

Review of London Biggin Hill Airport 2021 Noise Action Plan Review

Introduction

1. The Environmental Research and Consultancy Department (“**ERCD**”) of the United Kingdom Civil Aviation Authority (“**CAA**”) has been appointed by the London Borough of Bromley (“**LBB**”) to undertake a technical review of the Biggin Hill Airport Review of Noise Action Plan 2016 – 2020, published by Biggin Hill Airport Limited (“**BHAL**”) as operators of London Biggin Hill Airport (“**LBHA**”).

Background

2. LBB is the freehold owner of the land on which LBHA is situated. LBB granted a 125-year lease to BHAL in 1994.
3. In 2015, BHAL applied to LBB to extend its operating hours. Following discussion between LBB and BHAL, an agreement was reached and BHAL was granted an extension to the airport’s operating hours. As part of that agreement, a condition requiring that BHAL committed to a further series of actions to reduce the impact of aircraft noise on residents in Bromley, was put in place. This condition required a series of actions to be published as the Noise Action Plan (“**NAP**”) and the Management Information Letter (“**MIL**”). Further information on the application to vary the lease is provided on LBB’s website¹.
4. The **London Biggin Hill Airport NAP** was published by BHAL on 28 August 2015. LBB is the authority responsible for the NAP. The approval of the extension to the airport’s operating hours was conditional on the NAP being reviewed every five years subsequently. The MIL, dated 19 May 2016, adds that *‘opportunities to minimise the environmental impact of airport activities will be considered at each review’*.
5. During summer 2021, BHAL reviewed the 2015 NAP and delivered **Biggin Hill Airport Review of Noise Action Plan 2016 – 2020** (“**NAP Review**”) with the aim of fulfilling this obligation.
6. ERCD understands that LBB has already taken independent advice from RSK Acoustics on whether the review fulfils the obligations. ERCD’s review (documented

¹ Information on BHAL is provided at:

https://www.bromley.gov.uk/info/1004/planning_policy/1012/biggin_hill_airport_limited.

Specific information on the application to vary the lease is provided at:

https://www.bromley.gov.uk/info/1004/planning_policy/1012/biggin_hill_airport/2.

in this technical note) was requested by LBB to offer a second opinion from an aviation specialist. ERCD acknowledge the potential perceived conflict of interest of LBB being both the Local Planning Authority and freehold owner of the land, with BHAL as the leaseholder.

7. For this review, LBB has sought ERCD's opinion on the following seven questions, in addition to raising other matters which ERCD consider to be relevant in assisting LBB to decide whether the NAP Review fulfils BHAL's obligations to meet the conditions of the agreement to extend operating hours:

- a) *'Has the Noise Action Plan, as agreed with LBB, been adhered to? Specifically, with reference to Appendix 2 of the NAP, has the NAP review adequately demonstrated compliance. If not, what evidence needs to be submitted.'*
- b) *Has the review process been completed in an appropriate fashion, adhering to all industry and governmental procedures?*
- c) *Specifically, should a new NAP or a new version of the NAP have been delivered at the end of the process, or does a review document suffice?*
- d) *Does the review document adequately reflect Biggin Hill Airport's adherence and attempts to adhere to the Noise Action Plan?*
- e) *Does the review document adequately incorporate the latest industry standards and processes at other airports to improve the situation for residents affected by the airport?*
- f) *Does the review document adequately reflect any improvements in technology that could improve the situation for residents affected by the airport?*
- g) *Would you advise any other noise minimisation measures that might reasonably be considered to be included in the review document?'*

8. LBB has also requested an Executive Summary that could be placed in the public domain and used as part of Bromley Council's decision-making process. We have presented this in **Appendix A** to this technical note.

9. **Appendix B** contains the UK AIP Noise Abatement Procedures for LBHA (as of 15 October 2021) for reference. **Appendix C** supports the response to the LBB's first question, and a glossary of terms used in this technical note is presented in **Appendix D**.

Review

10. The following sub-sections present our review of the NAP Review against each of the seven questions listed above.

Has the Noise Action Plan, as agreed with London Borough of Bromley, been adhered to? Specifically with attention to Appendix 2 of the NAP, has the NAP review adequately demonstrated compliance? If not, what evidence needs to be submitted?

11. We have interpreted this question as both:
- a) Has BHAL fulfilled the actions to the extent that it has met its obligations according to the NAP; and
 - b) Does the NAP Review document give enough information to demonstrate to its readers that BHAL has met its obligations according to the NAP?
12. Appendix 2 of the NAP presents a summary of the Noise Action Plan actions. This includes Table B1: Action – Monitor and Manage and Table B2: Action – Research and Reporting, which list 22 actions (plus sub-actions) and 11 actions respectively. In their NAP review, BHAL provides its update on these in Table 2.4 and Table 2.5. We have reviewed each of the 39 actions as described here below.

Actions where claimed have been met, and evidence provided

13. Following a detailed review, it is ERCD’s opinion that almost all the actions have been met where claimed. The information provided to satisfy the reader that these actions have been met varies in the level of detail, and for just over half of these actions, we considered the information was sufficient to give reasonable assurance that the measure had been met. I.e. factual information is contained in other sections of the NAP review document, or the information in the table reports the accountability has been transferred to a third party, e.g. the supplier of the Noise Monitoring and Track Keeping System (“**NMTKS**”), or Biggin Hill Airport Consultative Committee (“**BHACC**”).

