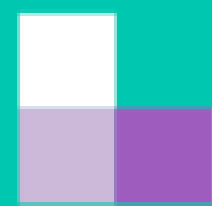
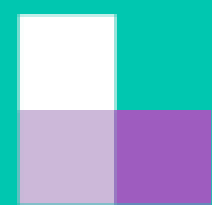


# Community Noise Report

## Redbournbury

### August – November 18



London  
Luton  
Airport

# Introduction

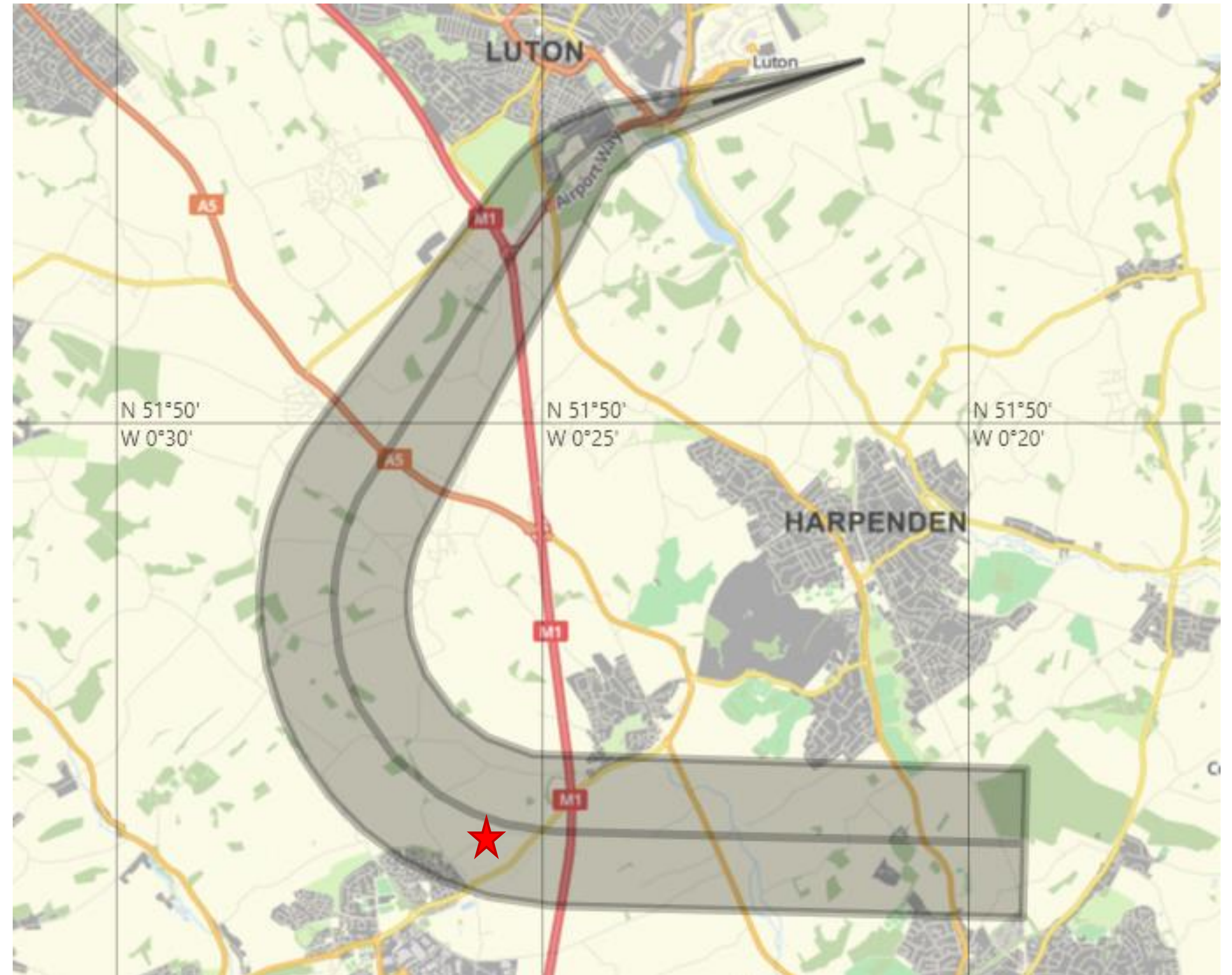
As part of the ongoing noise monitoring programme, London Luton Airport deployed a portable noise monitoring terminal in Redbournbury.

The purpose of the monitoring programme is to understand the typical noise levels created in the local community, for Redbournbury it specifically related to departing aircraft during westerly operations on our MATCH departure route.

The noise monitor was located in Redbournbury between the 13<sup>th</sup> August and 2<sup>nd</sup> November 2018.

The monitor's location was within the main westerly RNAV departure corridor approximately 240m south of the route's centreline at an altitude of 394ft above sea level.

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.

