Community Noise Report

Stevenage - Westerly

Sept – Nov 2018

London
Luton
Airport

Introduction

As part of the ongoing noise monitoring programme, London Luton Airport deployed a portable noise monitoring terminal in Stevenage.

The purpose of the monitoring programme is to understand the typical noise levels created in the local community, for Stevenage it specifically related to westerly arrivals.

The noise monitor was located in Stevenage between the 4th September – 1st November 2018.

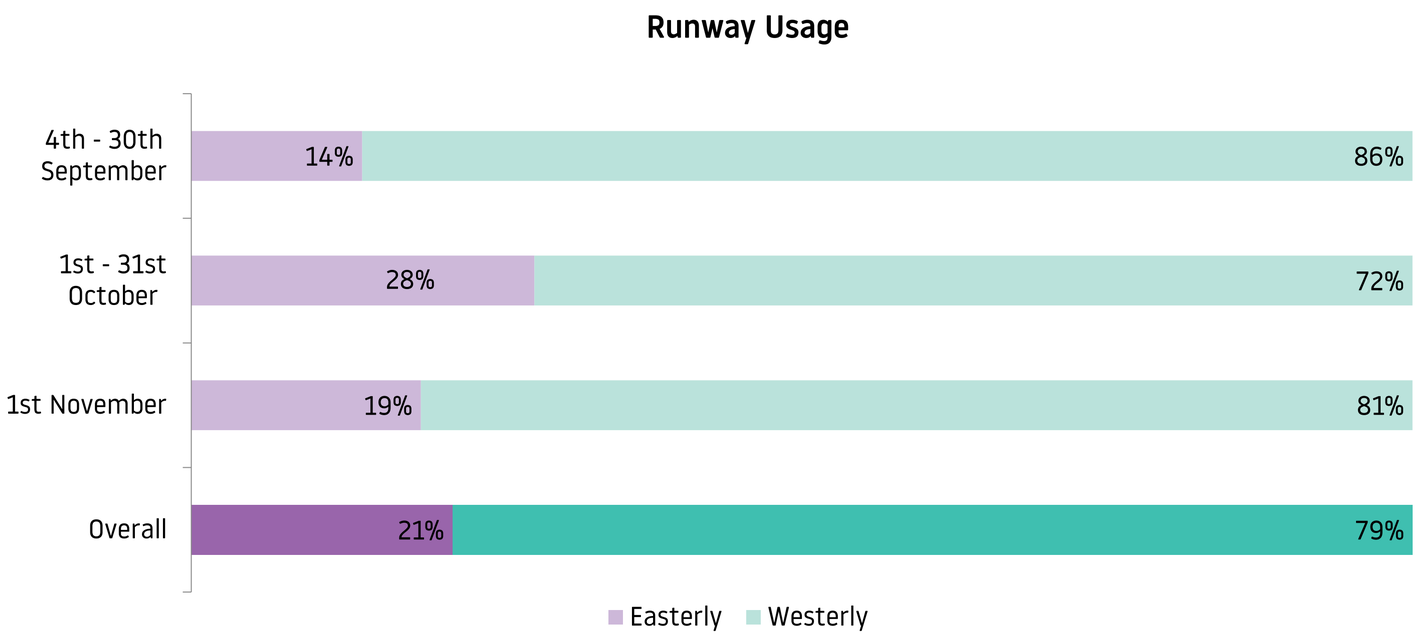
The monitor's location was within the main westerly arrival corridor at an altitude of 397 feet.

Aircraft noise and tracks recorded were extracted from LLA's noise and track-keeping system. This document evaluates the lateral and vertical positioning of aircraft near the monitor as well as the noise recorded at ground level.

