Community Noise Report Harpenden Oct-Dec 2017

London Luton Airport

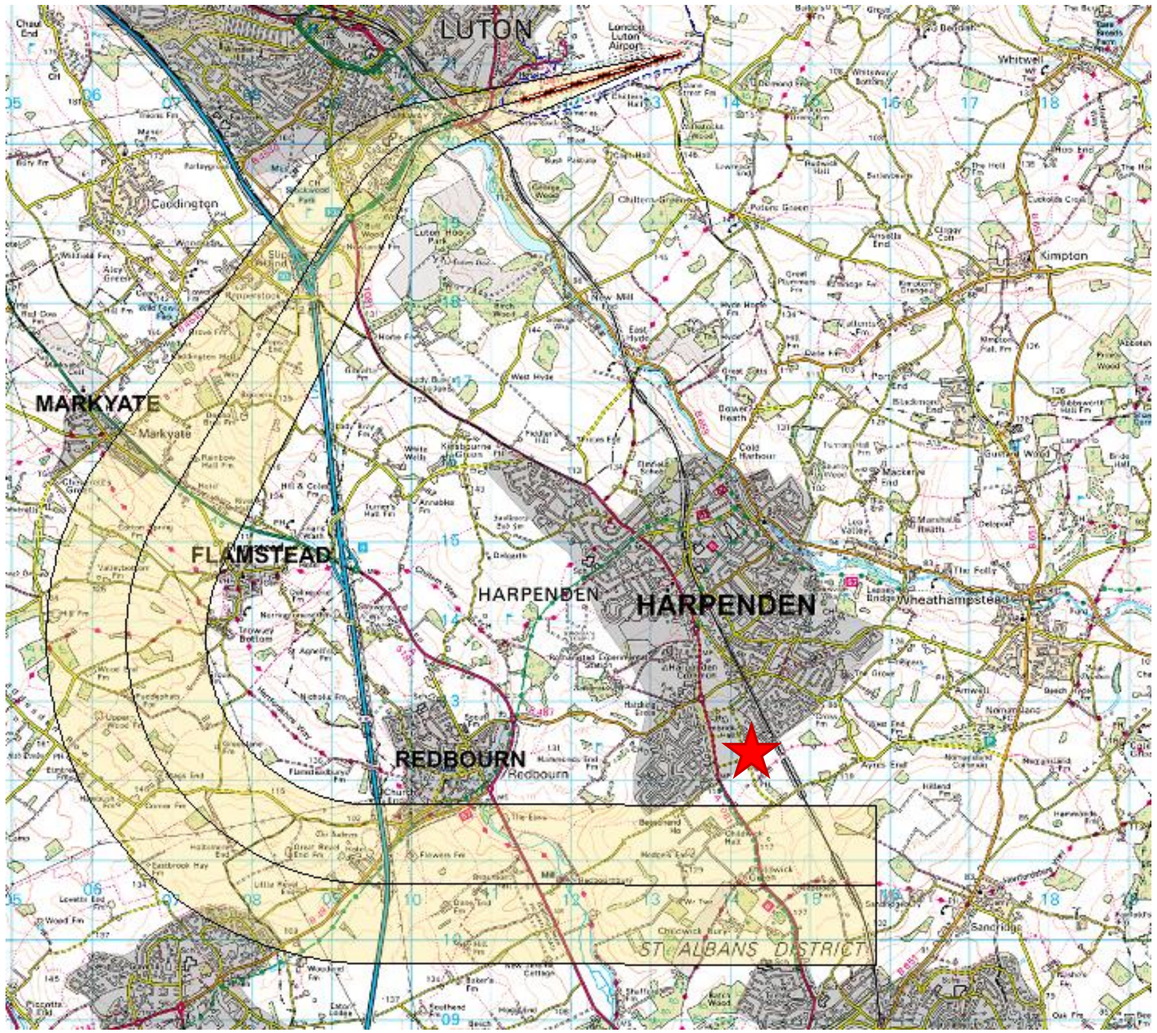
Introduction

London Luton Airport undertook unattended noise monitoring in Harpenden as part of the ongoing noise monitoring programme. The purpose of the monitoring was to understand the typical noise levels created in this area by departing aircraft during westerly operations.

The noise monitor was located in Cross Lane, Harpenden between the 18th October to 14th December 2017.

The monitor's location was north of the westerly Match/Detling departure route with aircraft tracking approximately 20km before reaching the monitor. The location was 1720m away from the route's centreline and at an altitude of 420ft above sea level.

