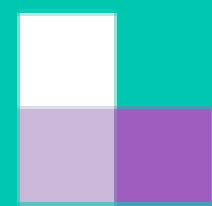
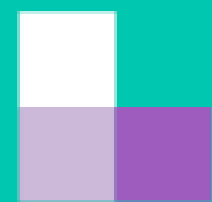


Community Noise Report

Pepperstock

Feb-Mar 2018



London
Luton
Airport



Introduction

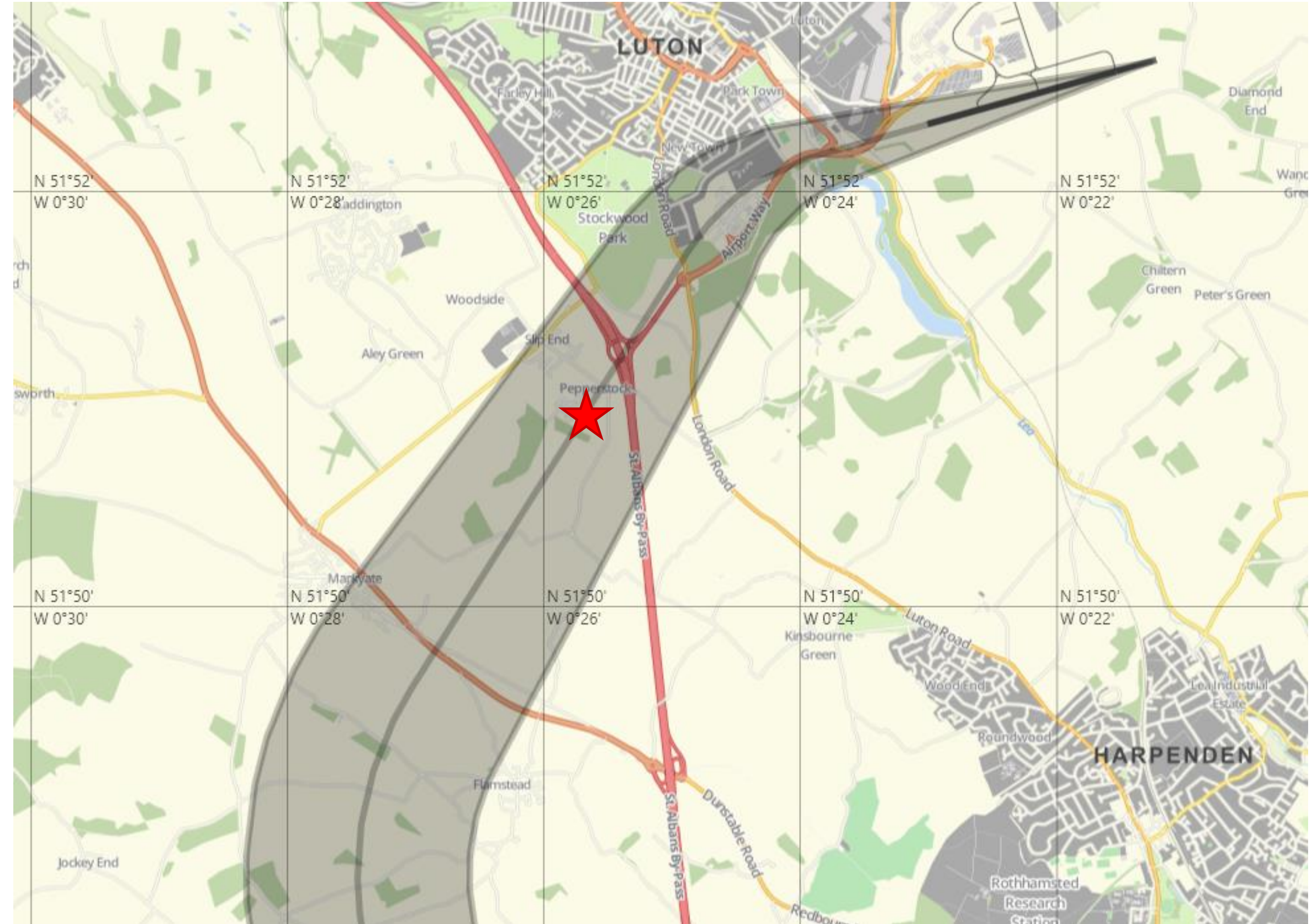
As part of the ongoing noise monitoring programme, London Luton Airport deployed a portable noise monitoring terminal in Pepperstock.

The purpose of the monitoring programme is to understand the typical noise levels created in the local community, For Pepperstock it specifically related to departing aircraft during westerly operations.

The noise monitor was located in Pepperstock between the 15th February and 26th March 2018.