LLA Operations During the Monitoring

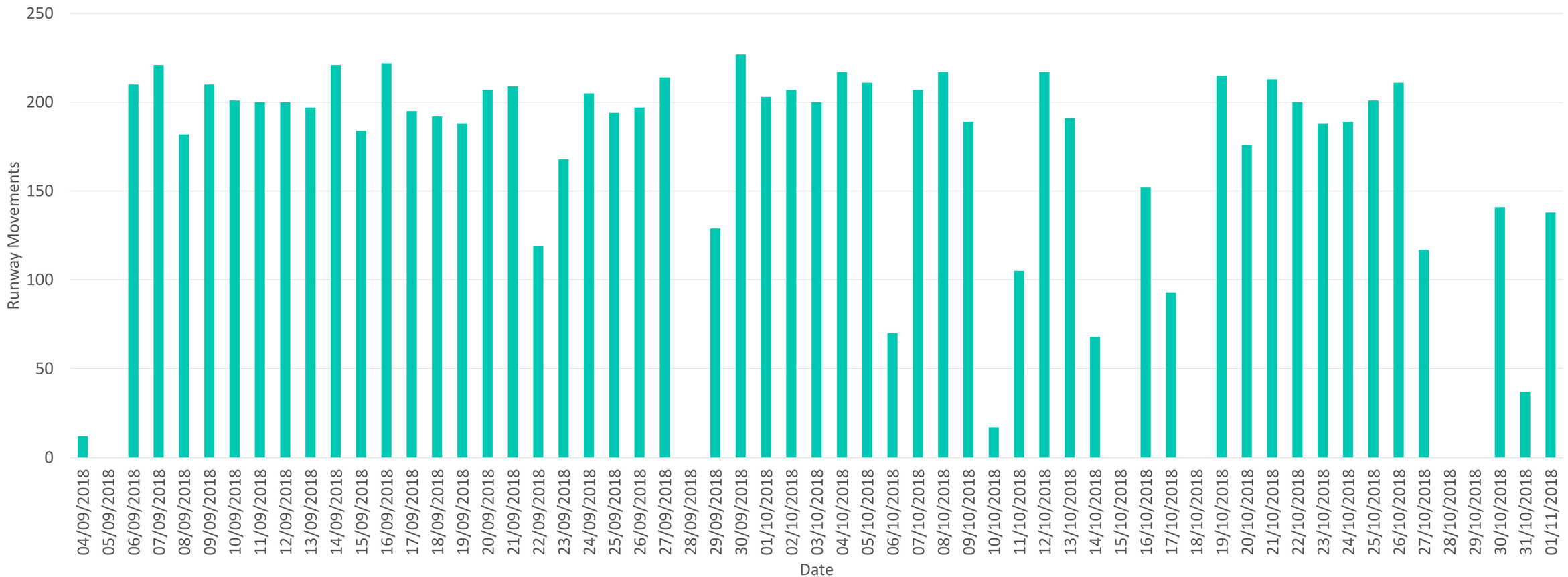
During the period of monitoring, the direction of operation was 21% Easterly and 79% Westerly. The 5 year average for this time of year is 34% Easterly vs 66% Westerly which demonstrates that residents in the area would have experienced increased movements.

9,294 aircraft arrived on the westerly arrival route operated from the airport whilst the monitor was located in Stevenage.



Daily Movements During Monitoring Period

The chart below shows the number of Runway 26 daily arrivals that passed the noise monitor. Due to the location of Stevenage, all flights that arrived on our Runway 26 arrival route whilst on westerly operations would have flown passed the monitor.
During the monitoring period there were 6 days of easterly operations and therefore no flights passed near the monitor on these days.



