# Community Noise Report Markyate & Flamstead July 2017





#### Introduction

London Luton Airport undertook unattended noise monitoring in Markyate and Flamstead as part of the ongoing noise monitoring programme. The purpose of the monitoring was to understand the typical noise levels created in these areas by departing aircraft during westerly operations.

Both noise monitors were in place between 28<sup>th</sup> June to 3<sup>rd</sup> August 2017 and approximately 7km from the Luton runway. The noise monitoring results were conducted at the same time in order to provide comparable results.

The Markyate noise monitor was located in Pickford Road and at an altitude of 540ft above sea level.

The monitoring in Flamstead was located in Friendless Lane and at an altitude of 485ft above sea level.

Aircraft data captured was extracted from LLA's noise and track-keeping system (TopSonic). Operations in the area was evaluated by drawing a 2km 'gate' perpendicular to the Noise Preferential Route corridor.



## LLA Operations During the Monitoring

During the monitoring 15,654 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 15% easterly and 85% westerly and therefore during easterly operations no data was captured.



**Runway Usage** 

Easterly Westerly



#### Aircraft Tracks During the Monitoring Period

The plot density map below shows the 6,447 flight tracks that passed nearby the monitors 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 69% of flights were above 3000ft. The average altitude of aircraft in this area was 3300ft.



5824 aircraft shown on gate analysis



#### **Daily Movements During Monitoring Period**

88% of westerly departures passed through the 'gate' during the monitoring period. The chart below shows the daily number of movements that passed through the 'gate' between Markyate and Flamstead.



Date



# Markyate 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	674
A320	1178
A321	283
B734	20
B738	304
B739	21
B752	39
GL5T	81



# Flamstead 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	1063
A320	1745
A321	480
B734	39
B738	588
B739	39
B752	53
GL5T	60





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#### Summary

- for westerly operations is 70% of the time.
- Flamstead.
- to have caused the small differences in noise results.
- Flamstead are in line with this.
- consistent with the expected noise for the area, based on the annual noise contours produced.

• During the monitoring period, the airport was using westerly operations for 85% of the time, whereas annually the average

• The average altitude of aircraft in the area is 3,300ft above sea level, Markyate and Flamstead are 540ft and 485ft above sea level respectively and therefore aircraft will typically be at 2,760ft and 2,815ft above the properties in Markyate and

• The noise monitoring results were higher at Flamstead compared to Markyate, however, the noise monitor at Markyate was 1100m from the centreline, whereas the monitor at Flamstead was closer, at only 900m from the centreline; this is thought

• The main aircraft types operating at the airport are A320 and A319's therefore the aircraft types flying nearby Markyate and

Based on these noise results the Laeq (16hr day) value for Markyate was 47dB and Flamstead was 50dB. These results are







## **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 between Markyate and Flamstead.

**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 2km 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'.

- 130 dB Pneumatic drill
- 120 dB Loud car horn one metre away
- 120 db Airport
- 100 dB Inside underground train or alongside mainline railway
- 90 dB Bus interior
- 80 dB Busy residential road
- 70 dB Conversational speech
- 60 dB Living room with music or television playing quietly
- 50 dB Quiet office
- 40 dB Bedroom
- 30 dB Recording studio
- 20 dB Broadcasting studio
- 10 dB Threshold of hearing

