

## Proposed changes in Airspace at Leeds Bradford Airport.

The aspects of the proposals which are most likely to affect our area are:

1. that all aircraft taking off to the SE will continue in a straight line over Leeds City Centre (most of them currently turn right shortly after passing over West Park and head towards Pudsey)
2. that departing aircraft should ascend more gradually but continue straight on up to higher altitudes.

Leeds Bradford Airport consulted on these proposals during 2017 and is now submitting them to the Civil Aviation Authority (CAA) for approval. If approved they would come into effect in Spring 2019.

## Summary of NWLTF's Objection to the proposals:

### **(1) Aspects of the consultation were inadequate:**

- a. **The format and content** of the original Consultation Document made it almost impossible for the unaided public to understand the implications of the airspace change proposals (use of acronyms and technical terminology, absence of clear maps....);
- b. **Misleading assurances** dissuaded many people from attempting to understand the consultation material or from engaging with the consultation;
- c. **No consultation events** were held in our area and we have **no representation on the Airport Consultative Committee** (hence our attention was not drawn to the documents and we had no help to understand them); and
- d. Subsequent re-issues of the document were only marginally easier for laypeople to understand and failed to give a clear picture of the expected impact on aircraft noise.

### **(2) The analysis presented in the Consultation Documents did not allow for:**

- a. **the number of aircraft movements expected after the proposed changes come into effect** (Calculations were based on aircraft movements in 2016 but passenger numbers are expected to double by 2030);
- b. **the proposed change in ascent profiles** – this will increase the noise heard at ground level for some people and reduce it for others (there is no indication of whether this means that our area will be worse off or better off but the potential impact could be very significant); and
- c. **WHO guidelines** on the threshold at which aircraft noise becomes a public health issue (these guidelines imply that significant impacts will be felt beyond the footprints indicated in the Consultation Documents).

### **(3) The Proposals will result in:**

- a. **more aircraft overflying** areas where people congregate out of doors (Leeds Beckett campus, Beckett Park, Headingley Stadium, Woodhouse Moor, University of Leeds, Leeds City Centre) as well as noise-sensitive premises such as the Queenswood Educational Centre and Leeds General Infirmary; and
- b. **an increase in aircraft noise** (according to the latest version of the Consultation Document) in a large area stretching from Weetwood to Belle Isle and including Meanwood Park and Woodhouse Ridge

### **(4) The proposed change in flight paths over north Leeds are presented as the Airport's response to changes sought by National Air Traffic Control** but it is not clear whether the changes would be necessary if the number of aircraft movements at LBA were to remain at the present level.

### **(5) Aspects of the proposals are not fully consistent with the spirit of the local planning conditions which require LBA to minimize the impact of aircraft movements over the main built up area of Leeds**

# Objection to the proposed changes in Airspace at Leeds Bradford Airport.

Full Objection submitted to CAA by the North West Leeds Transport Forum on 17<sup>th</sup> October 2018

Grounds for objection:

