



**Horsham
District
Council**



GATWICK AIRPORT NORTHERN RUNWAY PROJECT

PLANNING INSPECTORATE'S REFERENCE: TR020005

LEGAL PARTNERSHIP AUTHORITIES

RESPONSE TO ACTIONS RAISED BY THE ExA AT ISSUE SPECIFIC HEARINGS 9

DEADLINE 8: WEDNESDAY 07 AUGUST 2024

Crawley Borough Council (GATW-AFP107)

Horsham District Council (20044739)

Mole Valley District Council (20044578)

Mid Sussex District Council (20044737)

West Sussex County Council (20044715)

Reigate and Banstead Borough Council (20044474)

Surrey County Council (20044665)

East Sussex County Council (20044514)

Tandridge District Council (GATW-S57419)

Legal Partnership Authorities

Gatwick Airport Northern Runway Project (TR020005)

LEGAL PARTNERSHIP AUTHORITIES

ISSUE SPECIFIC HEARING 9

POST-HEARING SUBMISSION INCLUDING WRITTEN SUMMARY OF THE LEGAL PARTNERSHIP AUTHORITIES ORAL CASE

Note: The Legal Partnership Authorities are comprised of the following host and neighbouring Authorities who are jointly represented by Michael Bedford KC and Sharpe Pritchard LLP for the purposes of the Examination:

- Crawley Borough Council
- Horsham District Council
- Mid Sussex District Council
- West Sussex County Council
- Reigate and Banstead Borough Council
- Surrey County Council
- East Sussex County Council; and
- Tandridge District Council.

In these submissions, the Legal Partnership Authorities may be referred to as the “*Legal Partnership Authorities*”, the “*Authorities*”, the “*Joint Local Authorities*” (“*JLAs*”) or the “*Councils*”. Please note that Mole Valley District Council are also part of the Legal Partnership Authorities for some parts of the Examination (namely, those aspects relating to legal agreements entered into between the Applicant and any of the Legal Partnership Authorities).

PURPOSE OF THIS SUBMISSION

The purpose of this document is to respond to the actions raised during ISH9 which necessitate a response by the Legal Partnership Authorities. The responses to those actions are set out below and in the appendices to this submission.

NOTE TO EXA:

Please note that this submission should be read in light of, and having regard to, the Legal Partnership Authorities' Deadline 8 submission “Update on Negotiations Regarding the Draft DCO Section 106 Agreement” which reports the up-to-date position to the ExA that broad agreement has been reached between the Applicant and the Authorities on many of the Authorities' outstanding concerns relating to the monitoring and mitigation of environmental impacts.

In the unlikely event there is conflict between the Authorities' submission “Update on Negotiations Regarding the Draft DCO Section 106 Agreement” and another of the JLAs' submissions, the ExA should have regard to the update on the section 106 negotiations. When considering the below submission, the ExA should also have in mind that the Authorities maintain their position in relation to the proposal for an Environmentally Managed Growth Framework (“EMGF”) ((see [\[REP4-050\]](#), [\[REP5-093\]](#) and [\[REP6-100\]](#)), or any similar measures relating to controlling growth within environmental limits.

Action No.	Action	Legal Partnership Authorities Response
Item 3 – Mitigation Noise and Vibration		
7	To submit interpretation of how noise contour limits would work with a 0.5 dB reduction every 5 years.	A full response to this Action Point is provided in Appendix 1 .
8	To provide more detail on how a mechanism could work in the requirements to deal with potential exceedances 2 years in advance.	<p>In order to be workable, it is suggested that the air noise envelope requirement be modified from that proposed by the ExA in Annex B to the Agenda for ISH9.</p> <p>The ExA is referred to Part C of the Authorities’ submission titled “Consolidated DCO Submissions – Update at Deadline 8” containing further information on the Annex B proposals.</p>
10	<p>Other IPs, including the JLAs, the CAA, CAGNE and GACC are invited to offer their response to Action Point 9 <u>Action Point 9 for the Applicant:</u></p> <p>To provide a note that explains how the noise information in the Aviation Policy Framework 2013 ‘Aviation key facts’ and in the Applicant’s Supporting Noise and Vibration Technical Notes to the Statements of Common Ground - Tracked Version June 2024 [REP6-066] Appendix E paragraph 2.2.2, regarding reductions in aircraft and engine noise respectively, would be likely to affect the air noise prediction values at the time dual runway operations commence compared with the air noise prediction values for 2019, assuming the same air traffic movements. The response may be expressed as the area of air noise contours at appropriate noise levels or an air noise change for day and night during the conventional periods</p>	<p>The JLAs would firstly like to refer to the Planning Inspectorate Scoping Report in paragraph 2.3.13 of Appendix 6.2.2 [APP-095], which states: <i>“The ES should also give consideration to the prospect of a ‘no development’ and ‘no growth scenario’ for comparative purposes and in support of the justification for the Proposed Development in the form that is to be presented in the DCO application”.</i></p> <p>This request was ignored by the Applicant in its Scoping Response set out in 2.3.11 of Appendix 6.2.3 [APP-096]. This was raised in the Local Impact Report - Appendix C: Noise and Vibration District and Borough Profiles [REP1-100], which the Applicant again chose to ignore. The JLAs have consistently requested information on the ‘no growth’ scenario throughout the examination, which the Applicant has failed to provide. The JLAs’ position is that this information is still important to understand how the proposed expansion impacts the communities and to inform any assessment of sharing the benefit with the local community. In order to do so the Applicant needs to provide modelling displaying the 2019 ATMs but using 2029 quieter fleet.</p> <p>Unfortunately, without full access to the data that Gatwick possesses it is very difficult to provide any reliable assessment on the size of the contour areas. The JLAs are firmly of the opinion that this is a matter that the Applicant should have already addressed and fully support the ExA request of the Applicant to provide this information.</p> <p>The JLAs would also like to specifically address the ExA’s reference to noise information in the Aviation Policy Framework 2013 ‘Aviation key facts’ and in the Applicant’s Supporting Noise and Vibration Technical Notes to the Statements of Common Ground - Tracked Version June 2024 [REP6-066] Appendix E paragraph 2.2.2. Information on aircraft codes and ICAO Chapters is presented in Appendix 2 to this submission.</p>