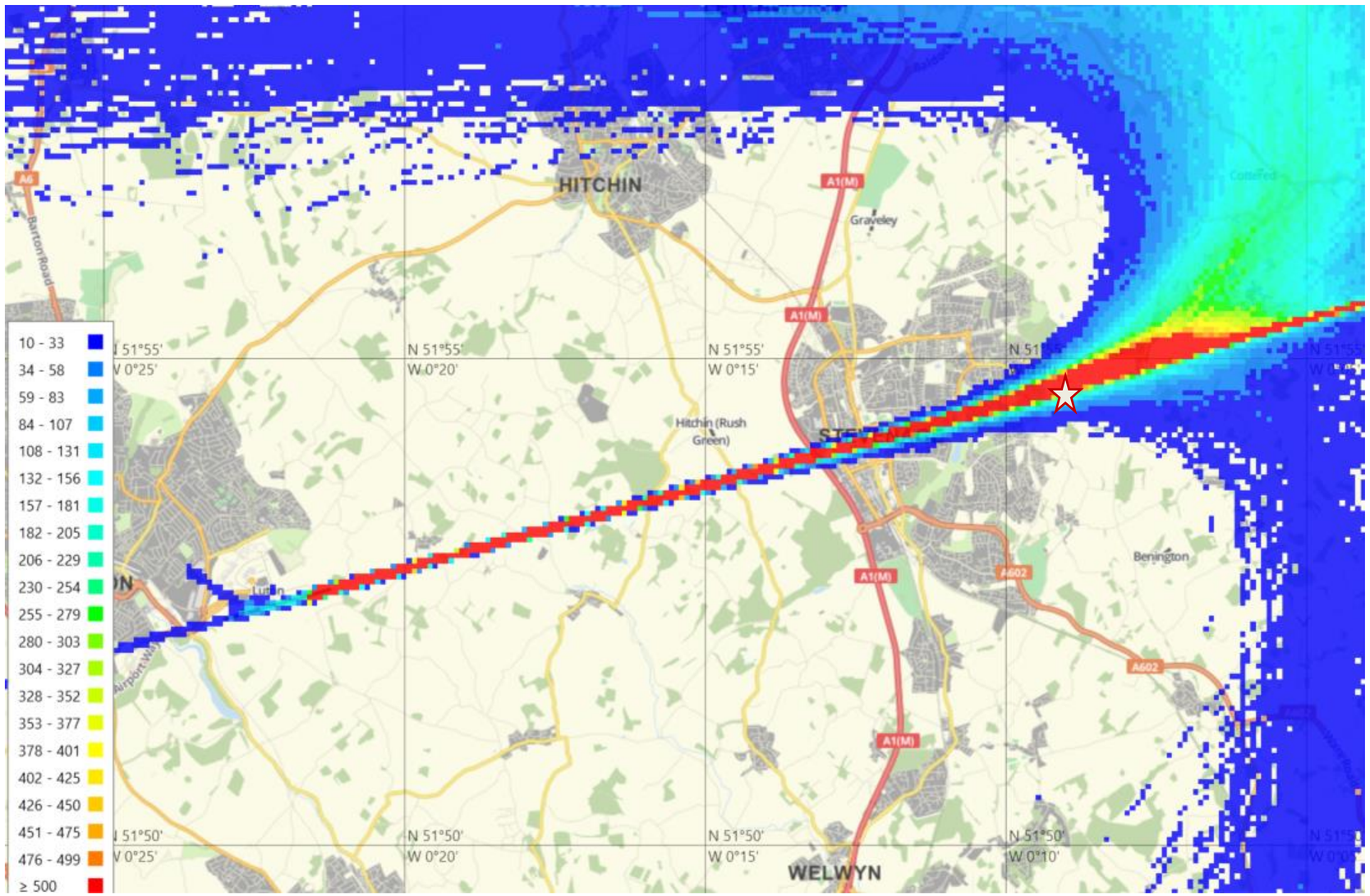
Operations during the monitoring period

The graph below represents the average number of arrivals during the monitoring period. During the peak periods, local residents of Stevenage may notice more aircraft. Peak periods were at 07:00-08:00, 12:00-14:00, 18:00-19:00 and 22:00-23:00. The busiest period was between 18:00-19:00 at average of 15 arrivals during the monitoring period.

During the night period of 23:00 – 06:00 there was an average of 27 arrivals compared to 27 for the previous year showing the same number of arrivals in night time operations.