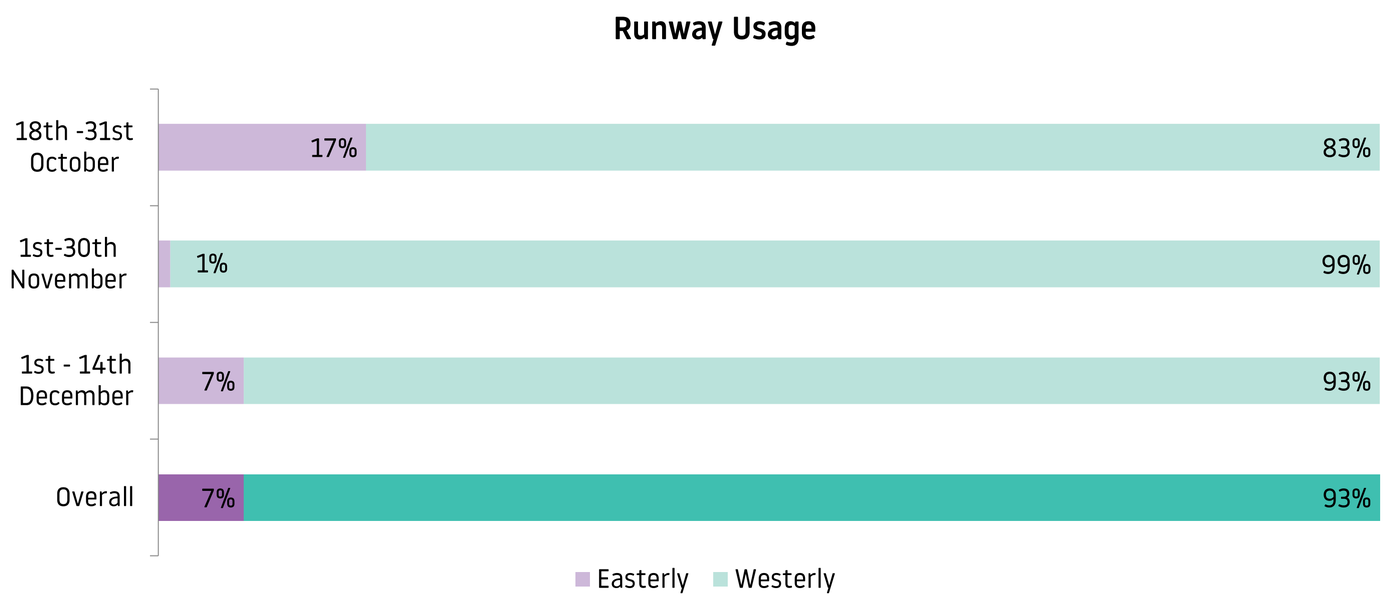
Aircraft tracks and noise recorded was extracted from LLA's noise and track-keeping system (TopSonic). Lateral and vertical dispersion was evaluated by drawing a 2.8km 'gate' perpendicular to the departure route's centreline.



LLA Operations During the Monitoring

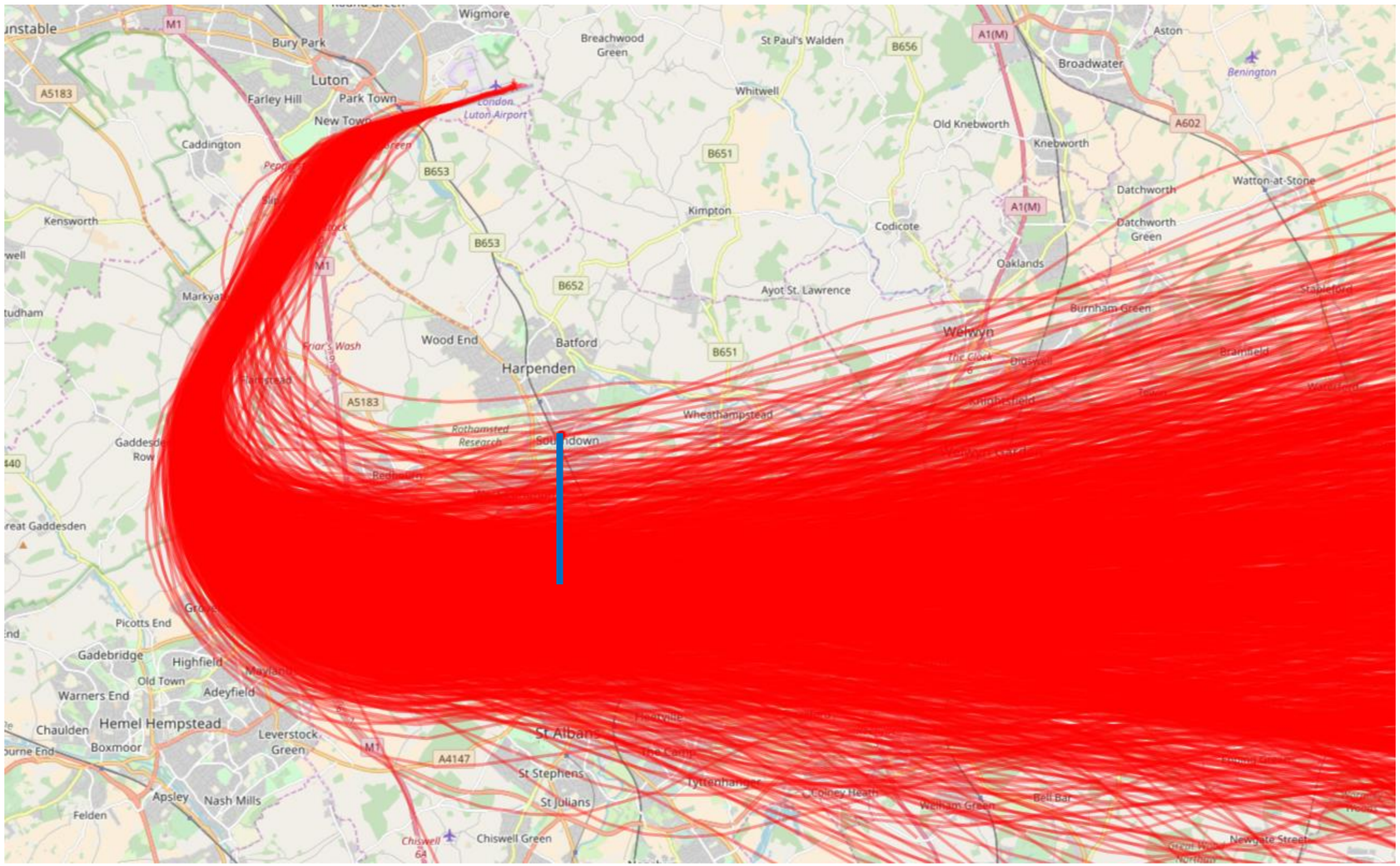
During the monitoring 18,448 air traffic movements were handled by LLA, there were no trials in place that could have affected the position of aircraft during this time.

