Community Noise Report- Handheld

South Luton

December 2025 – February 2026

London Luton Airport

Introduction

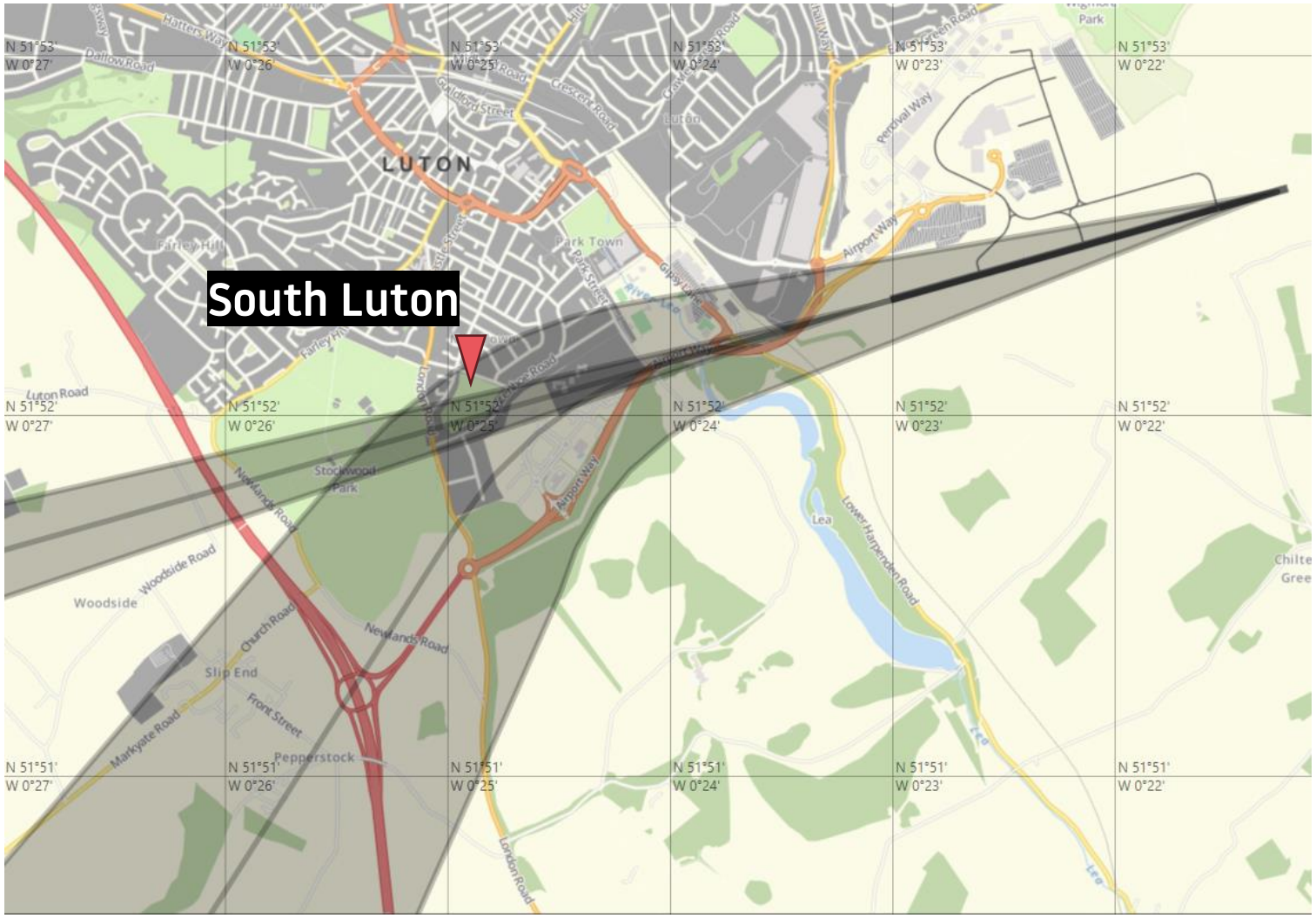
As part of the ongoing noise monitoring programme, a **handheld noise monitor** recorded noise results in South Luton.

The purpose of the monitoring programme is to understand the typical noise levels created in the local community. **For South Luton it specifically related to easterly arrival and westerly departure operations. The flightpaths nearest are shown on the map.**

The handheld noise monitor was located at a residential property on West Hill Road, at an altitude of 535 feet above sea level. The red triangle on the map shows the location.

The handheld noise monitor in South Luton was used over 24 separate days between the 8th December 2025 to 3rd February 2026. 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.