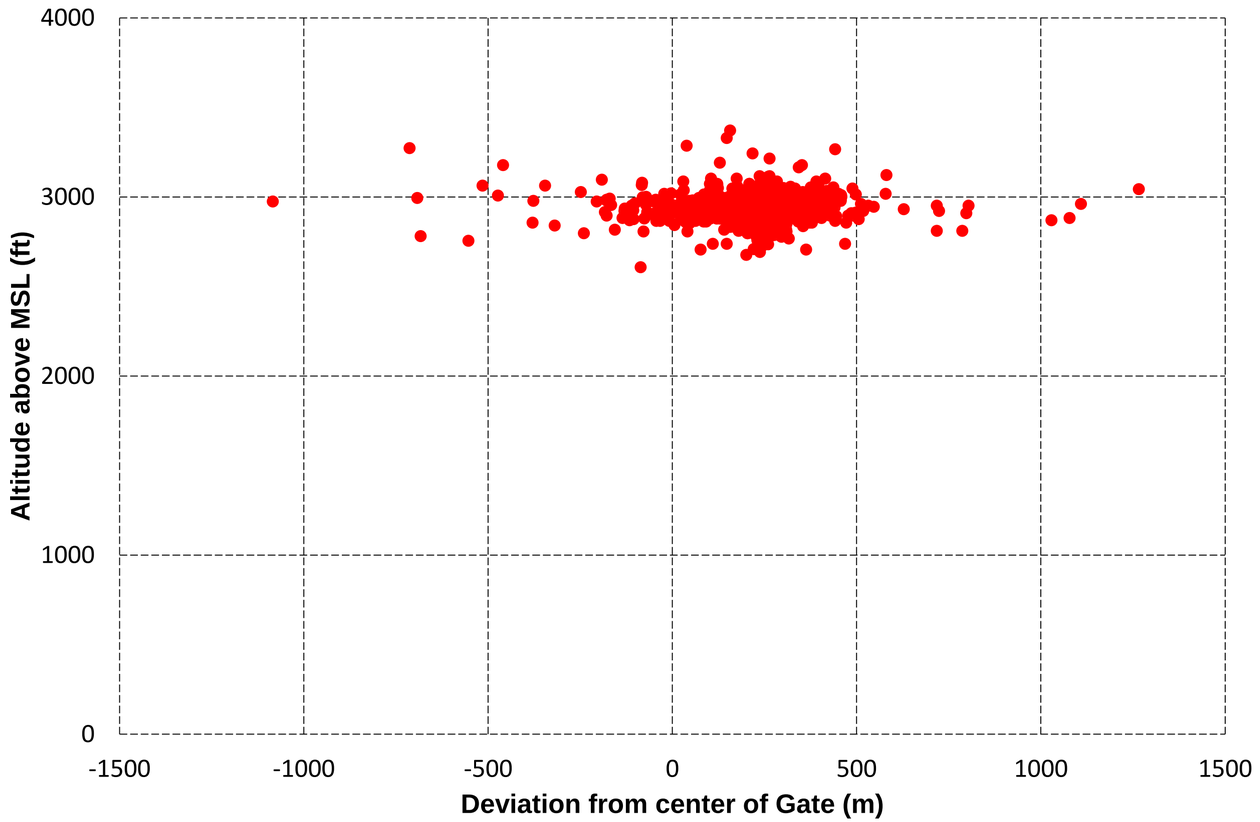
Aircraft Tracks During the Monitoring Period