During the period of monitoring the direction of operation was 7% easterly and 93% westerly and therefore during easterly operations no data was captured.



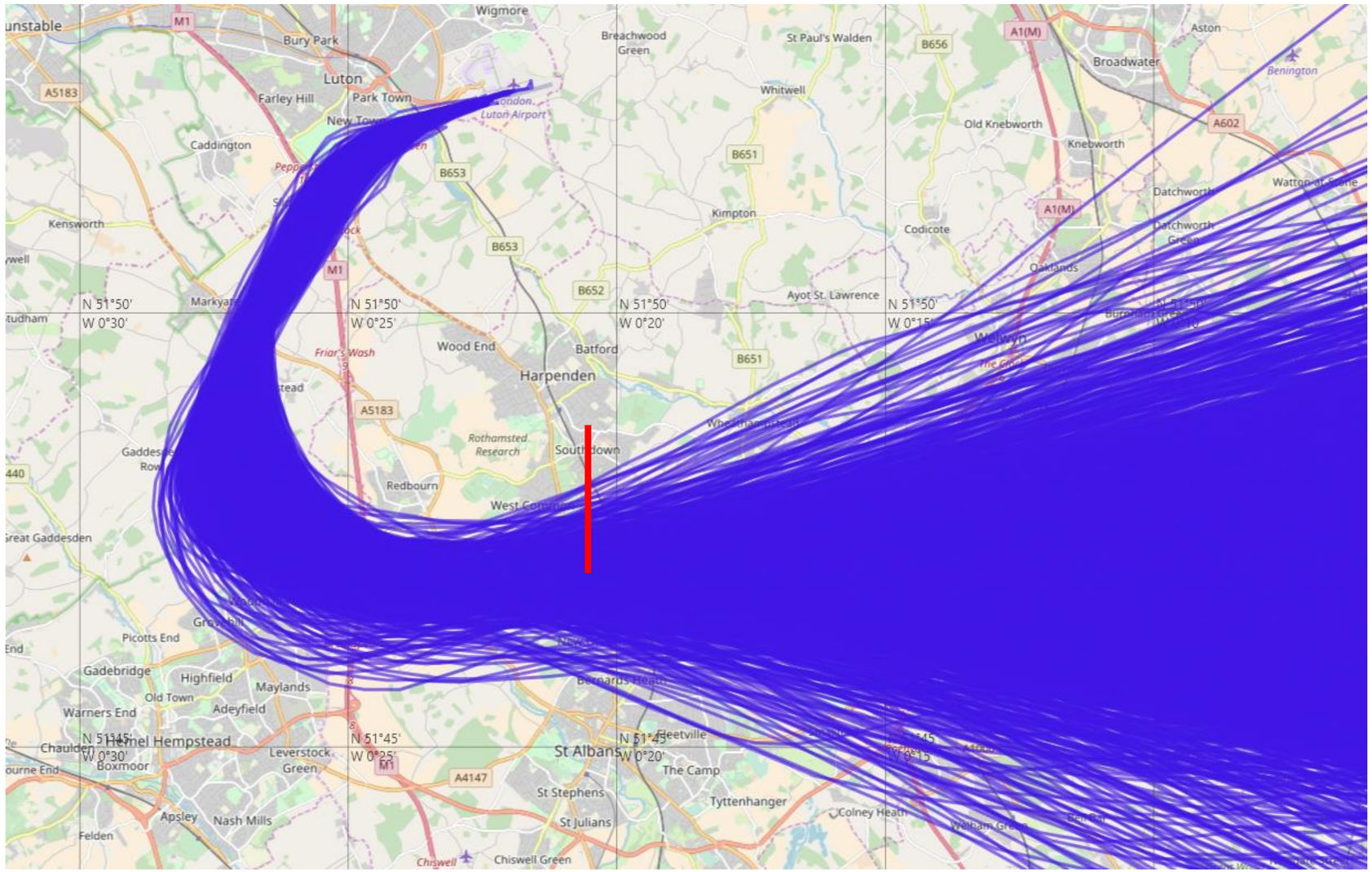
Aircraft Tracks During the 2014 Monitoring Period

The sample below shows 1,954 flight tracks that passed nearby the monitor during the monitoring period in 2014 (15th October – 18th November 2014) .