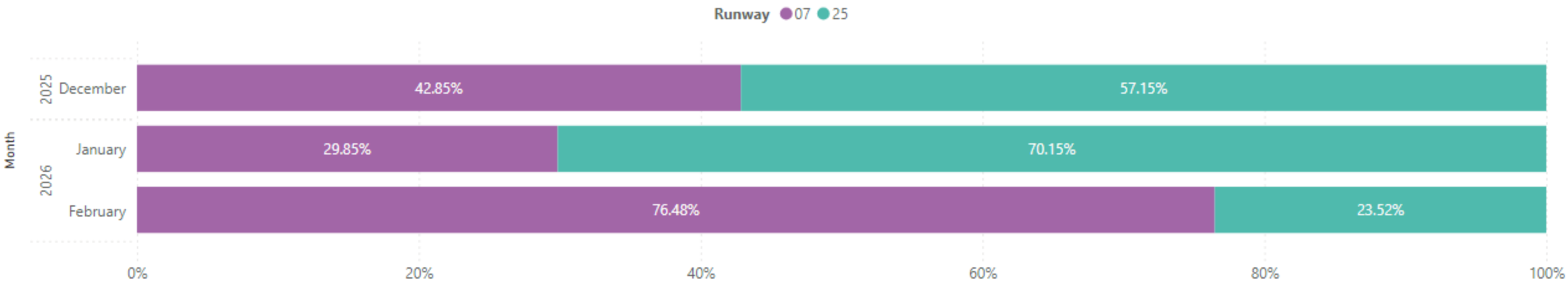


LLA operations during the monitoring period

There are two operating directions at LLA. The operating direction depends on the wind direction as aircraft are required to take off and land into the wind for aircraft performance and safety reasons. These are known as easterly operations (Runway 07- Purple) and westerly operations (Runway 25- Green) and can change the aircraft tracks nearby specific areas. The split in operating direction varies from year to year and month to month. The amount of time that the runway operates in one direction depends on the wind direction.

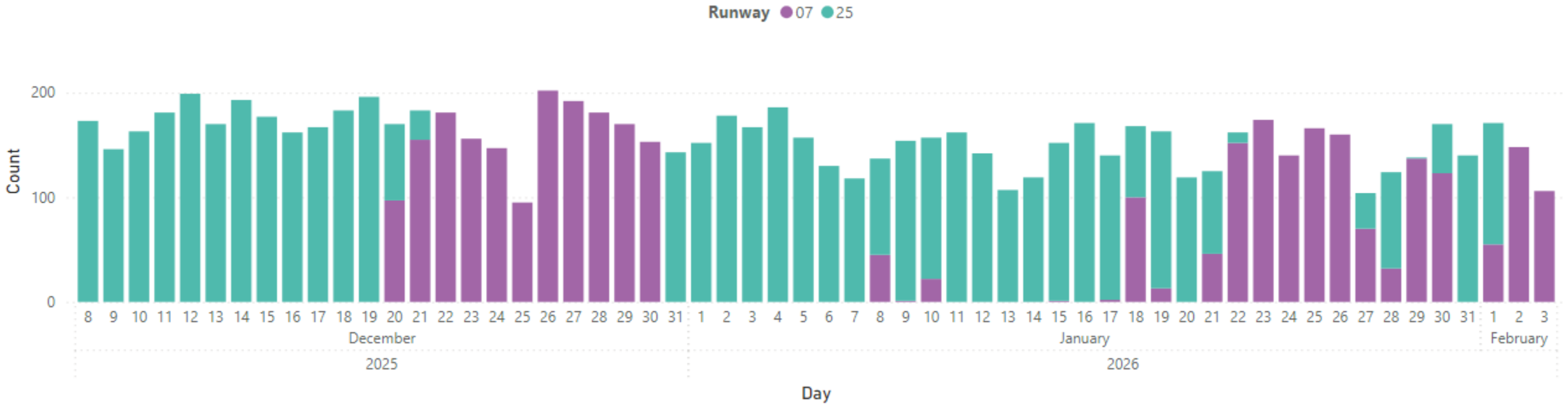
During the period of monitoring, the direction of operation was 38% Easterly and 62% Westerly. The 5-year average for this time of year is 21% easterly vs 79% westerly.

There were 9,093 arriving aircraft and 9,090 departing aircraft during the monitoring period. The chart below showing the breakdown of runway usage during the monitoring period 8th December 2025- 3rd February 2026.



Daily Movements during monitoring period

The chart below shows the number of daily easterly and westerly operations. Due to the location, arriving aircraft during easterly operations and departing aircraft during westerly operations would have flown nearby. The graph shows the easterly operations (Runway 07- Purple) as well as westerly operations (Runway 25- Green) on the other side.