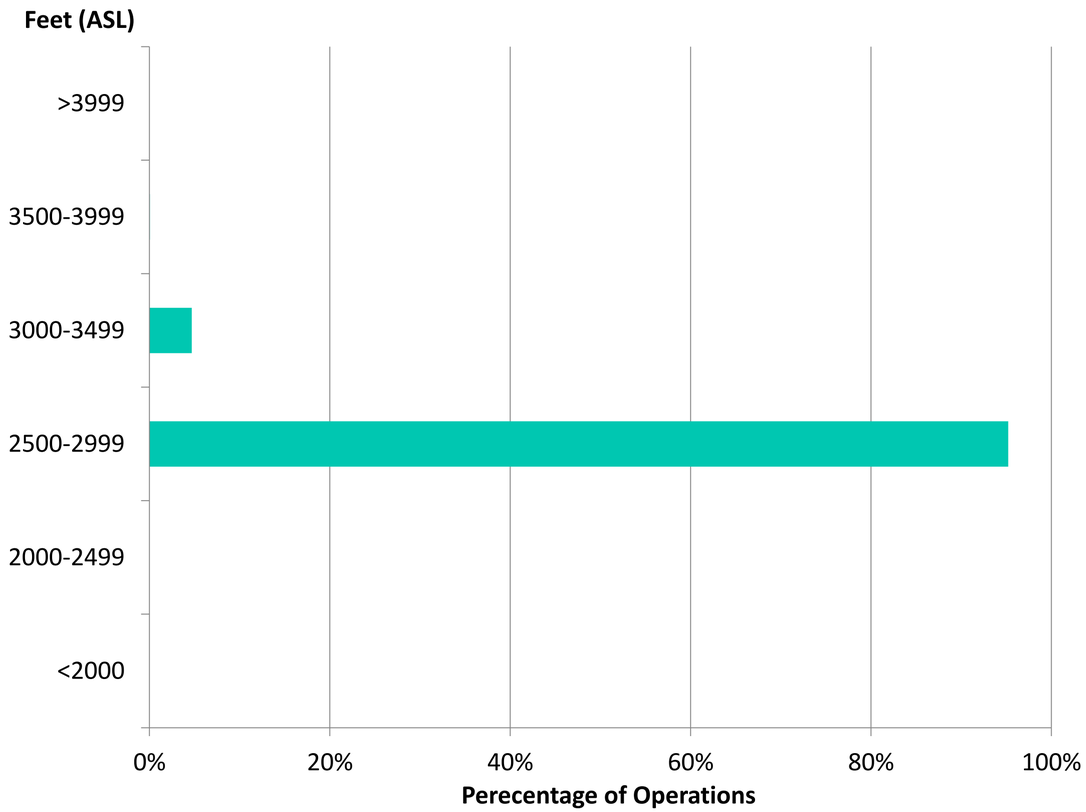
The sample below shows the representative flight tracks that passed nearby the monitor during the monitoring period.



Altitude Analysis During Monitoring Period

Altitude analysis shows the vertical and lateral dispersion of aircraft 1.5km either side of the noise monitor. The chart below shows that 95% of flights were between 2,500-2,999 feet. The average altitude of aircraft in this area was 2,921 feet above mean sea level.





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How we analyse the Noise data

Following the noise monitoring period, we collate the data taken from our Noise and Track Keeping system and analyse the results. When analysing the results the first thing we do is ensure that there are no unusual noise events present which might not be caused by aircraft (i.e. vehicles or wildlife).

The weather also plays a big part in the data recorded and in periods of extreme weather the equipment can record noise incorrectly so during these weather conditions we exclude recordings from the analysis. i.e (periods of heavy rain, extreme temperatures or very strong winds)

We are always looking at new ways to make our Noise Reports easier for the local communities to understand as well as including the right information. If you have any suggestions about how we can make these reports better, please don't hesitate to let us know.

For the monitoring period in Stevenage the Noise Monitoring Terminal collected results for 5,461 aircraft. However, 3,833 aircraft did not register noise events as they were either too high or too quiet, 2,312 results were excluded for weather reasons as outlined above, which left 3,149 noise results to analyse which are shown in the next few pages.

