

Memorandum

To: Marc Hume (LBB)
CC: Mark Bowen (LBB), Andrew Rogers (LBB), Hedley Pugh (LBB), Susan Frazer (LBB)
From: Vernon Cole
Project: London Biggin Hill Airport
Subject: Flightpath Watch: STA Report
Reference: 15/0009/M11-0
Date: 20 November 2015

Preamble

Stephen Turner Acoustics have prepared a report for Flightpath Watch dated 13th November 2015 which provides commentary on the noise issues associated with the proposed Extension of Operating Hours at Biggin Hill airport.

This memo responds to a number of the assertions made by Mr Turner and provides commentary on a number of the issues raised. It is structured using the section numbering of the STA report.

1 Introduction

1.1 Lease: Third Schedule

1.1.1 Throughout the report, Mr Turner relies on a fundamental misunderstanding which is articulated in paragraph 1.5:

1.5 It is understood that if agreement is reached between LBHA and LBB to amend the lease to allow the increase in operational hours, the measures contained in the third schedule would be replaced by those set out in the NAP.

1.1.2 With the exception of the hours of operation, the measures and restrictions set out in the Third Schedule of the Lease will not be altered or superseded by the proposed Noise Action Plan. They will remain in force in the event that the change of hours is consented. In particular, the noise limits defined in paragraph (e) will continue to apply to all aircraft operating at Biggin Hill Airport.



1.1.3 The Noise Action Plan contains additional noise control provisions that will result in a substantially lower noise impact in the Borough than is currently permitted by the Lease.

1.1.4 Therefore, where Mr Turner identifies in paragraph 1.6 that he is advising on whether the measures set out in the NAP provide a commensurate level of protection for residents, his starting point is incorrect. The Noise Action Plan contains noise control provisions which add to, and therefore do not need to be compared to, those contained in the Third Schedule.

1.2 **Brief to Mr Turner**

1.2.1 In paragraph 1.1, it is established that the report was prepared in response to a request by Mrs Giuliana Voisey on behalf of Flightpath Watch, sent by e-mail dated 4th July 2015. It is presumably on that basis that Mr Turner was given to understand that the measures in the Third Schedule to the Lease would be replaced by those set out in the NAP.

1.2.2 Mrs Voisey had already been advised that adoption of the NAP would not in any way prejudice the noise limits contained in the Lease which would remain in place.

1.2.3 This point has been made several times since, including in response to questions posed by members of the public on 10th June 2015 (Q12 from Penny Denby).

1.2.4 It is hard to reconcile the misinformation still underpinning Mr Turner's report of 13th November, with the correct information that was already in the public domain some 5 months earlier.

2 The Current Lease

2.1 **Certainty**

2.1.1 In paragraph 2.5, it is attested that the provisions in the Lease as it currently stands gives certainty on the following points.

Hours of Operation

2.1.2 Under the terms of the Lease, residents would expect to be affected by noise from normal aircraft movements between the hours of:

06h30 and 22h00 on weekdays

08h15 and 20h00 on weekends

2.1.3 The noise generated by any of these movements is limited only by the restrictions contained in the Lease, which equivalent to Chapter 3 noise limits.

2.1.4 If the operating hours variation is approved, residents would expect to be affected by noise from normal aircraft movements between the hours of:



06h30 and 23h00 on weekdays (+ 1 hour per day)

08h00 and 22h00 on weekends (+1.75 hours per day)

- 2.1.5 The noise generated by any of the movements in the core hours is limited only by the restrictions contained in the Lease which are equivalent to Chapter 3 noise limits. Additional limits apply before 07h00 (end of the night time period) that are equivalent to Chapter 4 noise limits (6 to 13dB improvement)¹ with reasonable endeavours being used to limit the noise further to values consistent with the Lear 35 business jet (16 to 23dB improvement).
- 2.1.6 Therefore, the certainty of being potentially exposed to noise from aircraft flyovers over slightly longer periods of time is accompanied by the certainty that maximum flyover noise levels in the critical night time period will be substantially lower than permitted by the Lease.