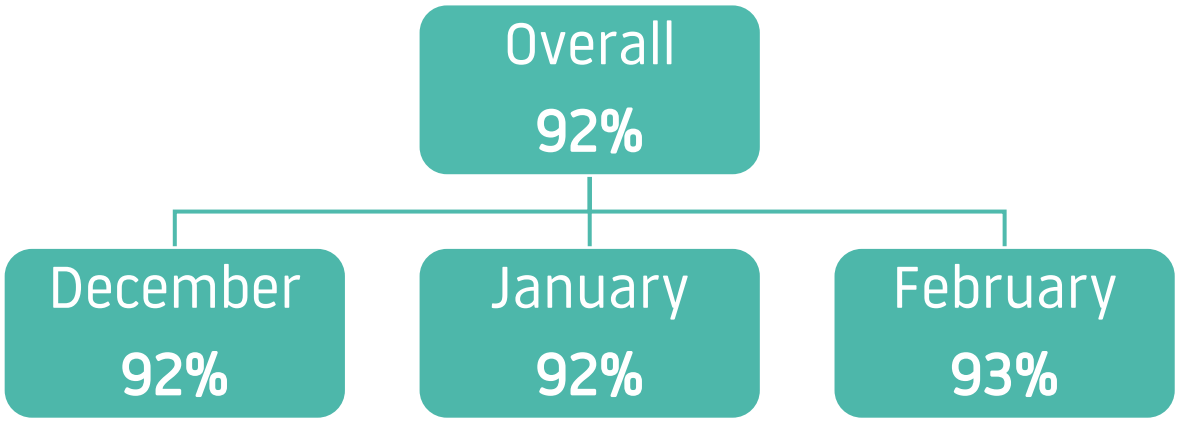


Continuous Descent Operations (CDO)

Continuous Descent Operations (CDO) is an operational technique for arriving aircraft. This form of operation targets noise, fuel and emission reduction. Each time a plane performs level flight it involves increased thrust therefore an increase in fuel consumption and higher noise. A CDO approach is measured from 5,000ft and has no level flight of more than 2.5nm (nautical miles) using minimal thrust.

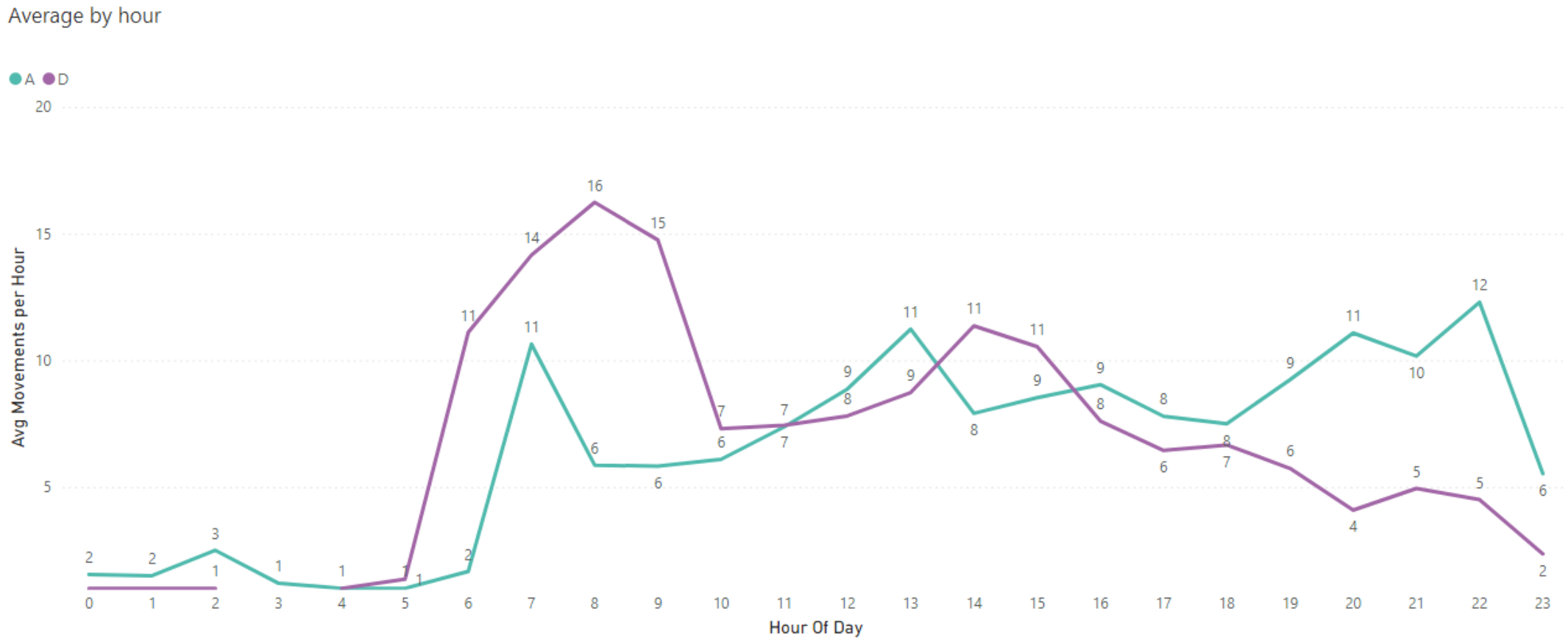
We continuously monitor this and aim to increase these operations for benefit to all, our target for CDO is 95%. CDO is not always possible for every flight as there are factors that would affect this such as- safe operations of the aircraft, ATC instruction, weather, compliance with procedures etc.

