would become more noise efficient because the resident population under the flight paths becomes subject to more noise.

Baseline assessment

27. One reason why people choose to live in the countryside is because it is a relatively tranquil place compared to towns. One of the core planning principles set out in paragraph 17 of the National Planning Policy Framework (NPPF) is to:

“take account of the different roles and character of different areas, promoting the vitality of our main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it”.

28. The Council agrees with the Commission when it says in Paragraph 2.5 of the Discussion Paper that noise from road and rail is very intense around the source but, because it is ground generated, it dissipates quickly due to obstructions and ground cover. This is the case in the countryside as well as in towns. Conversely, air noise is not subject to these dissipating effects, and the dose-response relationship data in Figure 4.2 of the Discussion Paper implies that air noise is more annoying. As background noise levels are lower in the countryside than in towns, it is reasonable to assume that recipients of aircraft noise in the countryside will become aware of each noise event earlier than those in towns, and will subsequently be aware of it for longer. In the Council’s opinion, baseline assessments should therefore be based on changes relative to the existing background noise environment and not on absolute noise levels. This would respond to the need to recognise the intrinsic character of the countryside established in the NPPF.
29. The Commission asks to what extent introducing noise at a previously unaffected area represents more or less of an impact than increasing noise in already affected areas. In the Council’s view, the lower the existing background noise level is, the more the impact will be. Anyone can be annoyed by a new flight path, probably more so that those who are already overflowed, but the impact and level of annoyance will be worse in country areas. It is strongly recommended that the Commission should require proposers to publish noise uplift contours as part of Phase 2 assessments as an adjunct to Number Above or Frequency contours to take background noise levels into account.

Appropriateness of noise envelopes

30. A noise envelope can be a valuable tool, but it has limitations. Its major value is to provide a degree of certainty for local residents via a maximum noise climate which will not be exceeded. As this maximum is related to an increased future throughput it is always likely that, given improved noise emissions from aircraft, the maximum will never be achieved. To be more effective in achieving noise minimisation, the Commission should consider recommending to the Government that intervening forecast envelopes should be used. These envelopes would provide some

constraint on existing / near future noise levels as airports grow. Airport noise action plans would be the obvious source of these forecasts.

31. At Stansted, a planning condition defines a maximum contour area (16 hour average day 57dBA Leq), which together with a further condition limiting the total number of ATMs provides the local community with certainty as to the maximum (annual day) noise climate that could eventually be experienced. However, as previously explained, the envelope is no constraint on existing noise levels. Furthermore, using an averaged sound metric is not representative of the disturbance experienced on the ground.
32. If the Commission decides to recommend a noise envelope concept to the Government it should look at metrics which avoid averaging. Use of Number Above or Frequency contours for the 16-hour day and 8-hour night would, as previously mentioned, be more understandable. This type of noise envelope should also be easier to enforce as data gathering ought to be easier.

Noise concentration or noise dispersal

33. The issue of concentration vs dispersal is not an easy one to deal with, and there will be differing opinions. NATS is shortly to begin public consultation on Phase 1(a) of local airspace changes as part of the London Airspace Management Programme (LAMP). Phase 1(a) is the first of three local LAMP phases, with complete implementation of all phases by 2020. Part of the consultation will include questions around balancing impacts and local requirements such as concentration vs dispersal or preferred routes within wider noise preferential route (NPR) swathes. These questions are predicated on the ability of modern aircraft to use Precision-Area Navigation (P-RNAV) to consistently fly predictable and repeatable flight paths. Whilst the timescale for the LAMP development work may not be helpful to the Commission, the Council trusts that NATS will be advising Commission's on the navigational abilities of modern aircraft.
34. Concentration will bring increased disturbance to some beneath the flight path. For Standard Instrument Departures (SIDs), it is thought better to use concentration. Where feasible using P-RNAV it may be possible to vary the concentrated flight paths within the NPR swathes so that (relative) respite can be provided at times. Local trials overseen by Airport Consultative Committees may prove valuable in this respect.
35. Dispersion at higher altitudes is suggested, including for arriving aircraft. Dispersion must take account of population density to avoid particular areas. Urban areas such as Harlow, Bishop's Stortford, Great Dunmow and Hertford / Ware are not overflowed, but this concentrates flights over smaller villages. However, a situation where dispersed aircraft may fly anywhere in a locality is unlikely to be acceptable to residents who seem

to prefer the certainty of specific flight paths.

Noise Compensation Schemes

36. The Commission asks how a system of fair, robust compensation arrangements can be established in relation to the addition of aviation capacity in the UK. The Council considers that the current arrangements for compensation claims under the Land Compensation Act 1973 for depreciation in the value of interests caused by the use of highways, aerodromes and other public works are unfair.
37. Part 1 of the Act allows certain homeowners to claim compensation when their homes are reduced in value by the use of a new road or aerodrome. Part 1 is concerned mainly with new works coming into use for the first time, so intensification of use of existing works will not give rise to compensation entitlement. In the case of aerodromes, the Part 1 provisions apply where:
- (a) an existing runway is extended, strengthened or substantially realigned,
 - (b) an existing taxiway or apron is substantially enlarged or altered for the purpose of providing facilities for a greater number of aircraft, or
 - (c) a new runway is constructed.
38. In 1999, reserved matters approval was granted for expansion of Stansted Airport from 8-15mppa as Phase 2 of the outline planning permission for 15mppa following the Graham Eyre inquiry in the early 1980s. Public works included in the application were Satellites 3 and 4, and Echo taxiway and apron northeast of Satellite 4. Satellite 3 has been built and is in use, but Satellite 4 has not been built. Echo apron has only been partly constructed and is sometimes used for remote parking of towed aircraft.
39. At a meeting of the Stansted Airport Consultative Committee on 28th July 2010, BAA Stansted advised that claims for 8-15mppa compensation could be made at any time, but that it would reject these until the Echo taxiway and apron had been completed. At that time, claims would be invited from interested parties. The facilities would not be built until demand required it.
40. Local residents are aggrieved that compensation has not been paid because the qualifying infrastructure has not been finished, yet the airport is operating at beyond 15mppa, in fact peaking at just under 24mppa before the economic downturn. It seems unfair that compensation should be tied retrospectively to the building of infrastructure when, in the case of an airport, it is the increased number of arriving and departing aircraft that cause the community annoyance, particularly from noise.
41. If the Commission decides to recommend to the future Government that new runways or a new hub airport should be built, it should make the point

very strongly indeed that compensation should be tied to throughput and not completion of items of works. The Government should amend the 1973 Act to allow this to happen. Airport development projects are long term, and it is inevitable that the need for particular pieces of infrastructure may change over time. Residents who deserve compensation should not lose out because of what is in effect a technicality that has no effect on throughput.

CONCLUSIONS

42. Noise from aircraft is a key local issue for Uttlesford residents, and will remain so into the future. The Commission should look very carefully at how aviation noise is represented in submissions made to it so that those who are likely to be disturbed can easily understand what the effects will be, including uplift above background levels. Number Above or Frequency contours are more easily understood than averaging ones.
43. One of the intrinsic characteristics of the countryside is its relative tranquillity compared to towns, and the use of a measurement such as noise efficiency would be biased against tranquil areas with dispersed populations. In any event, noise efficiency calculations appear unreliable even over the short term when comparing airports with similar scores.
44. The Council is strongly of the view that residents deserve protection from aircraft noise as airports grow. Accordingly, noise envelopes should be drawn to deal with intervening periods as well as final throughput, and compensation schemes should be related to throughput.