



Horsham
District
Council



Gatwick Airport Northern Runway Project

Examination Ref: TR020005

Supporting Noise and Vibration Technical Notes to the Statements of Common Ground - Book 10 – Version 1- April 2024 – Document reference 10.13 [REP3-071] Review

Deadline 4: 15 May 2024

Crawley Borough Council (GATW-AFP107)
Mid Sussex District Council (20044737)
Reigate and Banstead Borough Council (20044474)
East Sussex County Council (20044514)
Mole Valley District Council (20044578)

Horsham District Council (20044739)
West Sussex County Council (20044715)
Surrey County Council (20044665)
Tandridge District Council (GATW-S57419)
Kent County Council (20044780)

Supporting Noise and Vibration Technical Note Review [\[REP 3-071\]](#)

Construction Vibration

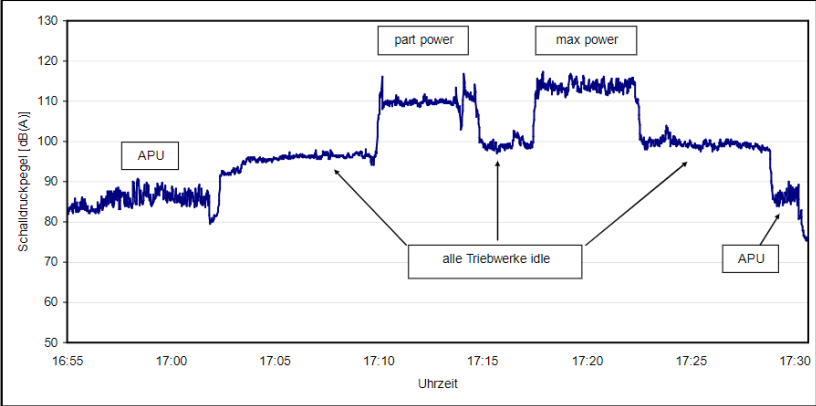
ID	Paragraph reference	Technical Note Subject	JLAs Comment
Appendix A – Construction Vibration			
The JLAs accept the Applicant’s construction vibration submission			
Appendix B – Ground Noise Fleet Assessment			
JLA-NVTN-B1	1.1.1	The assessment of Ground Noise from taxiing aircraft	Ground noise should consider all sources (ground running, auxiliary power units, end around turns and fire training ground) and not just taxiing. Only taxiing is covered in the ground noise assessment and other noise sources are predicted using the L _{Amax} metric, which the Applicant states is only for context and is not used for identifying likely significant effects.
JLA-NVTN-B2	1.1.3-1.1.4	Incorrect levels reported in ES Appendix 14.9.3	<p>The JLAs request that an updated version is submitted of Appendix 14.9.3 is submitted with tracked changes.</p> <p>Details of the error should be provided as it means that some properties experience significant effects when previously they did not and other properties do not now experience significant effects whereas previously they did.</p> <p>The JLAs also request that numerous errors in the ES Chapter 14: Noise and Vibration [APP-039] ground noise assessment are also addressed in an updated tracked version.</p>
JLA-NVTN-B3	1.1.5	Ground noise contours	<p>The ground noise contours provided are not adequate for determining how communities would be affected. The contours should be presented, as per air noise, in 3 dB increments from 51 dB daytime and 45 dB night-time so the JLAs are able to identify noise sources and how effective mitigation is.</p> <p>They should be provided with a zoomed in view and a better resolution of base-mapping so properties can be identified.</p>