Evidence exists but not reported in NAP review

14. For just under half of these actions, the review comprised a claim that the action had been addressed without providing supporting information. In some of these cases, we were able to find supporting evidence without too much difficulty via other sources, such as the NATS Aeronautical Information Publication², and BHAL’s website³. Although for these actions, the NAP review meets a) above, it does not in its own right adequately demonstrate BHAL’s compliance with the actions, so in ERCD’s view, it does not meet b).
15. For example, actions 13a and 13b require assessment of airport performance against actual noise contours; this is also stated in section 20 of the MIL which states that ‘*Prior to any NAP review, LBHA will prepare actual measured noise*

² <https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/>

³ <https://biggin-yourairport.co.uk/>

contours to be compared with predicted noise contours. Where the actual noise contour falls within the agreed forecast noise contour, no further action will be required.' These actual 57 dB L_{Aeq} daytime, morning and evening noise contours were published in the 2020 Annual Noise Report⁴, the extents and enclosed areas of which are shown to be within the limit which the airport is required to take reasonable endeavours to stay below. The NAP review, however, compares the 2020 forecast noise contour areas with the 57 dB daytime limit contour area; no mention is made of the comparison of the actual and predicted noise contours.

16. Further to this, para 4.33 of the NAP specifically requires BHAL 'to assess performance with respect to the previously forecast noise envelope... by reference to the number of people and dwellings affected.' Information on numbers of people and dwellings affected has not been included in the NAP review.

Evidence could not easily be found

17. There are some cases where we were not able to determine whether the requirement had been met without significant effort. In these cases, the reader either is required either to accept the claims in the NAP review as fact, to do their own investigation, or to reject the claims. Whether or not LBB has received sufficient information to confirm that these actions have been met through their oversight role, ERCD recommends that LBB requests that BHAL provide substantive information.
18. An example is action 4 where the NAP review states that BHAL '*conducts noise surveys through the deployment of a mobile noise monitor at the request of residents*'. The NAP review does not contain sufficient information to substantiate this (i.e. details of any requests, and the dates, locations (anonymised) and findings of any surveys in response, or confirmation if no requests were received). This information was also not readily available on BHAL's website.
19. A further example is action 14b where the NAP review states that 'For new based and non-based aircraft operations, the Airport has limited the use of the airport to those aircraft types that meet ICAO Chapter 4 standard'. Although the ICAO Chapter 3 requirement (action 14a) is listed in the UK AIP, EGKB AD 2.21 1b (see Appendix B), there is no mention of the Chapter 4 limits here, so it is questionable whether and how this has been implemented.
20. One final example is action 16, requiring that BHAL operates '*in accordance with the noise abatement procedures delineated in the UK Aeronautical Information Publication (AIP)*'. On inspection of UK AIP, EGKB AD 2.21 (Appendix B), section 2a ii, 3b and 3g i refer to '*additional charges as set out in the London Biggin Hill*

⁴ London Biggin Hill Airport Annual Report 2020, Bickerdike Allen Partners, ref. A11103-R04-DR_1.0, February 2021. https://biggin-yourairport.co.uk/wp-content/uploads/2021/07/A11103-R04-DR_1.0-Biggin-Hill-Airport-Annual-Report-2020.pdf

Airport Schedule of Fees and Charges’ or penalty charges for failure to comply with the noise abatement procedures. On review of the Biggin Hill Airport Schedule of Fees and Charges⁵, it does not set out any additional charges, so it is unclear whether this has been implemented.

Actions not stated to have been met

21. There is a case where the NAP review states the action has been completed, but its supporting claim does not imply that the action has been met.
22. Action 8b requires BHAL to ‘Implement a scheme to restrict circuit training to certain operating hours’. The NAP review states that ‘All circuits, other than for flight training, are approved by the Senior Air Traffic Control Officer (SATCO) or Chief Executive Officer (CEO)’ and that the action has been completed and is ongoing. This does not address the specific action.

Actions not yet complete

23. There are also actions which are stated to be ongoing but not yet completed. These are presented as such in Table 2.4 and Table 2.5.

Inaccuracies or lack of clarity

24. In some cases, statements are inaccurate or unclear to the extent that it could lead to confusion and/or misinterpretation.
25. For example, action 11 requires the airport to ‘*operate controls*’ whereas the NAP review states that ‘*Maximum noise level compliance is measured by the two monitors...*’. I.e. it says measurement takes place but does not specifically state that controls are used.
26. Regarding action 10c concerning the early removal of the VOR beacon at Biggin Hill, the NAP review refers to the update in para 4.9. This refers to the WebTrak system and is located within the section with heading: *Accuracy and utility of Webtrak* and is therefore not related to action 10c. Paras 4.12 and 4.13 are instead relevant. This appears to be a typographical error. There were other such errors relating to actions 10a and xi.

Section summary

27. In the most part, it appears that BHAL has met its obligations according to the NAP actions. For a significant proportion of the NAP Review, it is however ERCD’s view, that further information may be required to demonstrate to all readers that BHAL has met its obligations according to the NAP. Appendix C summarises which actions we consider to fall within each of the above categories.

