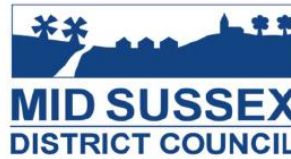




Horsham
District
Council



GATWICK AIRPORT NORTHERN RUNWAY PROJECT

Planning Inspectorate's Reference: TR020005

ISSUE SPECIFIC HEARING 9 | RESPONSE TO ACTION 7 (RESUBMISSION OF APPENDIX 1)

DEADLINE 9: WEDNESDAY 21 August 2024

Crawley Borough Council (GATW-AFP107)

Horsham District Council (20044739)

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)

RESPONSE TO ACTION 7 ISSUE SPECIFIC HEARING 9 (RESUBMISSION OF APPENDIX 1)

Introduction

The Legal Partnership Authorities responded to the actions raised at ISH9 in their Deadline 8 submission “*Response to Actions raised by the ExA at Issue Specific Hearing 9*” [REP8-168].

Appendix 1 to [REP8-168] set out the Authorities response to Action 7 which was as follows:

To submit interpretation of how noise contour limits would work with a 0.5 dB reduction every 5 years.

Unfortunately, a formatting error in [REP8-168] led to the omission of two figures referred to in the body of Appendix 1.

Please find an updated version of Appendix 1 below in which now includes the two figures which were mistakenly omitted on pages 6 and 7 below.

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 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 LAeq,16h contour (Table 4.1.1 of Appendix 14.9.2 [APP-172]) and 159.4 km² for the 45 dB LAeq,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 LAeq,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 LAeq,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.
- 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 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.

Figure 1: Daytime 51 dB LAeq,16h Noise Contour Areas

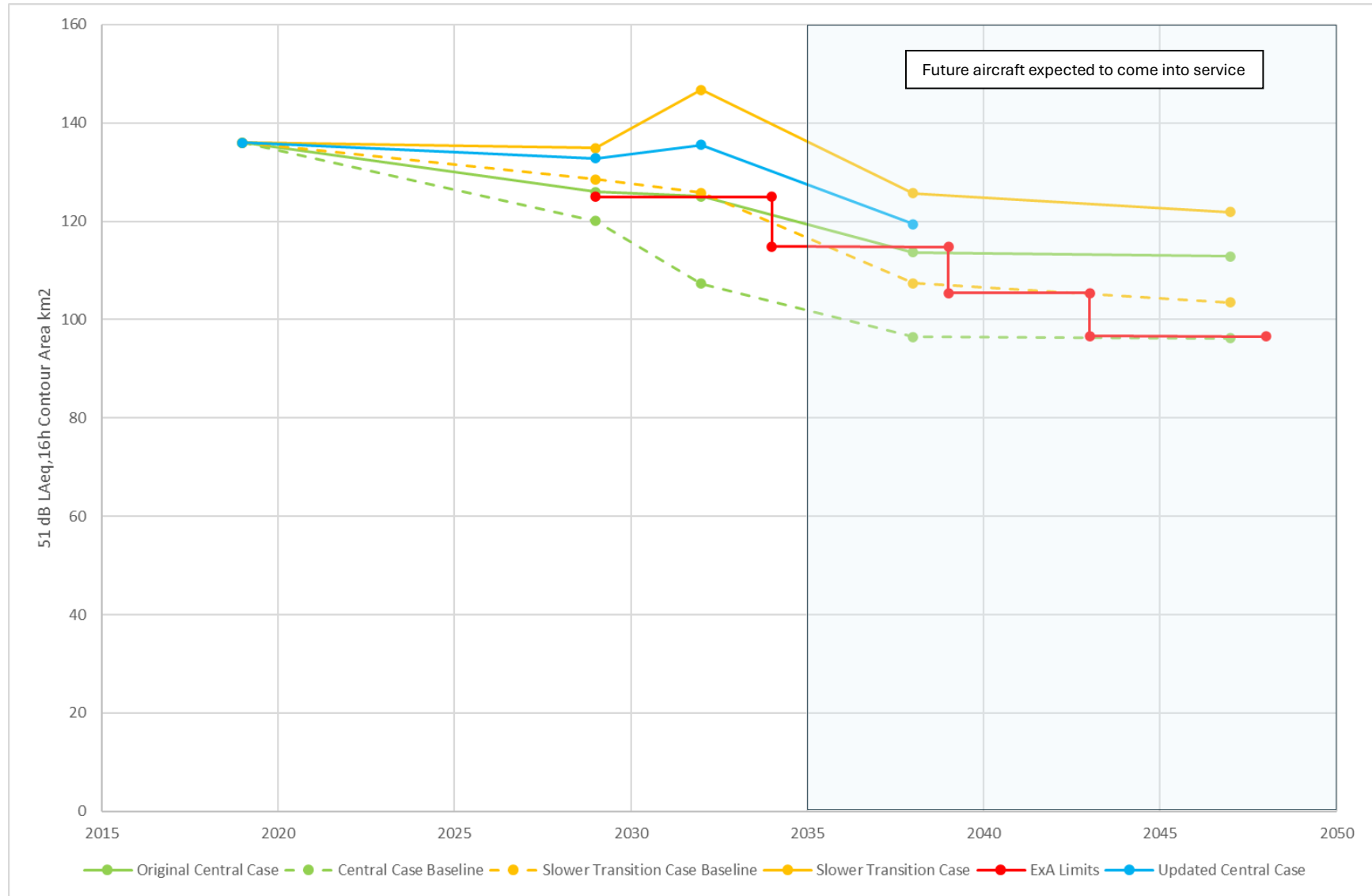


Figure 2: Night-time 45 dB LAeq,8h Noise Contour Areas