The percentages below detail the CDO achieved during the monitoring period.



Operations during monitoring period

The graph below represents the average aircraft movement by hours during the monitoring period. Depending on the operating direction on the day, residents in South Luton may experience different flight patterns. During the peak periods, residents of South Luton may notice more frequent aircraft movements. In general, the morning peak starts at 7 am for arrival operations (A- Green line) and 6 am for departure operations (D- Purple line). During the night period of 23:00 – 06:00 in the monitoring period, there were average of 16 easterly arrivals and 7 westerly departures.

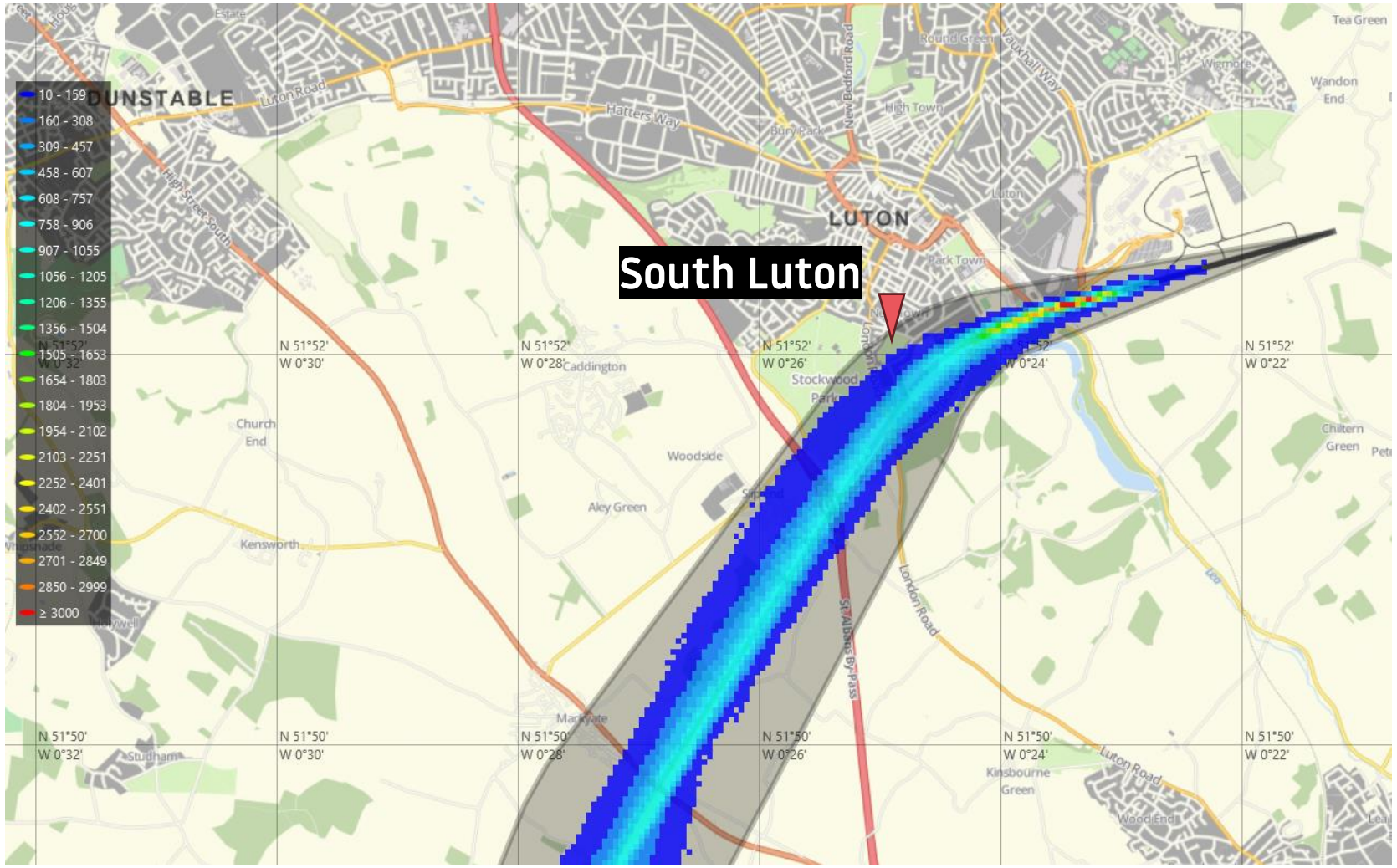


Aircraft Tracks- Easterly Arrivals

The heat map below show the representative flight tracks that passed near the noise monitor terminals during the monitoring period. The red triangle indicates the location of the noise monitor in South Luton. This map shows the path of easterly arrivals.

