Community Noise Report Redbourn Sept-Oct 2017

London Luton Airport

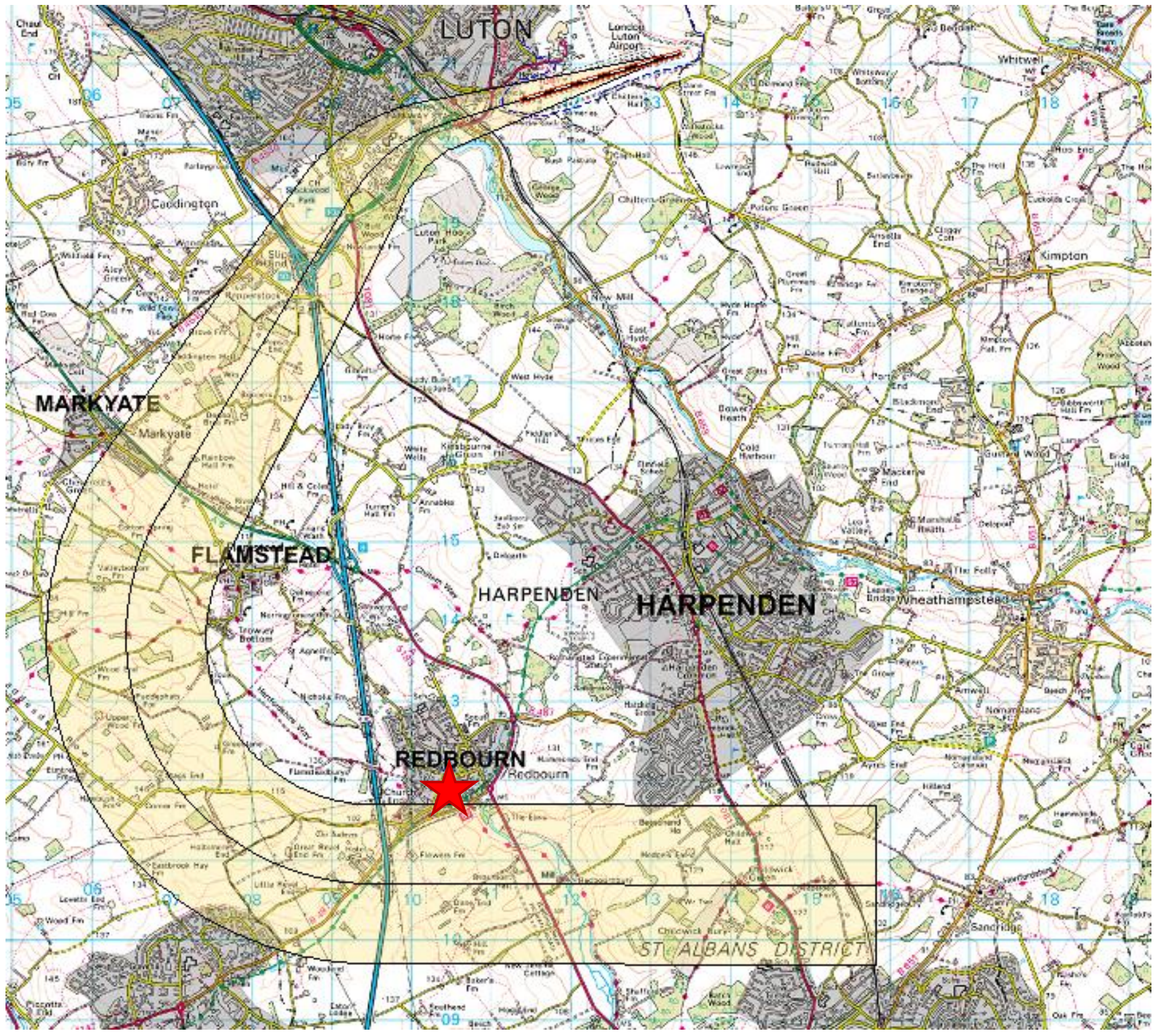
Introduction

London Luton Airport undertook unattended noise monitoring in Redbourn 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 East Common, Redbourn between the 19th September to 18th October 2017.

The monitor's location was north of the westerly Match/Detling departure route with aircraft tracking approximately 16.5km before reaching the monitor. The location was 1160m away from the route's centreline and at an altitude of 330ft above sea level.

