

Note

Title	Deadline 3 Noise Responses		
Project	Gatwick Airport DCO		
Reference	28AD.NT.4.0	Author(s)	BHo
Date	13 May 2024	Reviewer	VC

Overview

1. This note provides Suono's response on behalf of CAGNE following submission by the Applicant of the Deadline 3 documents dealing with noise.
2. This note sets out a list of the high-level issues identified in the Deadline 3 documents provided by the Applicant. Our review has identified a number of highly important matters arising, rather than being able to confirm that our issues are resolved. More details can be provided on any of the matters we raise on request from the ExA.
3. Even basic information remains outstanding, as highlighted throughout this note. We request the ExA ask the Applicant to provide this outstanding information at the next deadline, in order to enable as much scrutiny as possible at this relatively late stage of the examination.

REP3-071 - Supporting Noise and Vibration Technical Notes to the Statements of Common Ground

4. The majority of our comments for Deadline 3 stem from this document, with the most important items listed below for each Appendix and paragraph number within the Applicant's document for ease of reference.

Appendix B – Ground Noise Fleet Assessment

1.1.1 The supposed 'Slower Fleet Transition' does not result in "overall greater noise emissions at a given future time" due to "a slower uptake of quieter aircraft variants". This is demonstrated later in this note.

The reasoning provided for why the Ground Noise assessment has only considered the Central Case to date is not logical, nor is the text reproduced from 4.5.5 of APP-173. The approach taken by the Applicant for ground noise using the Central Case is inconsistent with the approach taken for air noise. This results in a smaller number of dwellings being eligible for sound insulation due to ground noise.

The Applicant provides in Appendix 1 of Appendix B the updated tables for the Central Case; in Appendix 2, the noise contours for the Slower Fleet Transition are provided. Given that the Applicant is now stating that their core case is the Slower Fleet Transition, comparable information to that contained within APP-173 and Appendix 1 of REP3-071 must be produced for the Slower Fleet Transition.

We maintain that the Applicant's methodology within the ground noise assessment is not robust. We find there is a lack of evidence supporting the approach whereby ground noise is assessed in the context of other forms of ambient noise, such as road traffic, as is set out later in this note.

1.1.5 The Applicant must provide a full range of ground noise contours for the day and night. As the Applicant states, “ground noise contours are only one part of the ground noise assessment”, so they must be presented, irrespective of whether other parts make up the full assessment.

We note that presenting ground noise contours may have also assisted in identifying the error set out by the Applicant. There is a risk that further errors may be present which have not been identified due to full contours not having been provided. We have little confidence in the model without sight of these contours.

2.1.4 The Applicant states that they have corrected a ‘reporting’ error within the ES (earlier sections 1.1.3 and 1.1.4) but here states that there is no need to review any other results due to the lack of material change between the erroneous and new results. Either the precise reason for the error must be set out, or all results should be double-checked to be reported properly.

3.1.3 and 5.1.1 In order to justify using the same LOAELs and SOAELs for ground noise as are used for air noise, the same or comparable assessment methodology must be used for both sources. If, on the other hand, the Applicant is insistent that ground noise is comparable to road traffic noise, then it would be more logical to use the road traffic LOAELs and SOAELs. Indeed, the Applicant claims that the effects of aircraft noise are highly contingent on the levels of road traffic which on its own merits invalidates the use of air noise LOAELs and SOAELs as these are absolute values.

3.1.4 The Applicant refers to the noise bund as being up to 12m high in places but accepts in their response to the ExA’s question in REP3-101 NV.1.1 that the noise bund is to reduce down to no more than 10m. In REP3-101 NV.1.15 the noise bund is again quoted as being up to 12m high.

3.1.4 and 3.1.5 The Applicant states that ground noise is not a key issue due to only a small number of noise complaints having been made historically. The planning system is not designed to reduce or eliminate complaints, but rather to assess the impacts of noise.

Indeed, the increase in complaints during the pandemic arising from ground noise contradicts the Applicant’s position. Further, the Applicant appears to be justifying their assessment results based on historic complaints, but complaints (and especially number of complaints) and degree of noise impact do not necessarily correlate, as has been found at other airports.

3.1.5 It is not clear what point is being made when the Applicant states that “Ground noise attenuates over distance”, as all noise attenuates over distance.

3.1.6 The Applicant states that a small number of properties may have been identified compared to air noise. However, this could have been exacerbated by their approach not being sufficiently robust in identifying all properties and does not absolve the Applicant from fully and accurately assessing the effects of ground noise.

The reliance on air noise contours to cover ground noise effects within Gatwick’s proposed Noise Insulation Scheme is not sufficient. We note that Luton Airport are proposing a Ground Noise Insulation Scheme as part of their DCO, including coverage down to 45 dB $L_{Aeq,8hour}$ in the night-time. This approach of dealing with ground noise on its own terms is much more robust than Gatwick’s approach of cherry-picking properties.