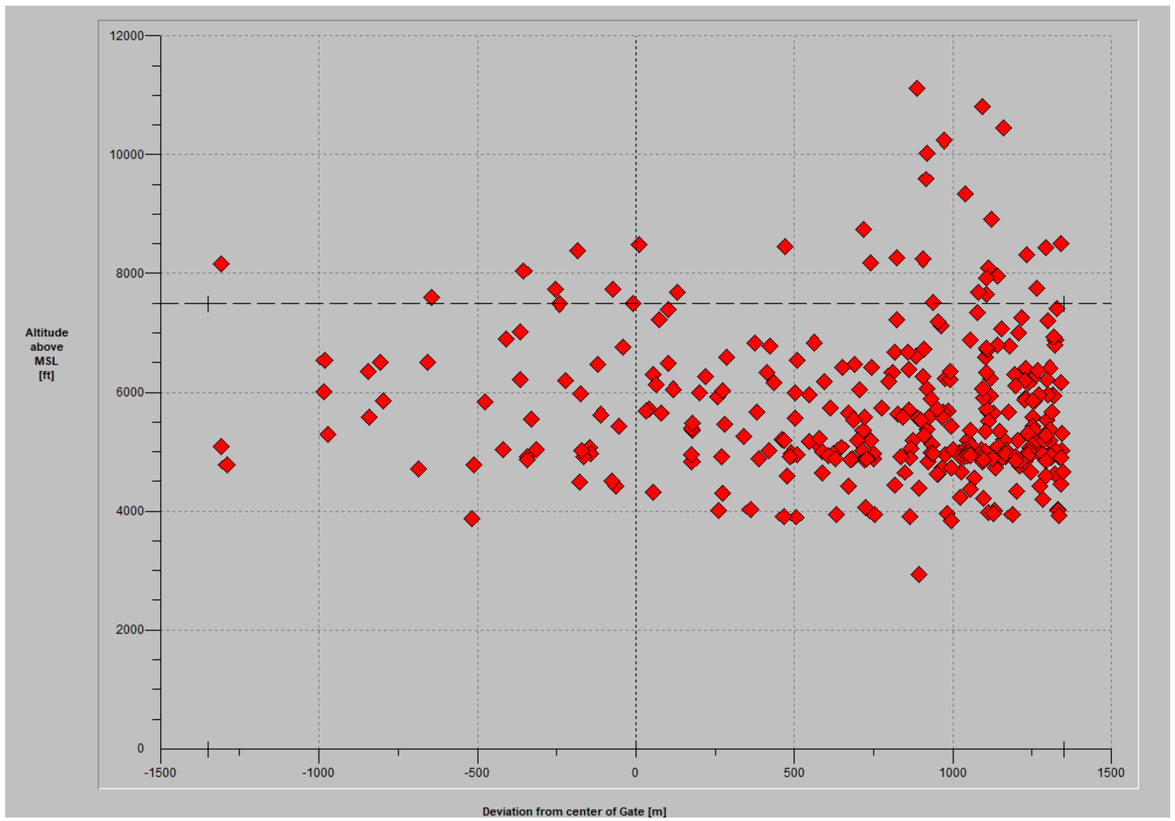
Aircraft Tracks During the 2017 Monitoring Period

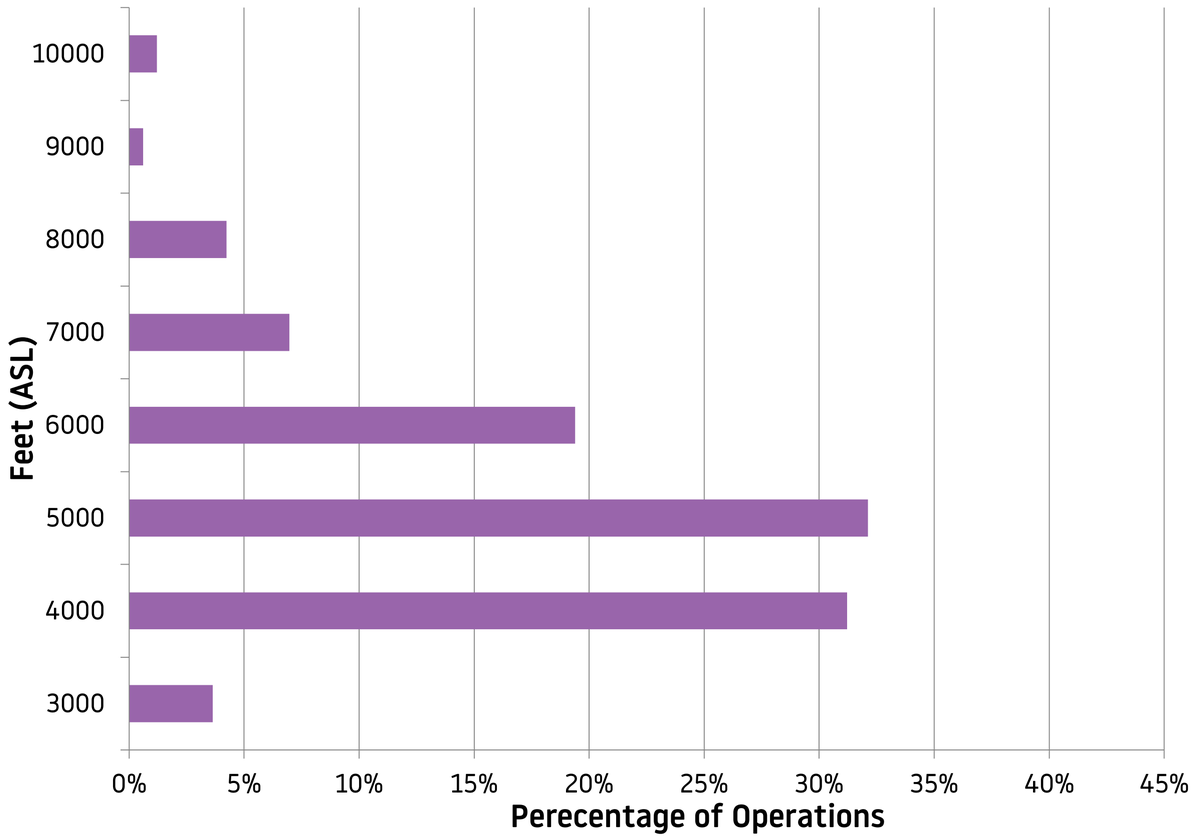
The sample below shows 4,361 flight tracks that passed nearby the monitor during the monitoring period (18th October -14th December 2017).



Gate analysis during 2014 Monitoring Period

Gate analysis shows the altitude and lateral dispersion of aircraft at this point on the departure route. The chart below shows that 64% of flights were above 5,000ft. The average altitude of aircraft in this area was 5,700ft above mean sea level.