## (1) Aspects of the consultation were inadequate

- e. The **absence of consultation events**, other than in Horsforth, **in the area to the SE of the airport** and the **lack of representation of this area on the Airport Consultative Committee** meant that lay people in this area were left to try and decipher the very technical and complex consultation material on their own. Given that the new 80dB SEL footprint would cover a large population and several major institutions within this area, the failure to set up meetings or stakeholder contacts within the area is inconsistent with guidance in CAP725 paragraphs 2.5, 3.2 and 3.7 (bullet 6).
- f. The content of the original Consultation Document (issued on 15/06/17) was such that **it was unrealistic to expect the unaided public to understand the implications of the airspace change proposals** (contravening CAP725 bullet 3 of para 3.7). For example:
  - The text contained numerous codes, acronyms, and technical terminology which were unlikely to be understood by a lay readership<sup>1</sup> (contravening CAP725 bullet 1 of para 3.7)
  - The document did not contain any graphical vertical profiles for taking-off or landing to permit stakeholders to interpret the impact of the proposals on the height that aircraft would be over a given location point (contravening CAP725 para B.33).
  - The document did not contain any maps which would enable readers to assess the impact of the proposals on the noise which they might experience at their place of residence (a map of the current  $L_{Aeq}$  contours was included along with one showing the  $L_{Aeq}$  contours for the proposed arrangements, but the scale of these maps was such that it was nigh impossible to identify any difference between them and certainly impossible to identify which properties might experience a change in  $L_{Aeq}$ ). This is inconsistent with advice in CAP725 para B54.
  - There was no mention, let alone graphical representation of, other measures of noise nuisance (such as SEL,  $L_{DEN}$ ,  $L_{Night}$ ,  $L_{Amax}$  or N70) nor any maps showing  $L_{Aeq}$  difference contours – all of which have been shown to assist people in understanding noise impacts. This is inconsistent with advice in CAP725 paras B57, B59, B68, B80 and B79.
  - CAP725 suggests, in bullet 1 of para 3.7, that separate documents be produced for different audiences but, to the best of our knowledge, there was no less technically demanding version of the document designed for lay readers.
- g. Our research suggests that the overwhelming majority of the (few) people in our area who saw the original consultation document found it almost completely impenetrable. Would-be readers found it particularly difficult to interpret references to indices and levels of sound energy whose significance meant nothing to them<sup>2</sup>. Their understanding was also constrained by the fact that the runway numbers and reporting beacon names which were used to describe flight paths were completely unknown to them, and by the absence of detailed maps showing changes in expected noise levels.

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<sup>1</sup> As an example, the description of new departure arrangements begins as follows: “*The draft RNAV 1 Standard Instrument Departure (SID) procedures are provided at Figure 4 and Figure 5. These have been developed to utilise the current NPRs as outlined in the IAIP EGNM [Reference 3] AD 2.21. The LAMIX/DOPEK SIDs replicate current conventional SIDs, although the intention is to truncate them at points NMS03 and NME12 on Figure 4, at FL 70*”.

<sup>2</sup> Lay people might have found the indices and levels easier to comprehend if, in line with advice in CAP725, they had been explained by means of analogies such as “that’s like the noise you would experience standing 30 feet from a noisy motorbike”, or “that’s like having one noisy motorbike go past you every 15 minutes on an otherwise quiet day”.

- h. Issue 2 of the Consultation Document was published on 14/07/17 but was not widely read in our area.
- Some people were confused by the fact that there had already been at least two issues (Issue 1.0, originally produced on 14<sup>th</sup> June, was apparently re-published on 20<sup>th</sup> June and another issue (1.1) had been published on 29<sup>th</sup> July).
  - The relative lack of publicity for the publication of this new issue meant that its existence remained unknown to most people.
  - Some of those who learned of its existence had already been “turned off” by the content and format of the original document (and its re-issues) and so made no attempt to read it. Some of these had learned nothing from the original document while others, having seen only the small scale  $L_{Aeq}$  maps and the conclusion in para 1.1.12, had come away with the impression that any impact on noise would be minimal.
  - Those who did try to read Issue 2 have reported finding more information on the expected change in  $L_{Aeq, 16hr}$ . The inclusion of a map showing contours for the current and proposed situations superimposed on the same base map and of the  $L_{Aeq, 16hr}$  change map together with increased detail on the number and location of people affected was a step forward but the inclusion of references to night time SEL and  $L_{Amax}$  without any maps to show the footprints was unhelpful and most readers remained unable to comprehend the indices and levels of sound energy or to interpret the runway numbers and names of reporting beacons.
- i. The Addendum Document issued on 18/09/17 was not widely read.
- Again there was comparatively little publicity and many of those who were aware of it had lost heart after ploughing through issues 1, 1.1 and 2 of the original document.
  - Those who did persevere were rewarded with maps highlighting differences between current and proposed footprints for  $L_{Amax}$  and night time SEL, but most remained unable to comprehend the indices and levels of sound energy or to interpret the runway numbers and names of reporting beacons.
  - Although it was a distinct improvement on Issue 1 of the original document, the addendum was still difficult to understand and lacking in the kind of information that might have been gleaned if it had included graphical representations of vertical profiles for aircraft arriving and departing from LBA or maps showing information about changes in  $L_{DEN}$  or N70.
- j. The fact that, following consultation, the original proposals were modified to address issues raised by people living in the Menston area reflects the fact that, while areas to the NW of the airport which are well represented on LBA’s Airport Consultative Committee benefitted from local briefings on the proposals and made effective and timely representation to LBA, **residents and others in the area to the SE (with the exception of those living in Horsforth) were left to their own devices.**
- k. Recent informal consultation leads us to conclude that, with the exception of people in Horsforth, the overwhelming majority of people living in the area to the SE of the airport within the current or proposed 80dB SEL footprints were unaware of the proposed changes to the airspace and of the fact that there was consultation on it during 2017. This alone suggests that the publicity for the consultation was inadequate.
- l. As a result of the facts identified above, **LBA’s consultation team will have been unaware of the amount of opposition to their proposals which exists in the area to the SE of the airport** and their report to the CAA inevitably reflects that deficiency.