⁵ <https://bigginhillairport.com/wp-content/uploads/2021/03/Biggin-Hill-Airport-Fees-and-Charges-2021-22.pdf>

28. It is ERCD's view that BHAL has missed an opportunity to have effective dialogue with its local community. Whilst the COVID-19 pandemic may have had a significant effect on the available resources to undertake the review, the NAP review, as drafted, is indicative of a "do minimum" approach to meet its obligations to LBB, though not necessarily to meet the expectations of its wider stakeholder audience.

Has the review process been completed in an appropriate fashion, adhering to all industry and governmental procedures?

Governmental procedures

29. The concept of a NAP arose from the European Environmental Noise Directive (END): 2002/49/EC, transposed in domestic legislation as the Environmental Noise (England) Regulations 2006 (the "**Environmental Noise Regulations**") legally oblige airport operators to meet the terms of the Environmental Noise Regulations if it meets one or both of two conditions, namely:
- the airport operates greater than 50,000 annual aircraft movements during the assessment year; and/or
 - aircraft noise contours for that airport would impinge on an agglomeration.
30. To meet their legal obligations, in-scope airport operators must provide their NAP (and associated noise mapping results) to the Department for Environment, Food and Rural Affairs ("**Defra**"). Defra has provided guidance to airport operators, the latest was published in July 2013⁶.
31. In paragraph 1.06 of the guidance, it states 'To meet the Regulations, some airports have previously produced noise action plans following the first round of noise mapping. For those airports, a simple proportionate updating process is required'. Further information is provided in Chapter 5 of the guidance on what the updating process should comprise, and what we consider to be appropriate. Although this guidance is written for airport operators meeting the terms of the regulations in 2013 (and references to 2012 should be read as '2020' for this 2021 review), we understand the same principles apply to subsequent years, given this is the most recently published guidance.
32. BHAL is therefore required to review rather than revise their NAP. Defra also provides guidance for a review, specifically in paras 5.5 to 5.11, which are copied in Table 1 below. Again, the guidance is directed to qualifying aerodrome operators who meet either (or both) of the conditions set out at paragraph 29 of this advice.

⁶ Guidance for Airport Operators to produce noise action plans under the terms of the Environmental Noise (England) Regulations 2006 (as amended), July 2013. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/276226/noise-action-plan-airport-operators-guidance-201401.pdf

ERCD notes that BHAL is not a qualifying aerodrome as it meets neither of the conditions set out above at paragraph 29.

33. Whilst BHAL does not meet the conditions under the Environmental Noise Regulations, it is ERCD's view is that the Defra guidance does however set an appropriate standard for addressing the elements of the review required under paras 4.32 to 4.34 of the NAP. It is, therefore, incumbent on BHAL to clearly assess its performance against agreed limits and demonstrate any progress it has made against the actions. Moreover, it is also incumbent on BHAL to ensure that LBB may clearly understand the status of the actions, and for local community stakeholders to have a clear understanding as to how BHAL is meeting its obligations, and, where it fails to do so, how it is being held accountable.
34. The table below sets out our review against the Defra criteria, with paragraph numbering within the table copied directly from the Defra guidance.

Table 1 Review against Defra guidance

Guidance	CAA assessment
<p>5.2 The current action plan should be reviewed taking account of:</p> <ul style="list-style-type: none"> ▪ The results of the noise mapping completed in 2012 [read as 2020 for this 2021 review]; and ▪ The progress made against the actions described in the current action plan 	<p>The NAP review takes account of forecast noise contours, not actual noise contours (Table 2.2). This element of the guidance has not been met. Progress made against the actions is described as key achievements (2.8), in Tables 2.4 and 2.5, and in the latter parts of the document. As noted in para 27, we do not consider the NAP review document to be satisfactory in terms of the level of information provided.</p>
<p>5.3 The current plan should be revised to include, as necessary:</p> <ul style="list-style-type: none"> ▪ Updating details about the airport and its operation; ▪ Updating information about relevant legislation and standards; and ▪ Updating relevant national and local policies 	<p>The NAP has not been revised in the NAP review, so these updates have not been fulfilled.</p>
<p>5.4 The revision to the plan should also include:</p> <ul style="list-style-type: none"> ▪ The results of the recent round of noise mapping; ▪ Information about the progress made against the actions described in the current plan ▪ Information about on-going actions ▪ Information about any proposed new actions 	<p>As mentioned above, the 2020 actual noise contours have not been included. Information about progress against the actions has been provided, but as mentioned in para 27, we do not consider the level of information to be satisfactory. In the summary, section 6.0, eight new actions for 2021 have been proposed.</p>
<p>5.5 It is envisaged that once the plan has been revised, it will be presented to the Airport's Consultative Committee for comment, and any other appropriate bodies depending on the extent and nature of the revisions.</p>	<p>It is not stated that the NAP review contains comments from BHACC, nor whether the new actions for 2021 were consulted upon to any degree.</p>
<p>5.6 The Airport Operator will reflect upon the comments received from the Consultative Committee. A description of those comments</p>	<p>A description of comments received from BHACC has not been included in the NAP review.</p>