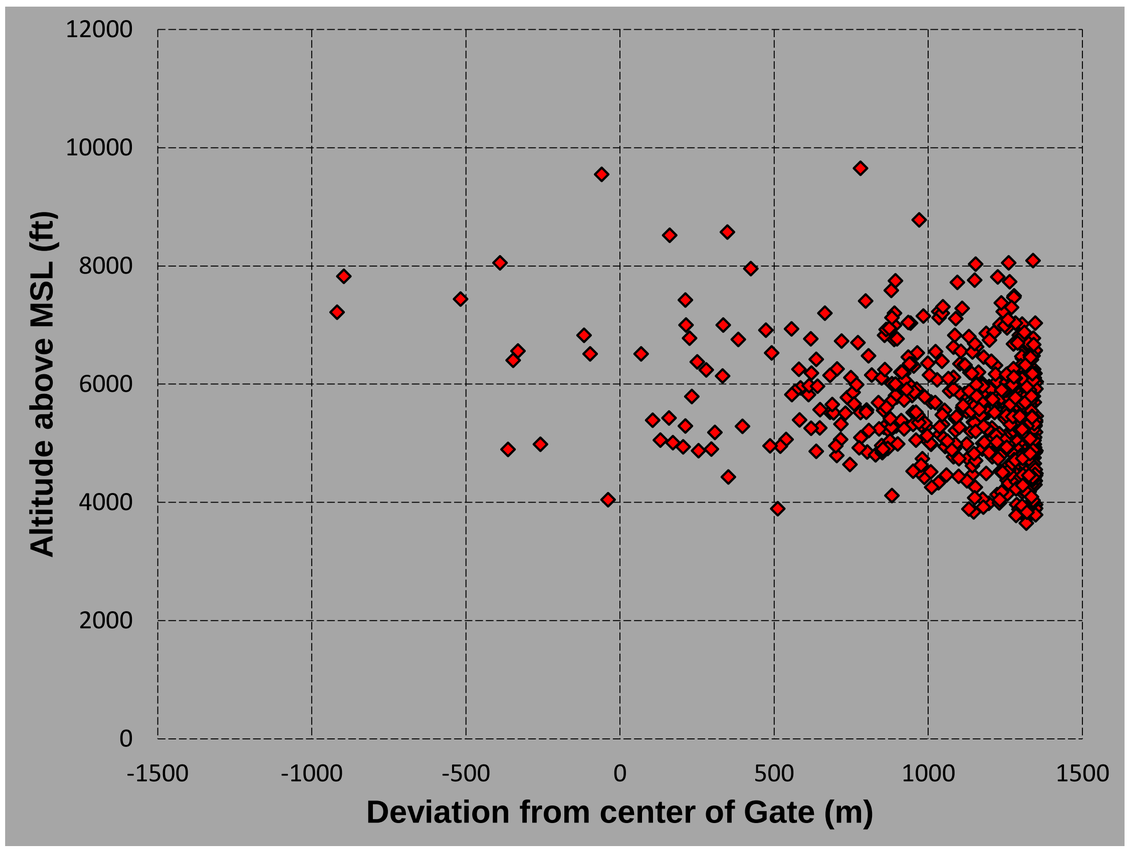




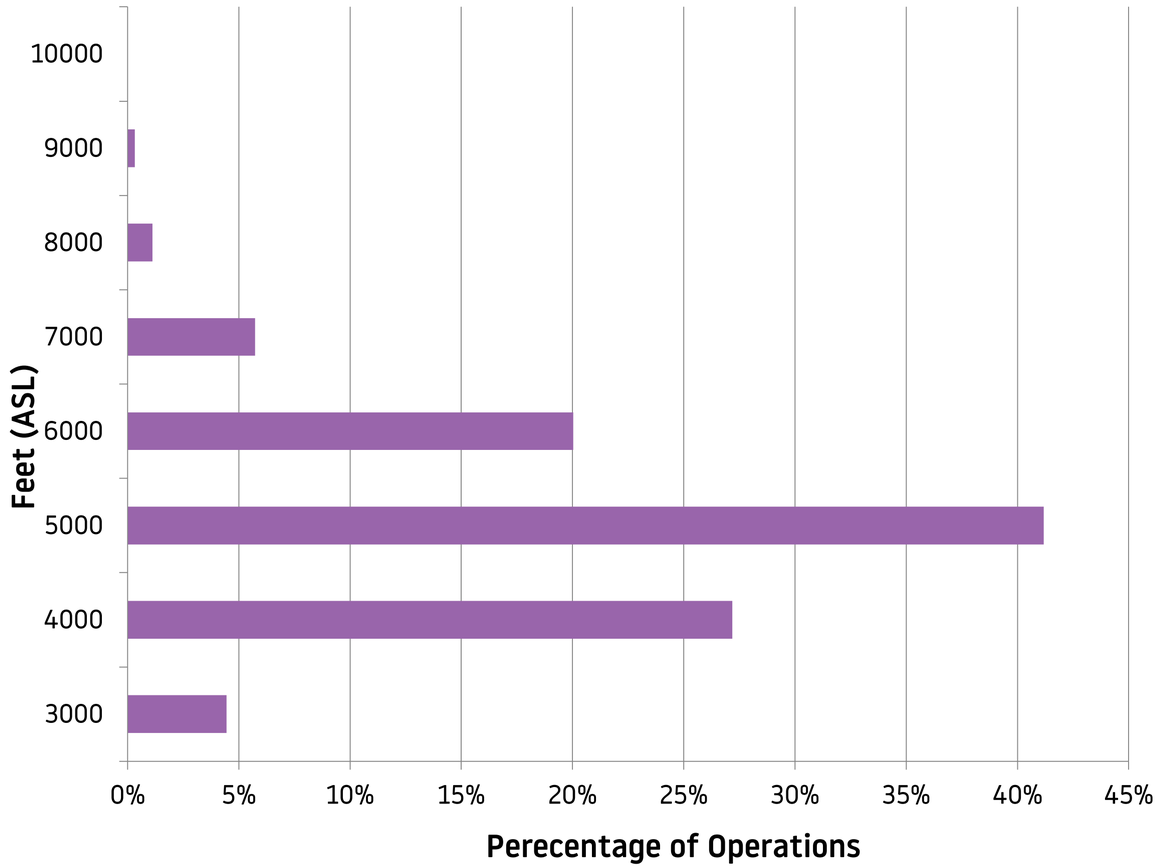
330 aircraft shown on gate analysis

Gate analysis during 2017 Monitoring Period

Gate analysis shows the altitude and lateral dispersion of aircraft at this point on the departure route. The chart below shows that 68% of flights were above 5,000ft. The average altitude of aircraft in this area was 5,500ft above mean sea level.