Movements Limit

- 2.1.7 Under the terms of the Lease, residents would be certain to be affected by noise arising from not more than 125,000 aircraft movements per annum. Again, the noise generated by any of these movements is limited only by the restrictions contained in the Lease equivalent to Chapter 3 noise limits.
- 2.1.8 If the operating hours variation is approved, residents would retain the certainty that they would be affected by noise arising from not more than 125,000 aircraft movements per annum.
- 2.1.9 In this case, however, they can be also certain that they will never be exposed to average noise levels greater than determined by the 57dB_{L_{Aeq,16h}} contours equivalent to 50% of the UDP contour. Furthermore, they will be certain that the Airport will be using reasonable endeavours to limit noise to an even greater degree as determined by the 2020 noise envelope. This envelope is consistent with a movement figure of 49,500 per annum by aircraft, each having an aggregate noise level will below the Lease limits.

2.2 Noise Limit Revisions

- 2.2.1 In paragraph 2.6 Mr Turner correctly points out that there has been a ban in the UK since 2002 on movements by aircraft that do not comply with Chapter 3 noise standards, or better. (There are certain exceptions, but these need not cloud the point to be made.)
- 2.2.2 Since 2002, there has been no further outright ban by the UK Government on operations by aircraft based on their certified noise levels.
- 2.2.3 Directive 2002/30/EC 'implicitly desires' (to quote Mr Tuner) that EU member states should discourage the use of marginally compliant Chapter 3 aircraft (however so defined). This does not constitute a ban. To attempt to ban Chapter 3 Aircraft from operating at Biggin Hill Airport

¹ The noise level improvements quoted in parentheses cited by Mr Turner in his paragraph 3.7



when no such ban is imposed by the Government at any other UK airport would be unreasonable in the extreme.

- 2.2.4 Therefore, the debate does not hinge on a question of semantics. By any reasonable interpretation of the meaning of the wording in paragraph (e) (ii) (b) on page 65 of the Lease, the limits so set out are consistent with the latest Government revisions.

3 The Noise Action Plan

3.1 Early Morning Noise Limits

- 3.1.1 In paragraph 3.8, Mr Turner points out that limiting aircraft in the early morning period to those that meet the ICAO Chapter 14 noise limits would provide more protection than currently exists in Schedule Three of the Lease. That is entirely correct; but rather beside the point.

- 3.1.2 It is beside the point because we are no longer relying on the Third Schedule as the primary noise control mechanism for early morning movements, we are relying on the Noise Action Plan. Mr Turner sets out the provisions of the NAP in this regard in his paragraph 3.6 and goes on to describe the noise benefits to be derived in his paragraph 3.7. He points out that the prescribed aircraft which is used to set the 'reasonable endeavours' noise limits (the Lear 35 business jet) meets the Chapter limits by a margin of 16 to 23dB.

- 3.1.3 This margin is consistent with, and likely to be better than, the 17dB margin attributed to Chapter 14 aircraft.

3.2 Chapter 14 Noise Limits

- 3.2.1 In paragraph 3.8 reference is made to Chapter 14 noise standards offering a 17dB cumulative improvement over the Chapter 3 noise limits, which are cited in the Lease Third Schedule. It must be understood that Chapter 14 noise limits apply only to new prototype aircraft being developed by manufacturers and it would not be appropriate to attempt to retrospectively apply the limits to existing aircraft already in service.

- 3.2.2 It is also important to understand the meaning and limitation of the cumulative margin concept.

- 3.2.3 The Third Schedule noise limits for jets are:

Sideline	94 EPNdB
Take-off	89 EPNdB
Approach	98 EPNdB

- 3.2.4 The cumulative noise level imposed by the Lease is therefore 281 EPNdB, the sum of the three individual values. The Chapter 4 limit is effectively 17dB below this, equating to 264 EPNdB.



3.2.5 However, beyond also stating that no individual Chapter 4 limit shall be higher than 1dB below the individual Chapter 3 limits, and giving new lower aggregate limits for lighter jet aircraft, the ICAO regulation does not stipulate that there should be a balance between the three individual values in achieving the cumulative limit. Imposing noise limits only framed in terms of the ICAO Chapter 14 requirements therefore leaves open the possibility that:

- Aircraft with take-off noise levels only 1dB lower than those imposed in the Third Schedule are permitted to depart in the early morning, or
- Aircraft with approach noise levels only 1dB lower than those imposed in the Third Schedule are permitted to arrive in the early morning.