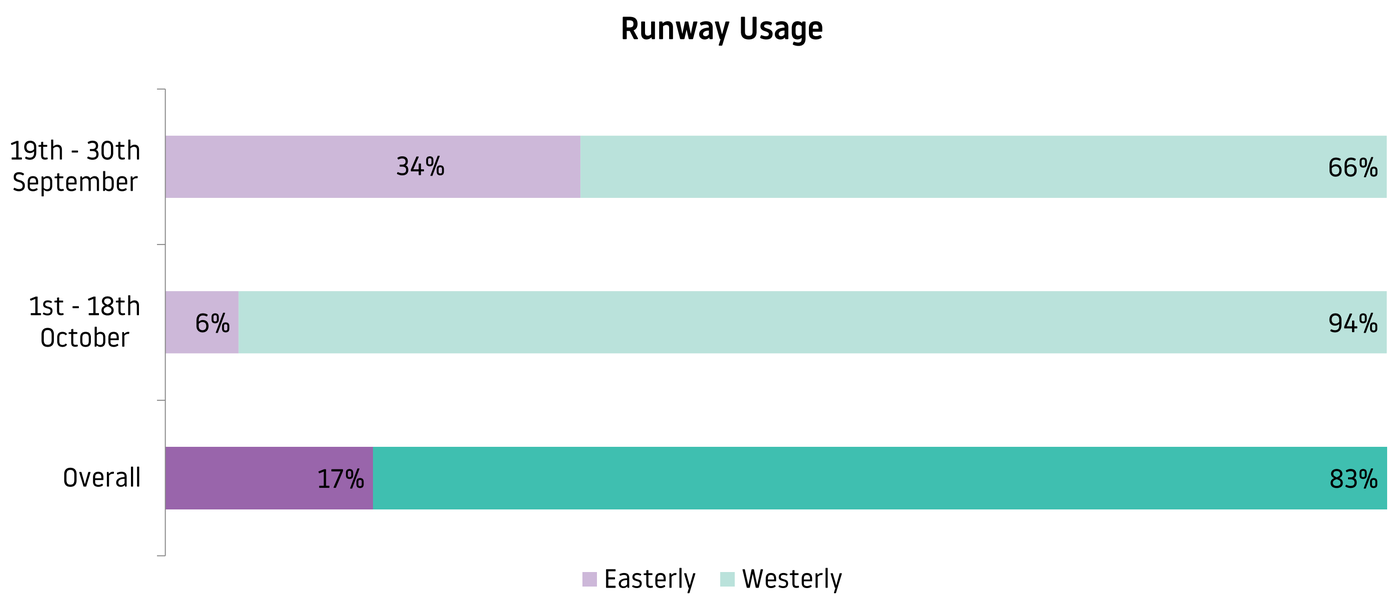
Aircraft tracks and noise recorded was extracted from LLA's noise and track-keeping system (TopSonic). Lateral and vertical dispersion was evaluated by drawing a 3km 'gate' perpendicular to the departure route's centreline.