<p>11</p>	<p>Applicant to provide JLAs and CAGNE with the revised written proposals on the timing of the insulation scheme so that the JLAs and CAGNE can submit a response to the examination at D8.</p>	<p>The JLAs were expecting a fully revised noise insulation scheme document but have been provided with an update. A summary of the proposed noise insulation scheme is as follows:</p> <ul style="list-style-type: none"> • Inner Zone and Outer Zone 1 to be completed prior to Northern Runway opening. • Outer Zone 2 installed within 2 year of routine use of the northern runway commencing. • Outer Zone 3 installed within 2 year of routine use of the northern runway commencing. <p>The JLAs welcome information on the proposed noise insulation scheme rollout, but the JLAs' position is that the noise insulation scheme as a whole does not address a number of important issues that have been repeatedly highlighted by the JLAs and therefore the scheme as proposed is deficient and does not satisfy policy requirements. The JLAs would like to see the following included in the noise insulation scheme:</p> <ul style="list-style-type: none"> • Use of single mode contours to determine eligibility. • Setting the Inner Zone at 60 dB LAeq,16h consistent with Aviation 2050; The future of UK Aviation, the Manston airport decision and to futureproof against a potential reductions in SOAEL. • Use of an additional noise induced awakening contour to determine eligibility for the inner zone. (Heathrow included this criteria as a SOAEL in their PEIR for runway 3 and have adopted it as a qualifying criteria within their new noise insulation scheme). • Inclusion of a voluntary acquisition scheme for properties within the 69 dB LAeq,16h contour or the 63 dB LAeq,8h contour. • A comprehensive and effective methodology for assessing and mitigating the effects of overheating in properties where to mitigate the effects of noise there is a requirement to close windows.
<p>12</p>	<p>Provide comment on the impact on additional awakenings and whether they are satisfactorily mitigated by the LAeq, 8 hr 48 dB limit at night.</p>	<p>A full response to this Action Point is provided in Appendix 3.</p>
<p>Item 3 – Mitigation Air Quality</p>		
<p>13</p>	<p>Submit proposed requirement for control of Engine Ground Running (EGR) noise.</p>	<p>The JLAs thank the ExA for the opportunity to provide a requirement in relation to the control of engine testing which, in the JLAs' view has the potential to cause significant adverse effects during the construction phase (particularly Works 18a and b when the noise barrier at the Western end of the runway will be removed) and during the operational phase and is an important piece of mitigation.</p> <p>The JLAs can confirm that the matter has been discussed and negotiated with the Applicant so as to include provisions</p>

		<p>within the draft section 106 agreement. An agreement has been reached between the Applicant and the JLAs as to limiting the testing and threshold above which testing cannot occur without additional on-site mitigation have been agreed and including a mechanism for approval of such mitigation.</p> <p>As regards the construction phase of the development, the JLAs are seeking a requirement for a prohibition of testing at the Western end of the airport during the period of Works 18a and b for the decommissioning and reconstruction of the noise bund. Please see proposed requirement set out in Part B of the Legal Partnership Authorities Consolidated Submissions on the dDCO – Update at Deadline 8.</p> <p>For the operational phase, to ensure that there is proper control of noise from ground-based sources, the JLAs have also proposed two further requirements:</p> <p>a) a ground noise management plan to manage the effects of noise from aircraft whilst not in flight; and b) a fixed plant noise management plan.</p> <p>The ground noise management plan will include provisions for the control of day-to-day operations of aircraft not in-flight including engine testing, taxi-ing and auxiliary power unit use. Controls may include both physical and operational controls as appropriate. Please refer to Part B of the Legal Partnership Authorities Consolidated Submissions on the dDCO – Update at Deadline 8.</p> <p>Should the section 106 agreement not be agreed, the JLAs will seek to embed appropriate mitigation within a requirement but at this point the JLAs do not consider that a requirement is necessary.</p>
<p>Item 3 – Mitigation Socio-Economics</p>		
<p>15</p>	<p>Provide suggested wording for the requirement on the Housing Fund.</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following should therefore be read in view of the Authorities’ submission “Update on Negotiations regarding the Section 106 Agreement”.</p> <p>The JLAs welcome the opportunity to comment on this proposed requirement and provide wording for its own to secure mitigation that the JLAs maintain is required.</p> <p>At the time of submission of this document, the JLAs maintain that mitigation in the form of a Housing Fund would be most appropriately secured via a planning obligation in the DCO Section 106 Agreement and are currently hopeful that agreement can be reached with the Applicant for such purposes.</p>

		<p>If Agreement is not reached prior to Deadline 9, the Authorities will present a draft Requirement to the ExA, which would be in line with comments made at ISH9 as to what would need to be secured as part of that.</p>
16	<p>Provide detail and justification of the funding the JLAs consider would be satisfactory under Schedule 4 of the draft s106 agreement if agreement between the JLAs and the Applicant is not reached by D8.</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following should therefore be read in view of the Authorities' submission "Update on Negotiations regarding the Section 106 Agreement".</p> <p>At the time of submission of this document, the Authorities are confident that agreement can be reached with the Applicant for the purposes of the Community Fund. If agreement cannot be reached an update will be provided at D9 as requested by the ExA.</p>
17	<p>Provide draft wording for a requirement to secure the Community Fund</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following should therefore be read in view of the Authorities' submission "Update on Negotiations regarding the Section 106 Agreement".</p> <p>The JLAs welcome the opportunity to propose a requirement to secure mitigation that they maintain is required.</p> <p>At the time of submission of this document, the Authorities maintain that mitigation in the form of a Community Fund would be most appropriately secured via a planning obligation in the DCO Section 106 Agreement and are currently hopeful that agreement can be reached with the Applicant for such purposes.</p> <p>If Agreement is not reached prior to Deadline 9, the Authorities will present a draft Requirement.</p>
Item 3 – Mitigation Landscape and Ecology		
23	<p>Provide comments on the Applicant's D7 submissions regarding tree planting.</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following summary should therefore be read in view of the Authorities' submission "Update on Negotiations regarding the Section 106 Agreement".</p> <p>At Deadline 7 the JLA's provided detailed comments [REP7-103] on the information within the following documents submitted by the Applicant at Deadline 6 comprising:</p>