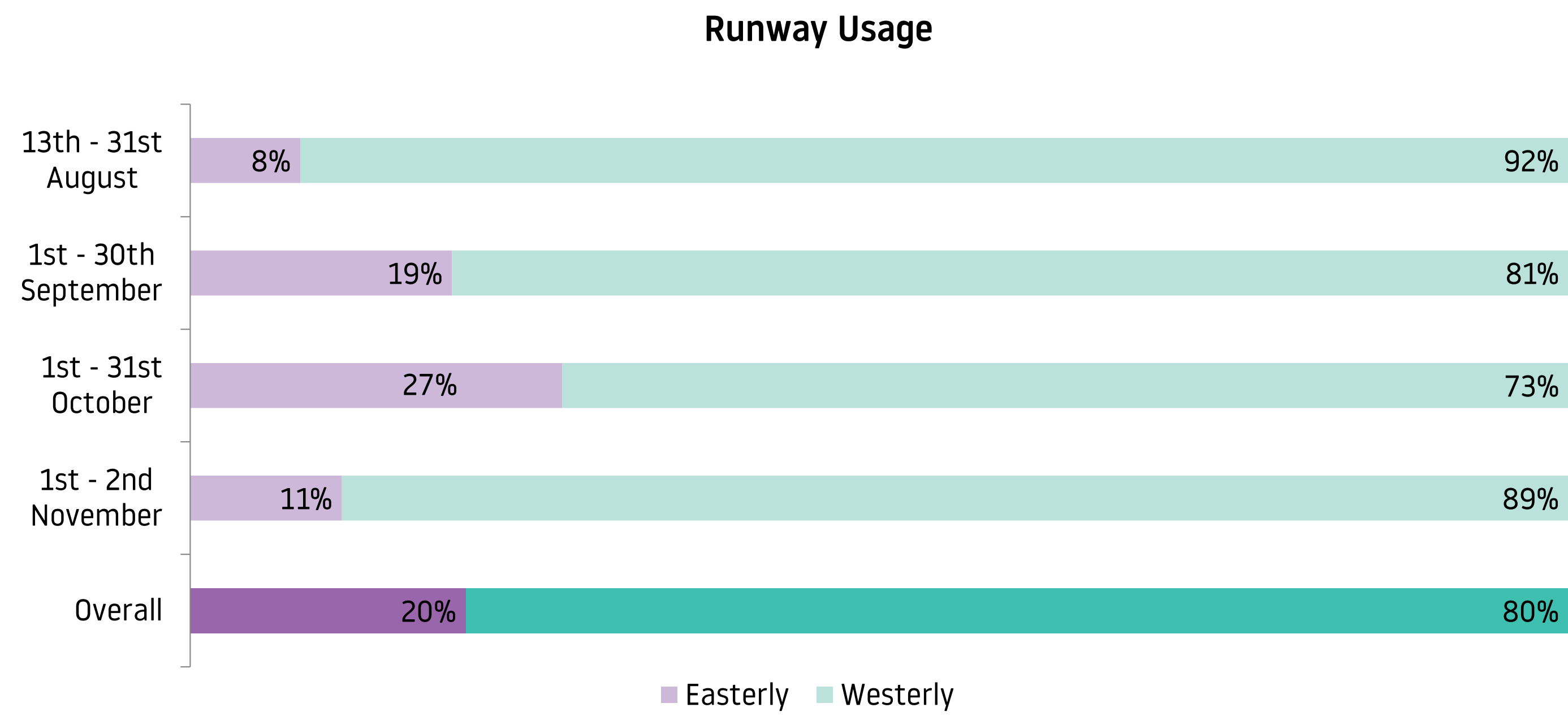




# LLA Operations

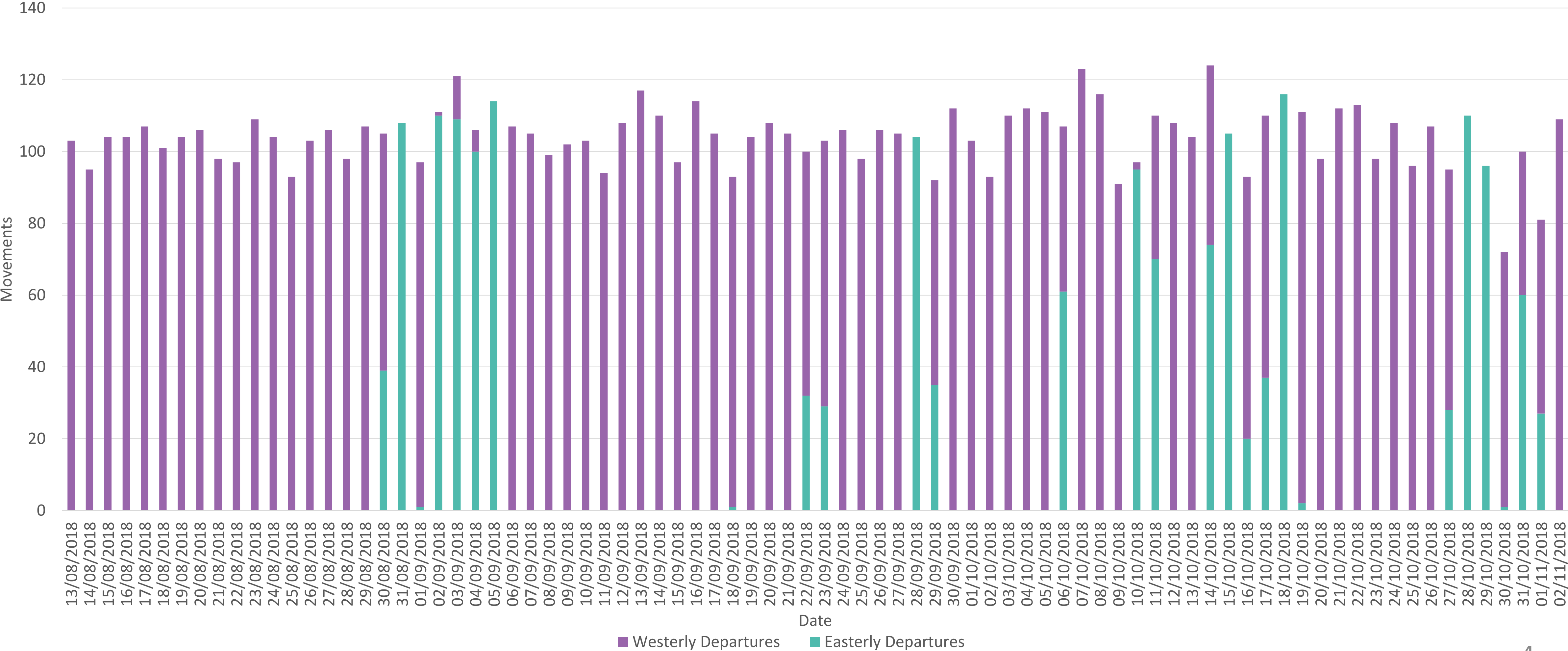
During the period of monitoring, the direction of operation was 20% Easterly and 80% Westerly. The 5 year average for this time of year is 30% Easterly vs 70% Westerly which demonstrates that residents in the area would have experienced a few more days of aircraft activity than in previous years.

6,903 aircraft departed on the MATCH westerly departure route operated from the airport whilst the