should be included in the revised plan together with a reasoned justification for the response to the issues raised. The Airport Operator shall include, as appropriate, information about those who responded to the consultation (unless they indicated that they did not wish to be mentioned).	
5.7 In the revision of the plan, the Airport Operator must be sure that the information required by Annex V of the EU Directive is included.	Some of the information required by Annex V has been provided. There are some notable omissions, such as estimates of the number of people exposed to noise due to the airport; a record of public consultations; financial and cost/benefit assessment of actions; and provisions for evaluating the implementation and the results of the NAP.
5.8 Once the revised plan has been finalised, it needs to be sent to the Secretary of State for Defra. The document must include prominently displayed wording identifying it as a draft subject to formal adoption and approval.	There is no requirement to do this, as London Biggin Hill Airport is not in scope of the Environmental Noise Regulations.
5.9 The Secretary of State for Defra, in liaison with the Department for Transport, will form a view regarding whether or not the submitted revised plan meets the requirements of Regulation 15 and, therefore, whether or not the plan is appropriate for adoption.	See above re. 5.8 comment
5.10 If the Secretary of State for Defra considers that the requirements of Regulation 15 are not met, the airport operator will be required to make the necessary changes to the revised plan so that the requirements of Regulation 15 are met in full. Following revision, the revised plan will need to be resubmitted to the Secretary of State for Defra by an agreed date for further consideration.	See above re. 5.8 comment
5.11 Once adopted, the revised Noise Action Plan should be published by the Airport Operator as a public document in an electronic format, within 28 days of being informed that the revised Noise Action Plan has been adopted.	The NAP states it is subject to formal adoption, though it does not state what this adoption process is; we assume that since London Biggin Hill Airport is not in scope of the Environmental Noise Regulations, the NAP was not adopted by the Secretary of State. It is not clear whether there is a requirement for BHAL to formally adopt the NAP review.
5.12 The Environmental Noise Regulations contain a continuing obligation on Airport Operators to review (and revise, if necessary) the Noise Action Plan every 5 years or sooner where a major development occurs. Where the Airport Operator feels that such a review is necessary, then the process described in paragraphs 5.5 – 5.11 above regarding consultation and submission shall be followed.	BHAL has an obligation to LBB to review the NAP, and guidance is given in 5.5 – 5.11. Although this could set the expectation for what a review should comprise, we acknowledge that some of these elements have not been specified in the NAP or MIL.
5.13 Airport Operators may wish to agree to carry out an informal review of the progress being made on the implementation of the Action Plan as part of their continuing engagement with the local airport consultative committee or other stakeholders. The process and timing for any informal review should	Our understanding is that the NAP review is considered a formal review which discharges BHAL's obligation to LBB to review the NAP.

be jointly agreed between the Airport Operator and the committee, or other stakeholders, as appropriate. Such reviews could form part of any regular environmental reporting that is already undertaken.	
5.14 It should be noted that, Regulation 26(4) of the Environmental Noise Regulations, sets out that the Secretary of State has the power to take action should he believe that a requirement of these Regulations is not being met due to any act or omission by the Airport Operator.	This does not apply, as London Biggin Hill Airport is not in scope of the Environmental Noise Regulations.

35. According to Table 1, the reporting against the actions is the only applicable element of the guidance that has been met.

Industry procedures

36. There are many examples of revised NAPs produced by the UK's major airports since the first round of noise mapping and reporting of 2007. These fully met the Defra guidance in order to be formally adopted. Crucially, they describe the latest policy context, present results of noise mapping based on actual operations, set measurable actions with key performance indicators (with reviews against these for the previous period) that have gone through a public consultation process.
37. Comparing BHAL to a large commercial airport might be considered inappropriate given the different scale of the operation. Notwithstanding this fact, Wycombe Air Park (WAP), a medium sized General Aviation airfield, was in scope for the second round of the mapping and reporting in 2011 since its L_{den} 55 dB(A) contour abutted the High Wycombe (Booker) agglomeration. Its 57 dB $L_{Aeq,16h}$ noise contours are smaller than those calculated in 2020 for London Biggin Hill Airport.
38. WAP's round three NAP⁷ was a full revision of its first NAP and met the Defra requirements as described above. It included noise contour results for the previous year based on actual operations, and consultation via their Joint Consultative Committee (JCC) which we consider to be a proportionate approach.
39. Although WAP was in scope of the Environmental Noise Regulations, whereas London Biggin Hill Airport is not, we would suggest that LBB and BHAL consider agreeing to meet elements of this standard in subsequent years.

Section summary

40. As summarised in the previous section, whilst the NAP review process principally meets the agreed requirements, it falls short on demonstrating this compliance.

⁷ Wycombe Air Park, Noise Management & Action Plan, 2019 – 2024

<http://www.wycombeairpark.co.uk/sites/default/files/Wycombe%20Air%20Park%20Noise%20Action%20Plan%202019-24%20FINAL.pdf>

Industry precedent and governmental procedures set a higher standard which have not been met in the NAP review.

Specifically, should a new NAP or a new version of the NAP have been delivered at the end of the process, or does a review document suffice?