		<ul style="list-style-type: none">• Appendix 5.3.2 CoCP Annex 6 - Outline Arboricultural and Vegetation Method Statement (oAVMS) - Parts 1-6 [REP6-018 – REP6-029]• 5.3 Environmental Statement Appendix 8.8.1 Outline Landscape and Ecology Management Plan (oLEMP)- Parts 1-3 Version 5 [REP6-032- REP6-037]• 5.3 Environmental Statement Appendix 8.10.1 Tree Survey Report and Arboricultural Impact Assessment (AIA) - Parts 1-6 Version 3 [REP6-038 – REP6- 049] <p>The responses in sections 1, 3, 4, 5 and 6 of the document [REP7-103] highlight several concerns with the information provided including for example:</p> <ul style="list-style-type: none">• Inconsistencies in information between the documents;• Missing updates for example in respect of Project Change 4 (Waste water Treatment Works), changes to Museum Field.• Disagreement with the conclusions of the AIA in respect of the amount tree removal proposed which is still considered to be excessive• Errors with the survey findings and schedules including where an individual tree entry collectively references a group of trees.• Lack of clarity of interpretation of the entries where collective referencing has occurred and where all or part of group are being removed• Lack of detail on plans, in terms of grouping of vegetation types, lack of information on which trees are being retained <p>The Deadline 7 response did not confirm the Authorities’ agreement with the tree loss and replanting figures provided by the Applicant.</p> <p>Within the AIA a technical note was provided explaining how the Applicant has sought to address policy CH6 of the Crawley Borough Local Plan and seeks to demonstrate compliance with this tree mitigation policy. This sets out an estimated number of trees to be removed and replanted. Annex 1 and Annex 2 of this document contain tree planting calculation tables (however these were omitted from document at Deadline 6) and were not provided at Deadline 7 so are therefore not before the Examination. These have not therefore been reviewed in any detail.</p> <p>Notwithstanding the above, based on the current information before the Authorities, the survey data in these documents is not of sufficient accuracy to allow the Authorities to calculate the number of trees that are likely to be lost in a worse-case scenario and establish the total number of trees to be removed.</p> <p>Furthermore, in the absence of any detailed layout plans for the works, it is impossible to establish the number of trees to be removed. There are no clear replanting plans to demonstrate the extent and quantum of trees proposed to be</p>
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		<p>planted. This position was explained at ISH9 as part of Agenda Item 3 and more detail is provided in the Legal Partnership Authorities post-hearing note.</p> <p>The Authorities welcome that the ExA acknowledge the importance of CBC policy CH6 and have put forward a requirement which would comprehensively address the policy.</p> <p>The Authorities also note that in order to meet their concerns, the Applicant said at ISH9 that they would revisit the LEMP. The Authorities await this information and will confirm at D9 if the revisions proposed by the Applicant meet the Authorities’ concerns and secure the mitigation considered to be necessary.</p>
<p>24</p>	<p>Provide commentary on the status of discussions regarding the Gatwick Greenspace Partnership and Landscape and Ecology Enhancement Fund</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following summary should therefore be read in view of the Authorities’ submission “Update on Negotiations regarding the Section 106 Agreement”.</p> <p>At the time of submission of this document, the Authorities are hopeful that agreement can be reached with the Applicant as regards the Gatwick Greenspace Partnership and the Landscape Ecology Enhancement Fund, including as to the sums to be secured within the draft section 106 agreement.</p> <p>The Authorities consider that such funding would be most appropriately secured via a planning obligation in the DCO Section 106 Agreement.</p>
<p>Item 3 – Mitigation Odour</p>		
<p>26</p>	<p>Provide comment on the Applicant’s proposed odour reporting process.</p>	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following summary should therefore be read in view of the Authorities’ submission “Update on Negotiations regarding the Section 106 Agreement”.</p> <p>The Applicant has provided an Odour Reporting Process Technical Note [REP7-094]. This note is split into 5 sections: Introduction, Odour Complaints, Odour Reporting Process, Air Quality Monitoring and Conclusion.</p> <p>Within the Introduction, paragraph 1.2.1 the note sets out that the note is intended to fulfil the odour commitment within the draft Air Quality Action Plan [REP6-063], as reproduced below:</p>

		<p><i>“Manage and promote the system to record odour complaints and review the record of odour complaints on a regular basis, respond and identify any new actions required [Emphasis Added].”</i></p> <p>However, a review of the Applicant’s note has identified that there is no situation under which any new actions to mitigate odour would be triggered following the Odour Complaints Process set out in section 2 of the note. Therefore, the note fails to fulfil odour commitments set out in the Applicant’s own draft AQAP reflecting an unwillingness of the Applicant to voluntarily address odour matters.</p> <p>The odour reporting section of the note (section 3, paragraphs 3.1.1 and 3.1.2) sets out routine periodic odour reporting cycles. However, no facility is included within the odour reporting to flag odour issues as they occur and are investigated to the JLA. This should be expanded to include the relevant authority so that they can support the Applicant and the communities they serve in the resolution of odour issues.</p> <p>The air quality monitoring section of the note (section 4) sets out that the Applicant will provide an extended monitoring network onsite (paragraph 4.1.1). It is understood that this relates to low cost sensors that were sited and intended to be used for local air quality pollution (i.e. nitrogen dioxide and particulates) focused on aircraft and airside pollution sources. Reference is also made to analysis of this data using Openair (paragraph 4.1.2). However, it is unclear how these monitors and analysis would be used specifically in relation to odour, both in terms of the locations they are to be sited (i.e. would these be focused on dominant odour sources?) in and how relevant any monitored pollutants would be for odour.</p> <p>The conclusions of the Applicant’s note (section 5, paragraph 5.1.1) set out that the note is:</p> <ul style="list-style-type: none">• Proportionate;• Robust in the context of existing assessment results; and• Concerns raised by stakeholders. <p>The JLAs disagree with all three of the Applicant’s statements as set out below.</p> <p>The JLAs do not consider the note to be proportionate as it does not fulfil the Applicant’s own stated aims to provide a process where the need for new odour mitigation actions can be identified. The note is also deficient against best practice guidance on the necessary components of an Odour Management Plan (OMP), as set in Institute of Air Quality Management Guidance (IAQM) ‘Guidance on the assessment of odour for planning’, specifically Section 7. It should be noted this is the same IAQM odour guidance relied upon by the Applicant in their risk-based odour review [APP-038].</p>
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		<p>In relation to how robust the existing assessment results are as presented by the Applicant [APP-038] the odour assessment presents a risk-based review only, rather than a quantitative assessment. It is considered that a quantitative approach would have been beneficial. Particularly as a quantitative approach was previously adopted by GAL to investigate the existing odour situation in 2019 (Screening Report – Assessment of odours arising from Gatwick Airport, dated October 2019). This is also despite the complaints received over an extended duration at Gatwick before any further expansion of operations.</p> <p>This is surprising as one of the key findings of the 2019 study was:</p> <p><i>‘There is an area around the airport itself where faint or even distinct odour levels are likely to occur. [Emphasis Added]</i></p> <p>The suggestion that the Applicant’s note aligns with the concerns of stakeholders is not supported by the submissions of the JLAs specifically REP7-108 which culminated in the proposed new requirement for odour management. This new requirement was proposed to address stakeholder operational odour concerns.</p> <p>In summary, the JLAs are concerned that further notable refinements and commitments will be made by the Applicant to address the concerns of the JLA in relation to operational odour. The JLAs therefore welcome the draft requirement proposed by the ExA for an odour management and monitoring plan [REP7-005], which aligns with the new requirement proposed by the Joint Legal Partnership [REP7-108]. The JLAs also agree with the reasons as set out by the ExA for this new odour requirement. Additionally, the JLAs consider there is a clear odour policy basis for the approach set out by the ExA including: ANPS paragraphs 5.236 and 5.237.</p> <p>The JLAs consider that mitigation is required in respect of odour as set out above, and that the proposed requirement provides this. However, if the Applicant were to come forward with an alternative proposal that satisfies the JLAs concerns and negates the need for the draft requirement before D9 then the JLAs will notify the ExA.</p>
<p>Item 4 – Case for the Development</p>		
<p>30</p>	<p>Continuation of information exchange on forecasting and need between the Applicant and JLAs.</p>	<p>Discussions are planned to continue and following those an update will be provided at Deadline 9 or earlier if there is the opportunity.</p>

Item 5 – Socio Economics		
33	Provide an update on the current situation of the housing emergency	An update on the Crawley Housing Emergency, reflecting the position as of August 2024, will be submitted at Deadline 9.
34	Provide wording for a requirement that would secure the housing fund if it were not agreed in the s106 agreement. (See also action 15)	<p>Post-hearing Note: As explained in the introduction to this submission, further discussions between the Applicant and the Authorities have taken place since the close of ISH9 and the following summary should therefore be read in view of the Authorities’ submission “Update on Negotiations regarding the Section 106 Agreement”.</p> <p>The JLAs welcome the opportunity to propose a requirement to secure mitigation that they maintain is required.</p> <p>At the time of submission of this document, the Authorities maintain that mitigation in the form of a Housing Fund would be most appropriately secured via a planning obligation in the DCO Section 106 Agreement and are currently hopeful that agreement can be reached with the Applicant for such purposes.</p> <p>If Agreement is not reached prior to Deadline 9, the Authorities will present a draft Requirement to the ExA.</p>
37	Submit the detail of JLA concerns regarding the methodology used to calculate the catalytic employment benefits.	Please refer to the Authorities’ Post-Hearing Submission ISH9 – Socioeconomics item 5.6.
38	Further discussions to take place between Applicant and JLAs regarding assessment of catalytic employment benefits and provide ExA with update on whether common ground can be reached.	Discussions are planned to continue, and an update will be provided on the likelihood of common ground being reached at D9 or, if possible, earlier.