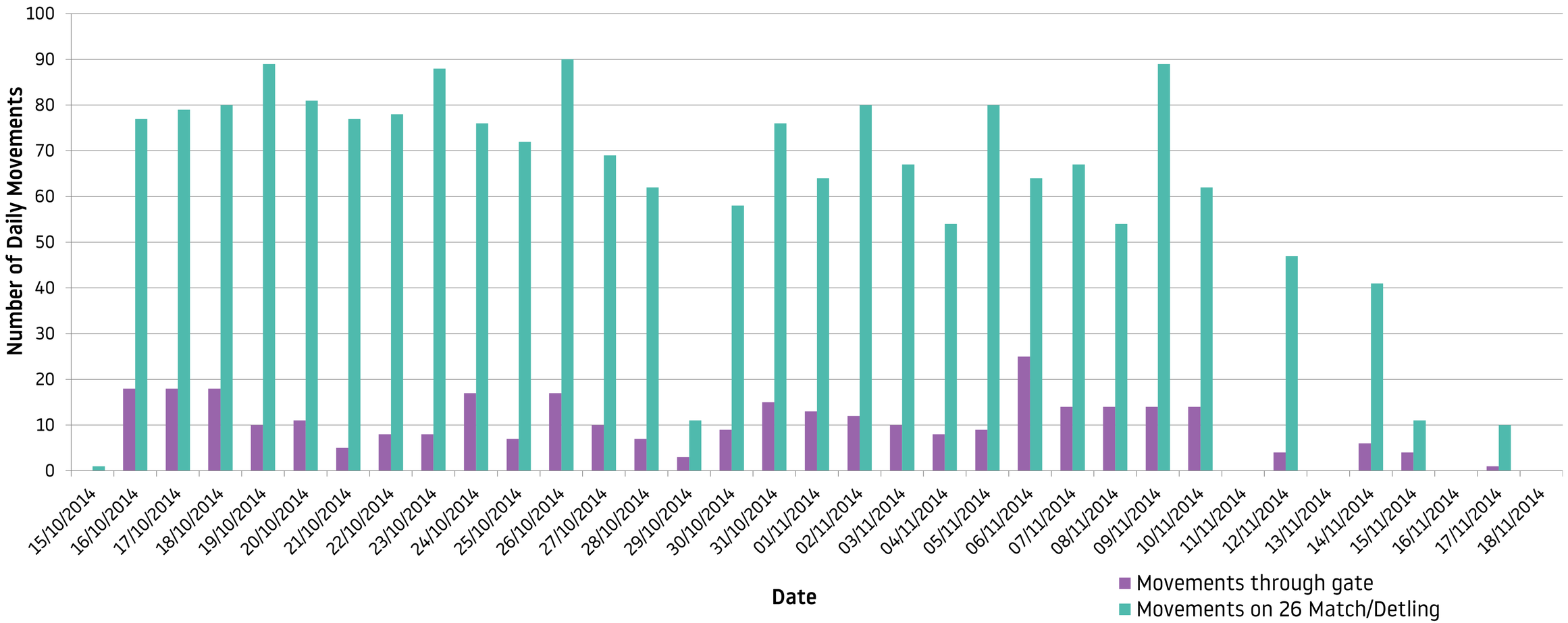


629 aircraft shown on gate analysis



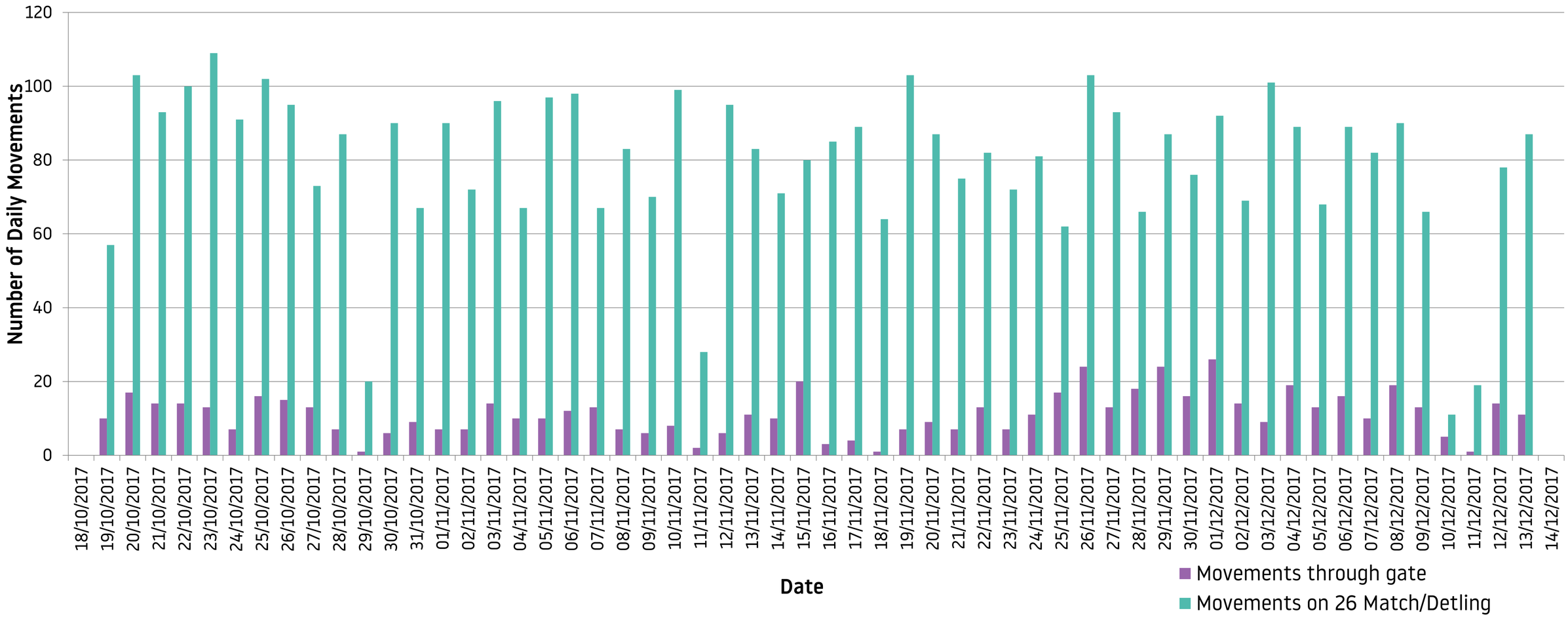
Daily Movements during 2014 Monitoring Period

17% of westerly departures following the Match/Detling route passed through the ‘gate’ during the monitoring period. The chart below shows the daily number of movements that passed through the ‘gate’ and flew nearby Harpenden. There was no loss of radar during the monitoring period, and four full days of easterly operations and therefore no movements that passed through the ‘gate’ on these dates.