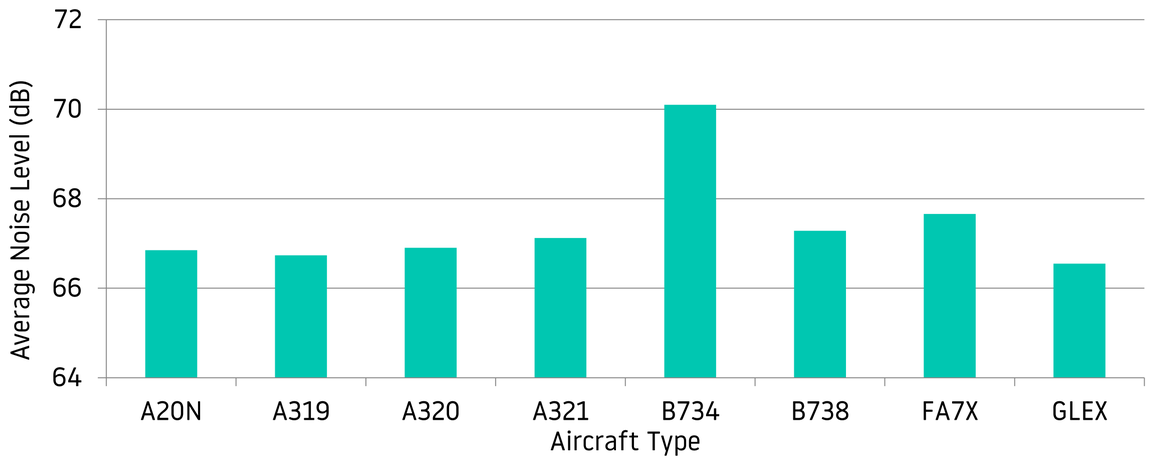
Noise Results During Monitoring Period

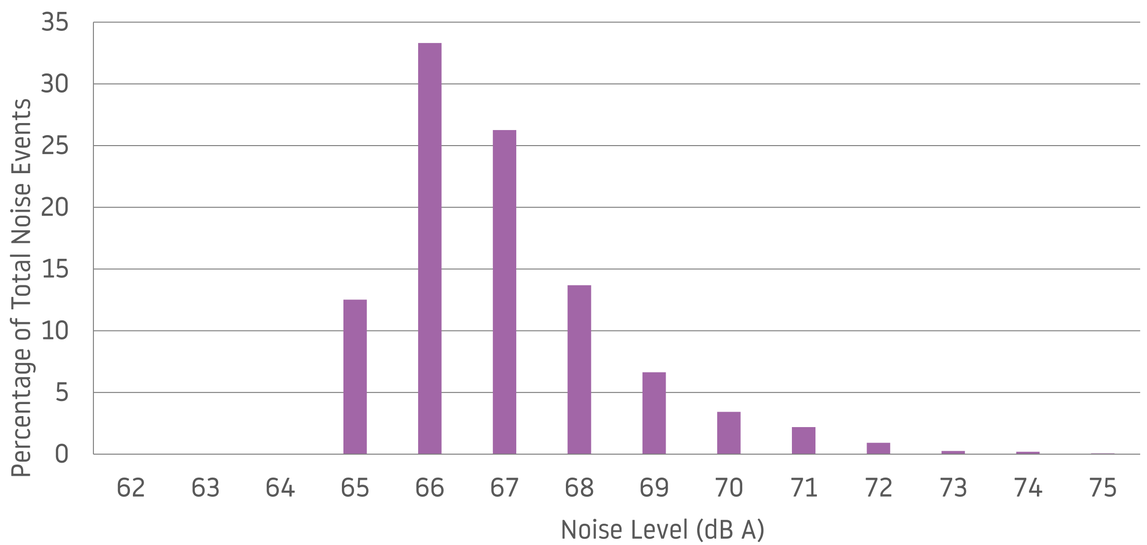
During the monitoring period, noise results were gathered from various aircraft types, the most popular aircraft types are shown in the table below*.

Aircraft Type	Number of movements
A20N (A320 NEO)	151
A319	896
A320	1,173
A321	355
B734	21
B738	346
FA7X	20
GLEX	33

The average noise in Stevenage is 67.0dB with a standard deviation of 1.85. This is based on a sample size of 3,149.

*The noise results shown in the analysis are only for those aircraft types that recorded more than 20 events per aircraft.





