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Dear Duncan,

High Easter Noise Monitoring Response to Analysis

This letter is a response to the document received through Stansted Airport, understood to be from Mr Peachey and dated 29 November 2016, which highlights some points from report 16/0321/R1-4 for High Easter, dated 07 November 2016. The letter responds to each clause from the document in turn, with the relevant clause set out in italics first for ease of reference.

1. *The most significant omission is the lack of ambient or background noise level (L_{A90}) measurements. This is a very important measurement in a rural location and is the reference level against which every aircraft flyover will be clearly heard. The report says that L_{A90} measurements were taken and they should be provided.*

There are no standard assessment approaches for assessing the impact of aircraft noise in relation to the background noise level. Therefore, this index (L_{A90}) was not recorded or presented in the report. The noise monitor did not include a facility to measure the L_{A90} level over the full dynamic range. The report does erroneously refer to L_{A90} instead of L_{Amax} when setting out the indices measured. Ambient levels are discussed within the report, and a detailed time history of the ambient noise level is set out in figures 16/0321/L1 and 16/0321/SCH1.

2. *The number of aircraft flyovers during the monitoring period is unclear. This is another very important measurement since people hear aircraft noise as a series of discrete events. In paragraph 6.7.1 of the report – Number of Identified Aircraft Noise Events per Hour of Day – the only place where numbers of flyovers are shown, the Y-axis of the graph only appears to be scaled for the whole period.*

This information is set out in the report in a way which we believe to be clear. As identified in point 6.7.1 the numbers presented are for the full period.

For instance it indicates that there were approximately 860 aircraft events per hour at 7am which would be an aircraft flyover about every 4 seconds unless it covers the whole period. The number of aircraft flyover events must be provided, not only as a total in the period, but also as an average daily number and average hourly numbers in a day.



Relevant total and daily counts, in terms of N60 and N70 indices, are set out in Section 5. There was no apparent benefit in setting out the mentioned graph in terms of an average day, as this would result in an identical graph apart from the Y-axis scale, and so such a graph was not included. Throughout the report the graphs, where appropriate, show both the maximum and average L_{Amax} level measured for the relevant descriptor.

3. *There should be a table showing the total number of noise events (that triggered the monitor) and those events due to aircraft and the correlation percentage compared with the flight plan – it's not clear in the report.*

As set out in report clause 6.2.2 it was pessimistically taken that all noise events which triggered the meter were due to aircraft. It is possible, and indeed likely, that a number of events were due to local noise sources, such as birdsong. However, as it was not possible to definitively rule these events as not being due to aircraft noise, the pessimistic assumption was made.

4. *The noise monitor trigger level was set at 55dBA. The report does not state the trigger duration. It was probably 10 seconds, but it is useful to know this for the analysis.*

This should be confirmed by the monitor supplier, but we understand that it is an L_p trigger, which remains activated as long as the level remains above the set level. It does not need to remain above the trigger level for 10 seconds.

5. *The time weighting of the noise monitor is not stated. This makes a difference to the noise readings and it is necessary to know whether a Slow or Fast time weighting was used.*

The time weighting was Slow, in line with standard aircraft noise measurement metrics.

6. *Aircraft flyovers typically last on average for some 30 seconds – longer than vehicles on the road – and these durations were not provided. What was the spread of the duration in seconds of 90% of the aircraft noise events and what was the average? For instance, between X and Y seconds with an average of Z seconds.*

We are not aware of any accepted assessment basis which considers such a descriptor, and therefore this was not included in the report. The L_{Aeq} parameter takes full account of both the level and duration of aircraft flyovers, which is why it is the primary assessment index referred to in the Aviation Policy Framework.

7. *Single Event Noise Level (SEL) measurements were not provided. What were the SEL readings for each aircraft noise event? This would help indicate what a typical aircraft noise event sounded like. For instance as an average of W decibels for a duration of X seconds and varying between Y and Z decibels in the X seconds.*

L_{Aeq} , L_{Amax} , N70 and N60 are the primary indices which are considered as part of aircraft noise assessment. Other indices not considered directly relevant to aircraft assessment were not presented in the report.



A number of the above points relate to indices which were not presented. We presented all indices deemed appropriate for the noise source being monitored. To pre-empt any potential requests for additional indices could result in an excessively long report. Given that the requested indices are not part of standard accepted assessment terms it is not considered necessary to include these. In addition to the already substantial amount of data collated, the inclusion of this might only serve to confuse matters.

Yours sincerely

Johnny Berrill
Cole Jarman