clarke saunders | acoustics
specialist consultants

Head Office:

London Office:

Exeter Office:

www.clarkesaunders.com

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04 May 2017

Stephen Hornsby
Via E-mail

Dear Stephen,

AS6162 BAGBY AIRFIELD PLANNING APPLICATION

We have received and reviewed the following information provided in relation to potential noise Impact of the proposed re-development at Bagby Airfield;

- Bagby Airfield Planning Application letter to Tim Wood (Hambleton District Council), Barton Willmore, 8th March 2017.
- Proposed Block Plan, Joplings Property Consultants, 1452-10, Revision A 02/03/2017.
- Bagby Airfield (EGNG) Code of Conduct, October 2016.
- Bagby Airfield Noise and Vibration ES chapter 7.0, WSP | Parsons Brinkerhoff, September 2016.
- Hambleton District Council, ES response application invalidly, 26th October 2016.
- KP Acoustics report review, WSP | Parsons Brinkerhoff, 28 February 2017.
- Further noise data analysis, WSP | Parsons Brinkerhoff, 28 February 2017.

Hambleton District Council: ES Response

Within the response from Hambleton District Council (HDC) concerns relating to noise issues are raised, repeated below;

The Assessment has not been carried out in accordance with the LPA's Scoping Opinion and therefore is not a robust assessment. The Scoping Opinion was clear in that the noise assessment should be carried out over representative periods of the year measuring individual events. It was suggested in the Scoping Opinion that for instance one week a month over August, September, October and November was appropriate. As the time period has passed for September and October, a comparable period of evidence gathering should be progressed. The limited period during a busy period should not be used to extrapolate the noise impact. The assessment, as set out in Volume 2, 7.3, has been carried out over limited periods in July and August. This is not considered a representative period of sampling.

The use of LAeq (16 hour) and impact on noise sensitive premises is not considered appropriate or robust and the assessment should be based on peak noise levels (L_{Amax}) from individual noise events should be determined at noise sensitive premises.

The submitted noise assessment has therefore not taken account of the LPA's Scoping Opinion and is not a valid assessment or basis for the Environmental Statement.

Responses to these issues have been detailed in the WSP | Parsons Brinkerhoff documents dated 28th February 2017

As per your request we have reviewed the WSP | Parsons Brinkerhoff February documentation in reference to the HDC comments, in addition we have also carried out an overarching review of the WSP | Parsons Brinkerhoff Noise and Vibration ES chapter.

ES chapter movement / noise impact assumptions

The Noise and Vibration ES chapter states (para 7.47) that there are no proposed changes as part of the development to the current level of aircraft use of the site, and concludes that as a result there can be no noise impact from aircraft noise associated with the development, but a cap on the number of movements is to be adopted as part of the development. This cap is proposed of 8,787 annual movements and an assessment is carried out on this number of movements

The historic number of aircraft movements at the airfield have been discussed during previous planning applications and inquiries, with figures indicated 5,000 movements per annum, and the planning inspector indicating 703 movements during a peak month as typical. It is recognised that the operation of the airfield is seasonal and the increases in operations will be focused to the summer months.

Indications are that in 2016, when the ES noise monitoring took place there were 6,748 annual movements (including 390 helicopters). This is around 2,000 (23%) less movements than the annual proposed cap, and there will be a noise impact associated with the implementation of the movement cap, clearly contrary to the ES statement.

The ES chapter does not consider the change from existing noise levels to what would occur with the 8,787 movement cap.

The predictions of noise levels ($L_{Aeq,16hr}$) of 8,787 movement cap has been carried out, but no assessment of absolute levels or comparison to existing has been made. Concerns with these predictions are detailed in the section below. In addition to this the use of the $L_{Aeq,16hr}$ parameter is not considered appropriate or robust by HDC, with which we agree with for Bagby Airfield.

ES aircraft noise modelling

Figure 7.4.3.1 of the noise and vibration ES chapter indicates the number of aircraft utilised to predict the $L_{Aeq,16hr}$ noise contour around the airfield. The annual number of movements modelled is 8,787, which have been equally distributed in the modelling throughout the year resulting in circa 24 daily movements.