monitor was located in Redbournbury as well as an additional 68 Helicopters.



# Daily Movements

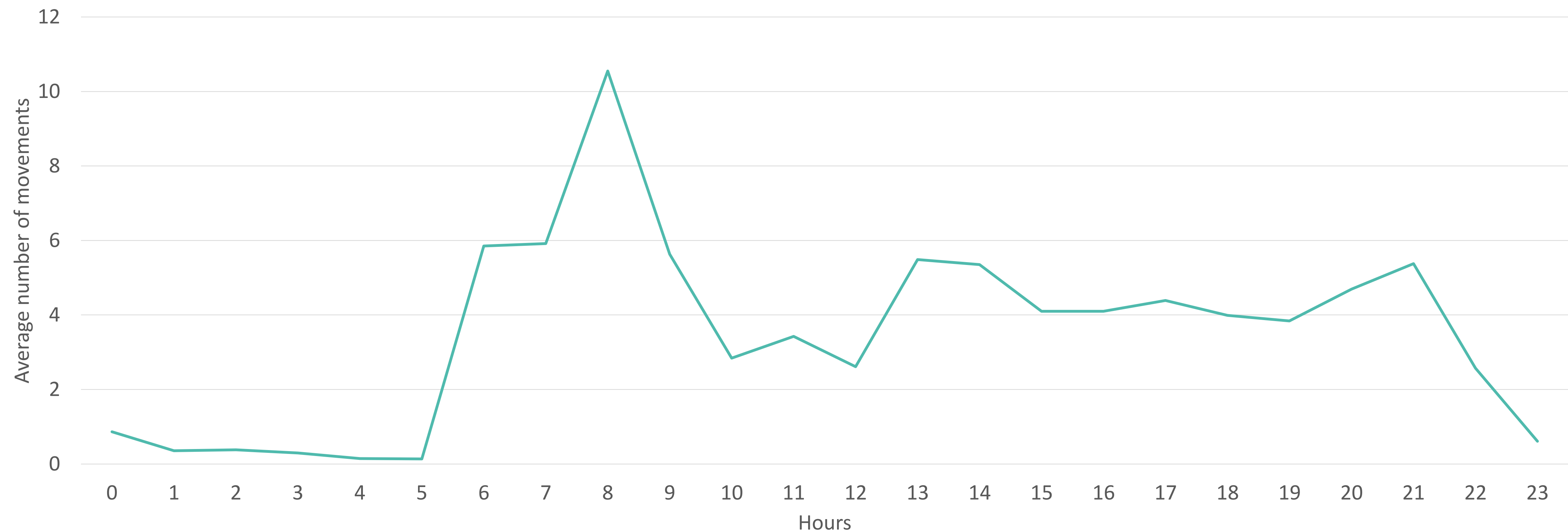
The chart below shows the number of daily departures that passed the noise monitor. Due to the location of Redbournbury, all flights that departed on our MATCH route whilst on Westerly operations would have flown passed the monitor. During the monitoring period there were 7 days of Easterly operations and therefore no flights passed near the monitor on these days.