41. The Defra guidance is clear that for ‘those airports for which an action plan, prepared under the terms of the Regulations, exists, ... the current plan should be revised to include’ the various information listed in Table 1. The NAP published by BHAL was not, however, prepared under the terms of the Environmental Noise Regulations, so this requirement does not apply in this situation.
42. Through studying the relevant sections of the NAP (paragraphs 3.4f, and 4.32 – 4.34) and the MIL (paragraph 20), it is apparent that the agreement made between LBB and BHAL was for the NAP to be ‘reviewed’ at 5 yearly intervals, rather than ‘revised’.
43. The requirements of the NAP review are set out in paras 4.32 – 4.34 of the NAP, and these do not require a revision of the NAP. There would therefore be no expectation for LBHA to undertake a revision.
44. In the case of a NAP review, Defra provides guidance. Although London Biggin Hill Airport is not within scope of the Environmental Noise Regulations, the aim of BHAL’s NAP to manage noise in the context of the increased operating hours, is clearly linked. Defra’s guidance serves to make the NAP process effective, which provides a strong case for following it.
45. For instance, in the space of five years, aircraft noise policies are likely to change. Since the BHAL’s NAP was published, the Department for Transport has set the lowest observed adverse effect level (the point at which it regards adverse effects begin to be seen on a community basis) at 51 dB $L_{Aeq,16h}$ ⁸. The international guidance for calculating aircraft noise in the vicinity of civil airports⁹ has also been revised. It is appropriate to not just review progress against the actions, but also review the actions to check they are still appropriate.

Section summary

46. ERCD would recommend that best practice be followed and BHAL should undertake a revision following the Defra guidance for revising a NAP. It should however be noted that this must be the subject of an agreement between LBB and BHAL as the airport operator is not obliged under the Environmental Noise Regulations to do so. ERCD would further recommend that, as part of this negotiation, analysis should be undertaken as to whether the cost of carrying out

⁸ [Air Navigation Guidance 2017, Department for Transport, October 2017.](#)

⁹ ECAC Doc.29 4th Edition Volume 2, December 2016. <https://www.ecac-ceac.org/documents/ecac-documents-and-international-agreements>

the revision outweighs the perceived or actual benefit to stakeholders and local communities. The absence of population/household noise exposure data in the current NAP review makes this difficult to determine.

47. If the decision is to accept a review instead of a revision, ERCD recommends that the assessment of actual noise performance against limits is clearly documented in the NAP review, that sufficient information is given to demonstrate the NAP obligations have been met, including the status of the actions, and that the typographical errors are corrected.

Does the review document adequately reflect Biggin Hill Airport's adherence and attempts to adhere to the Noise Action Plan?

48. The review document addresses the criteria set out in paragraphs 4.32 – 4.34 of the NAP. Read as a standalone document (without having access to the BHAL's website), the level of information provided is not adequate for a reader to reach their own conclusion as to whether BHAL has adhered to, or attempted to adhere to, all parts of the NAP.
49. Table 2.2 of the NAP review shows that 50,000 ATMs was exceeded within the first five years. According to the MIL, this being foreseen should have triggered a review. This in turn would have allowed LBB to consider suspending the extended hours pending completion of that review if it was considered appropriate to do so. Given that the maximum exceedance in 2016 was by only 1.7%, followed by subsequent action to reduce movements, and finally movements in 2020 amounting to 57% of the forecast, the decision not to bring forward a review would appear to have been appropriate.

Does the review document adequately incorporate the latest industry standards and processes at other airports to improve the situation for residents affected by the airport?

Noise measurement/monitoring

50. London Biggin Hill Airport uses an industry standard noise monitoring and track keeping system, which is calibrated according to current standards. It is expected that this will have been installed according to ISO 20906, and comprises two fixed noise monitoring stations and a mobile monitor for deployment at residents' properties on request.
51. This is standard practice and proportionate for an operation of the size of London Biggin Hill Airport. The WebTrak interface and integrated complaints handling functionality mentioned in para 3.2 of the NAP review is welcomed and something that is routinely used at large commercial airports.

52. There may be some value in considering how frequently the mobile monitor is deployed and for how long. A possible improvement could be to publish community noise monitoring reports on BHAL's website.

Noise modelling

53. In January this year, the CAA published CAP2091, CAA Policy on Minimum Standards for Noise Modelling¹⁰. CAP2091 sets out the noise modelling standards that airports are required to adhere to when providing the CAA with the outputs required to carry out regulatory duties. ERCD's recommendation would be for bodies who have responsibility of NAP oversight to also adopt these standards.
54. The criteria for the various levels (Categories) of noise modelling sophistication are based on population exposed to day and night time noise levels at 51 dB LAeq,16h and 45 dB LAeq,8h respectively. Population data is not readily available for London Biggin Hill Airport, so ERCD have not confirmed the applicable Category. If it were to fall into Category C, D or E, there would be a requirement to make use of the ICAO aircraft noise and performance (ANP) dataset which is periodically updated.
55. As mentioned in para 45, the international guidance for calculating aircraft noise in the vicinity of civil airports was updated in 2016. Industry standard noise modelling software are subsequently updated.
56. The noise modelling software used to produce BHAL's noise contours is the US Federal Aviation Administration (FAA) Integrated Noise Model (INM) version 7.0d. This is no longer a supported software and will not receive updates to the methodology or the ANP dataset. The latest equivalent software is the FAA Aviation Environmental Design Tool (AEDT) version 3d. It would be ERCD's recommendation that BHAL look to migrate to this software, with a one-off study to compare contours produced using INM 7.0d and the current version of AEDT to account for any changes due to the model change.