The monitor's location was within the main westerly departure corridor approximately 4.5km from the end of the runway and directly underneath the route's centreline at an altitude of 551ft above sea level.

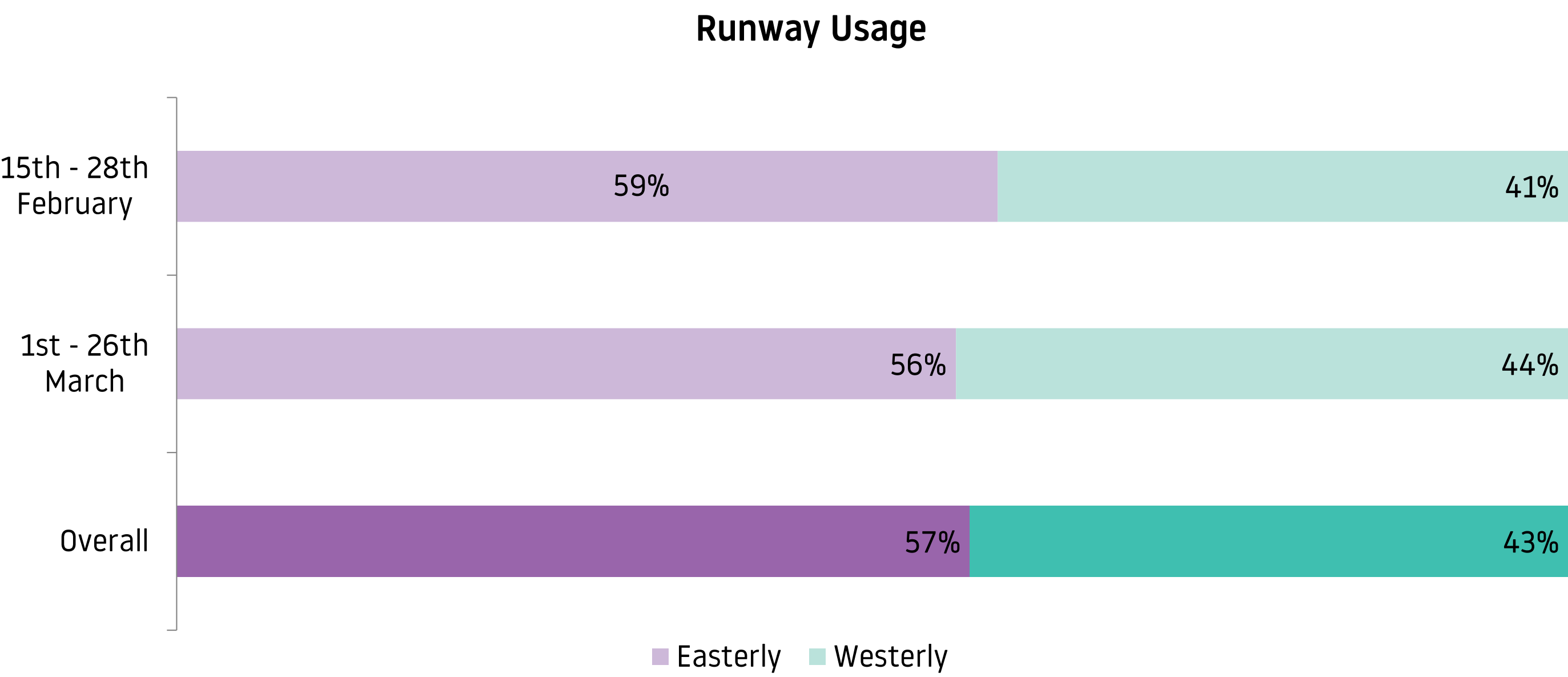
Aircraft noise and tracks recorded were extracted from LLA's noise and track-keeping system. This document evaluates the lateral and vertical positioning of aircraft near the monitor as well as the noise recorded at ground level.



LLA Operations

During the period of monitoring, the direction of operation was 57% easterly and 43% westerly. The 5 year average for this time of year is 44% Easterly vs 56% Westerly which demonstrates that residents in the area would have experienced a few more days of aircraft activity than in previous years.

2,912 westerly departing flights operated from the airport whilst the monitor was located in Pepperstock.