Conclusion

- During the monitoring period, the airport was using westerly operations for 79% of the time, this is greater than the 5 year average of this time period, and therefore residents would have experienced more noise during this period than in recent years.
- The main aircraft types operating at the airport are A319 and A320 therefore the aircraft flying in the vicinity of Stevenage are in line with this.
- 11.2% of the noise events recorded were created by easyJet A320 NEO and A321 NEO aircraft, registering average noise events of 67dB.
- The average altitude of aircraft in the area is 2,921 feet above sea level, and as Stevenage is already 397 feet above sea level, aircraft will typically be 2,524 feet above ground level in this area.
- Above Stevenage aircraft are typically between 2,500-2,999 feet, during the monitoring period this accounted for 95% of all aircraft. We also saw 5% of aircraft achieve altitudes between 3,000-3,499 feet.
- During the monitoring period 6 aircraft were fined for track violation. As part of the Noise and Track violation scheme, all fines generated go directly into the community trust fund, more information on the community trust fund can be found here.

Glossary of Terms

Westerly Operations: As aircraft take off and land into the wind, westerly operations refers to the time when the wind is blowing from the west and aircraft follow the arrival route above Stevenage.

SID: Standard instrument departure, is the published route that an aircraft must follow on departure.

Aircraft Movement: A single aircraft departing or arriving at the airport.

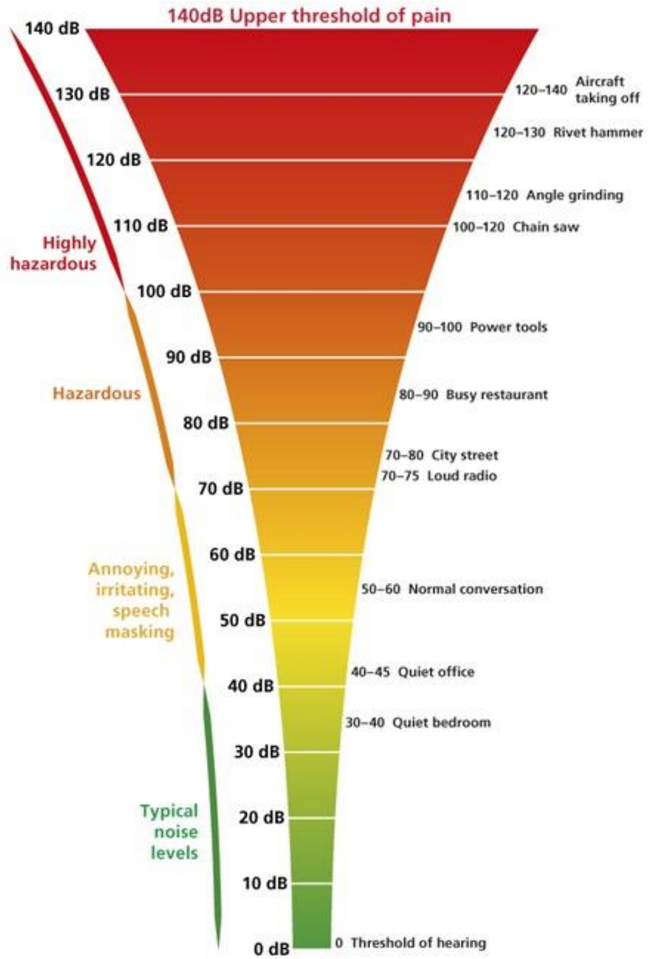
Gate Analysis: A 3km gate which is drawn across an area and will gather information about every aircraft passing through the gate area.

Noise Event: A single event is the period from when an aircraft approaches the monitor until when the aircraft is leaving the area.

Decibel (dB): The unit used to measure noise (typically 50-60dB is equivalent to a normal conversation level).

LasMax: A unit of measure and is the maximum noise level from a single aircraft passing over the noise monitor.

LAeq (16hr day): the average noise level during the day (a 16-hour day) during the summer period. The measure of noise is given in decibels (dB). This averaged decibel measurement 'LAeq', is the most common international measure of aircraft noise, it means 'equivalent continuous noise level'.



Source: iosh.co.uk