Charging schemes

57. It is common for large commercial airports to use a system of noise-related landing charges to incentivise use of best-in-class aircraft. These should be based on certification noise levels, and levy higher charges for the noisier aircraft types.
58. Differential charging can also be used to incentivise operation during the less noise-sensitive periods of the day/week.
59. Further information is provided in CAA CAP1576: Environmental charging – review of impact of noise and NOx landing charges: update 2017¹¹, and its predecessor

¹⁰ [CAP2091: CAA Policy on Minimum Standards for Noise Modelling](#)

¹¹ https://publicapps.caa.co.uk/docs/33/Environmental_Landing_Charges_Review_2017_20170721V1.1.pdf

CAP1119: Environmental charging – Review of impact of noise and NOx landing charges¹².

Residential Sound Insulation Scheme

60. Although the airport has established a residential sound insulation scheme (RSIS), no properties are currently eligible according to the criteria. It could be that this was set when airport operations were greater, pre-pandemic, however the eligibility criteria should be reviewed to check it is relevant and affords the protection to local residents that it was intended to.

Engaging communities

61. The WebTrak system is helpful for local residents that are disturbed by aircraft noise to inform themselves about which aircraft is causing the disturbance and when. It also provides a convenient interface for issuing a complaint. Section 4 of the NAP review also highlights the structures in place and the active engagement the airport has with local community stakeholders.
62. ERCD notes that the Consultative Meeting Minutes page¹³ of BHAL's website publishes noise contour reports in addition to consultative committee meeting minutes. In addition to these, ERCD would recommend that greater use of the website is made to provide community noise monitoring, complaints reports and other monitoring reports as appropriate, details of the residential sound insulation scheme and information on progress against NAP actions on a periodic basis.

Does the review document adequately reflect any improvements in technology that could improve the situation for residents affected by the airport?

Steeper approaches

63. The new action 5, 'The Airport will endeavour to ensure that the Runway 21 ACP includes an increase in the approach angle and enable the Airport to increase all approaches to 3.5 degrees' is in line with action at other airports to introduce steeper approaches.

Continuous Descent Operations (CDO)

64. Continuous descent operations attempt to keep aircraft at higher altitude for longer on approach, removing or at least reducing the need for aircraft to fly relatively noisy level segments. These could be considered by BHAL for adoption at London Biggin Hill Airport, though we recognise that due to LBHA's proximity to Heathrow Airport, there are constraints regarding this.

¹² <http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=5803>

¹³ [Consultative Minutes - Biggin Hill - Your airport \(biggin-yourairport.co.uk\)](http://biggin-yourairport.co.uk)

Low Power Low Drag

65. Low power/low drag is the collective term used for describing the lowest noise configuration for a given speed and/or altitude during the approach. It involves using optimum flap settings on approach and delaying the deployment of the undercarriage. While remaining within international safety guidance, it may still be possible to achieve beneficial improvements in noise performance.

Would you advise any other noise minimisation measures that might reasonably be considered to be included in the review document?

66. The table in section 6 of the NAP review contains the measures BHAL will take to reduce noise over the subsequent 5 years. ERCD's recommendation is for these actions to be redrafted where necessary to be specific, measurable, achievable, realistic, and timely ("SMART").
67. Given the potential for airport activity eventually to return to pre-pandemic levels and then continue to grow, consideration could be given to reviewing the noise envelope in place, for instance using a noise-factored type limit potentially in combination with a movement limit. The CAA has provided various options for defining a noise envelope in CAP1129: Noise Envelopes¹⁴.

Conclusions

68. In producing the 2021 NAP review, BHAL has followed the scope set out in the NAP and MIL and therefore agreed with LBB. It appears that BHAL has met the majority of its obligations according to the NAP actions. The level of information provided as evidence, is not however, in ERCD's view, adequate to demonstrate to its readers that BHAL has met its obligations according to the NAP.
69. Established industry precedent and governmental guidance to airports for producing a NAP require a greater level of detail, supported by evidence, than that demonstrated in the BHAL NAP review.
70. Best practice would be for BHAL to undertake a revision following the Defra guidance for revising a NAP. Whilst this is not however strictly necessary, as London Biggin Hill Airport is not within the scope of the Environmental Noise Regulations, it would represent industry best practice.
71. ERCD notes that BHAL has already adopted, and is taking steps to introduce, or is considering standards, processes and technology which reflect those used at other airports. We have made some suggestions which BHAL and LBB may also wish to consider at an appropriate time.

¹⁴ <http://publicapps.caa.co.uk/docs/33/CAP%201129%20Noise%20Envelopes.pdf>

APPENDIX A

Executive Summary

The Environmental Research and Consultancy Department (“**ERCD**”) of the United Kingdom Civil Aviation Authority (“**CAA**”) was appointed by the London Borough of Bromley (“**LBB**”) to undertake a technical review of the “London Biggin Hill Airport Review of Noise Action Plan 2016 – 2020”, published by Biggin Hill Airport Limited (“**BHAL**”).

It concluded that in producing the 2021 Noise Action Plan Review, BHAL has followed the scope set out in the original Noise Action Plan dated 28 August 2015 (“**NAP**”) and Management Information Letter dated 19 May 2016 (“**MIL**”).

The Noise Action Plan Review published by BHAL demonstrates that the airport appears to have met the majority of its obligations arising from the NAP actions. The level of information provided for many of the actions as evidence, is not however, in ERCD’s view, adequate to demonstrate to all readers that BHAL has met its obligations according to the NAP. Specifically, in terms of information provided, and overall scope, established industry precedent and governmental guidance to airports for producing a NAP require a greater level of detail, supported by evidence, than that which is currently provided in BHAL’s NAP review.