Daily Movements

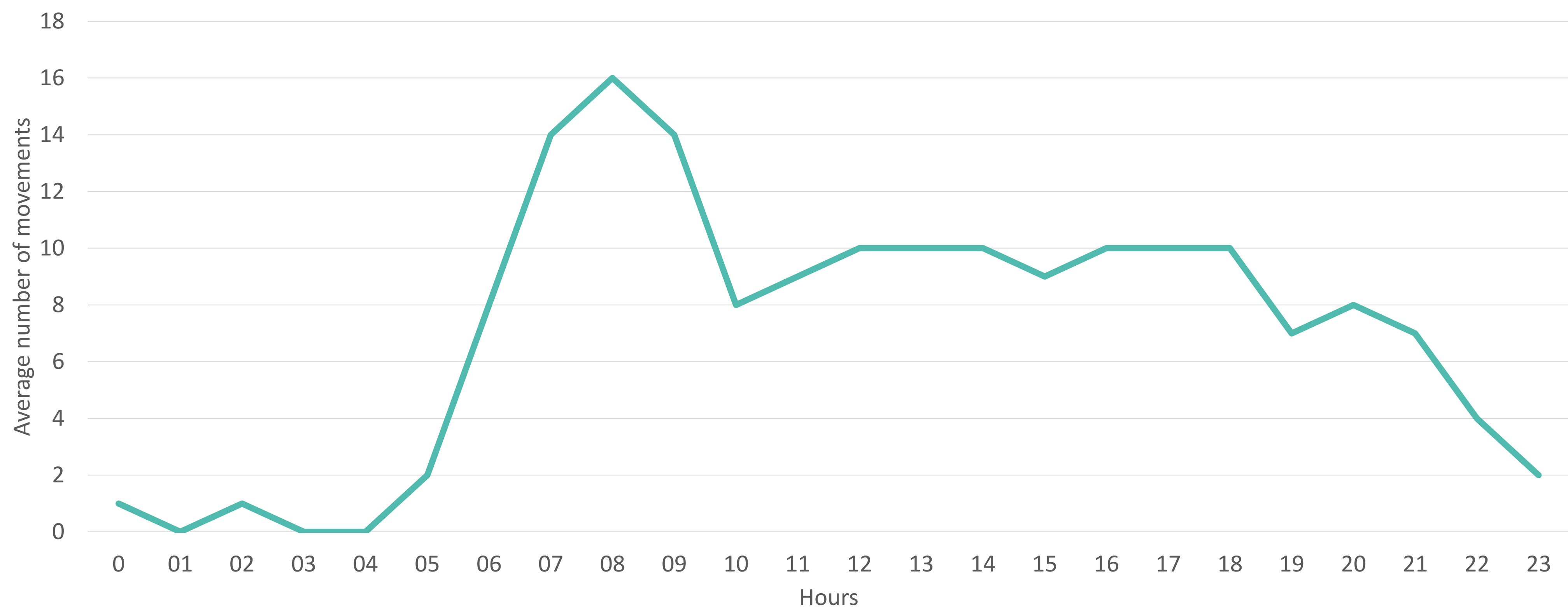
The chart below shows the number of daily departures from the airport with a split between Easterly and Westerly operations. For those days where there are Easterly and Westerly operations, this indicates that during the day we switched runway operations. Due to the location of Pepperstock, all flights that departed whilst on Westerly operations would have flown passed the monitor and therefore captured data. During the monitoring period there were 17 days of easterly operations at which time no flights passed near the monitor.