LLA Operations During the Monitoring

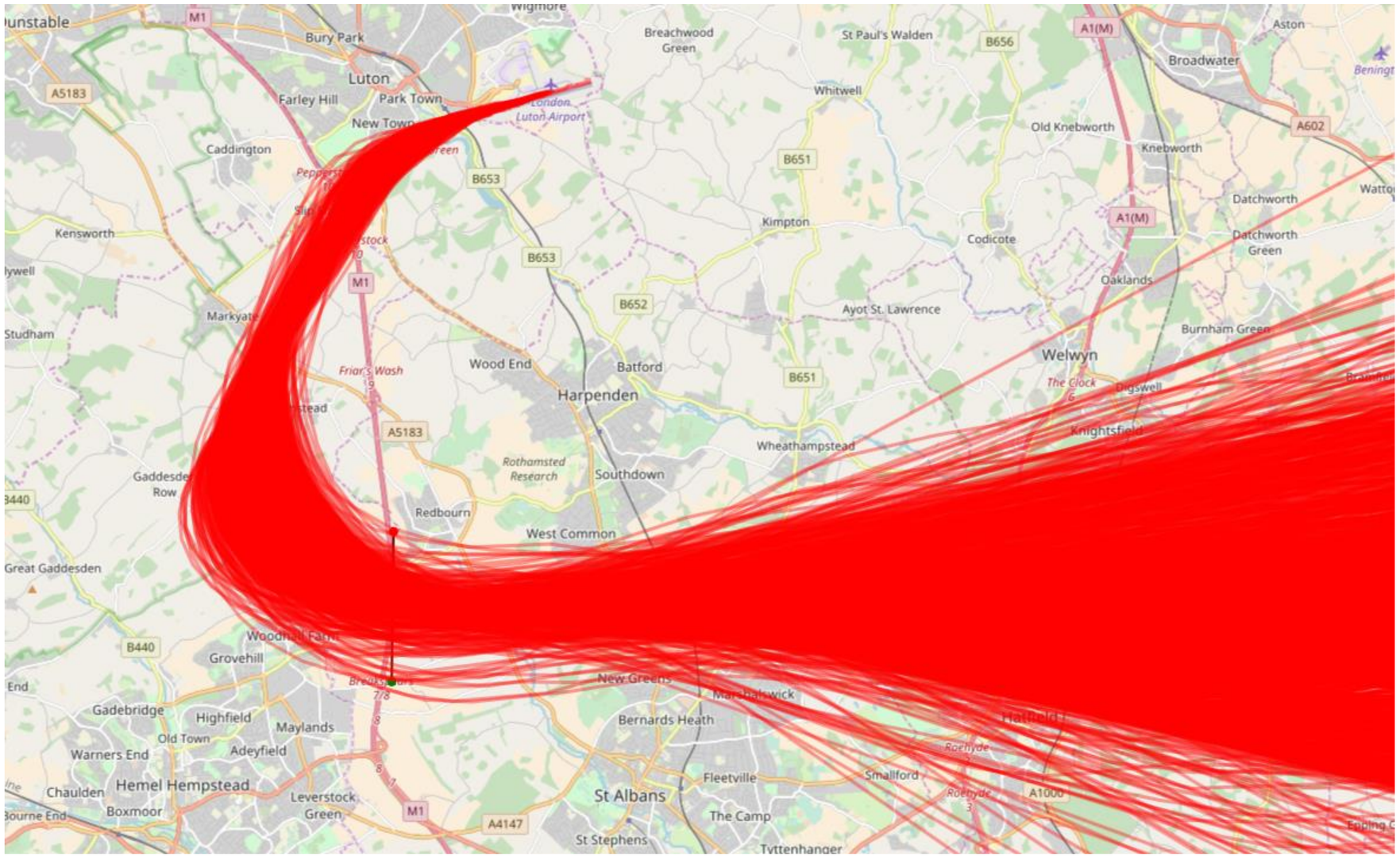
During the monitoring 12,118 air traffic movements were handled by LLA, there were no trials in place that could have affected the position of aircraft during this time.

During the period of monitoring the direction of operation was 17% easterly and 83% westerly and therefore during easterly operations no data was captured.