**(2) Misleading assurances** dissuaded many people from attempting to understand the consultation material or from engaging with the consultation

- a. Assurances came from three sources:

- Assurances were given by LBA to the MP for Leeds North West<sup>3</sup> to the effect that the changes were “*about reducing the Co2 and No2 emissions, managing aircraft more efficiently and reducing the impact of aircraft noise on the local communities in and around the airport*”. These assurances were shared with his constituents.
  - Verbal assurances were given by LBA staff to the effect that the changes in our area would be minimal and undetectable by most people. We now understand that these assurances were based simply on the  $L_{Aeq\ 16\ hr}$  Comparison (see Figure 16 in Issue 2 of the Consultation Document) which shows that most of our area would experience  $L_{Aeq\ 16\ hr}$  increases of less than 1dB and that only a small area of Woodhouse would experience increases between 1 and 2 dB.
  - Issue 1 of the Consultation Document contained a conclusion on noise impacts (para 1.1.12) which simply stated that “*there will be almost no change in the number of people affected by aircraft noise above 54 dB; there is a marginal increase (approximately 200 m) in the extent of the 54 dB contour*”.
- b. The assurances were misleading in that:
- they appeared to overlook impacts on night time SEL and  $L_{Amax}$ . Material in the Consultation Addendum indicates that, on these measures, there is significant evidence of detriment. For example, with respect to night time SEL, Table 3 reports “*potential increase in Sound Exposure Levels from Headingley to Robin Hood, through Leeds City Centre*”<sup>4</sup>. With respect to  $L_{Amax}$ , Table 2 records that “ *$L_{Amax}$  might increase above 70B in areas including Burley (areas around), Headingley, Far Headingley (south), Hyde Park (south) and Woodhouse (west)*”;
  - they are based on aircraft volumes in 2016 - see (3)a below; and
  - the reference, in para 1.1.12 of the initial Consultation Document, to “54 dB” rather than to “54 dB  $L_{Aeq\ 16\ hr}$ ” will have led those with some knowledge of the dB scale to conclude that the noise threshold being referred to was that for discrete events whose loudness was close to that of conversation at home (a discrete event at 54 dBA is benign, a series of events leading to a  $L_{Aeq\ 16\ hr}$  of 54 dB is not).
- c. **These assurances led many people in our area (between West Park and Hyde Park) to assume that they had no reason to study the later, more detailed, documents or to participate in the consultation.**
- d. As a result, LBA’s consultation team will have been unaware of the amount of opposition to their proposals which exists in the area to the SE of the airport.

**(3) The analysis presented in the Consultation Documents does not fully allow for the number of aircraft movements expected after the proposed changes come into effect.**

- d. CAP725 indicates, in paras B.36 and B45, that there should be an assessment of the situation “after the traffic has increased”. LBA argued (in para 3.5.2 of the Consultation Addendum Document) that such an analysis would not be appropriate because the situation post introduction of the airspace changes will have been affected by overall growth in traffic unassociated with the airspace proposals. LBA therefore based its comparisons of the impact of the airspace proposals on traffic in 2016. We argue that **the impact of the airspace changes will be amplified by the anticipated growth in aircraft movements**<sup>5</sup> and that a more meaningful estimate of the impacts would have been based on anticipated aircraft traffic and fleet mix in a future year (e.g. 2022, in line with CAP725 para B37) with and without the proposed airspace changes.