# Hourly Profile

The graph below represents the average number of MATCH westerly departures during the monitoring period. During the peak periods, local residents of Redbournbury may notice more aircraft. Peak periods were at 08:00 and 13:00 – 15:00 after which there is a steady decline from 21:00 as the night period approaches.

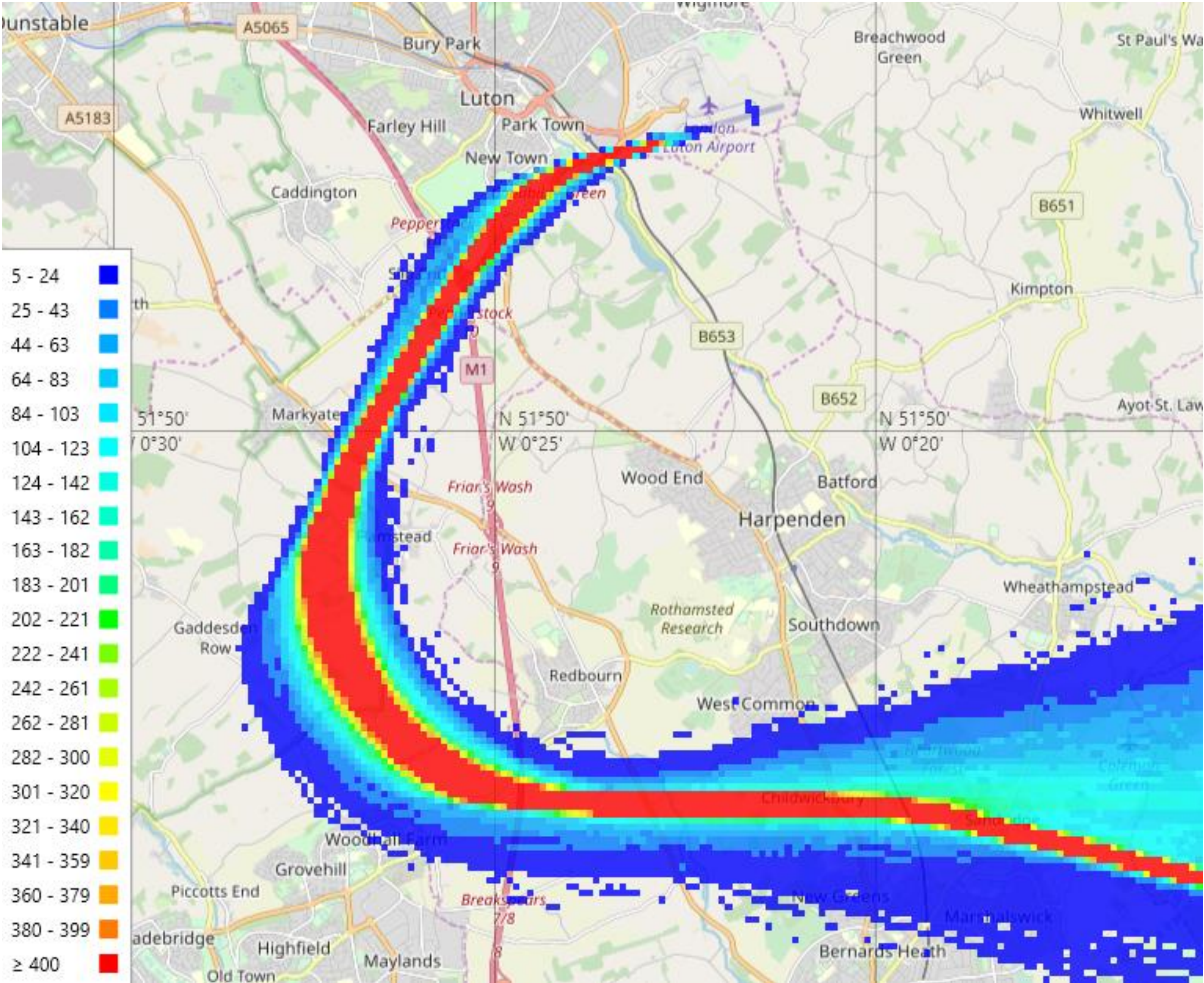
During the night period of 23:00 – 06:00 there was an average of 3 departures compared to 4 for the previous year showing a small decrease in night time operations.