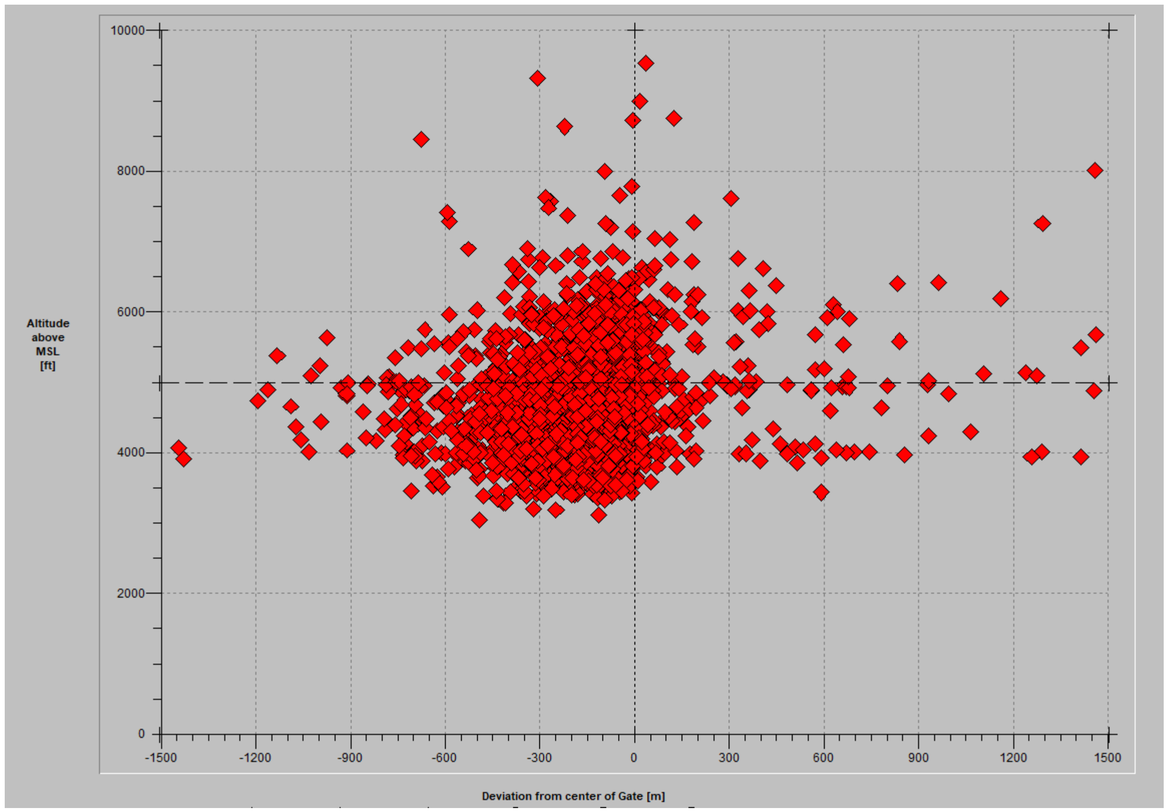
Aircraft Tracks During the Monitoring Period

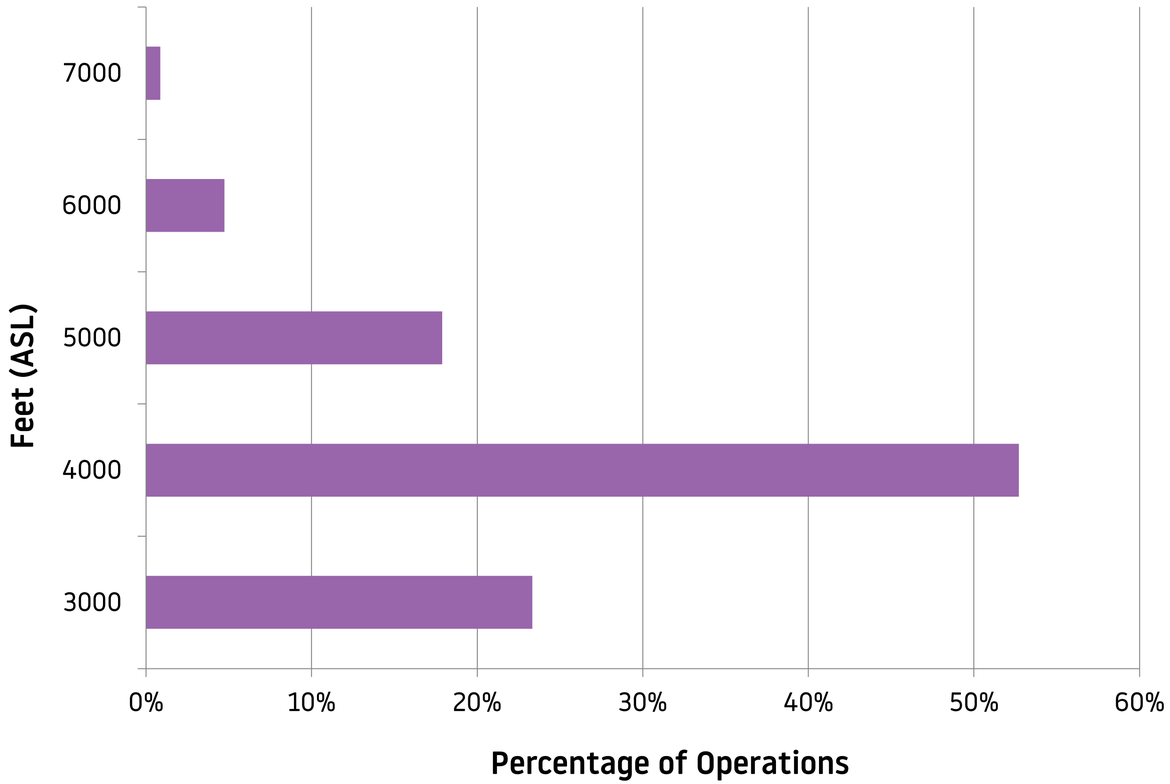
The sample below shows 2510 flight tracks that passed nearby the monitor during the monitoring period.