Hourly Profile

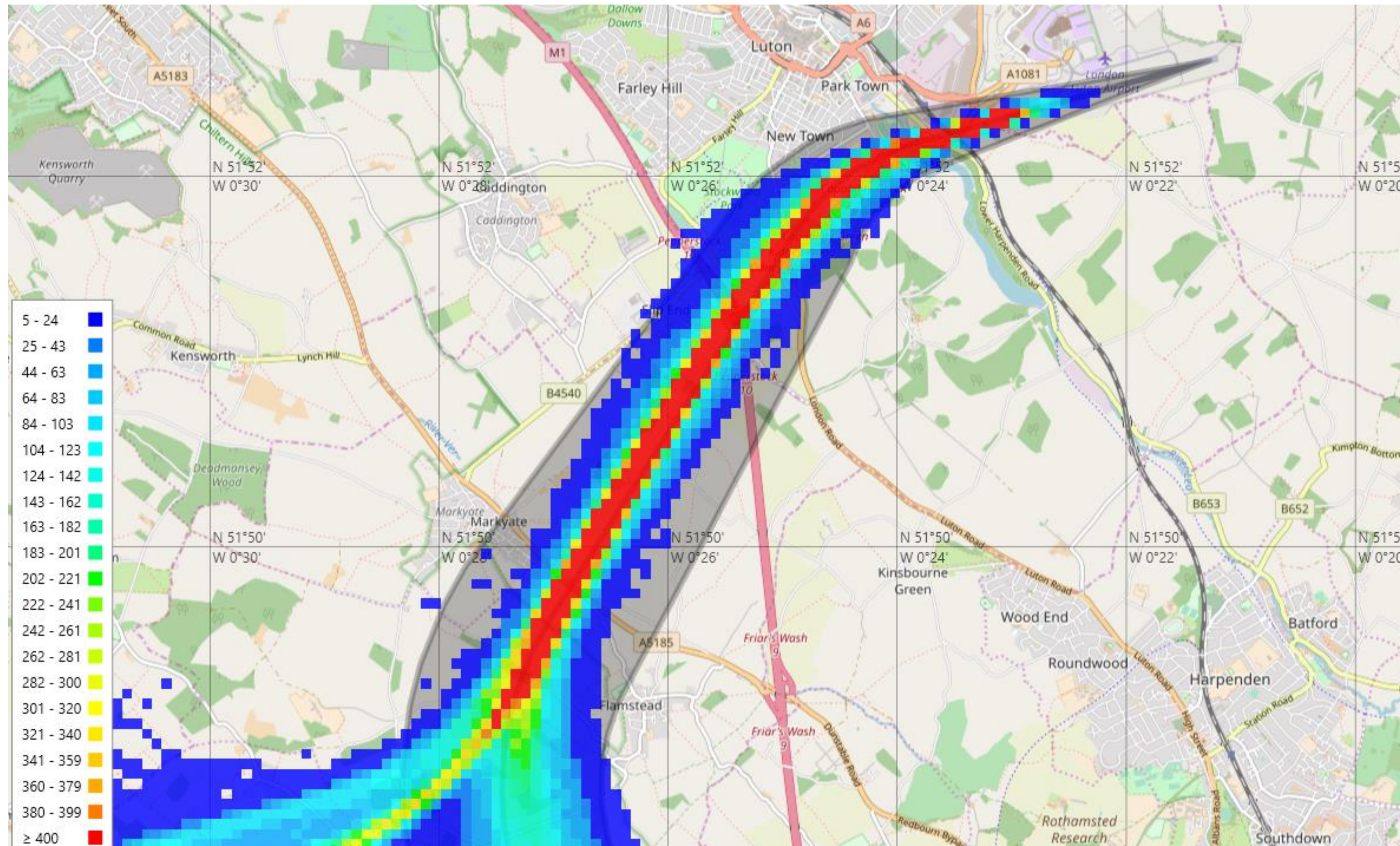
The graph below represents the average number of departures during the monitoring period. During the peak periods, local residents of Pepperstock may notice more aircraft in the airspace due to this. As a result, we saw peak periods between the hours of 07:00 – 09:00 and a continued flow of aircraft from 12:00 to 18:00 at which point we see a steady decline to 23:00.

A large percentage of our night flights are cargo operations, during the monitoring period LLA saw 161 cargo flights. During the night period however, we only saw an average of 14 departures between the hours of 23:00 – 07:00 compared to 14 for the previous year showing no change in night time operations.