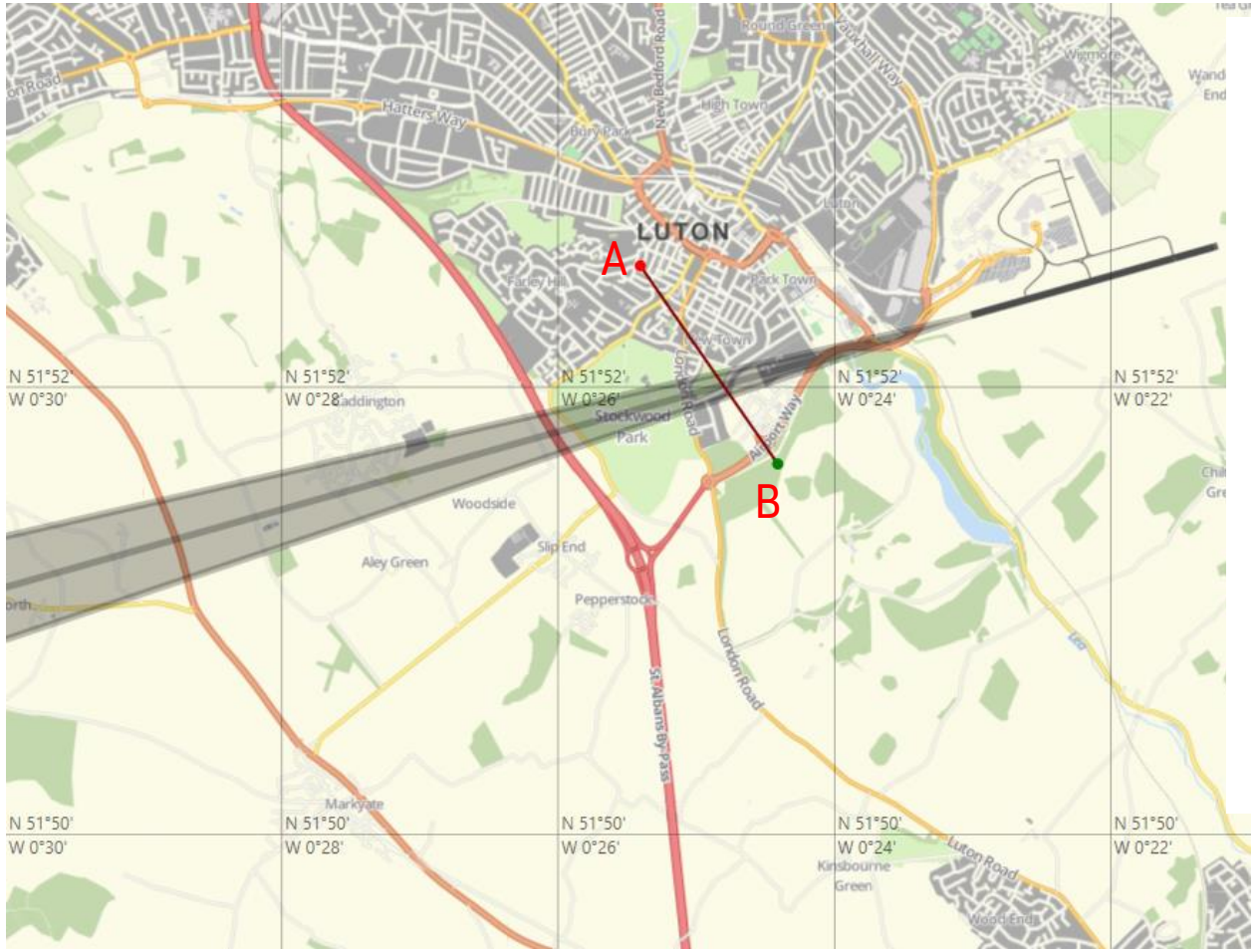
Aircraft Tracks- Westerly Departures

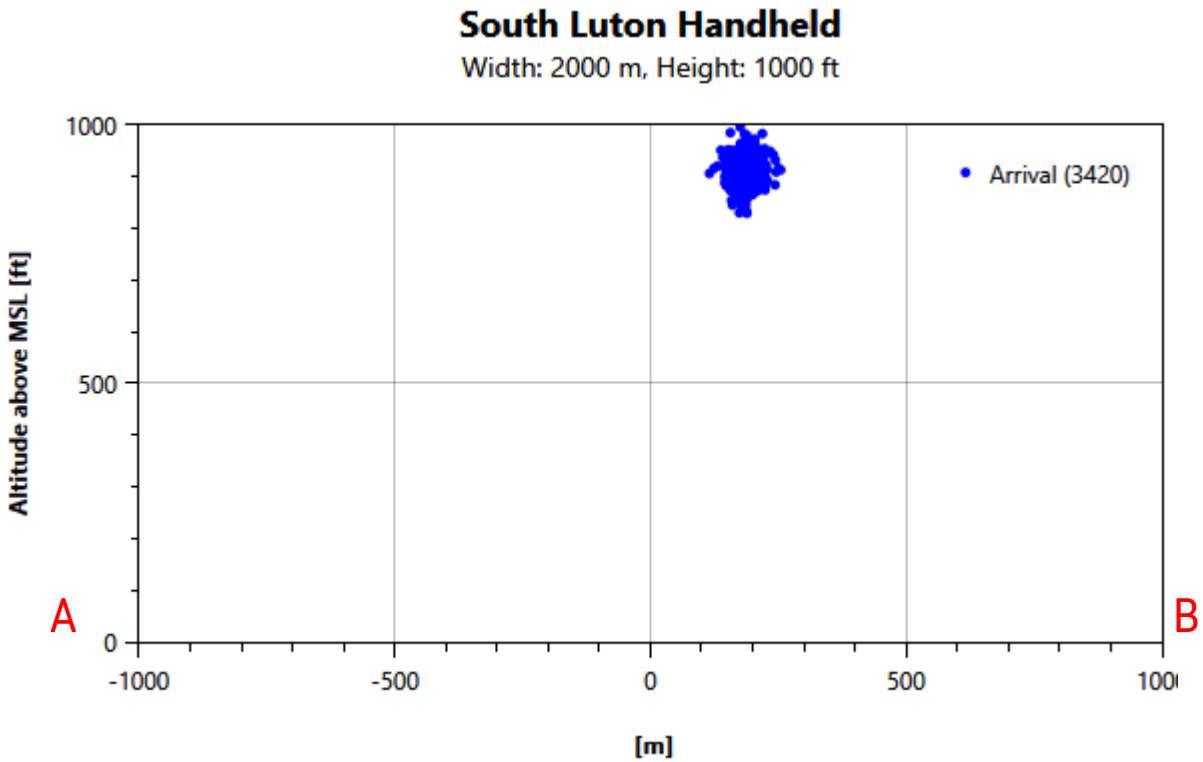
The heat map below show the representative flight tracks that passed near the noise monitor terminals during the monitoring period. The red triangle indicates the location of the noise monitor in South Luton. This map shows the path of westerly departures.