Gate 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 77% of flights were above 4000ft. The average altitude of aircraft in this area was 4,200ft above mean sea level.

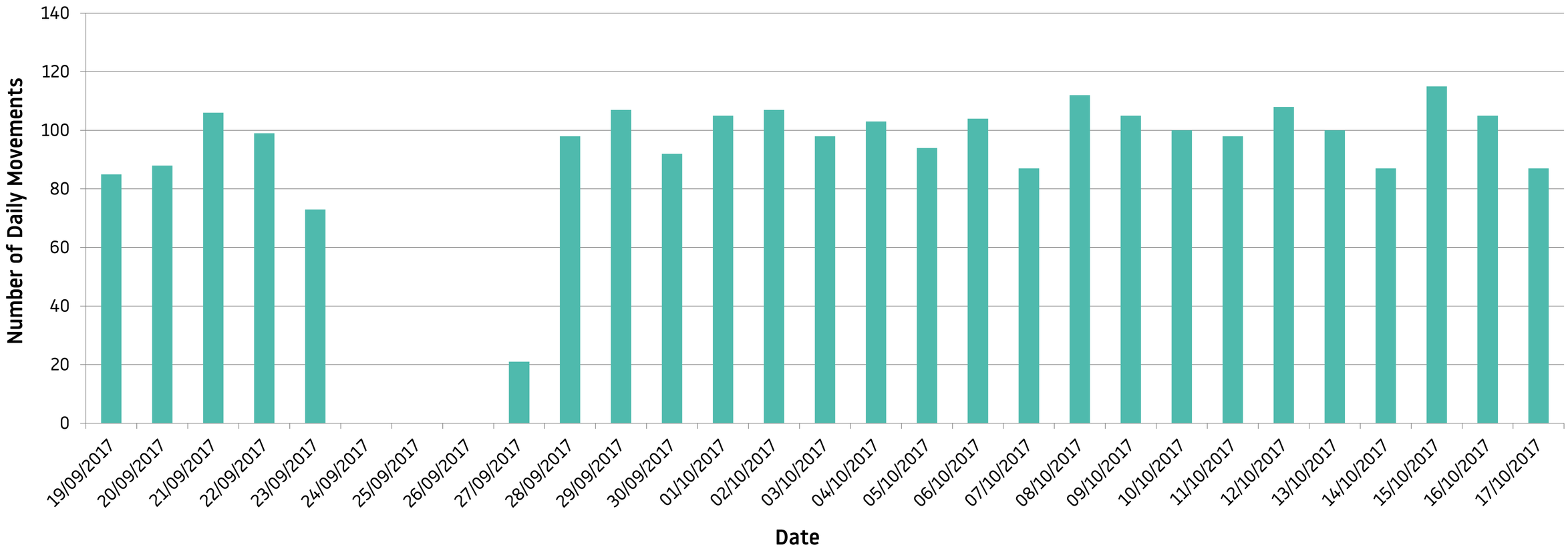




2484 aircraft shown on gate analysis

Daily Movements During Monitoring Period

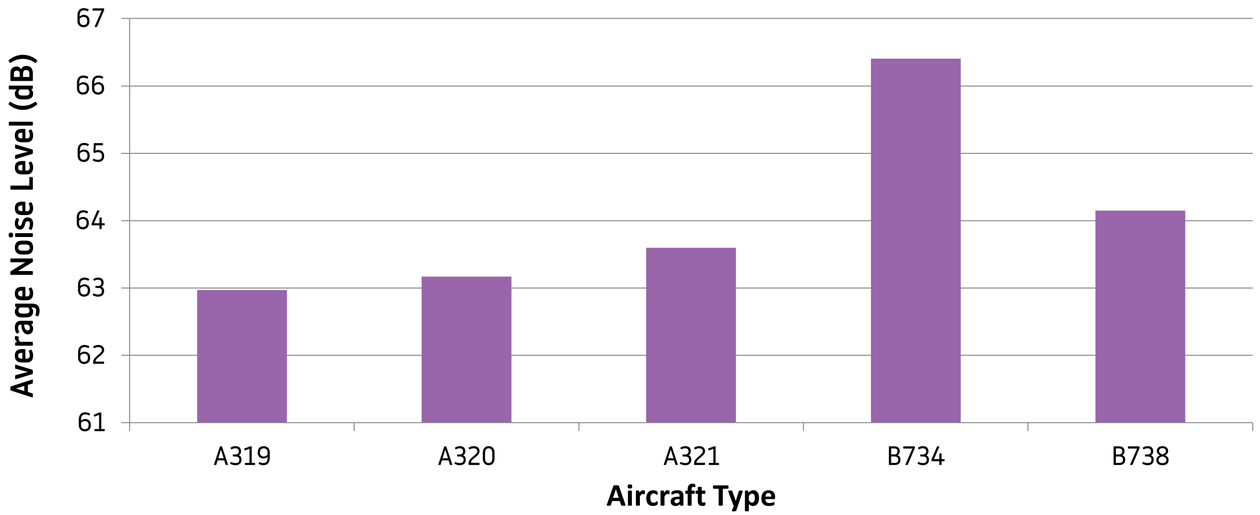
99% of westerly departures following the Match/Detling route passed through the ‘gate’ during the monitoring period. The chart below shows the daily number of movements that passed through the ‘gate’ and flew Redbourn. There was no loss of radar during the monitoring period, and three days of easterly operations and therefore no movements that passed through the ‘gate’ on these dates.

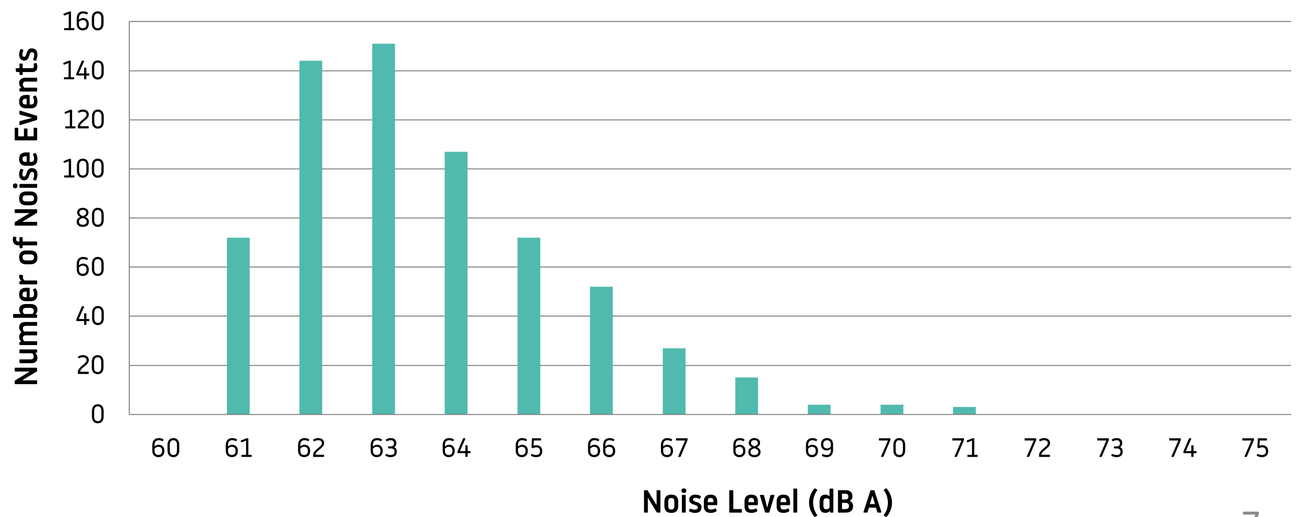


Noise Results During Monitoring Period

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
A319	53
A320	338
A321	98
B734	20
B738	80





Summary

- During the monitoring period, the airport was using westerly operations for 83% 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 therefore the aircraft types flying nearby Redbourn are in line with this.

- The average altitude of aircraft in the area is 4,200ft above sea level, and as Redbourn is already 330ft above sea level, aircraft will typically be 3,870ft above ground level in this area.

- Based on these noise results the Laeq (16hr day) value for Redbourn was 43dB. This result is consistent with the expected noise for the area, based on the annual noise contours produced.

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 Redbourn.

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 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'.