This distribution underestimates the seasonal pattern of aircraft movements in summer months. It is standard practice, when creating 'typical day' $L_{Aeq,16hr}$ noise contours in the U.K, that the number of movements is based on a typical 16-hour summer day (07:00 – 23:00 hours). By convention the 'typical summer day' is the average of the aircraft movements over the 92-day 'Index Period' from 16th June to the 15th September each year.

No assessment of noise levels for maximum allowed movements is detailed in the Bagby Airfield (EGNG) Code of Conduct.

The modelling and any $L_{Aeq,16hr}$ noise level derived from it utilised in the assessment underestimates the noise impact. This has particular implications on residential receptors to the South of Bagby and Low Moor Farm.

The noise modelling and ES chapter has not predicted or assessed L_{Amax} noise levels, in relation to the change of number of events due to movement increases.

The noise model has only predicted noise levels of aircraft utilising runway 06 – 24, with no movements on runway 15 – 33. This is in line with the Bagby airfield code of conduct (Oct 2016) other than emergencies.

KP Acoustics report review, WSP

This document details an overview and analysis of noise measurements carried out by KP Acoustics (12184.NIA.01 Rev.F) between 01/06/2015 – 22/08/2015. The WSP | Parsons Brinkerhoff review concludes that noise from individual airfield events are difficult to distinguish from other local events, and are comparable to non-airfield events, which are considered more frequent.

It should be noted that the KP Acoustics survey was unattended and no audio was recorded of events. The only information WSP have reviewed is the noise level data, and carried out a visual analysis of the charts in the in the KP Acoustics report.

The KP Acoustics report assessed the existing noise impact from the airfield and predicts the likelihood of adverse impact in relation to the $L_{Aeq,\ 1min}$ and $L_{Amax,\ 1min}$.

The precise location of the noise monitor within Bagby village is not provided (Location 1), however, from the site plan provided, this location is indicated to be within the central region of the village. This location does not represent the areas likely to have the greatest impact from the airfield operations, such as the amenity areas of properties to the south of Bagby village. The noise levels in the central monitoring location could be lower than in the southern area of Bagby village due to acoustic screening provided by residential buildings in relation to noise from aircraft, but contaminated to a greater extent by activity and traffic nearby.

No details of audio recording samples are described in the assessment, which would have been a useful method for establishing the actual source of the noise events monitored during the unmanned survey exercise. A relatively course filtering methodology has been implemented by KP Acoustics, to separate out noise data related to airfield activity, through use of aircraft movement logs.

The assessment attempts to correlate noise events at the airfield with noise levels within Bagby village, by comparison of the $L_{Aeq,\ 1min}$ and $L_{Amax,\ 1min}$ noise levels. As detailed above, the survey location in the centre of Bagby village may not be suitably representative of worst case receivers and the correlation is potentially flawed as a result.

Comparison of the noise levels at Bagby village has only based on $L_{Aeq,\ 1min}$ data that are 5 dB above the logarithmic daytime average, and measurements at the airfield characterised by a $L_{Amax,\ 1min}$ 10 dB over the average airfield $L_{Amax,\ 1min}$. This approach limits the amount of data of available for

analysis, as only 85 events were available for assessment as being attributed to aircraft over a 3 month period. Much of the aircraft noise excluded from the analysis constitutes a significant element of the village's ambient soundscape.

An indication of the change in noise levels due to aircraft is provided, within the result section of the KP Acoustics report, which describes typical noise levels in the village being L_{Aeq} 45-55 dB. Appendix B details the $L_{Aeq,\ 1min}$ of individual aircraft operations within the centre of the village being in the range of 55-65 dB, raising the typical noise level by up to 10 dB at those times.

The assessment indicates that the noise increases in the village are of marginal significance (based on 85 events), however the assessment has not accounted for how often these events (and those excluded from the analysis) occur and how this may change as a result of increased airfield operations (from 2015 movement to 8,787 movement cap).

No direct manual measurements appear to have been taken of any aircraft movements.