# Aircraft Tracks

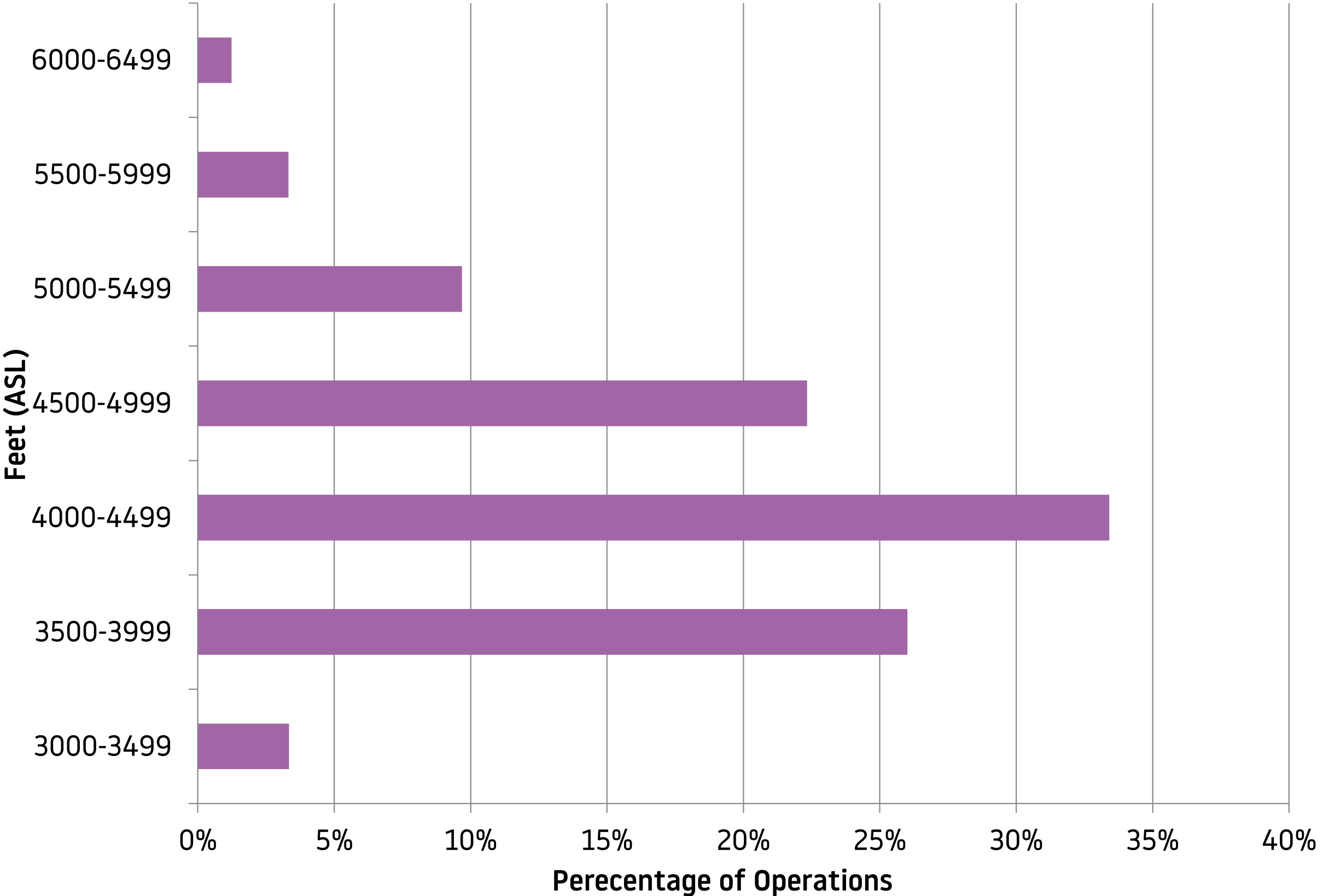
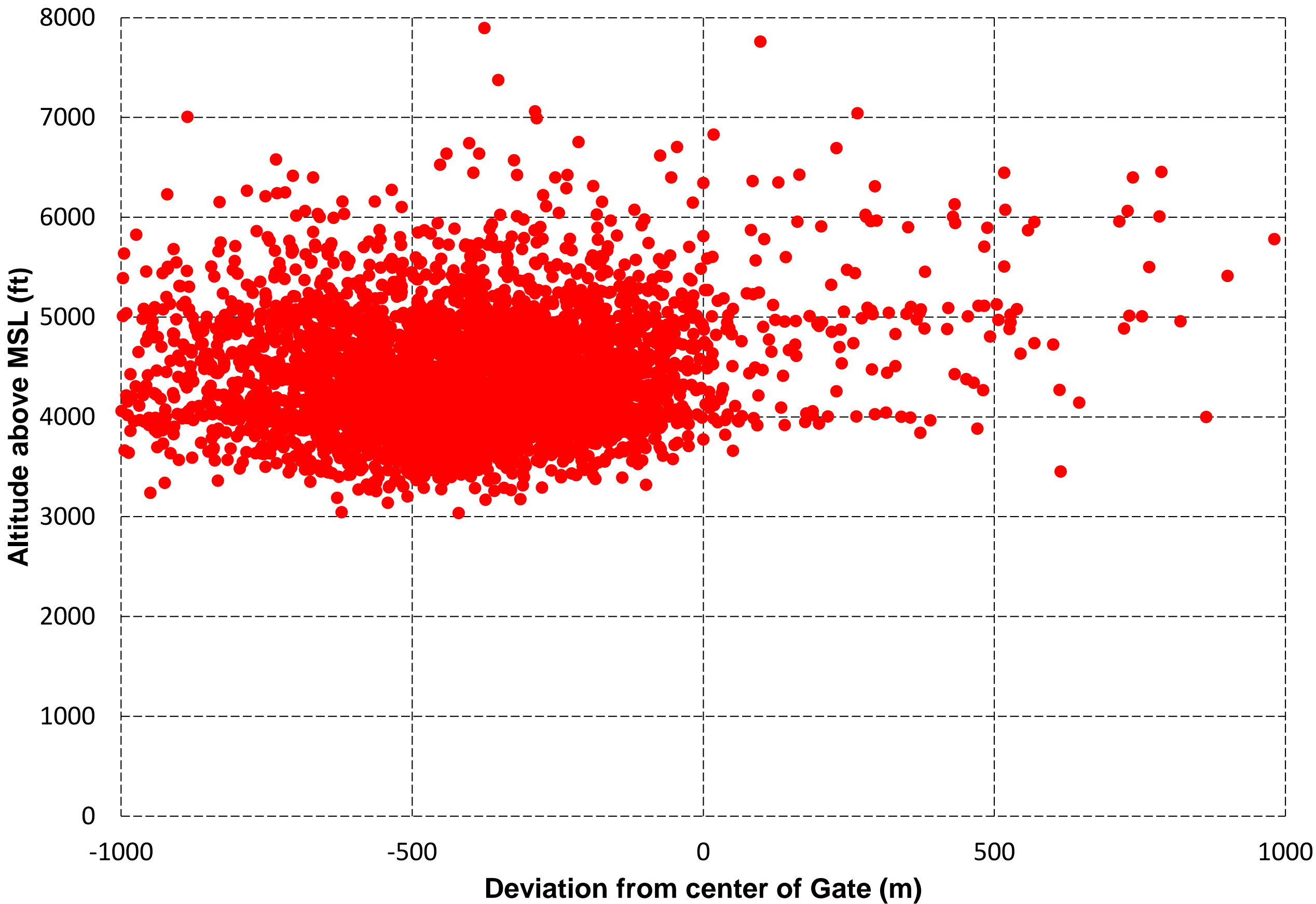
The sample below shows the representative flight tracks that passed nearby the monitor during the monitoring period.