Daily Movements during 2017 Monitoring Period

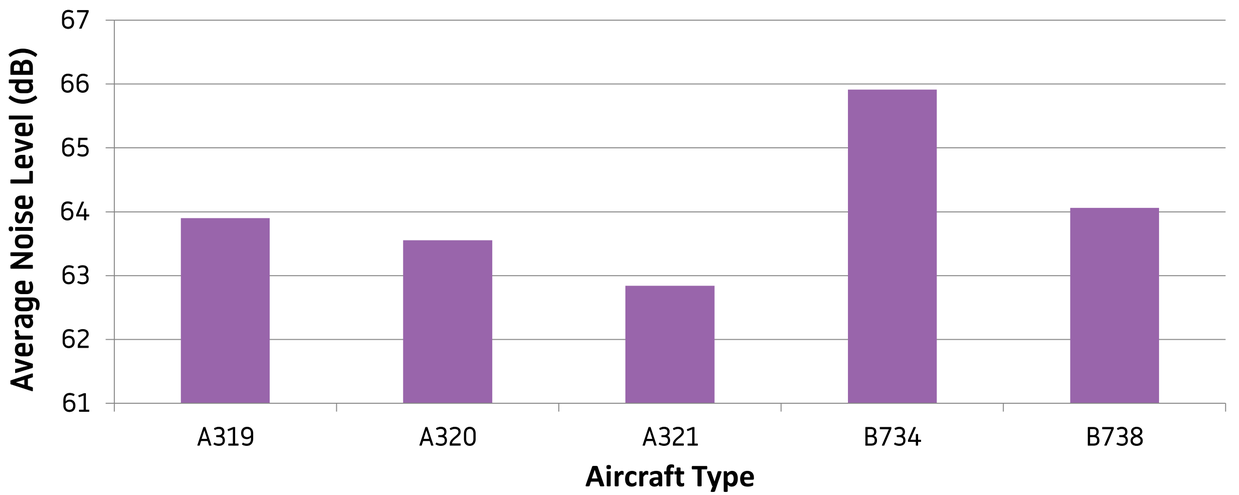
14% of westerly departures following the Match/Detling route passed through the ‘gate’ during the monitoring period. The chart below shows the daily number of movements that passed through the ‘gate’ and flew nearby Harpenden. There was no loss of radar during the monitoring period, and two full days of easterly operations and therefore no movements that passed through the ‘gate’ on these dates.

