Community Noise Report Knebworth Sept – Nov 2018





Introduction

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

The purpose of the monitoring programme is to understand the typical noise levels created in the local community, for Knebworth it specifically related to Easterly MATCH departure route.

The noise monitor was located in Knebworth between the 18th September – 12nd November 2018.

The monitor's location was within the main easterly MATCH route departure corridor approximately 1km east of the route's centreline at an altitude of 341 feet.

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 Monitoring

During the period of monitoring, the direction of operation was 25% Easterly and 75% Westerly. The 5 year average for this time of year is 29% Easterly vs 71% Westerly which demonstrates that residents in the area would have experienced decreased movements.

1,461 aircraft departed on the easterly MATCH route operated from the airport whilst the monitor was located in Knebworth.



Runway Usage

Daily Movements During Monitoring Period

The chart below shows the number of daily departures during the monitoring period. Due to the location of Knebworth, all flights that departed on our MATCH route whilst on easterly operations would have flown passed the monitor. During the monitoring period there were 28 days of westerly operations and therefore no flights passed near the monitor on these days.



Operations during the monitoring period

The graph below represents the average number of departures during the monitoring period. During the peak periods, local residents of Knebworth may notice more aircraft. Peak periods were at 08:00-09:00, 13:00-15:00 and 19:00-20:00am.

During the night period of 23:00 – 06:00 there was an average of 5 departures compared to 8 for the previous year showing a small decrease in night time operations.



Aircraft Tracks During the Monitoring Period

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





Altitude Analysis During Monitoring Period

Altitude analysis shows the vertical and lateral dispersion of aircraft 1.5km either side of the noise monitor. The chart below shows that 82% of flights were between 4,000-5,999 feet high. The average altitude of aircraft in this area was 4,750 feet above mean sea level.



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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 Knebworth the Noise Monitoring Terminal collected results for 1,052 aircrafts. However, 409 aircrafts did not register noise events as they were either too high or too quiet, 835 results were excluded for weather reasons as outlined above, which left 217 noise results to analyse which are shown in the next few pages.



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
A321	31
A320	95
B738	30

The average noise in Knebworth is 65.9 dB with a standard deviation of 2.7. This is based on a sample size of 217.

*The noise results shown in the analysis are only for those aircraft types that recorded more than 20 events per aircraft.



Conclusion

- ullettime period, and therefore residents would have experienced less noise during this period than in recent years.
- ulletwith this.
- 14% of the noise events recorded were created by A321 aircraft, registering average noise events of 67.2 dB. ullet
- ullettypically be 4,409 ft above ground level in this area.
- ullet
- ulletduring the daytime because the airspace is typically quieter during this period.
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During the monitoring period, the airport was using easterly operations for 25% of the time, this is less than the 5 year average of this

The main aircraft types operating at the airport are A320 and A321 therefore the aircraft flying in the vicinity of Knebworth are in line

The average altitude of aircraft in the area is 4,750ft above sea level, and as Knebworth is already 341ft above sea level, aircraft will

Above Knebworth aircraft are typically between 4,000-5,999 feet, during the monitoring period this accounted for 82% of all aircraft. We also saw 5% of aircraft achieve altitudes between 6,000-6,999 feet with a further 1% achieving altitudes higher than 7,000 feet.

Of those 8 aircraft shown in the altitude analysis that achieved altitudes above 7,000 feet, 5 were business jet aircrafts, 2 were cargo aircraft and 1 was scheduled passenger aircraft. These aircraft operated during the night period and had clearances to climb higher than

During the monitoring period 8 aircraft were investigated and fined for track violations. As part of the Noise and Track violation scheme, all fines generated go directly into the community trust fund, more information on the community trust fund can be found here.



Glossary of Terms

Easterly Operations: As aircraft take off and land into the wind, easterly operations refers to the time when the wind is blowing from the east and aircrafts follow the departure route in the direction of Knebworth.

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 'LAeg', is the most common international measure of aircraft noise, it means 'equivalent' continuous noise level'.



Source: iosh.co.uk