# Altitude Analysis

Altitude analysis shows the vertical and lateral dispersion of aircraft 1000m either side of the noise monitor. The chart below shows that 55% of flights were between 4,000 and 4,999 feet and 14% being higher than 5,000 feet. The average altitude of aircraft in this area was 4,383ft above mean sea level.



# 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 Redbournbury the Noise Monitoring Terminal collected results for 5,019 aircraft. However, 1,667 aircraft did not register noise events as they were either too high or too quiet, 1,286 results were excluded for weather reasons as outlined above, which left 2,066 noise results to analyse which are shown in the next few pages

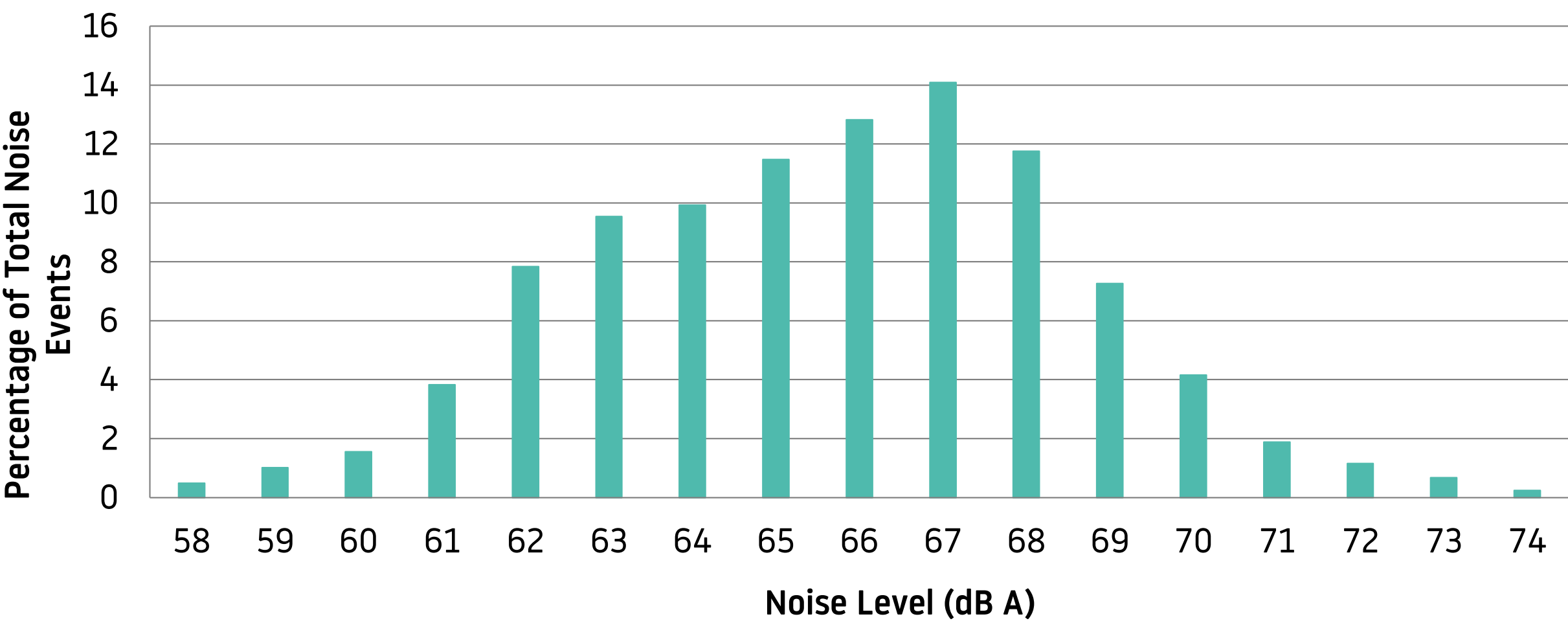
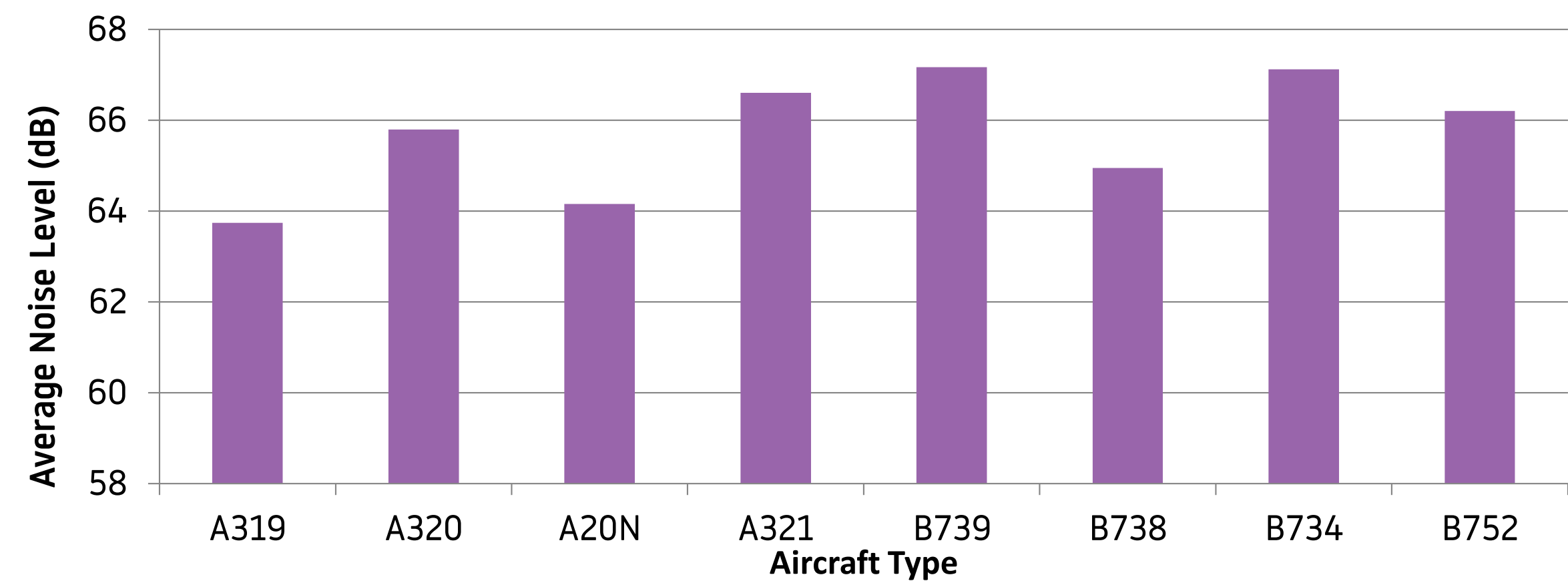


# Noise Results

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
A319	188
A320	930
A320 NEO (A20N)	31
A321	525
B739	22
B738	189
B734	24
B752	23

The average noise in Redbournbury is 65.7dB with a standard deviation of 2.9. This is based on a sample size of 2,066 results.