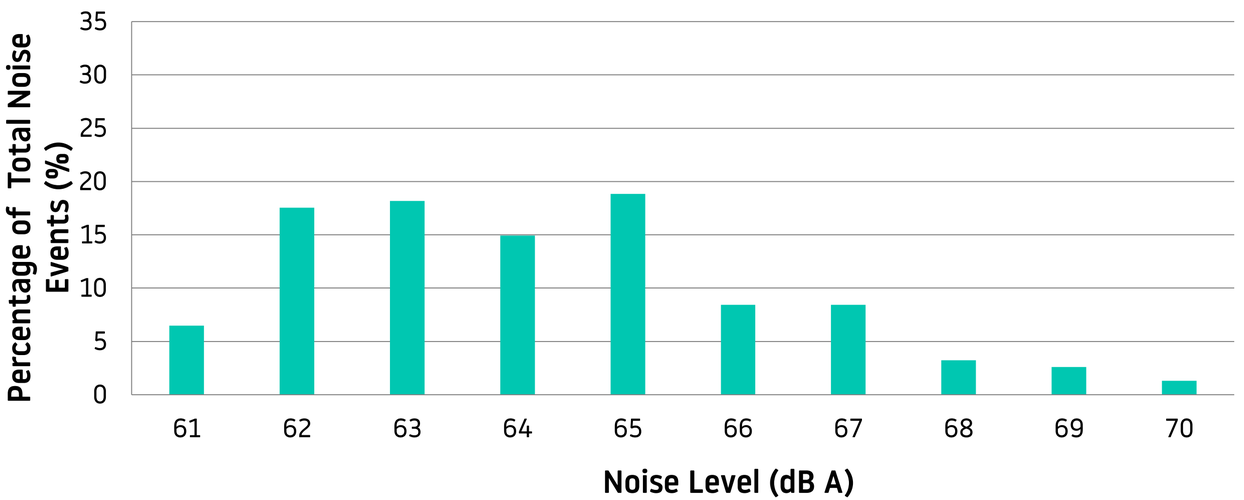


Noise Results during 2014 Monitoring Period

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
A319	11
A320	53
A321	5
B734	18
B738	21

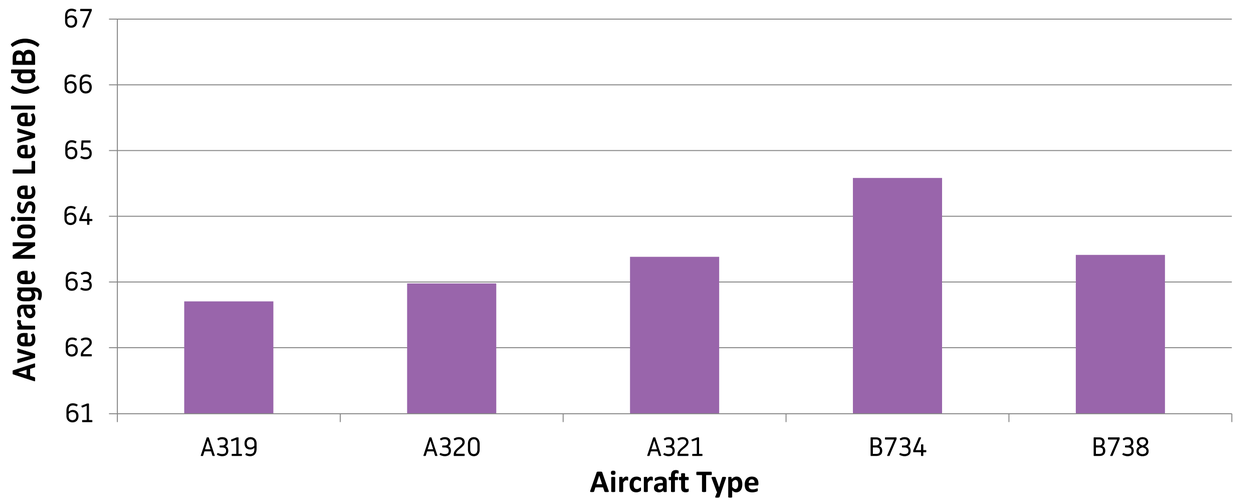


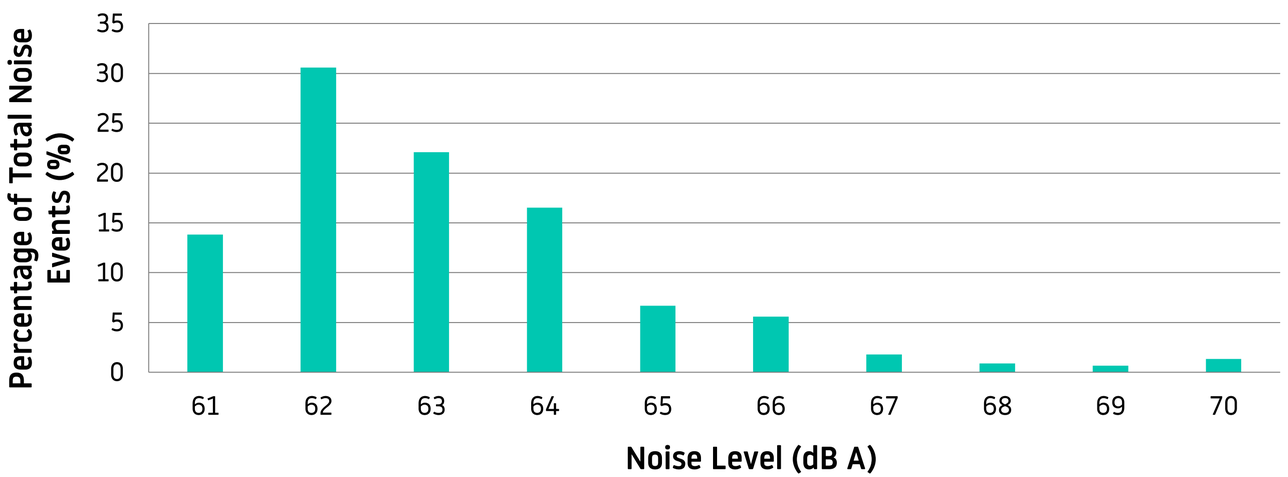


Noise Results during 2017 Monitoring Period

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
A319	48
A320	230
A321	67
B734	19
B738	70





Summary

- During the monitoring period, the airport was using westerly operations for 93% of the time, whereas annually the average for westerly operations is 70% of the time.

- The main aircraft types operating at the airport at A320 and A319's, whereas the main aircraft types near Harpenden were A320's, A321's and Boeing 737-800.

- The average altitude of aircraft in the area is 5,500ft above sea level, and as the monitoring location was already 420ft above sea level, aircraft will typically be 5,080ft above ground level in this area.

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 Harpenden.

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 2.8km 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 70dB 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'.