5.1.1 The reasoning provided by the Applicant for including consideration against ambient noise in the ground noise assessment being “because ground noise is generated on the ground” is not accepted. Irrespective of where the noise source is located, the impact occurs where the receptor is (i.e. aircraft can be at altitude, but the noise impact arises where the person under the aircraft flightpath is). No reference is made to any study of the community response to aircraft ground noise that clearly identifies levels due to other sources as having a material effect.

The Applicant claims that ground noise is “a more continuous noise source similar in nature to road traffic”. This is inconsistent with their selected LOAELs and SOAELs (using air noise values and not traffic noise values) and also with their assessment approach. They have chosen to include some noise sources only within the L_{max} assessment and not the L_{eq} assessment. This latter point would suggest that these ground noise sources are perceived as a series of peaks, which would make them more comparable to air noise than road traffic.

We note that the Applicant accepts that these ground noise sources are experienced as individual events in 14.4.82 of APP-039, in common with peoples’ experience of air noise.

While the Applicant is content to justify ground noise effects as not being significant on the basis of high ambient noise levels, they make no allowance for areas with low ambient noise levels. Using the Applicant’s own logic, ground noise impacts in such areas could be significant.

It is also not clear what noise data the Applicant is using to justify their high ambient noise levels. If this is the road traffic model, no actual noise measurements have been taken around the vast majority of ground noise locations. If this is the noise data obtained in 2016, this also includes contributions from ground noise operations and would therefore be a false comparison. For either option, the assessment is deeply flawed, even if the Applicant was using the industry standard approach to noise propagation.

Appendix 2 The Applicant should provide the aggregate summers day ground noise contours between LOAEL and SOAEL for day and night-time on high quality OS mapping, using wind corrections as per ISO 9613. It would enable other parties a much greater insight into the full extent of ground noise impacts than is currently known.

Appendix E – Ground Noise Engine Ground Run

It remains unclear whether the results refer to high power engine ground runs or “start-stop” engine testing, which could generate materially different results. The Applicant should clarify what noise sources are included in their various assessments.

2.5 The locations where EGR is to take place are shown on ES figure 5.2.1a but the text in 2.5.3 does not provide percentages for all locations. Regardless, these locations do not appear to correlate with the noise contours provided in Appendix 2 of Appendix B of this document. If EGR has only been assessed for L_{max} , then it is necessary to set assessment criteria LOAELs and SOAELs for this particular index.

2.7.2 We request that the ExA ensure that the assumptions used within the ground noise model reflect future operational conditions and are therefore adequately secured within the DCO. Particularly important is a requirement to not allow Engine Ground Running for more than 45 seconds a day on aggregate, to ensure that the results within the noise chapter and its various appendices fully reflect expected outcomes.

Appendix F – Aircraft Fleets Used in Noise Modelling

5. The Applicant has now provided the forecasts requested by PINS in the scoping report. These bring about considerable uncertainty as to how the noise assessments have been undertaken and the assumptions behind them.

Core versus Sensitivity Cases

6. The Applicant states in their Needs Case [APP-250] that they have prepared a core case and two sensitivity forecasts, one of which is the Slower Fleet Transition.

7. As stated in REP3-072, “Noise reduction and mitigation measures for the Project are based on the worst case for noise impacts, which is the slower transition case.”

8. As stated in REP3-071 and APP-173, “The ground noise model uses the Central Case air traffic forecast which is most likely as opposed to the slower transition case fleet, as discussed in the air noise assessment which uses both fleets to predict a range of air noise impacts”.

9. At a high level, if the core case is indeed the most likely case, then noise contour area limits must be based on it, rather than the larger contour areas of the sensitivity case. This would be in line with national noise policy which seeks to minimise, and where possible reduce, the number of people adversely affected by noise.

10. However, if the Slower Fleet Transition case is the most likely case, then the Environmental Statement is not internally consistent, and this should be viewed as the core case within the Needs Case and the various assessments that stem from this.

11. Finally, if the Slower Fleet Transition case is a sensitivity case, then this should be compared to the Central Case baseline, which forms the most likely baseline, rather than some different baseline as has been done.