Appendix 1

Introduction

1. Requirement 15 and 16 of Annex B of the Agenda for Issue Specific Hearing 9: Environmental Matters (ISH9) [EV20-001] provided the Examining Authority's (ExA) interpretation on how noise contour area limits could be applied as part of the Noise Envelope. This interpretation is as follows:
"From the commencement of dual runway operations, the operation of the airport shall be planned to achieve a predicted air noise level LAeq that:

for an average summer day is at least 0.5 dB less than the value calculated for an average summer day in 2019; and
for an average summer night is at least 0.5 dB less than the value calculated for an average summer night in 2019.
Five years after the commencement of dual runway operations, and every fifth year thereafter until 2049, the operation of the airport shall be planned to achieve a predicted air noise level LAeq that:

for an average summer day reduces by at least a further 0.5 dB; and
for an average summer night reduces by at least a further 0.5 dB."
2. At ISH9, the Joint Local Authorities suggested that they had considered how these limits could be applied and were willing to submit their interpretation of the limits at Deadline 8. As such, this document has been prepared in response to Action Point 7 from Issue Specific Hearing 9 [EV20-006], which was "To submit interpretation of how noise contour limits would work with a half dB reduction every 5 years".
3. The ExA is referred to Part C of the Authorities' submission titled "Consolidated DCO Submissions – Update at Deadline 8" containing further information on the Annex B proposals and the Authorities' comments on the proposed wording of Requirement 15 and 16.

Interpretation

4. It is not possible to look at different locations around the airport and expect to see similar reductions in noise at each point as time passes and the aircraft fleet transitions to newer aircraft. This is because the reduction in noise for newer aircraft on departure (approximately 4 dB) is substantially greater than the reduction in noise on approach (approximately 1 dB). As such, the JLAs interpreted the 5-yearly reduction of 0.5 dB as a reduction in the area encompassed by the 51 dB LAeq,16h and 45 dB LAeq,8h of the 2019 baseline.
5. The reduction in contour area can be defined through assuming that, for the first reduction in contour area on commencement of dual runway operations, the area of the 51 dB LAeq,16h contour area would have to be equivalent in size to the area of the 2019 baseline 51.5 dB LAeq,16h contour. This would mean that the population that experienced noise levels of 51.5 dB LAeq,16h in the 2019 baseline year would experience a noise level of 51 dB LAeq,16h on commencement of dual runway operations. Similarly, the area of the 45 dB LAeq,8h contour area would have to be equivalent to the area of the 2019 baseline 45.5 dB LAeq,8h contour. This process can then be undertaken iteratively to develop a series of stepped reductions in contour area every 5-years.

Defining a Reduction in Area

6. To define what the stepped reduction in contour area would be, it was necessary to produce 2019 baseline noise contours in 0.5 dB intervals from 51 dB LAeq,16h and 45 dB LAeq,8h upwards. As this information has not been produced by the Applicant or requested by the JLAs, the JLAs produced a 2019 baseline model in the Aviation Environmental Design Tool (AEDT). Information provided in ERCD Report 2002 Noise Exposure Contours for Gatwick Airport 2019 was referenced to build the noise model.
7. It should be noted that this model was not validated using radar data or local monitoring data so was produced using default aircraft data in AEDT. As such, the outputs were not reflective of the ANCON outputs submitted by the Applicant and the purpose of the modelling was not to challenge the ANCON noise model, which the JLAs are supportive of. However, the noise contour outputs were considered reasonable for the purposes of estimating potential changes in contour area to demonstrate how the ExA's proposed contour area limit criteria could work.

Noise Contour Area Results

8. As stated above, the purpose of the exercise was not to replicate ANCON modelling but to provide an indication as to how noise contour areas may reduce as a result of a 0.5 dB reduction. As such, contour areas are presented as a percentage of the 2019 baseline contour areas. These

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percentages are applied, in turn, to the Applicant’s 2019 baseline contour areas to show how contour areas would reduce in future. The 2019 baseline contour areas are 136.0 km² for the 51 dB L_{Aeq,16h} contour (Table 4.1.1 of Appendix 14.9.2 [APP-172]) and 159.4 km² for the 45 dB L_{Aeq,8h} contour (Table 4.1.2 of Appendix 14.9.2 [APP-172])

9. The results of noise contour area reductions and corresponding contour area noise limits are presented in Table 1 for daytime and Table 2 for night-time. The contour area limits assume dual runway operations will commence in 2029.

Table 1: Daytime Noise Contour Area Reductions and Contour Area Limits

Year	51 dB L _{Aeq,16h}	
	Contour Area % Compared to 2019 Baseline	Contour Area Limit km ²
2019	100%	136.0
2029	92%	125.0
2034	84%	114.8
2039	77%	105.4
2043	71%	96.6
2048	65%	88.4

Table 2: Night-time Noise Contour Area Reductions and Contour Area Limits

Year	45 dB L _{Aeq,8h}	
	Contour Area % Compared to 2019 Baseline	Contour Area Limit km ²
2019	100%	159.4
2029	92%	124.6
2034	84%	114.4
2039	77%	104.8
2043	71%	96.2
2048	65%	88.3

10. The results are plotted in Figure 1 (daytime) and Figure 2 (night-time) at the end of this document alongside the original Central Case (and baseline), the Slower Transition Case (STC) (and baseline) and the Updated Central Case (UCC). As set out in more detail below, the JLAs’ position is that the original Central Case is more likely to occur than the Updated Central Case, which the JLAs consider to effectively be an updated Slower Transition Case.
11. The ICAO’s ‘Global trends in Aircraft Noise’, which the 0.5 dB reduction every 5 years is based on, accounts for the continuing introduction of new aircraft fleet until 2049. However, the Applicant’s noise predictions only account for aircraft that are currently in service, with some minor exceptions (Table 2.1.1 of Appendix 14.9.2 [APP-172]) that do not have a material effect on noise contour area.
12. It is expected that the future generation aircraft will start to become available in the mid-2030s and these aircraft may result in ongoing reductions in noise. However, there is some uncertainty regarding future noise emission reductions due to the potential focus on reducing carbon emissions that may affect noise emission level reductions, which the Applicant identifies in section 6.6 of Appendix 14.7.9: The Noise Envelope [REP6-055]. As such, the period from 2035 onwards in Figure 1 and Figure 2 has been shaded to identify this period of uncertainty.