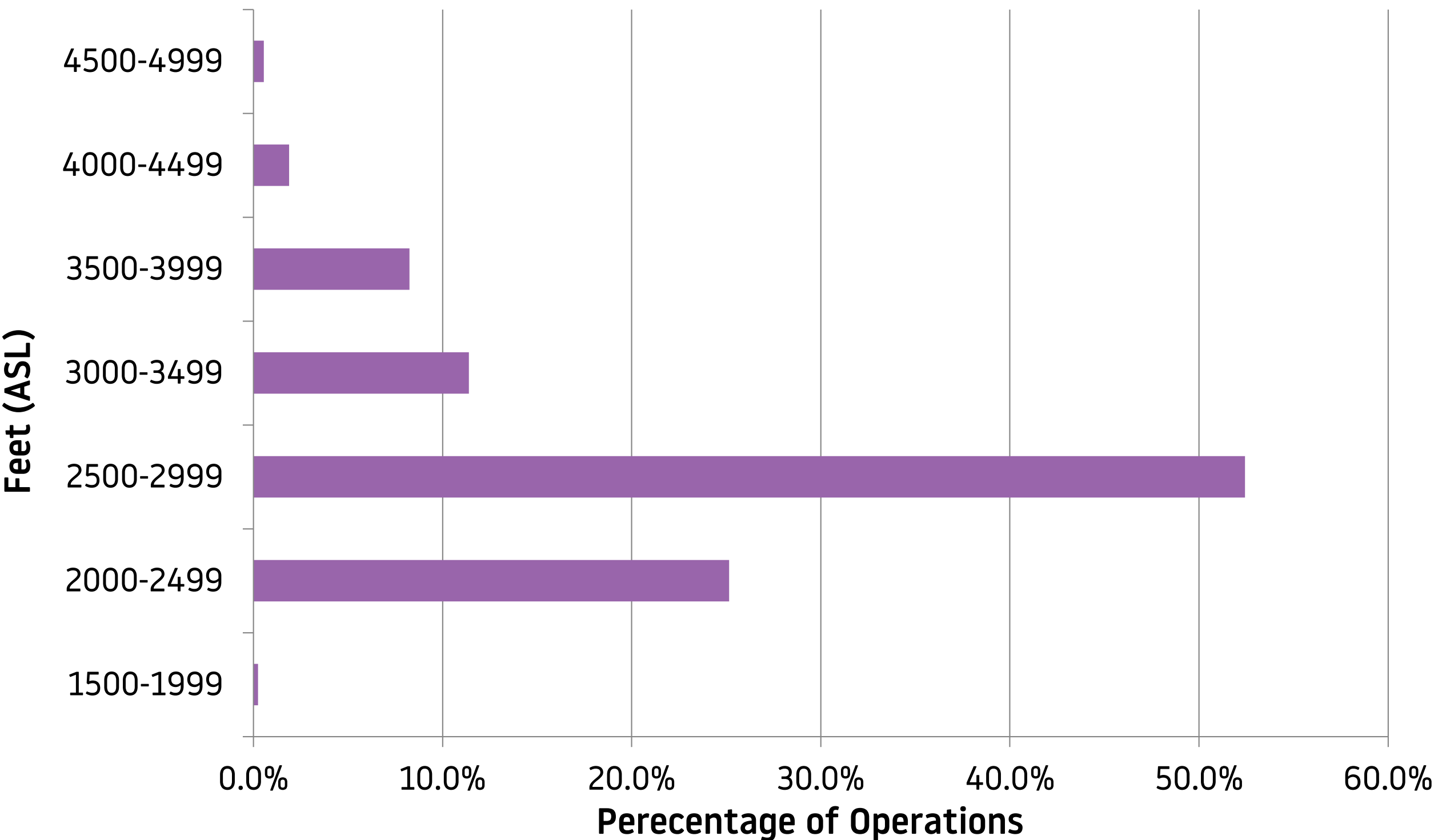
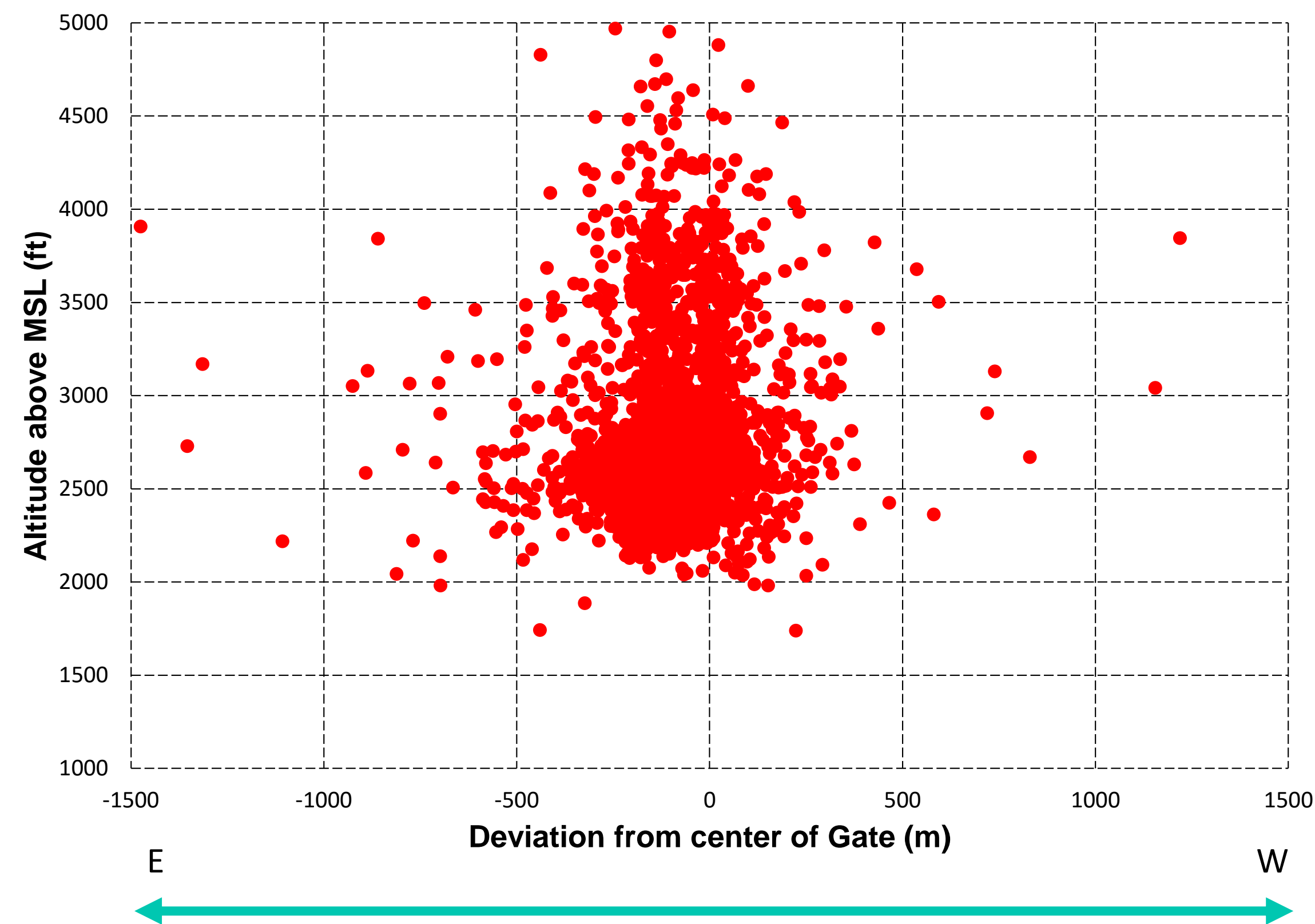
Aircraft Tracks