Rate of Transition

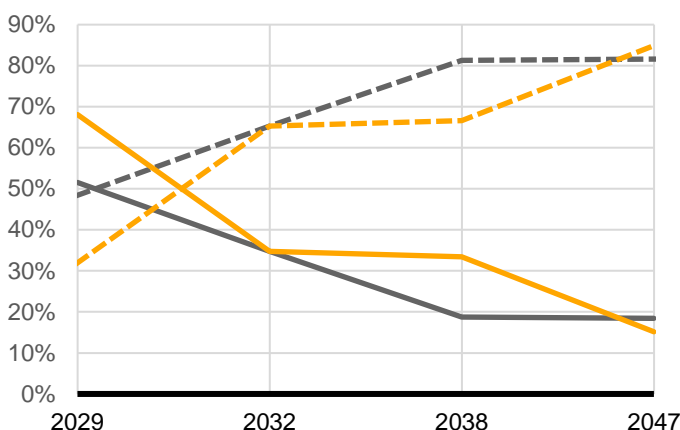
12. Focussing on the details of the two cases, it is not clear that the Slower Fleet Transition case is indeed as described by the Applicant. The Needs Case [APP-173] states the following in section 6.6.8, with the same sentiment set out at 1.1.1 of REP3-071:

Forecasts have been prepared for a ‘Slower Fleet Transition’ sensitivity case. This sensitivity assumes that the rate of transition of Gatwick’s airline fleet takes longer to transition to next generation aircraft. It has been used to understand how noise, air quality and carbon impacts could be greater if the turnover of aircraft types to next generation aircraft is slower than expected in the core forecasts.

13. Generally, the Slower Fleet Transition forecast has a lower number of next generation aircraft within it, with the exception of 2032 where both forecasts have the same percentage of next generation aircraft and 2047 where the Slower Fleet Transition has a slightly higher percentage. This can be seen on the graph below, whereby the Slower Fleet Transition (SFT) generally lags behind the Central Case (CC):

Graph 1: Central Case and Slower Fleet Transition

— SFT Current Generation; - - SFT Next Generation; — CC Current Generation; - - CC Next Generation
Presented on assessment years (note the x-axis is not linear).



14. If the Slower Fleet Transition forecast is exactly that, merely reflecting a slower uptake of new generation aircraft, one would expect that the noise contour areas between the two cases would

have some difference in area at the beginning, but that over time this area difference would reduce. When the fleets are both heavily modernised (in relative terms) in 2047, there should be little difference between the noise contour areas of both the Slower Fleet Transition and the Central Case. In fact, in 2047, the SFT is forecast to have a greater percentage of new generation aircraft than the CC, meaning noise contour areas for the former should be slightly smaller than the for the latter. This is not the case, as can be seen in the Diagram below, taken from APP-039.

Diagram 14.9.1: Leq, 16 hour Day Contour Populations and Areas: 2019, 2029, 2032, 2038 and 2047



15. When inspecting the forecasts in more detail, there are large numbers of the Boeing 737-MAX10 (B73710MAX; MAX10) in the Slower Fleet Transition in all assessment years compared to the Central Case. These forecasts are therefore not simply a lag in airline operators transitioning to newer aircraft types, but also transitioning to different aircraft types. The noise documentation does not highlight this at any point.

16. The fact that larger (and assumedly noisier) MAX10s are replacing slightly smaller MAX8s appears to be the main reason that the noise contours are larger in future years, rather than a slower rate of transition. As noted above, inspection of the graph and diagrams above show that in 2047 there are more next generation aircraft in the Slower Fleet Transition than the Central Case, yet the diagram shows larger noise contour areas for the Slower Fleet Transition. We have major concerns arising from this.

17. The heavy reliance on the MAX10 to establish noise contour area limits off is fraught with uncertainty. Firstly, this aircraft has not even been certified yet, let alone begun production; noise levels associated with it are therefore unknown. While estimates can be made, these cannot be considered sufficiently robust to precisely define future noise levels and any associated noise conditions. The Applicant has not justified the corrections used.

18. Take the situation, for instance, whereby the MAX10 is certified and enters service as forecast by the Applicant, but with noise levels lower than that used in the assessment. There are no controls in place, extant or proposed, that would restrict the Airport flying more aircraft during the summer period.

19. This would in turn invalidate the results of the Environmental Statement, such as the secondary metrics for number of events (Number Above contours) and the awakening assessment. The MAX10 is also expected to have an increased number of seats available, even compared to other next generation aircraft; this could potentially impact on other aspects of the noise assessment, such as the road traffic noise assessment, if this is based on the number of expected passengers used for the Central Case.

20. We also note that there remains considerable uncertainty around when the MAX10 could enter service, with it being well-documented that Boeing are experiencing major production delays and regulatory issues.

REP3-072 - The Applicant's Response to Written Representations

21. The below responses to this document refer to information within Table 24.1, with each row identified by the header used by the Applicant in the first column. Items already covered above within this note are not repeated.

'Noise'

22. The Applicant maintains that noise contour area limits should only be set for 14 years and then permitted to increase in area, due to potential changes in policy. No further information has been provided on what future policy might entail and this is not acceptable as it conflicts with current policy. Planning decisions should not be made on notional or possible 'direction of travel' prognostications about aviation noise policy.