The WSP | Parsons Brinkerhoff review of the in the KP Acoustics report does not add any further information than that already considered from our 2016 review of the KP Acoustics report. We have the following concerns relating to the KP Acoustics report acoustic report, which the WSP | Parsons Brinkerhoff review is based on.

- Bagby village noise monitoring location not representative of worst case location;
- Assessment based on limited dataset, no audio recording to distinguish aircraft events from local sources;
- WSP | Parsons Brinkerhoff review based on limited information and visual inspection of a cluttered noise time history chart.

<u>Further noise data analysis, WSP</u>

The WSP document reports on noise measurements carried out by WSP between 15/07/2016 – 2/08/2016 in an effort to address two Hambleton District Council (HDC) concerns relating to noise issues.

WSP undertook analysis with the following aims:

1. To determine how Bagby Airfield noise events affect the background $L_{A90,T}$ noise levels at locations representative of receptors within Bagby Village.
2. To determine whether noise from individual aircraft movements can be distinguished from other ambient noise sources and how such events influence the overall noise environment.
3. To attempt to quantify event noise levels applicable to specific aircraft movements.

The WSP report aims to determine how noise from Bagby airfield may affect the background noise levels (L_{A90}) in the village. The L_{A90} is a measure of the noise level exceeded for 90% of the time, and is would not be significantly affected by short duration noise events, such as aircraft movements. Therefore to carry out any analysis of impact of aircraft movements based on this parameter is not suitable.

WSP analyses conclude that the L_{A90} noise level is unaffected by airfield operations. We agree that the L_{A90} would not significantly change as it is not a suitable noise parameter to assess aircraft noise.

No details are provided of if any audio recording was carried out during the noise monitoring, and it is taken that assessment is only based on numerical values rather than audio or frequency analysis.

The correlation of events in the noise data (L_{Amax}) and aircraft movements has been carried out from aircraft logs rather than audio or attended observations. This is a significant flaw in the analysis and is unlikely to have addressed point 2) or 3). The time periods (10 minutes) used in the analysis are not sufficient to be able to provide any meaningful analysis of short term aircraft movements.

A note of major concern is that in Table 5 (measurement position 1) of the WSP analysis, the L_{Aeq} level is above the L_{AFmax} level for the first five aircraft identified. This is not possible, and suggests a critical instrumentation or data processing error.

The analysis concludes that it is difficult to distinguish from overall noise levels generated by other transient events in the locality, however the report does not indicate what the other transient events are, or could be (e.g. bird song).

The WSP analysis does not provide any detail in relation how the local noise environment may change as a result of the increased movement cap at the Airfield.

No direct manual measurements appear to have been taken of any aircraft movements. A site survey visit, with observations, notes, and manual measurements would be a fundamental basic method of attempting to address aims 2) and 3).

Aircraft noise events are of different nature (in terms of the character, frequency content and duration) to normal ambient noise sources within the village. These ambient noise sources are likely to comprise a mix of road traffic, fauna, and wind generated noise sources.

It is highly likely, in our opinion, that noise from individual aircraft movements could be distinguishable from other ambient noise sources. Overall dB(A) levels from aircraft movements may sometimes be commensurate with those occurring within the normal ambient range.

Summary

A summary of our review of the documents are;

- The ES noise modelling does not provide a suitable assessment of typical air traffic movements.
- The ES chapter does not provide an impact assessment as result of the increased movements.
- The background noise parameter (L_{A90}) is not deemed a suitable metric for the assessment of aircraft noise and determine the impact of the airfield, as short duration events of elevated level has little impact on the L_{A90}.

- No direct measurement of aircraft movements have been made, nor is any evidence provided that suggests any of the noise consultants have observed an aircraft movement from the measurement positions.

- No assessment has been made or evidenced of the increase in aircraft movements as a result of the cap, and effect of the number of events and L_{Amax} levels at noise sensitive receptors.

We share the concerns of HDC that the full noise impact of the proposals have still not been fully addressed.

Yours sincerely
for CLARKE SAUNDERS ASSOCIATES

Mike McLoughlin MIOA
email: *mmcloughlin@clarkesaunders.com*