Outcome

13. Figure 1 for the daytime 51dB L_{Aeq,16h} noise contours:
 - the Central Case baseline would be below the ExA’s proposed noise limits until they converge in 2038.
 - The Central Case with project broadly follows the ExA’s noise limits, but it would be challenging to meet the noise limits after they drop in 2034 unless account is taken of ICAO’s expectation for ongoing noise reductions with further new aircraft types is met.
 - Both baseline and with project slow transition case fleet are above the noise limits at all times so would not be workable in terms of their fleet transition rates.

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- The updated Central Case with project is above the noise limits at all times so would not be workable in terms of their fleet transition rates.

14. Figure 2 for the night time 45 dB $L_{Aeq,8h}$ contours:

- the Central Case baseline is below the ExA's proposed noise limits until they almost converge in 2038. This is similar to the day.
- The Central Case with project is also below the ExA noise limits up to 2039, at which point, the contour area plateaus. However, it is possible that future aircraft may continue the trend of noise reductions. Thus, compliance with the ExA limits after 2039 could be possible but it is acknowledged that it would be challenging. As with the daytime figure, the STC and the UCC are above the noise limits at all times so would not be workable in terms of their fleet transition rates.
- Slow transition with project would not comply whereas the slow transition baseline shows potential for compliance, but it is not certain,
- The Updated Central Case with project would not comply.

Conclusion

15. The factors that affect the area under the noise envelope are primarily the fleet transition, the composition of the fleet at a future date (there are proposals to increase the proportion of wider large-bodied aircraft compared to the baseline year) and the presumed demand. This paper focusses on the Examiners' proposal by considering it against the Applicant's projection of the area within the noise contours which is based on these factors.
16. The current Noise Envelope [REP6-066] that the Applicant has submitted applies noise contour area limits based on the Updated Central Case fleet mix; however, the JLAs' position is that the Updated Central Case fleet mix is really a reworked slow transition fleet mix and that the Central Case is the most likely scenario to occur. Therefore, the JLAs' position (paragraphs 8.2 and 8.3 [REP7-103]) is that the Central Case is the appropriate basis for setting the noise contours and it can be seen that for the period to 2035 that the ExAs proposal tracks this reasonably well.
17. Beyond 2035, the ExA proposal for the day places a limit on the area that is less than the projection for the area of the central case fleet mix with project and presumed passenger demand.
18. However, taking into consideration the JLAs' view that the forecast demand is not likely to be as high as the predictions by the Applicant in the near term [REP4-049], were demand to be less, then the effect would be to further reduce the area of the contour resulting in compliance with the ExA's proposed limit.
19. For the night period the ExA's proposed limit is an even better correlation for the central case fleet with project and suggests that compliance is achievable until 2038.
20. The gap in the growth in demand between the Applicant's predictions and those of the JLA are set to converge by 2038. This coincides with the period of the introduction of new generation fleet so at that time there may be potential for the continuation of the downward trajectory but not based on the use of the central case fleet.
21. In order for the ExA's noise limits to work, there would need to be some mechanism in place to adjust the 5-yearly 0.5 dB rate of improvement (either up or down) based on future aircraft noise emissions once they are fully understood. For the avoidance of doubt, the rate of noise emission level improvement of future aircraft may reduce or increase, but the noise contour area limit of the noise envelope would not be allowed to increase. The earliest that a planned review would be expected to commence would be for the first noise limit reduction point after 2035.
22. The Applicant's Noise Envelope [REP6-056] allows the noise contour area limits to increase as a result of air space change, noisier future aircraft or 'force majeure'. To provide certainty to communities regarding the level of noise they could expect to experience in the future, the noise contour area limit should not be allowed to increase, even after 2035. At worst, the noise contour area limits could plateau and, only then, in exceptional circumstances as this would not be

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consistent with the policy of 'sharing the benefit'.

23. In addition to the adjustment mechanism referred to above there may be other circumstances where the area needs to be reduced, for example, where new evidence is published, or policy is updated.
24. In summary, the JLAs support the ExA's proposal of noise limits and five-year noise envelope periods rather than the initial 9-year period followed by a five-year period proposed by the Applicant and consider that it is inappropriate to quickly dismiss it.

Appendix 2

1. Paragraph 2.2.2 of Appendix E in the Applicant’s Supporting Noise and Vibration Technical Notes to the Statements of Common Ground refers to the difference in taxiing noise levels between a Code C aircraft and a Code E aircraft. Aircraft are assigned a code depending on their wingspan and their outer main gear wheel span as per Table 1. As such, the statement that “for taxiing aircraft the more common (Category C) aircraft are 7-9dB quieter than the larger Category E” does not provide any information on future trends of aircraft noise emissions.

Table 1; Aircraft Codes

Code	Wingspan	Outer Main Gear Wheel Span	Example Type of Aircraft
A	Up to 15 meters	Up to 4.5 meters	Cessna 172, Piper PA-28
B	15 meters to 24 meters	4.5 meters to 6 meters	Bombardier Q400, Embraer ERJ-145
C	24 meters to 36 meters	6 meters to 9 meters	Boeing 737-800, Airbus A320-200
D	36 meters to 52 meters	9 meters to 14 meters	Boeing 767-300, Airbus A330-200
E	52 meters to 65 meters	9 meters to 14 meters	Boeing 777-300ER, Boeing 747-400, Airbus A340-600

2. Noise information in the Aviation Policy Framework 2013 ‘Aviation key facts’ states:

“The UK was instrumental in the agreeing a decision by the Committee on Aviation Environmental Protection (CAEP) within ICAO which requires new types of large civil aircraft, from 2017, to be at least 7dB quieter on average in total, across the three test points, than the current standard. Standards for smaller aircraft will be similarly reduced in 2020”.

3. Noise emissions from aircraft have been controlled since the 1970s through aircraft noise limits out in the ICAO’s Annex 16 of the Convention on International Civil Aviation. The first noise certification standard was set out in Chapter 2 of Annex 16, Volume 1 and was introduced in 1972. Noise limits were defined as a direct function of Maximum Take-off Mass in order to recognise that heavier aeroplanes produce more noise than lighter aeroplane types.
4. Following the introduction of Chapter 2, higher bypass ratio jet engines were introduced into service that resulted in reductions in aircraft noise. Consequently, the Chapter 2 aircraft standard was added to through the introduction of Chapter 3 in 1978, which reduced noise certification limits set out in Chapter 2.
5. In 2006, the Chapter 4 noise certification standards were introduced, which ensured that the latest available technology is incorporated into new aircraft designs. The Chapter 4 standard has since been superseded by the new Chapter 14 noise standard for jet and propeller-driven aeroplanes. It is applicable to new aeroplane types submitted for certification on or after 31 December 2017, and on or after 31 December 2020 for aircraft less than 55 tonnes in mass.
6. In 2002, Chapter 2 aircraft were outlawed from the EU, so only Chapter 3, Chapter 4 and Chapter 14 aircraft are currently operational.
7. Aircraft are tested against ICAO Chapters using noise certification data, which is measured at three points, illustrated in Figure 1 and described as follows:
 - Flyover (Community) – 6.5 km from the start-of-roll, under the flight path;
 - Sideline – the highest noise measurement recorded at any point 450 m from the runway axis during take-off; and
 - Approach – 2 km from the runway threshold, under the approach flight path.