3.2.6 The potential 1dB benefit is far less than that to be derived by imposing limits that are based on the operation of the Lear 35 business jet which is up to 10dB quieter on departure and up to 6dB quieter on arrival than permitted by the Third Schedule.

3.3 Movement Limit

3.3.1 In paragraph 3.9 Mr Turner asserts that the NAP contains no movement limit, in contrast to the 125,000 contained the Third Schedule.

3.3.2 Again we reiterate that this is a fundamental misunderstanding of the situation: the measures and restrictions set out in the Third Schedule of the Lease will not be altered or superseded by the proposed Noise Action Plan. The 125,000 movement limits will remain in force.

3.3.3 The NAP provides two further control measures not currently available under the terms of the Lease:

- In the event that that the number of annual movements is likely to breach 50,000 (40% of the permitted limit), the NAP will automatically be reviewed and additional noise mitigation measures incorporated where appropriate.
- Irrespective of the annual number of movements actually occurring, a noise level equivalent to a 57dB $L_{Aeq,16h}$ contour that has an area of 50% of the UDP contour cannot be exceeded.² In addition, reasonable endeavours must be used by BHAL not to exceed a 57dB $L_{Aeq,16h}$ noise envelope that is more than 30% smaller than this limit.

3.4 Movements and Noise

3.4.1 In paragraph 3.16 Mr Turner suggests that doubling the amount of noise generated by an aircraft. i.e. increasing the flyover noise level by 3dB, might only just be discernible as a

² The UDP contour is that noise contour produced in 1998 as a statement of the annual average noise levels that might reasonably be expected to be generated by Biggin Hill aircraft movements. It less than the maximum they are permitted to generate under the terms of the Lease (effectively 125,000 movements by aircraft meeting the Chapter 3 noise limits), but is in the public domain as an indicator of the levels of aircraft noise residents might reasonably expect to be exposed to.



difference to someone experiencing it. On the other hand, he considers that doubling the number of movements without changing the individual flyover levels would be more noticeable and by extension lead to a greater adverse impact.

3.4.2 Mr Turner offers no evidence to support this supposition.

3.4.3 The primary reason for this is that there is no evidence to support the supposition, for if there was such evidence it would have informed the Government's reasoning and decision making in the formulation of the Aviation Policy Framework (APF). Later in his report (paragraph 3.31) Mr Turner relies on paragraph 3.19 of the APF, which states:

Average noise exposure contours are a well established measure of annoyance and are important to show historic trends in total noise around airports. However, the Government recognises that people do not experience noise in an average manner and the value of the L_{Aeq} indicator does not necessarily reflect all aspects of perception of aircraft noise. For this reason we recommend that average noise contours should not be the only measure used when airports seek to explain how locations under flight paths are affected by aircraft noise. Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities.

3.4.4 However, in formulating its policy in relation to the effects of aircraft noise on a community and the levels of noise that would trigger specific mitigation reference is made only to the $L_{Aeq,16h}$ measure of noise. For example:

3.17

We will continue to treat the 57dB $L_{Aeq,16h}$ contour as the average level of daytime aircraft noise marking the onset of significant community annoyance.

3.26

The Government continues to expect airport operators to offer households exposed to levels of noise of 69dB $L_{Aeq,16h}$ or more assistance with the cost of moving.

3.29

The Government also expects airport operators to offer acoustic insulation to noise sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63dB $L_{Aeq,16h}$ or.

3.4.5 The point is that in defining specific noise levels that underpin key aspects of its policy, the Government is relying on established evidence that supports the relationship between noise dose, as quantified by the $L_{Aeq,16h}$ value, and the response of people living in the community. These relationships were developed from studies such as ANIS³ and ANASE⁴ which were comprehensive in their approach, methodology, purpose and level of detail. No comparable

³ DORA 8402 United Kingdom Aircraft Noise Index Study: main report, Department of Transport 1985

⁴ ANASE Attitudes to Noise from Aviation Sources in England: Final report for department of Transport, October 2007



studies have since been undertaken which provide conclusive evidence that is contrary to these studies and supports the supposition made by Mr Turner in his paragraph 3.16.