Whilst London Biggin Hill Airport does not meet the threshold tests set out in the Environmental Noise (England) Regulations 2006, ERCD would recommend that best practice should be followed and that BHAL undertake work to revise the NAP following the statutory guidance. This additional work must however be the subject of an agreement between LBB and BHAL, with analysis undertaken as to whether the cost of carrying out the revision would outweigh any perceived or actual benefit to stakeholders and local communities. Noise management activity must also be proportional to the noise issue at an airport. In the case of BHAL, information on the number of people and/or households exposed to policy noise levels has not however been provided to support this aim.

ERCD notes that BHAL have already adopted and/or is taking steps to introduce standards, processes and technology which reflect those used at other airports. In addition to these steps which are either in place or in train, we have also made some further suggestions which BHAL and LBB may also wish to consider now or in the future.

APPENDIX B

UK AIP Noise Abatement Procedures for London Biggin Hill Airport

EGKB AD 2.21 NOISE ABATEMENT PROCEDURES

1 GENERAL

- a. Every operator of aircraft using the airport shall ensure at all times that aircraft are operated in a manner calculated to cause the least disturbance practicable in the area surrounding the airport.
- b. Only those aircraft meeting ICAO Chapter 3 criteria or better will be accepted. Contact Flight Operations on +44 (0)1959-578500.
- c. Pilots are requested to avoid the use of reverse thrust or reverse pitch above idle power settings on landing, consistent with the safe operation of the aircraft.
- d. Due to the close proximity of residential areas, ground running of engines or Auxiliary Power Units (APU) shall be kept to a minimum consistent with operational requirements. At no time shall APUs be run for more than 30 minutes without Aerodrome Operator consent.
- e. The use of the Noise Preferential Routings is supplementary to the noise abatement take-off techniques published by specific aircraft manufacturers.
- f. The Noise Preferential Routings may at any time be departed from to the extent necessary for avoiding immediate danger.

2 NOISE ABATEMENT PROCEDURES - IFR DEPARTURES

- a. **Runway 21/03 IFR Departures**
 - i. London Biggin Hill Airport is located close to densely populated and largely residential areas. In order to support operating hours that include night time aircraft operations, compliance with NPRs is required and is enforced by a Noise Monitoring and Track Keeping System (NMTKS).
 - ii. Aircraft failing to comply with NPRs and/or noise limits may be subject to additional charges as set out in the London Biggin Hill Airport Schedule of Fees and Charges. As with other London airports, frequent or repeated noise and/or track violations may result in a permanent exclusion from the airport.
 - iii. Calibrated Noise Monitors are located approximately 1 KM from the threshold of each runway and lie directly under the approach and departure path. Additionally, a mobile noise monitor may be positioned anywhere from time to time deemed appropriate by the airport operator. Nominal departure track limits are programmed into the NMTKS along with minimum heights set at two points in the standard departure route.
- b. **Runway 21 Departures**
 - i. On departure speed should be restricted to V2+25 KIAS and in any case no more than 185 KIAS, in accordance with the Standard Departure Route (SDR), until passing over BIG eastbound in order to achieve the best

practical angle of climb whilst keeping thrust to the minimum required for an expeditious departure.

- ii. Following rotation, runway track should be maintained accurately.
 - iii. On crossing the upwind end of Runway 21, an immediate right turn should be commenced to track 220° M in order to avoid residential housing located at Norheads Farm. In accordance with the SDR, a right turn should be commenced promptly at BIG 1 DME in order to route back over the airfield on track towards DET. Speed in excess of 185 KIAS will result in a radius of turn which exceeds the designated track limits and may therefore result in a track violation. In strong south/southwesterly winds, particular attention should be given to radius of turn.
 - iv. In order to safely maintain the relatively low speed mandated by this procedure and dependent upon aircraft type, consideration should be given to delaying flap retraction until passing BIG outbound at or above 2100 FT AMSL in order to ensure a sufficiently tight radius of turn is achievable.
 - v. The procedure is designed to prevent unnecessary overflight of the built up areas lying to the north of the airport. Pilots should pay particular attention to avoiding overflight of these areas. Achieving the correct radius of turn is therefore essential.
 - vi. Additionally, an altitude limit violation will occur if the noise monitor at Norheads Farm is overflown below 1000 FT AMSL (400 FT AAL) or the BIG is overflown below 2100 FT AMSL.
- c. **Runway 03 Departures**
- i. On departure speed should be restricted to V₂+25 KIAS and in any case no more than 185 KIAS until at or above 2100 FT AMSL in order to achieve the best practical angle of climb whilst keeping thrust to the minimum required whilst at low level.
 - ii. Following rotation, runway track should be maintained accurately. Upon reaching BIG 1 DME aircraft should commence an immediate right turn to track 120° M to intercept DET R275° to DET in accordance with the SDR.
 - iii. In order to safely maintain the relatively low speeds required by this procedure and dependent upon aircraft type, consideration should be given to delaying flap retraction until at or above 2100 FT AMSL in order to ensure a sufficiently tight radius of turn is achieved.
 - iv. The procedure is designed to prevent unnecessary overflight of the built up areas lying to the north of the airport. Pilots should pay particular attention to avoiding overflight of these areas. Excessive speed on departure or a failure to commence a right turn immediately upon reaching BIG 1 DME will likely result in a track violation.
 - v. Additionally, a limit violation will occur if the noise monitor at Milking Lane Farm is overflown below 1000 FT AMSL (400 FT AAL) or 2100 FT AMSL is not achieved after 5 track miles.

d. **General Exclusion**

Pilots should note that none of these provisions will apply in any emergency. Commanders must place the safety of their aircraft ahead of published NPR requirements.