			Ground noise contours for all assessment scenarios should be provided.
JLA-NVTN-B3	2.1.1	Comparison of future operational scenario with future baseline	The assessment only looks at the change in noise between the operational scenario and the respective future baseline. As per the air noise assessment, likely significant effects should be identified for smaller changes in ground noise when the SOAEL is exceeded.
JLA-NVTN-B4	3.1.2	Ambient noise sources	The Applicant states that existing sources of noise, such as road traffic noise, are a factor in the ground noise assessment are not discussed in the ground noise assessment in ES Chapter 14: Noise and Vibration [APP-039] . As stated in, JLA-NVTN-B2, the JLAs request that the ES chapter is updated with tracked changes.
JLA-NVTN-B5	3.1.4	Complaints	The Applicant states that the lack of complaints is reason for not identifying ground noise as a major concern. The JLAs are of the opinion that there is no basis for this assumption as complaints only tend to be made about unusual events and typical activities can still cause disturbance even though a complaint is not made.
JLA-NVTN-B6	3.1.5	Proposed mitigation	It would be helpful to discuss the proposed mitigation or reference where details of it can be found rather than assuming the reader is knowledgeable about such things.
JLA-NVTN-B7	Section 4	Ground noise assessment	The assessment text is difficult to follow and does not provide enough information. It would be helpful to use tables to summarise information so it is easily digestible. The matter is confused by attempting to correct an error and assessing a slower growth rate scenario at the same time. As stated in, JLA-NVTN-B2, the JLAs request that the ES chapter is updated with tracked changes with ALL slower growth rate and central case ground noise scenarios assessed.
JLA-NVTN-B8	5.1.1	'protection' provided by bund/ barrier	The JLAs object to the use of 'protected' when describing its influence on ground noise at nearby communities. The word 'protection' means to keep safe from harm. A barrier/ bund mitigates noise but does not protect.
JLA-NVTN-B9	5.1.1	Ground noise and road traffic noise comparison	The JLAs object to the Applicant's statement that ground noise and road traffic noise are similar in nature. Road traffic noise and ground noise have different acoustic character so any comparison should be contextualised.
JLA-NVTN-B10	5.1.7	Noise insulation scheme	The Applicant has identified that properties that would qualify for ground noise insulation would be determined through monitoring (paragraph 4.1.11 [APP-180]) so it comes as a surprise that the Applicant is now willing to rely on modelling to

			determine whether properties would qualify. It would be helpful if these properties could be identified.
Appendix C – Traffic Noise Barrier Options Selection Report			
JLA-NVTN-C1	Appendix C	Riverside Park barrier	As detailed in the Appendix C of the Surrey County Council Local Impact Report [REP1-100] , a 2m barrier would result in reduction in road traffic noise between 4 and 6 dB for some properties benefiting from screening. The JLAs are of the opinion the A23 Riverside Park barrier would provide substantial benefits for properties experiencing levels of road traffic noise exceeding the SOAEL and should be reinstated. This accords with aim 3 of the Noise Policy Statement for England to improve health and quality of life as referred in Para 12.188 of REP1-097 .
JLA-NVTN-C2	4.1.9	Barrier disbenefits	The Applicant lists a number of barrier disbenefits, but does not go into any detail as to why a barrier results in these disbenefits. Can the Applicant provide more information on: <ul style="list-style-type: none"> • Why there is a reduction of ability to provide replacement planting. • How the character of the park will change. • Why there is a reduction of ecological connectivity along the length of the park. • Why there will be a greater light spill into the park from the highway.
JLA-NVTN-C3	Table 2	Traffic noise predictions	A review of the traffic noise predictions was undertaken and the JLAs noted that the predicted ES road traffic noise levels in Table 2 did not match the ES predictions from Table 6.3.1 of ES Appendix 14.9.4 [APP-174] . They do match the results of the road traffic noise mitigation analysis in Table 5.1.1 of ES Appendix 14.9.4 [APP-174] . The JLAs would like to query why the results of Table 5.1.1 and Table 6.3.1 are different for baseline scenarios with specific focus on the 2018 baseline, which should be unaffected by traffic forecasts and mitigation.
Appendix D – Traffic Noise Important Area Assessment			
JLA-NVTN-D1	4.1.2	2032 is the most stringent assessment	Can the Applicant explain why 2032 is considered as the most stringent assessment for road traffic noise when, for similar projects, the worst-case assessment tends to be when aircraft movements are at their maximum
Appendix E – Ground Noise Engine Ground Run			