- 3.4.6 Finally in relation to the use of noise envelopes to control the levels of noise generated by an airport, paragraph 3.29 of the APF states:

The Government wishes to pursue the concept of noise envelopes as a means of giving certainty to local communities about the levels of noise which can be expected in the future and to give developers certainty on how they can use their airports.

- 3.4.7 The tools used in the NAP are entirely consistent with current policy.

3.5 Residential Sound Insulation Scheme

- 3.5.1 In paragraph 3.18 Mr Turner suggests that a debate could be had about the eligibility threshold for the RSIS, but seems to grudgingly suggest that the measure does address the noise impact in the very early morning period.
- 3.5.2 Mr Turner does not reflect on the fact that the eligibility threshold is consistent with the best practice used at UK Airports where the aim is to minimise the risk of sleep disturbance caused by noise from aircraft flyovers during the night time period. No attempt has been made to contact Cole Jarman to discuss any aspects of the NAP or the noise assessment that has been carried out, and no request to debate the RSIS threshold has been made.

3.6 Table 1

- 3.6.1 The content of Table 1 is predicated on the misunderstanding that the NAP replaces the provisions of the Third Schedule of the Lease, and is therefore incorrect. The table is replicated below, with corrections and additions highlighted where these are required to render it consistent with the current proposals.



Measure	Operating Criteria	Final NAP	Comment
Aircraft Type (general)	Chapter 3	Chapter 3	No change. There have been no Government revisions that would alter this.
Aircraft early Morning	Chapter 3	Chapter 4 plus reasonable endeavours to be no worse than Lear 35	Improvement.
Movement Limit (general)	125,000 per annum	125,000 and undertaking to review NAP if 50,000 exceeded	Improvement.
Movement Limit (early morning and late evening)	No limit	8 between 06h30 and 07h00 8 between 22h00 and 23h00 Monday to Fridays Reasonable endeavours for early morning 57dB, $L_{Aeq,30m}$ contour not to exceed 2.2km². Reasonable endeavours for late evening 57dB, $L_{Aeq,ih}$ contour not to exceed 1.3km².	This is where the increase in operating hours is likely to be particularly noticeable. The measure limits the extent of the noise impact. There are new controls on noise levels generated by aircraft operating in the early morning period.
Contour Area limit	No limit	Area within the 57dB $L_{Aeq,16h}$ not to exceed 4.3km ² . Reasonable endeavours for this contour not to exceed 2.9km².	Improvement. This a new control and the limit equates to a noise exposure that is 50% of that which might reasonably be expected based on the forecasts in the UDP. In addition, reasonable endeavours must be used to ensure the noise exposure is effectively 30% lower still. Control consistent with Government APF.
Residential Sound Insulation Scheme	None	Those living within the 90dBA SEL footprint of aircraft movements that occur on average once per night over a year	Improvement

3.7 Other Observations

Aim of the NAP

3.7.1 In paragraphs 3.20 to 3.23, it is suggested by Mr Turner that because the projected future noise contours encapsulate a greater number of people in the low and medium community



annoyance categories, the NAP will have failed in its objective to better protect people against noise from operations at Biggin Hill.

- 3.7.2 There is no argument that based on current projections, noise levels in 2020 are expected to be higher than they currently are (contours have been most recently prepared for 2014). However, that is to ignore the point that the NAP sets controls that do not currently exist. These controls limit the future noise levels to values that are substantially lower than they might reasonably be expected to be (based on the 1998 UDP contours) or could physically be (based on 125,000 movements by aircraft meeting the Chapter 3 noise limits).
- 3.7.3 While future noise levels may indeed be higher than they presently are, residents in the communities around the Airport are provided with certainty that they will be substantially lower than they could be based on the controls currently applied at the Airport.