We think it likely that such an analysis would show, not only a larger population within the  $L_{Aeq\ 16hr}$  54 dB contour, but a still larger population brought into that contour by the proposed airspace changes.

<sup>3</sup> In an email dated 25/08/17

<sup>4</sup> In fact, Figures 4.5 and 4.9 clearly show that, in addition to the areas listed in Table 3, parts of Weetwood and Meanwood will also become exposed to a night time SEL exceeding 80dB.

<sup>5</sup> LBA’s masterplan envisages a doubling of passenger numbers between 2016 and 2030 and this implies a significant increase in aircraft movements and/or much larger aircraft

- e. The  $L_{Aeq\ 16hr}$  contours included in the consultation material allow for the number of daytime flights (all be it only in 2016) but the night time SEL and  $L_{Amax}$  footprints do not. We suggest that this leaves consultees with an incomplete picture of the impact of the proposed changes – particularly for the night time period. This is an important omission because, for many people living under the ELENL path beyond its divergence from the POLE HILL path, the main impact of the changes may well be the increased number of night time movements overhead. In the circumstances, we suggest that an additional measure of exposure such as  $L_{DEN}$  or N70 should have been provided to consultees.
- f. In conclusion, we suggest that the true impact of the proposals on noise nuisance would be more apparent if the analyses were based on traffic expected in 2022 and included assessment of  $L_{DEN}$  or N70.

**(4) There is, unfortunately, some scepticism as to the accuracy of the noise contours and footprints included in the Consultation Documents**

- a. Paragraph 3.5.4 of the Addendum states that the  $L_{Aeq}$  modelling was unable to show the effect of changes in climb profiles and that the estimates of  $L_{Aeq}$  therefore represent a “*theoretical worst case noise outcome; in reality we expect the noise levels to be lower than those modelled*”. This claim is made in the context of paragraph 3.4 which indicates that “*the new arrangements will allow aircraft to make best use of modern performance characteristics, one of which is to allow aircraft almost unrestricted climb rates to maximum performance. This will therefore result in aircraft being at a similar or higher height than they are today*”. We understand the logic of the claim. **However**, a document sent by LBA to the MP for Leeds NW<sup>6</sup> states that, under the proposed arrangements “*aircraft will take off at reduced thrust capacity ..... ascents will be shallower*” and an accompanying diagram indicated that aircraft would cover about twice as much ground before reaching 3000 feet<sup>7</sup>. Paragraph B262 of CAP725, indicates that the replacement of high-thrust-steep-ascents by low-thrust-shallow-ascents will increase sound exposure at ground level (because the reduction in sound emitted is more than offset by the decrease in attenuation). In which case, the  $L_{Aeq\ 16hr}$  contours shown in the consultation document, rather than representing a theoretical worst case, would represent a significant underestimate the post-change noise levels. The same may be true of the  $L_{AMAX}$  and night time SEL footprints.
- b. The absence of a “bulge” in the  $L_{Aeq\ 16hr}$  contours coinciding with the uphill gradient which exists between the A6120/Low Lane intersection and the Butcher Hill/Spen Lane intersection raises questions about the extent to which terrain profiles have been taken into account in the calculation of  $L_{Aeq}$  (and perhaps also of  $L_{Amax}$  and SEL). CAP725 clearly states that terrain adjustments should be allowed for in the calculation of  $L_{Aeq}$  (para B48), SEL (para B59) and other measures (paras B70 and B74).  
If the influence of terrain has not been fully allowed for, the amount of nuisance along the proposed ELENL route will have been underestimated because it follows a ridge of high ground between West Park and Woodhouse.
- c.  $L_{Aeq}$  contours should, of course, include arrivals and departures (CAP725 para B163). However, the absence of a double-pronged tip on southern end<sup>8</sup> of the  $L_{Aeq\ 16hr}$  contour for current conditions has raised some concern as to whether arriving aircraft were included in the calculation. Even though the main impact of the proposed airspace changes is on departures, omission of arrivals from the  $L_{Aeq\ 16hr}$  calculation would mislead because it would result in unrealistically low values and an underestimate of the population falling within the 54 dB contour.
- d. These uncertainties, particularly those related to climb profiles frustrate any attempt to fully understand the impact of the proposals and have exacerbated local concern about potential impacts.
- e. Notwithstanding points a, b, c and d above, we have assumed, for the purposes of paragraphs 5 and 6 below, that the contours and footprints are accurate!