# Conclusion

- During the monitoring period, the airport was using westerly operations for 80% of the time, this is greater than the 5 year average of this time period, and therefore residents would have experienced a little more activity during this period than in recent years.
- The main aircraft types operating at the airport are A320 and A319's therefore the aircraft flying in the vicinity of Redbournbury are in line with this.
- 1.5% of the noise events recorded were created by easyJet A320 NEO aircraft, registering average noise events of 64 dB.
- The average altitude of aircraft in the area is 4,383ft above sea level, and as Redbournbury is already 394ft above sea level, aircraft will typically be 3,989ft above ground level in this area.
- Above Redbournbury aircraft are typically between 4,000 – 4,499 feet, during the monitoring period this accounted for 33% of all aircraft. We also saw 22% of aircraft achieve altitudes between 4,500 and 4,999 feet with a further 14% achieving altitudes higher than 5,000ft.
- Of those 15 aircraft shown in the altitude analysis that achieved altitudes above 7,000 feet, 7 were cargo aircraft, 5 were business jet aircraft and 3 were scheduled passenger aircraft. These aircraft operated during the night period and were clearances to climb higher than during the daytime because the airspace is typically quieter during this period.
- During the monitoring period 13 aircraft were investigated as part of the Noise and Track violation scheme and are currently ongoing. All fines generated by this scheme 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 departure route in the direction of Redbournbury.

**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.

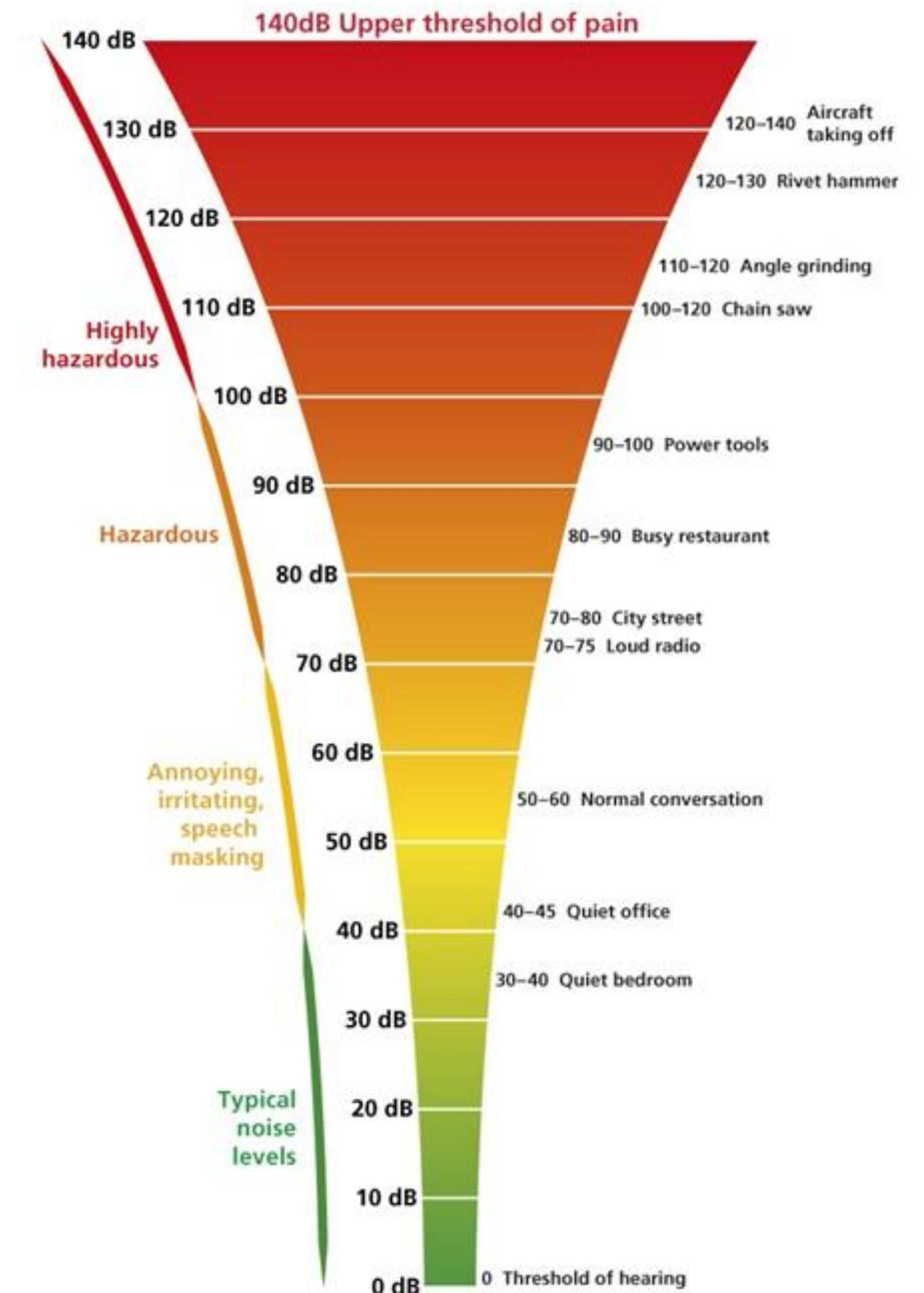
**Gate Analysis:** A 3km gate which is drawn across an area and will gather information about every aircraft passing through the gate area.

**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](http://iosh.co.uk)