3 VFR NOISE ABATEMENT PROCEDURES

- a. London Biggin Hill Airport is located close to densely populated and largely residential areas. In order to support extended operating hours that include night time aircraft operations, compliance with NPRs is required and is enforced by a Noise Monitoring and Track Keeping System (NMTKS).
- b. Aircraft failing to comply with NPRs and/or noise limits may be subject to additional charges as set out in the London Biggin Hill Airport Schedule of Fees and Charges. As with other London airports, frequent or repeated noise and/or track violations may result in a permanent exclusion from the airport.
- c. Calibrated Noise Monitors are located approximately 1 KM from the threshold of each runway and lie directly under the approach and departure path. Additionally, a mobile noise monitor may be positioned anywhere from time to time deemed appropriate by the airport operator. Nominal 'no fly' zones over Keston, Downe, Farnborough and Orpington are programmed into the NMTKS along with minimum heights set at each noise monitor.
- d. **Runway 21 Departures**
 - i. All aircraft departing Runway 21 VFR are required to turn right, after passing the aerodrome boundary, to make good a track of 220° M:
 1. aircraft departing to the west via Kenley should continue to 1 NM, before turning right and setting course, avoiding the villages of Woldingham and Warlingham;
 2. aircraft departing to the east or northeast via Sevenoaks or Swanley should continue to 2 NM before turning left and tracking to the southeast, remaining south and east of Tatsfield Village. A useful visual reference for the turn is to remain south of the Tatsfield golf course;
 3. once an aircraft has left the ATZ, it should not re-enter the ATZ without the appropriate ATC clearance. Aircraft intending to route to via Swanley should ensure that they arrange their flight in order to avoid the eastern limits of the ATZ whilst tracking northeast. **CAUTION** – there may be numerous aircraft joining from the east.
- e. **Runway 03 Departures**
 - i. Aircraft departing Runway 03 are required to climb straight ahead until 1NM:
 1. aircraft departing to the west via Kenley to make a left turn en-route to leave the ATZ
 2. aircraft departing east or southeast via Sevenoaks or northeast via Swanley, to leave the ATZ en-route. **CAUTION** – there may be numerous VFR aircraft joining from the east;
 3. aircraft departing to the north, continue en-route but avoiding overflight of the Noise Sensitive Areas of Orpington and Chelsfield. Expect an early frequency change to the next agency, due to the close proximity of London Heathrow and London City CTAs;
 4. all pilots must in all cases avoid overflight of the residential areas to the north and east especially Keston, Farnborough, Orpington and Downe.
- f. **Visual Circuits**
 - i. All circuits at London Biggin Hill Airport are conducted to the west of the aerodrome (Right Hand - Runway 21, Left Hand - Runway 03). Overflight

of the following Noise Sensitive Areas should be avoided, unless necessary to fulfil an ATC instruction such as to extend downwind for spacing, Keston Village The Leavesdon Estate and Leaves Green. Aircraft unable to comply with these requirements should not plan to make use of London Biggin Hill Airport.

- ii. Aircraft joining the visual circuit from the east or southeast should avoid overflight of the Noise Sensitive Areas of Downe Village and Biggin Hill Village.
- g. **Noise Sensitive Areas**
 - i. The NMTKS will track all aircraft arriving at and departing from London Biggin Hill Airport. Aircraft entering a Noise Sensitive Area will automatically become the subject of a track violation report which will be considered by the airport Noise Abatement and Safety Review Board (SANARB) for consideration of a penalty charge. All penalty charges levied are donated to local good causes. In the case of repeated violations of wither noise or track limits, permanent exclusion from the airport may result.

APPENDIX C

Action review status

The table below identifies which actions, in ERCD's view, fall within each review category as set out in paragraphs 11 to 26. Those actions for which inaccuracies were found or there was lack of clarity are marked in bold.

Category	Actions
Actions where claimed have been met, and evidence provided	1, 2, 5, 6, 9, 11, 12, 14a, 14c, 15, 17, 18, 19, 22, i, iii, vi, xi
Evidence exists but not reported in NAP review	3, 7, 13a, 13b, iv
Evidence could not easily be found	4, 8a, 14b, 16, 20 , 21, v , vii, viii
Actions not stated to have been met	8b
Actions not yet complete	10a , 10b, 10c , ii, ix, x

APPENDIX D**Glossary**

Technical terms and abbreviations	
ACP	Airspace Change Proposal
BHACC	Biggin Hill Airport Consultative Committee
CDO	Continuous Descent Operations
CEO	Chief Executive Officer
END	European Environmental Noise Directive: 2002/49/EC
JCC	Joint Consultative Committee (at Wycombe Air Park)
NAP	Noise Action Plan
NMTK (also NMTKS)	Noise Monitoring and Track Keeping system
RSIS	Residential Sound Insulation Scheme
SATCO	Senior Air Traffic Control Officer
WAP	Wycombe Air Park