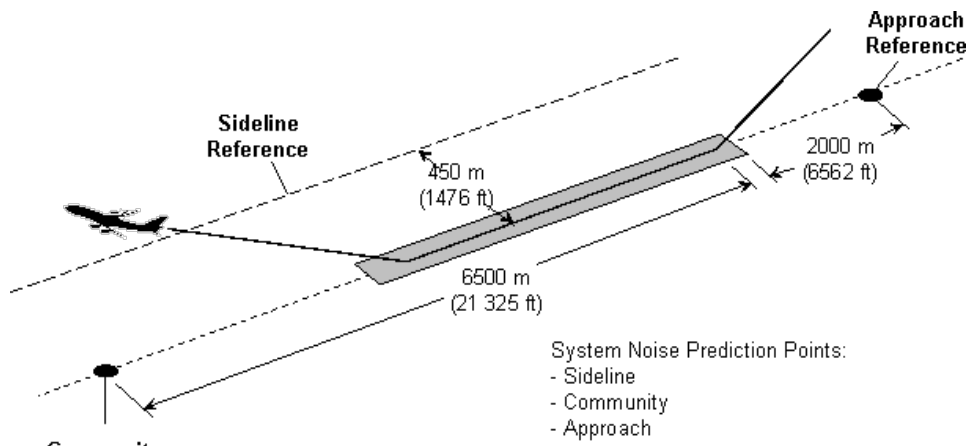


Figure 1. Noise Certification Measurement Points

8. Chapter 3 is the reference for defining aircraft noise certification limits. Noise limits were set based on number of engines and Maximum Take-off Mass (MTOM), as presented in Table 2.

Table 2. Chapter 3 Noise Certification Limits

MTOM (1,000 Kg)		0	20.2	28.6	35	48.1	280	385	400	
Sideline		94			80.87 + 8.51*log (M)					1 0 3
Flyover	2 or fewer engines	89				66.65 + 13.29*log (M)			101	
	3 engines	89		69.65 + 13.29*log (M)					104	
	4 or more engine	89		69.65 + 13.29*log (M)					106	
Approach		98			80.87 + 7.75*log (M)			105		

9. Chapter 4 and Chapter 14 noise certification limits were defined using Chapter 3 limits, as follow:

- Chapter 4 limits = Chapter 3 limits – 10 dB.
- Chapter 14 limits = Chapter 3 limits – 17 dB (for aircraft with MTOM of greater than 8,618 kg). In addition, Chapter 14 also includes a mandatory minimum reduction in the noise limits applicable to subsonic jet airplanes with MTOM less than 8,618 kg.

10. Cumulative noise limits for each noise certification Chapter are presented in Figure 2.

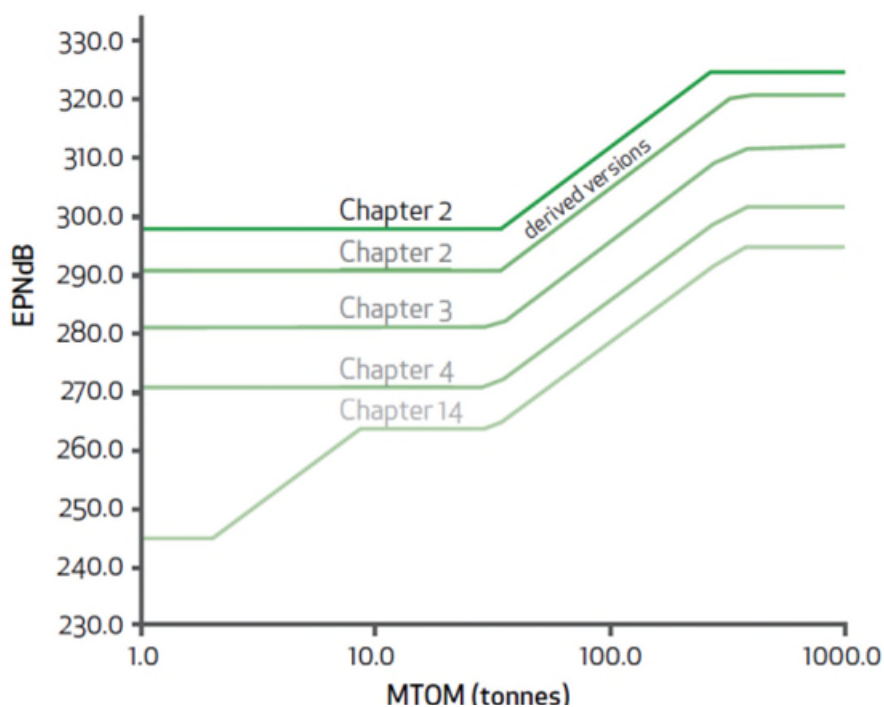


Figure 2. Noise Certification Limits

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11. The 7 dB reduction in noise identified in the APF relates to the difference between Chapter 4 aircraft, which are required to be 10dB EPNdB below Chapter 3 limits, and Chapter 14 aircraft, which are required to be 17dB EPNdB below Chapter 3 limits.
12. Taken at face value, it would be expected that aircraft noise would reduce by 7dB EPNdB in 2017 under Chapter 14 than they were in 2006 under Chapter 4. To provide some further information on how current aircraft chapters are assigned, the JLAs have undertaken some analysis of EPNdB data from the EASA Certification Noise Levels database, which is presented in Table 3.

Table 3: Average Aircraft Chapters

Aircraft	Average Cumulative EPNdB	Average Cumulative EPNdB Chapter 3 Limit	Difference EPNdB	Average Chapter
A319	269.1	287.8	18.7	14
A319NEO	257.4	288.5	31.1	14
A320-CFM56	272.9	288.6	15.7	4
A320-V25	269.5	288.6	19.1	14
A320NEO	259.2	288.9	29.8	14
A321	277.5	290.3	12.8	4
A321NEO	266.8	291.3	24.5	14
B737-800	275.3	288.9	13.6	4
B737Max	263.1	288.9	25.8	14

13. The analysis indicates that, on average, the new generation of aircraft (e.g. MAX and NEO) are at least 10 EPNdB quieter than their equivalent previous generation variant and meet the APF criteria that they are at least 7 EPNdB quieter. This reduction in aircraft noise is accounted for in the Applicant's future air noise model scenarios through the transition of fleet to increasingly contain more new generation aircraft as time passes.

Appendix 3

This document is the JLA response to Action Point 12

The summary points are shown in bold below with explanation in ordinary font underneath as required:

1. The contour for one additional noise induced awakening will not necessarily coincide with the 48 dB LAeq8h contour and the two should not be conflated.

CAP 2251 provides the diagrams with awakening contours plotted over the LAeq 8h night for Stansted Gatwick and Heathrow.