Altitude Gate- Easterly Arrivals

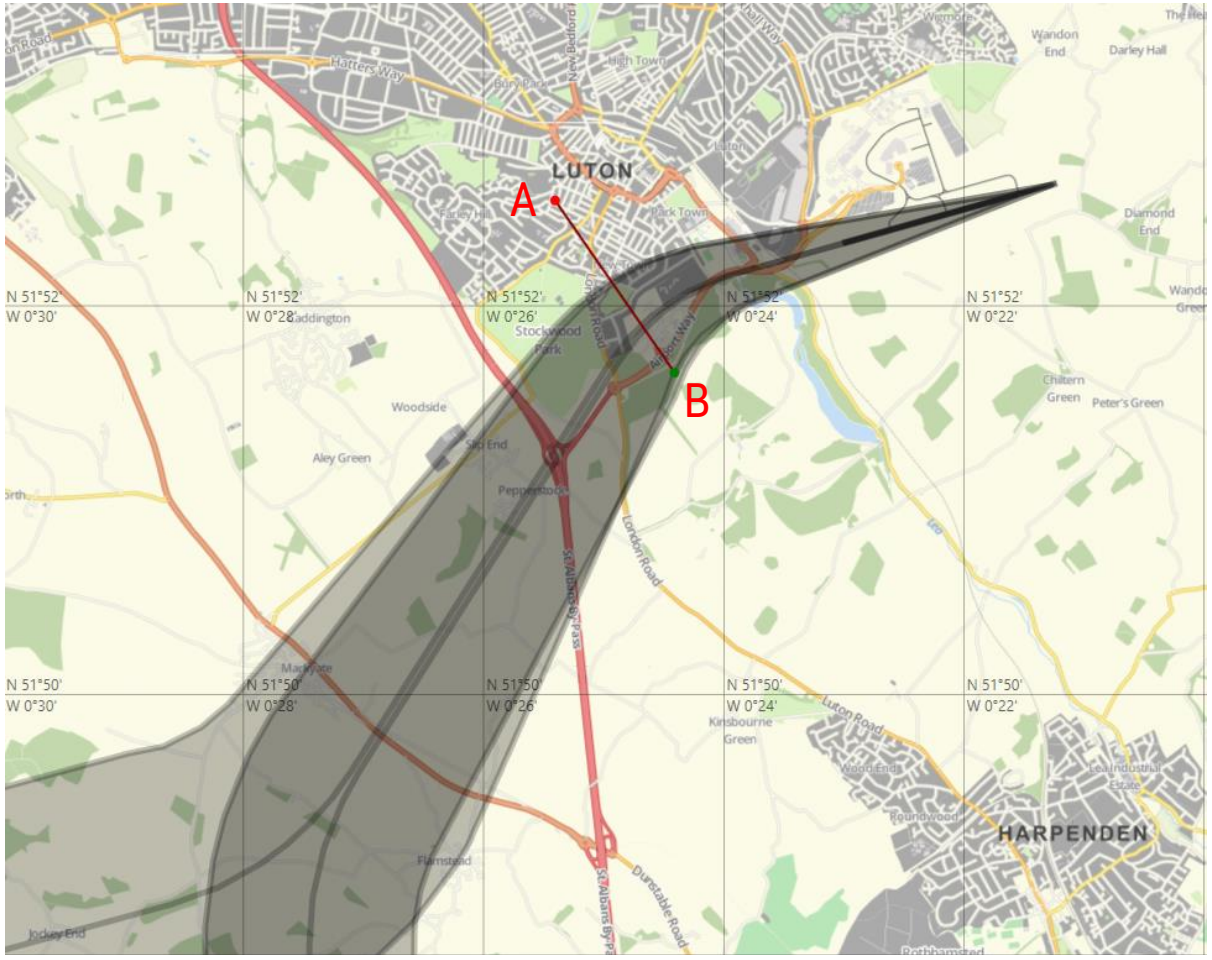
The altitude analysis for South Luton, shows the vertical and lateral dispersion of aircraft 1km either side of the noise monitor. The map below shows the 2km gate (Red line) which is drawn perpendicular to the NPR from northwest to southeast and it gathered information of every aircraft passing through the gate area. The scatter graph below shows the distance and altitude of aircraft from the noise monitor during the monitoring period. Residents in South Luton will see arriving aircraft on easterly operations.