<sup>6</sup> “Airspace Change Summary Document” emailed to Alex Sobel MP in August 2017

<sup>7</sup> Unfortunately the horizontal scale of the diagram was not given but this conclusion can be drawn from it.

<sup>8</sup> At the point where the path for most departing aircraft departs from that of almost all incoming aircraft.

**(5) There was an apparent failure to consider the particular impacts of the changes on premises which are noise-sensitive or attract large crowds.**

- a. CAP725 suggests, at the 5<sup>th</sup> bullet of para B51, the inclusion of a count of the number of schools, hospitals and other special buildings within the noise exposure contours. We have seen no such count in the Consultation Addendum document but are aware of the following issues which ought to have been highlighted:
- The Queenswood Educational Centre (a Special School whose clients include emotionally sensitive children) would, according to Figure 5 in the Addendum, become subject to at least 54dB  $L_{Aeq,16\text{ hr}}$ .
  - The centre line of ELEND, but not of POLE HILL, passes over a number of sensitive locations and that, particularly with PBN, they are likely to suffer from an increase in  $L_{Aeq,16\text{ hr}}$ . They include:
    - the Leeds General Infirmary;
    - the Leeds Beckett Campus, Headingley Cricket Ground, Leeds University Campus and Leeds City Centre, all of which cater for very large numbers of people many of whom will be out of doors; and
    - two public parks, Beckett Park and Woodhouse Moor, each of which attract people seeking quiet open space.
  - Two other public parks noted for their quiet ambience (Meanwood Park and Woodhouse Ridge) fall within the  $L_{Aeq,16\text{ hr}}$  contour for ELEND, but not for POLE HILL.
- b. It appears that, although the assessment of noise nuisance (as represented by  $L_{Aeq,16\text{ hr}}$ ) has allowed for the resident population, It has not considered the total number of people affected or the sensitivity of the land use to noise. We contend that **this deficiency will have resulted in an under-estimate of the noise nuisance which would be associated with the proposed PBN and replacement of POLE HILL by ELEND.**

**(6) Insufficient attention was paid to the amount and incidence of exposure medium levels of aircraft noise**

- a. In considering noise nuisance, the immediate concern must, quite properly, be for the areas likely to suffer the highest levels of noise (eg those suffering more than 57 dB  $L_{Aeq,16\text{ hr}}$ , 90dB night time SEL or 80 dB  $L_{Amax}$ ). However, since the next tier of noise nuisance (eg 54-57 dB  $L_{Aeq,16\text{ hr}}$ , 80-90 dB night time SEL or 70-80 dB  $L_{Amax}$ ) can be keenly felt and is likely to affect a larger number of people, it must be given due weight in the assessment of impacts. We suggest that the Consultation Addendum does not give adequate coverage to this second tier of nuisance. For example:
- Although Figure 5 allows identification of locations (such as Foxcroft Mount) which would become exposed to 54-57 dB  $L_{Aeq,16\text{ hr}}$ , the text does not draw attention to them (the list of affected postcodes relates only to those likely to become exposed to over 57 dB  $L_{Aeq,16\text{ hr}}$ );
  - Although comparison of Figures 4.5 and 5.2 (or 4.9 and 5.5) reveals the localities exposed to between 80 and 90 dB night time SEL under the current and proposed arrangements, and although Table 3 lists most of them, there is no information as to the populations involved;
  - Similarly, there is no discussion of the relative sizes of the populations subject to  $L_{Amax}$  in the range 70-80 dB (Figures 6.2 and 6.7 allow the localities to be identified and Table 3 names them but there is no reference to the sizes of the populations affected or to the fact that the affected area includes several noise-sensitive locations – see objection 5 above).
- b. We understand that CAP725 does not require sponsors to consider impacts below 57 dB  $L_{Aeq,16\text{ hr}}$ , 90dB night time SEL or 80 dB  $L_{Amax}$ . However, LBA will be aware that there is considerable debate about these thresholds and that some authorities suggest that lower level impacts should be considered. For example:

- WHO guidelines (summarized in CAP725 para B240) identify impacts on public health due to annoyance at 60dB  $L_{Amax}$  (disturbance of sleep), 55 dB  $L_{Aeq\ 16hr}$  (serious annoyance outdoors in daytime) and 50 dB  $L_{Aeq\ 16hr}$  (moderate annoyance outdoors in daytime);
  - The basis for the selection of 57 Db as the appropriate threshold for  $L_{Aeq\ 16hr}$  is controversial (the much-quoted ANIS study found that, among respondents subject to less than 57 dB  $L_{Aeq\ 16hr}$  of environmental noise from all sources, fewer than 8% spontaneously mentioned aircraft noise as something they disliked. In fact this result may simply reflect the fact that, below 57 dB  $L_{Aeq\ 16hr}$ , other sources of noise usually predominate. It cannot be deduced that, if these other sounds were absent, aircraft noise would not be a serious issue);
  - Normal conversation cannot be conducted if competing noise exceeds 60 dBA.(CAP 725 para B189);
  - Sleep awakenings cease to be infrequent when bedroom  $L_{Amax}$  exceeds 55 dB – for someone sleeping with partially open windows this equates to an outdoor  $L_{Amax}$  of 70dB (CAP725 para 230).
- c. We contend that exposure to aircraft noise below 80 dB SEL, 70 dB  $L_{Amax}$  and 57 dB  $L_{Aeq\ 16hr}$  constitutes a real nuisance in residential areas, noise-sensitive premises, public parks and other areas where large numbers of people congregate in the open air. Further, we suggest that failure to give due weight to this nuisance is inconsistent with LBA's stated aim (quoted in Para 3.5 of the Addendum) that it be "*recognized as a pioneering organization for the management and control of noise*" and with its claim that "*the airspace change proposal routes ... have been determined to align with that aim*".

**(7) An obvious alternative to the proposed new departure arrangements has, apparently, not been considered**

- a. CAP725 indicates (in para A1 bullet 1) that alternative change options should be analysed. The Consultation Document reviews a number of alternatives but does not address one which comes quite readily to mind. Namely; asking NATS to make provision for continued use of the POLE HILL reporting beacon by aircraft inbound to LBA.
- b. Perhaps this option has been pursued and has simply not been reported. Perhaps it would only be feasible if LBA traffic were to remain at its present level (radical though this thought may be, it should surely at least have been identified and discussed as an option).

**(8) Aspects of the proposals are not fully consistent with the spirit of the local planning conditions**

- a. In its description of proposed arrival arrangements, the original Consultation Document states (on p18) that "*.... From each key arrival reporting point, ATC has the option during intensive periods, to route aircraft to either the east or west of the Airport. It is intended that the most direct route shall be used whenever available, but if this should conflict with departing traffic, the alternate arrival route will be adopted.*" This intention is not consistent with the condition which requires arrivals to be from the North West (and departures to be to the North West) whenever possible.
- b. The planning conditions seek to minimize noise nuisance over the main urban areas but:
  - the proposed adoption of shallower ascent profiles would increase noise levels under the departure flight paths for several miles beyond the runway (we have not been able to verify the distance at which the proposed ascent paths would first leave aircraft higher than they are under existing paths but observation of current ascent profiles, together with the diagram referred to in Paragraph 4a above, suggests that it might be at around 4 miles from the end of the runway. This suggests that noise levels would increase over a large area including parts of Horsforth, West Park, Weetwood, Beckett Park, Headingley, , Guiseley, Otley, Menston, and Burley in Wharfedale);
  - based on existing ascent profiles, the replacement of POLE HILL by ELEND will increase the number of people exposed to aircraft noise within the Leeds conurbation.