At Gatwick Airport (Figure 2 reproduced below) there is a reasonably good association between the 48 LAeq 8h and one additional awakening contour. This is based on single runway operations. However, the association is not as strong as at Stanstead (Figure 4 reproduced below) so even under single runway operation it is not possible to conclude that the association between the 48dB LAeq8h and the one additional awakening will remain constant. The association at Heathrow is even less (Figure 3 reproduced below) and it shows the effect of dual runway operation at that location. Should the DCO be granted and the Airport resort to dual runway operation, then there is no guarantee that the association will remain as it is now and more likely it will depart from the 48 dB LAeq 8h. For this reason, the additional noise induced awakening needs to be specified separately to the 48 dB LAeq 8h contour.

CAP 2251

Chapter 3: Methodology

Figure 2: Average summer night additional aircraft noise-induced awakenings versus LAeq,8h for Gatwick 2014 (modal split 60% west/40% east, 123.1 total movements, 78.8 arrivals and 44.3 departures)

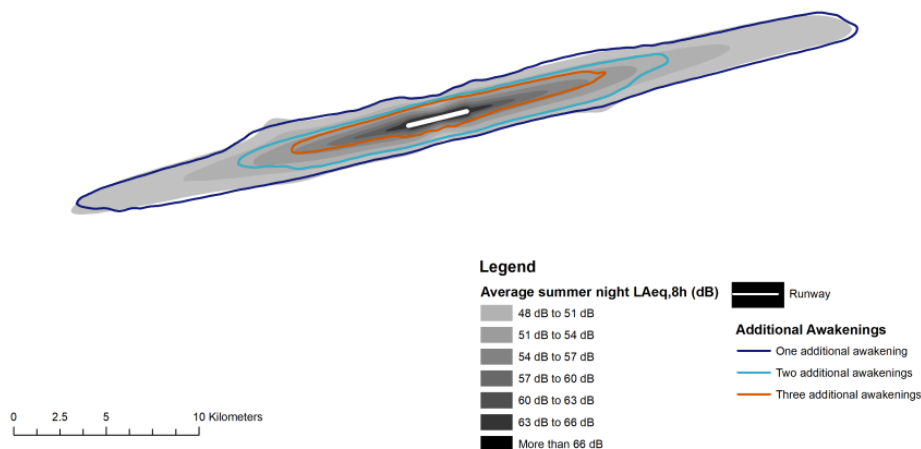


Figure 3: Average summer night additional aircraft noise-induced awakenings versus $L_{Aeq,8h}$ for Heathrow 2014 (modal split 66% west/34% east, 80.1 total movements, 56.9 arrivals and 23.2 departures)

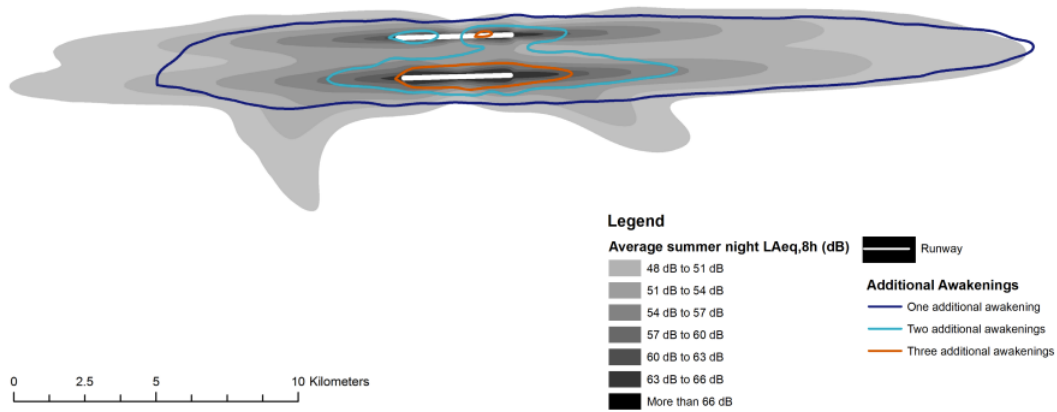
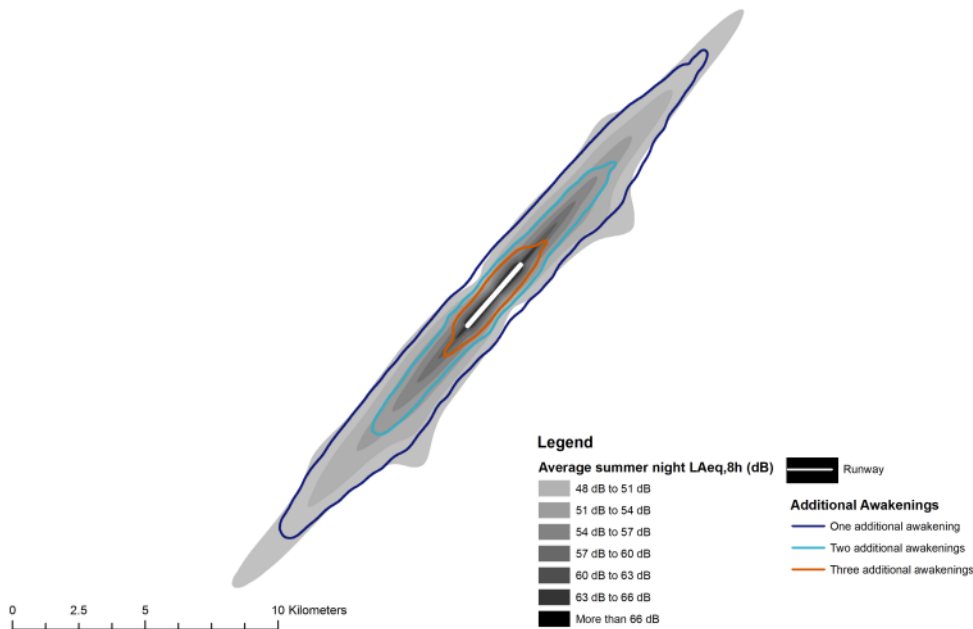


Figure 4: Average summer night additional aircraft noise-induced awakenings versus $L_{Aeq,8h}$ for Stansted 2014 (modal split 50% west/50% east, 74.4 total movements, 44.6 arrivals and 29.8 departures)



- One additional noise induced awakening deals with objective sleep disturbance and individuals will not necessarily be aware that they are experiencing harm. It is a SOAEL requiring the Applicant to ensure that effects are avoided.

The Applicant disputes that the one additional noise induced awakening is a SOAEL.

The JLAs have given numerous references to the inclusion of the one additional awakening as a SOAEL. This was included in the Heathrow PEIR for Runway 3. The Applicant notes that this was not examined, however, it seems unlikely that the SoS would overturn a proposal that was made by the Applicant to make the development more acceptable. Under its new noise insulation scheme Heathrow has provided for a composite qualifying criteria for noise insulation including the

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one additional noise induced awakening. This illustrates how a single metric cannot encompass all effects.