'Air noise'

23. The Applicant repeats their statement that there is unlikely to be any additional impact at schools as the impact over the wider day is not significant, without showing any assessment or workings. Changes in matters such as peak hour spreading could lead to significant effects at schools which are not obvious when only inspecting aggregate levels over the whole day, as has been done. The Applicant should justify this approach, given it lacks robustness.

24. The Applicant states awakenings are not summed for both air and ground noise due to their different nature, but this logic does not follow. For instance, a person can be woken up by both a car and a train in the night experiencing two awakenings. If, however, they assessed individually and separately the combined effect might not appear in any conclusions on awakenings as a whole. The Applicant should update their awakening assessment to include both air and ground noise.

25. The Applicant states that secondary metrics are generally assessed based on population size and number of people affected, as set out in 14.4.75 of APP-039, but this does not address the issue of scale of effect, nor fit with the evidence provided previously. We request the Applicant respond to how significance is determined for secondary metrics, in light of evidence provided by their team elsewhere.

'Ground noise'

26. The Applicant states that forecasts have been provided for aircraft included within the ground noise model, however, as stated in APP-173 (Ground Noise Modelling) section 4.4, aircraft have been grouped into generic types and the methodology has not been provided.
27. The Applicant states that further information has been provided on the ground running splits across locations in Appendix E of REP3-071; it is expected that this refers to section 2.5.3:

The paragraph goes on to state the intended use of no more than 10% at the western end of Taxiway Juliet and 50% at the central Taxiway Juliet locations. It should be noted that this presents a potential improvement compared with the baseline. Analysis of the log of EGR activity mentioned above at paragraphs 2.1.3 and 2.3.4, indicates that from the beginning of 2017 to the end of 2018, block 38S was used 45% of the time, the western end of Taxiway Juliet was used 17% of the time, Yankee taxiway was used 33% of the time and a location known as Alpha2 was used 5% of the time. It is also worth noting that 4% of the records in the log during this period do not specifically mention the location of the EGR test which could affect these calculated percentages, but regardless of this, the current usage of the western end of Taxiway Juliet is higher than it is planned to be with the development.

28. The information provided accounts for 60% of the ground running locations. We request the Applicant provide 100% of the split location information.

'Noise envelope'

29. The Applicant states that the SOAEL contours are close to the Airport and therefore would not be a suitable control value alongside their proposed value set at LOAEL. All SOAEL contours at all airports can be considered close to their respective airport and this is not a sufficient reason for not including them within any control.
30. The Applicant states that annual noise monitoring and reporting will be undertaken and that there can be confidence that this will be undertaken effectively. Luton Airport's DCO set out a prescriptive monitoring regime that is considerably more detailed than that proposed by Gatwick; production of an equivalent document would give confidence rather than what is currently proposed.

'Noise Insulation Scheme'

31. The Applicant states they have "*responded to CAGNE's concerns regarding the NIS within Section 3.24 of the Relevant Representations Report [REP1-048].*" REP1-048 merely acknowledges there is a concern but does not respond to the matter. The updated NIS is awaited, which we request to include a 'no worsening' clause, to ensure that local residents will not receive a lesser offer from the proposed NIS compared to the extant.

REP3-101 - The Applicant's Response to the ExA's Written Questions (ExQ1) - Noise and Vibration

32. Items covered within this note already are not repeated.

NV.1.1

33. It is not possible to comment on the proposed reduction in bund height from 12m to 10m before full information (including noise contours) has been provided on the ground noise assessment.
34. If it is possible to maintain a height of 12m, and this offers noise benefit, then this is still expected to be worthwhile, given the national aviation noise policy requirements to minimise noise

where possible. However, account must be taken of the fact that those dwellings benefiting from this will also be experiencing likely significant noise impacts from other sources as well.

NV.1.4

35. The Applicant maintains that new flightpaths would not be needed as these would be the same as those currently allocated to the emergency runway, but it remains unclear whether the emergency runway and main runway have ever operated simultaneously. If not, then there may be other issues, such as safety, that mean new flightpaths have to be developed, as has occurred at Dublin Airport. We have set out this information previously in REP2-070.

NV.1.7

36. Table 2 of this response contains what are expected to be multiple typos, including “<3dB” changes where presumably “>3dB” is intended and the criteria for schools, colleges and nurseries should be “55-63”, rather than “55-59”, based on the next row of the table.

37. It is not clear how these criteria have been derived, other than a general reference to particular documents. Luton Airport used the same criteria for schools (and also had the above typo in their original table), but this was based on measurements undertaken at Breachwood Green School (near Luton) and so are not necessarily justified at Gatwick. More information is sought from the Applicant.

NV.1.8

38. The Applicant refers to their use of ISO 9613 within their ground noise model for this particular purpose, but deems it overly worst-case in other matters; this lacks consistency. The Applicant should update their modelling to ensure ISO 9613 is used in all aspects, where relevant.

39. The Applicant also refers to an ERCD Report but does not state the title or reference; we request this be provided.