The sample below shows 2,560 flight tracks that passed nearby the monitor during the monitoring period.



Altitude analysis During Monitoring Period

Gate analysis shows the altitude and lateral dispersion of aircraft at this point on the departure route. The chart below shows that 52% of flights were between 2,500 and 2,999 feet and 11% being between 3,000 and 3,499 feet. The average altitude of aircraft in this area was 2,788ft above mean sea level.



2,544 aircraft shown on chart

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)

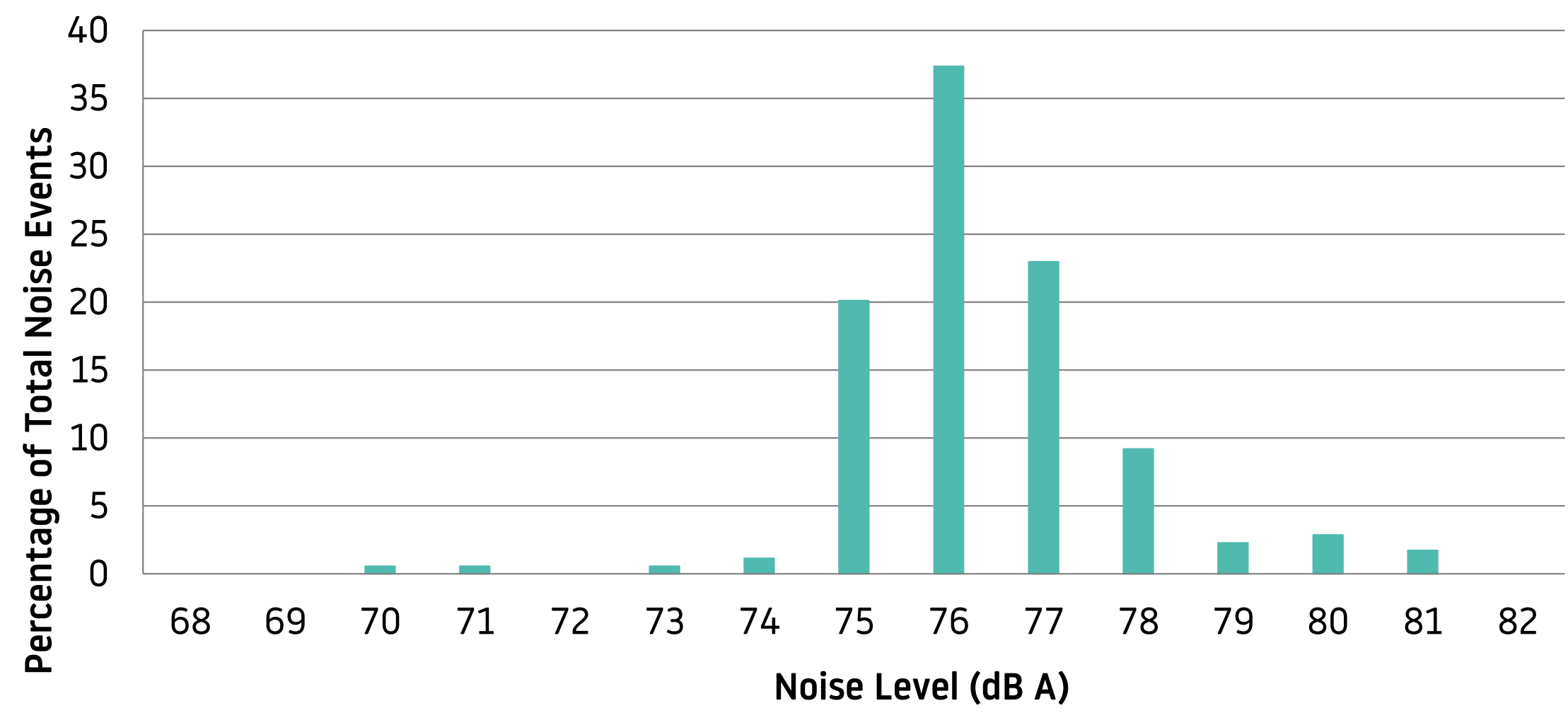
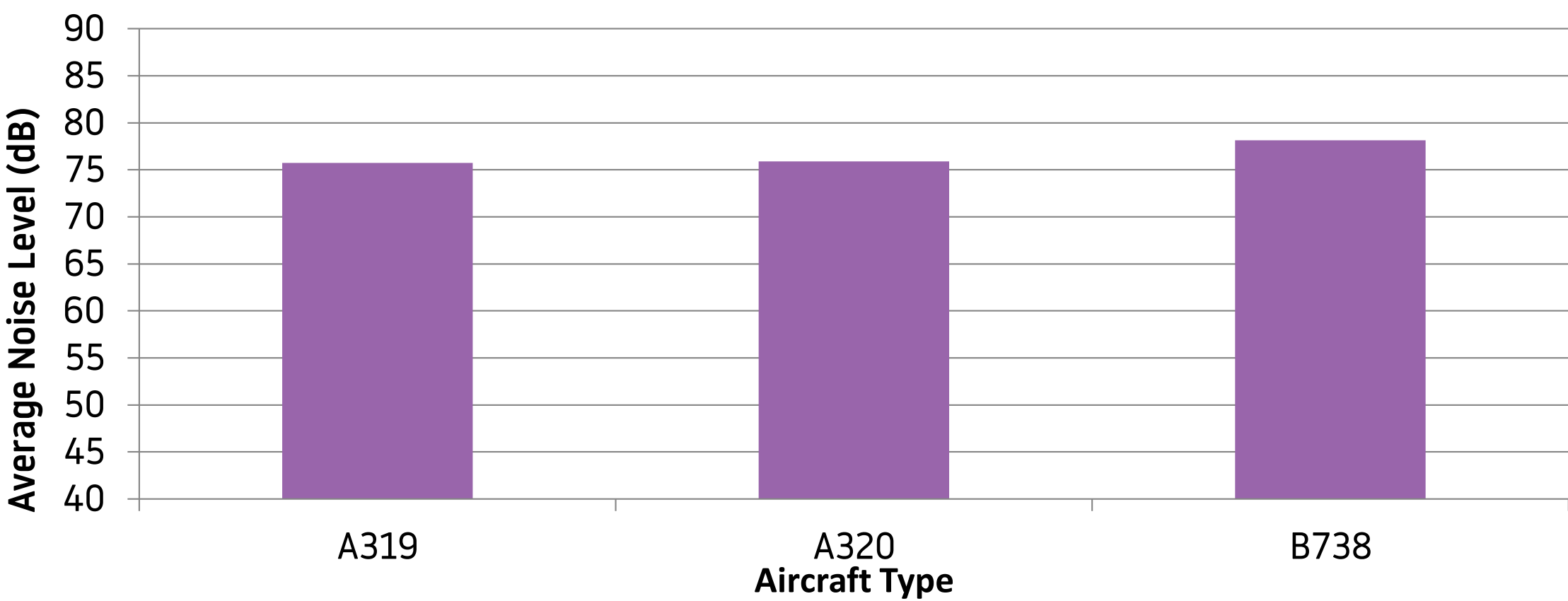
We are always looking at new ways to make our Noise Reports easier for the local communities to understand as well as including the right information. If you have any suggestions about how we can make these reports better, please don't hesitate to let us know.

For the monitoring period in Pepperstock the Noise Monitoring Terminal collected results for 3,874 aircraft. However, XXXX aircraft did not register noise events as they were either too high or too quiet, XXXX results were excluded for the weather reasons outlined above, which left XXXX 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	28
A320	100
B738	29



The average noise in Pepperstock during the monitoring was 76dB with a standard deviation of 2.1

Conclusion

- During the monitoring period, the airport was using westerly operations for 43% of the time, this is in line with the 5 year average of this time period, as such this report identifies noise levels that residents may experience during the period monitored.
- The main aircraft types operating at the airport are A320 and A319's therefore the aircraft types flying nearby Pepperstock are in line with this.
- The average altitude of aircraft in the area is 2,788ft above sea level, and as Pepperstock is already 551ft above sea level, aircraft will typically be 2,240ft above ground level in this area.
- Above Pepperstock, aircraft are typically between 2,500 – 2,999 feet as during the monitoring period this equated to 52% of all aircraft. We also saw 11% of aircraft achieve altitudes between 3,000 and 3,499 feet with a further 10% achieving altitudes higher than 3,500.
- Of those 16 aircraft shown in the gate analysis that achieved higher than 4,500 feet, 5 of these were cargo aircraft and 11 were privately owned aircraft. As these aircraft were operating during the night period, they were given continuous climb as the airspace is typically quieter during this period.
- 6 aircraft flew greater than 1000m either side of the centre of the gate, as part of the Noise and Track violation scheme these were investigated and resulted in 3 fines which equated to £2,250 which went 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 routing in the direction of Pepperstock.