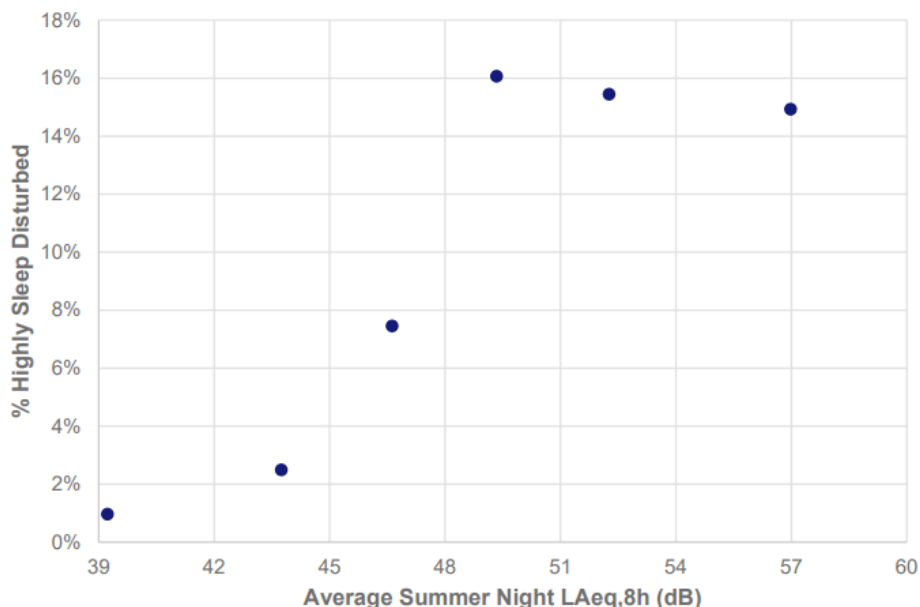
One additional noise induced awakening is also accepted in principle as a SOAEL albeit for a different noise source, see SI 2019/1358 – The Northampton Gateway Rail Freight Interchange Order 2019, Schedule 2, Part 1, Clauses 23(2) and 23(3)- For the Northampton Gateway Strategic Rail Freight Interchange.

3. The 48 dB LAeq8h deals with subjective sleep disturbance. The level is less than the policy SOAEL of 55 LAeq 8h and by inference it is within LOAEL. Any effort to prevent the harm in LOAEL is reduced compared to SOAEL, that is, to mitigate and minimise. (It should be noted here that several of the JLAs advocated the 48 dB LAeq8h as a SOAEL within the LIRs and those that did not did not express a view did not object to that).

In terms of the LAeq 8h night, 55dB is used as the SOAEL. The JLAs note by reference to the exposure response function in CAP 2251 that the similar level of effects occurs at 48 dB LAeq 8h night as occurs at 55dB and therefore consider that the 55 dBLAeq underestimates the impact on the population.

In the Local Impact Reports the JLAs all considered that the 48 LAeq8hr night is material, and all acknowledge the potential for the 55 dB LAeq 8h night to underestimate the health impacts. However, there were three authorities who, based on 48 dB LAeq8h went further and advocated the 48 dB LAeq8h as a SOAEL given the interpretation of the exposure response function in Figure 4 of in CAP2161 reproduced below.

Figure 4: Percentage of respondents calculated as highly sleep disturbed as a function of average summer night LAeq,8h



This is discussed further in the Local Impact Reports [REP1-100] and [REP1-068].

However, the JLAs emphasise that the two metrics are considering different things and one is not the surrogate for the other (see above for discussion about the relationship).

4. If the SOAEL of one additional noise induced awakening is mitigated consistent with the LOAEL policy response for the LAeq metric at 48 LAeq8h, instead of avoiding exposure (as required by the additional noise induced awakening) exposure will be mitigated and minimised. This is not compliant with the ANPS paragraph 5.68.

The ANPS is produced for ease below:

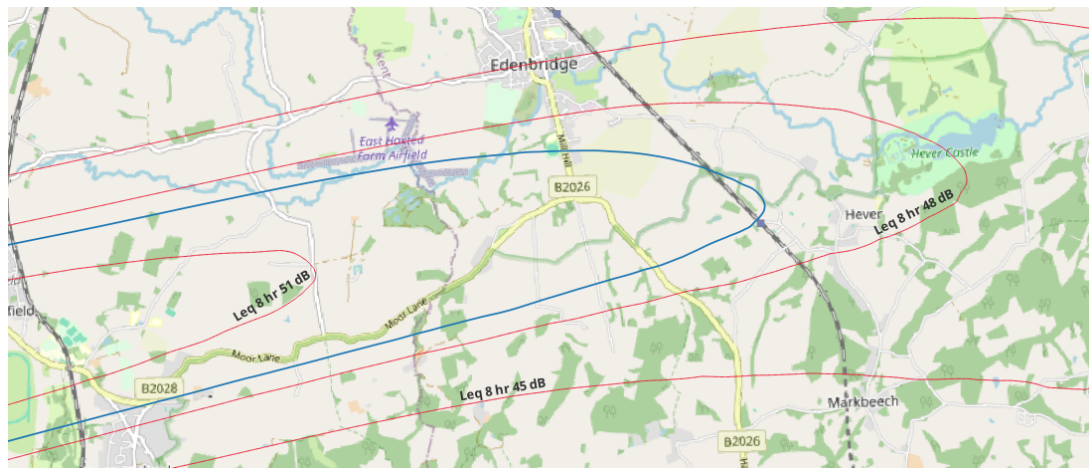
“5.68 Development consent should not be granted unless the Secretary of State is satisfied that the proposals will meet the following aims for the effective management and control of noise, within the context of Government policy on sustainable development:

- *Avoid significant adverse impacts on health and quality of life from noise;*
- *Mitigate and minimise adverse impacts on health and quality of life from noise; and*
- *Where possible, contribute to improvements to health and quality of life.”*

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5. The Applicant states that the night effects will be controlled as the 48 dB LAeq 8h contour coincides with the proposed 54 LAeq16h contour. There are two issues with this, the 54 dB LAeq16h does not encompass all the area within 48 dB LAeq8h contour and the second issue is that the day contour should be mitigating daytime effects. To avoid nighttime effects may require different forms of mitigation.

The figure below shows that the extent of the 48 dB LAeq 8h night exceeds the Applicant's existing proposed day outer zone commencing at 54 dB LAeq16h:



Where the:

- red lines represent the contours for the 48 dB LAeq 8h
- blue line is the extent of the proposed outer day noise insulation scheme at 54dB LAeq16h.

(This is based on slow transition fleet in 2032 with the new runway in operation.)

6. The 48 dB LAeq 8h contour upon which the noise insulation scheme depends relates to air noise only and takes no consideration of the impacts of ground noise or both sources combined. This will under-represent the likely impacts (bearing in mind ground noise is likely to be more dominant to the North and South of the airport). Combined awakening and Leq contours need to be produced for the airport

7. In conclusion the JLAs:

- a) do not consider that the 48 dB LAeq8h (summer night) will be satisfactorily mitigated by the LAeq8h (summer 92 day night);
- b) that the one additional noise induced awakening during the 8 hour 92 summer night must be referenced as a SOAEL within any Development Consent Order granted;
- c) the extent of the contours for both the one additional noise induced awakening and the 48 LAeq8h (for the 92 summer night period) must be used for the purposes of the noise insulation scheme; and
- d) the area within the additional noise induced awakening must be used for the purposes of a control limit within the noise envelope.