JLA-NVTN-E1	2.2.2	Boeing 777 engine testing measurements	The Applicant makes reference to engine ground running noise measurements that were used to model engine ground running noise. The Applicant should provide details of these measurements along with the sound power data used in the noise model to calculate L _{Amax} levels.
JLA-NVTN-E2	2.2.2	Sound power levels for aircraft	The Applicant states some differences in aircraft sound power level, but does not provide the results of measurements nor the calculated sound power levels to contextualise these statements.
JLA-NVTN-E3	2.5.2	Intention to use replacement locations on taxiway Juliet wherever possible	This should be a commitment rather than an 'intention'; the Applicant should secure this commitment in the DCO.
JLA-NVTN-E4	2.6.8	Justification for not identifying significant effects	The logic that air noise L _{Amax} noise levels are high so ground noise L _{Amax} noise levels are not significant is inherently flawed. The Applicant states that they cannot assess air and ground noise together as the sources are of different nature then chooses to make a comparison when it suits their narrative.
JLA-NVTN-E5	2.6.9	Justification for not identifying significant effects	The Applicant has attempted to provide some indication on how engine testing would contribute to the L _{Aeq,T} metric with some rather outlandish assumptions. Paragraph 2.7.2 [REP1-050] states that peak engine testing noise levels would last for two minutes and events would occur, on average, 0.35 times per day. As such, engine testing noise L _{Aeq,T} noise has been calculated based on event lasting for 0.7 minutes (42 seconds). An example of a typical jet aircraft engine test is provided in the figure below ¹ .

¹ Figure 1 of Basis of Calculation for Engine Test Runs – Dr Thomas Schenk – KSZ Ingenieurburo GmbH (2013)

			 <p>The duration of this typical event is 25-minutes and the figure illustrates that high levels of noise (at a distance of 100m) occur for the duration of the event. It would be helpful if the Applicant could provide a typical engine testing profile that could be used to model ground noise such that ground running events would contribute to LAeq,T ground noise levels. This should be modelled as one event occurring on a reasonable worst-case day and should not be modelled as a partial event for an average day. Engine ground running noise should be included in the assessment of likely significant effects through its contribution to LAeq,T noise levels on a reasonable worst-case day.</p>
JLA-NVTN-E6	3.1.1	The ground noise assessment is robust and cautious	The JLAs dispute this statement and are of the opinion that the ground noise assessment is not fit for purpose. The JLAs urge the Examining Authority to request the Applicant to update their ground noise assessment and address issues identified in [REP1-068] and [REP1-097] .
Appendix F – Aircraft Fleets Used in Noise Modelling			
JLA-NVTN-F1	Appendix F	Slower transition case vs Central case	The Need Case [APP-250] describes the slower transition case as “ <i>This</i>

			<p><i>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". This description gives the impression that the slower transition fleet transition merely lags behind the central case fleet transition so, when both fleets reach 100% next generation aircraft in 2047, noise contour areas should converge. However, this is not the case as the slower transition case noise contour areas are consistently higher than the central case contour areas, even when both are at 100% next generation aircraft. The central case and slower transition case contour areas are presented in Table 14.9.6 of ES Chapter 14: Noise and Vibration [APP-039].</i></p> <p>Analysis of the central case and slower transition case fleets show a markedly different aircraft type fleet composition. The most prominent example of this is in the 2047 slower transition case fleet, which has replaced approximately 200 EA320NEO aircraft from the central case with approximately 200 B73710MAX aircraft.</p> <p>The Applicant should explain why the fleet composition of the slower transition case is so markedly different than the central case fleet and why the central case and slower case contours do not converge in 2047.</p> <p>Following on from this, it is important to understand how the fleet are modelled. The JLAs have requested that the Applicant provide details of their validation process along with SEL/LAmax baseline data for individual aircraft variants at each monitoring location This request was originally made after the</p>
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			JLAs review of the PEIR and subsequent requests have been ignored by the Applicant. The JLAs would urge the Examining Authority to request the Applicant provide this information as it is important for understanding how individual aircraft types contribute to noise contours and how changes to the fleet can affect noise contour areas.
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