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.

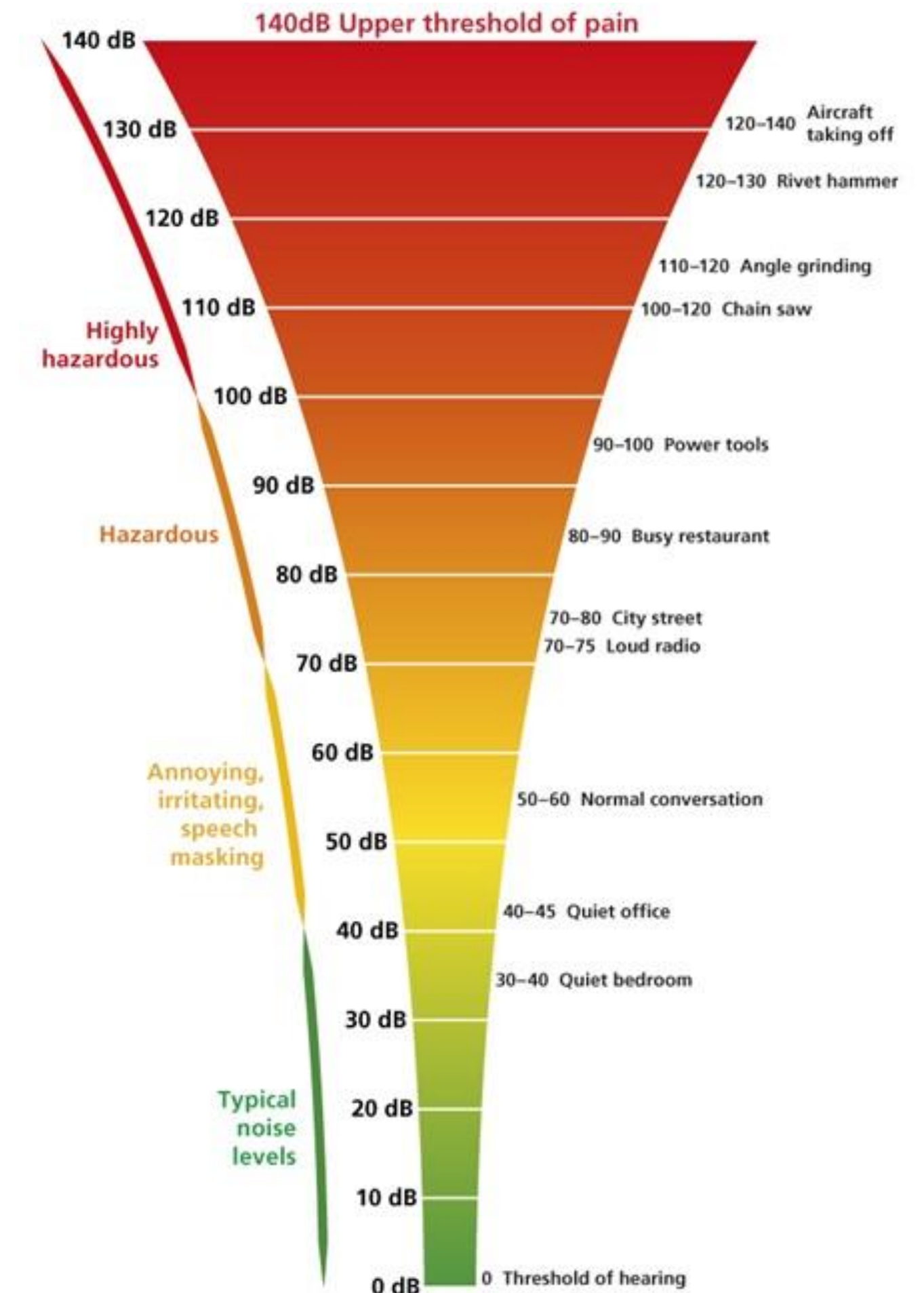
Gate Analysis: A 3km gate which is drawn across an area and will gather information about every aircraft passing through the gate area.

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