Brief Evaluation of the proposed NAP actions

- 3.7.4 In paragraph 3.25 it is suggested that the requirement for the Airport to use reasonable endeavours to achieve the stipulated noise envelopes for the daytime, early morning and late evening periods is 'probably not a mitigation measure' as there is no mention of what sanctions would occur if the aim is not met.
- 3.7.5 LBB Corporate Services⁵ have made it clear to Biggin Hill Airport that the Council would not be acting unreasonably if it rolled back any granted extension of hours should the Airport not deliver on matters within their control. The sanctions that would be applied have therefore been defined.

Overall Extension of Operating Hours

- 3.7.6 In paragraphs 3.27 to 3.32, it is suggested by Mr Turner that the NAP is not consistent with current Government policy (i.e. the APF) as it does not seek to control the noise generated by aircraft during certain morning and evening periods of the 16 hour day. These are periods that might be expected to contain movements in the event that the extension of operating hours is granted whereas at present they do not.
- 3.7.7 We do not disagree with the principle that having a knowledge, or reasonable expectation, of the levels of noise likely to be generated during every hour or half hour of every day would not be of some benefit. The greater the degree of understanding that residents will have of the noise climate around their homes the better they will be able to anticipate and react to the likely effects.
- 3.7.8 However, this is not the same as saying that the noise must be controlled or limited during every hour or half hour of every day, as Government policy does not require this. Our

⁵ Letter to Hogan Lovells International LLP dated 17th November 2015



argument as to what Government policy does require and how the NAP in its current form is consistent with it is set out in Section 3.4 of this note.

- 3.7.9 The NAP seeks to control overall noise levels, as quantified by the 57dB $L_{Aeq,16h}$ index, in line with Government policy. It recognises that noise is not always experienced in average manner by going on to define additional noise limits in the critical extended times at the beginning and the end of the operating period and limits on the levels of noise generated by individual flyovers during what is defined as the night time period.

Overall Government Policy

- 3.7.10 In paragraph 3.39 Mr Tuner points out that ultimately a judgement needs to be made between the expected economic benefits to be derived from a proposal and the consequential adverse effects that might arise from increased noise. This would most certainly be the correct basis on which to make a judgement in the event that the application to extend operating hours were a planning application.

- 3.7.11 It is not; it is an application to vary a commercial lease and two points should be made:

1. It is not certain that the same considerations apply in a lease variation negotiation as would apply in respect of a planning application. Our considerations have been in respect of the noise issues only, and the consequent economic effects have not come into our reckoning. In that vein, we have had to use a reasonable approach in our assessment of the noise effects as the test of reasonableness is an important gauge of whether the application to vary the Lease is being dealt with appropriately by Bromley Council.
2. In reconciling the noise effects associated with the application, we have balanced the expected increases in overall levels likely to occur in the early morning and late evening periods against the measures imposed in those periods to both control and mitigate the noise as well as the measures imposed in other periods to limit the overall noise impact of the Airport. Those wider measures will give a degree of control over noise that does not currently exist, thereby giving certainty to the residents of the Borough that the noise levels they experience in the future will be lower than they might otherwise experience without those measures in place. It is our view that on the noise case alone, a judgement can be made that the specific and wider controls that are being proposed balance the expected adverse effects in the extended hours.

4 Conclusions

- 4.1 It is a concern that Mr Turner has been incorrectly informed or come to his own misunderstanding that the measures contained the Third Schedule of the Lease will be replaced with those set out in the Noise Action Plan. They will not. In particular, the noise and movements limits defined in paragraph (e) will continue to apply to all aircraft operating at Biggin Hill Airport will remain in force.
- 4.2 Starting from this corrected basis, there are a number of amendments which would need to be made to the STA report so that it fairly reflects the fact that the NAP imposes a new set of



restrictions which act in addition to those already contained in the Lease. Where these are significant, they have been highlighted in this note.

4.3 This note also addresses other concerns raised by Mr Turner in respect of:

- Whether the provisions of the Third Schedule have been updated in line with Government revisions,
- The effectiveness of the noise controls imposed on early morning flyovers,
- The certainty of the benefits to be expected from the application of the NAP,
- Consistency with the Government's Aviation Policy Framework,
- Sanctions that are available to LBB to ensure that the provisions of the NAP are complied with.

■ End of Section