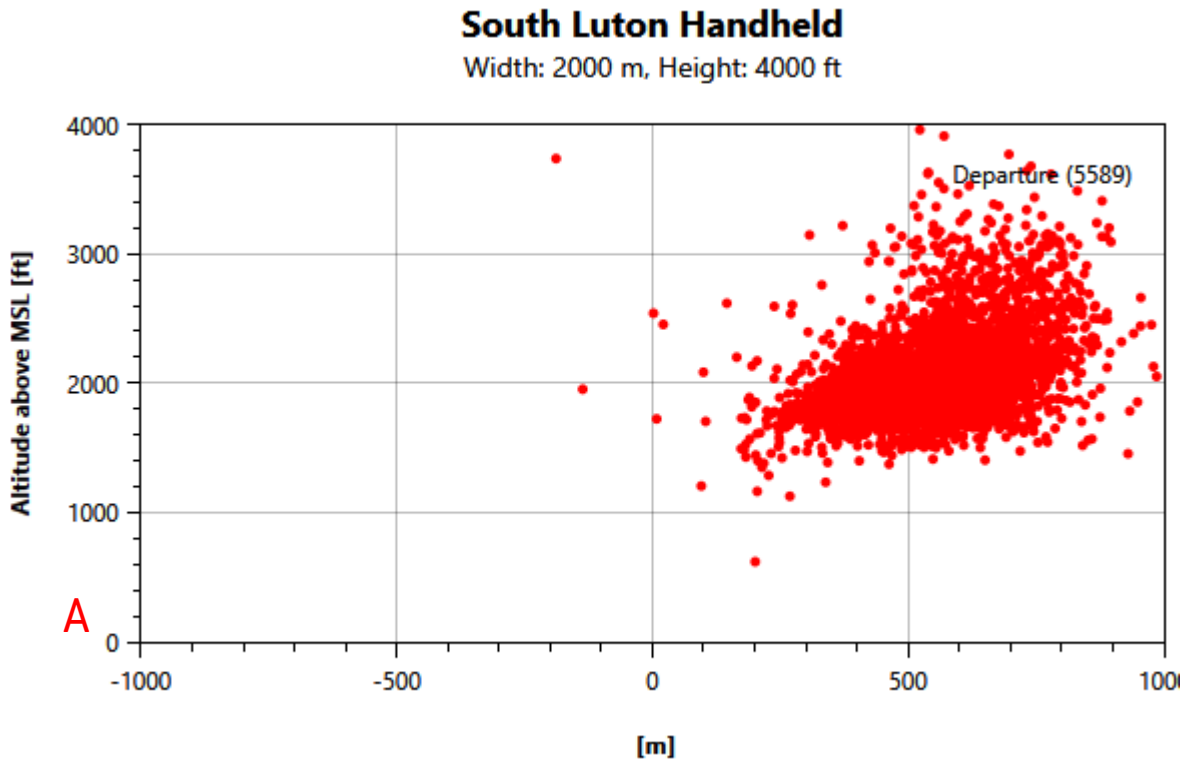




Altitude Gate- Westerly Departures

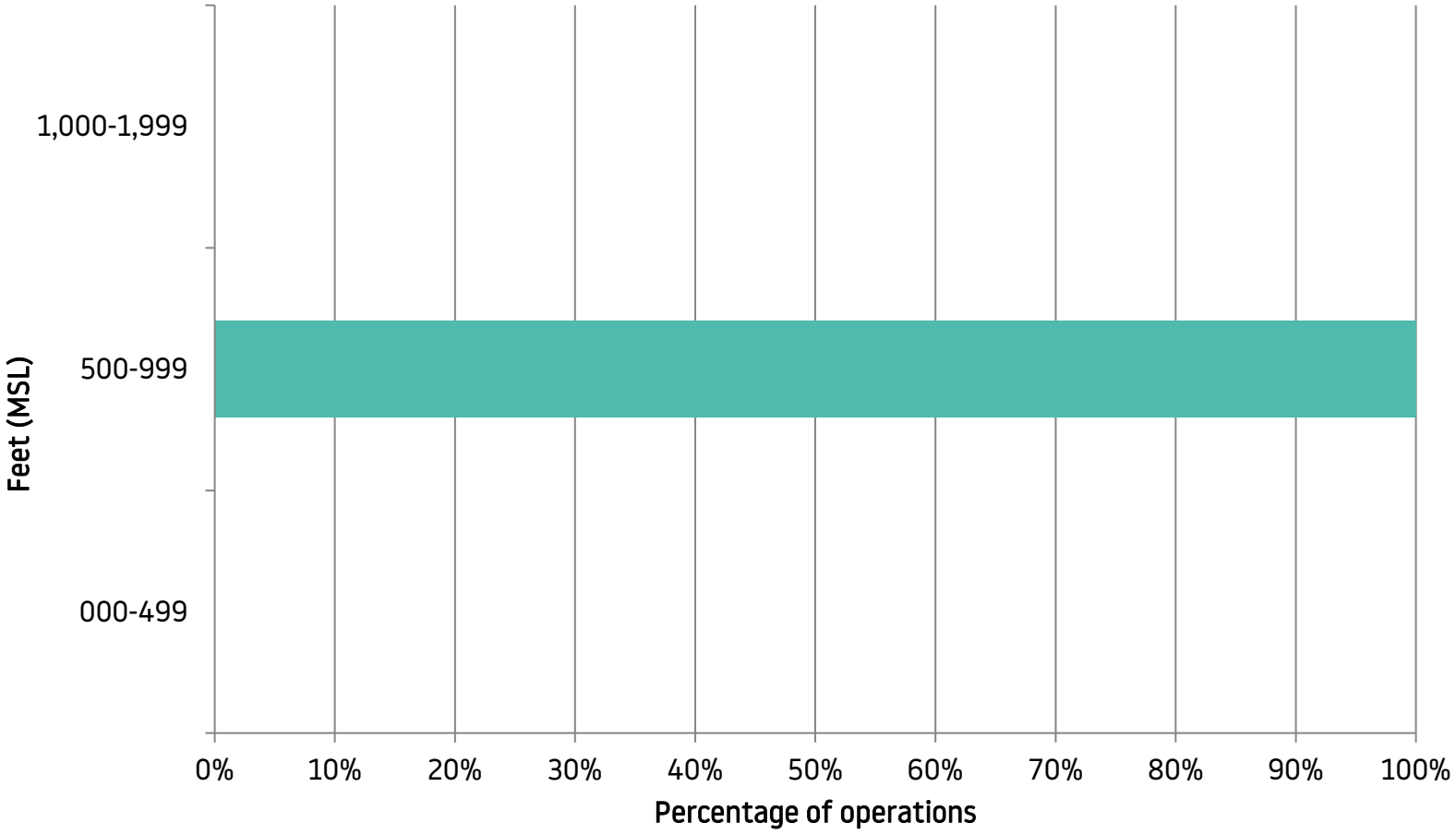
The altitude analysis for South Luton, shows the vertical and lateral dispersion of aircraft 1km either side of the noise monitor. The map below shows the 2km gate (Red line) which is drawn perpendicular to the NPR from northwest to southeast and it gathered information of every aircraft passing through the gate area. The scatter graph below shows the distance and altitude of aircraft from the noise monitor during the monitoring period. Residents in South Luton will see departing aircraft on westerly operations.





Altitude Gate Analysis – Easterly Arrivals

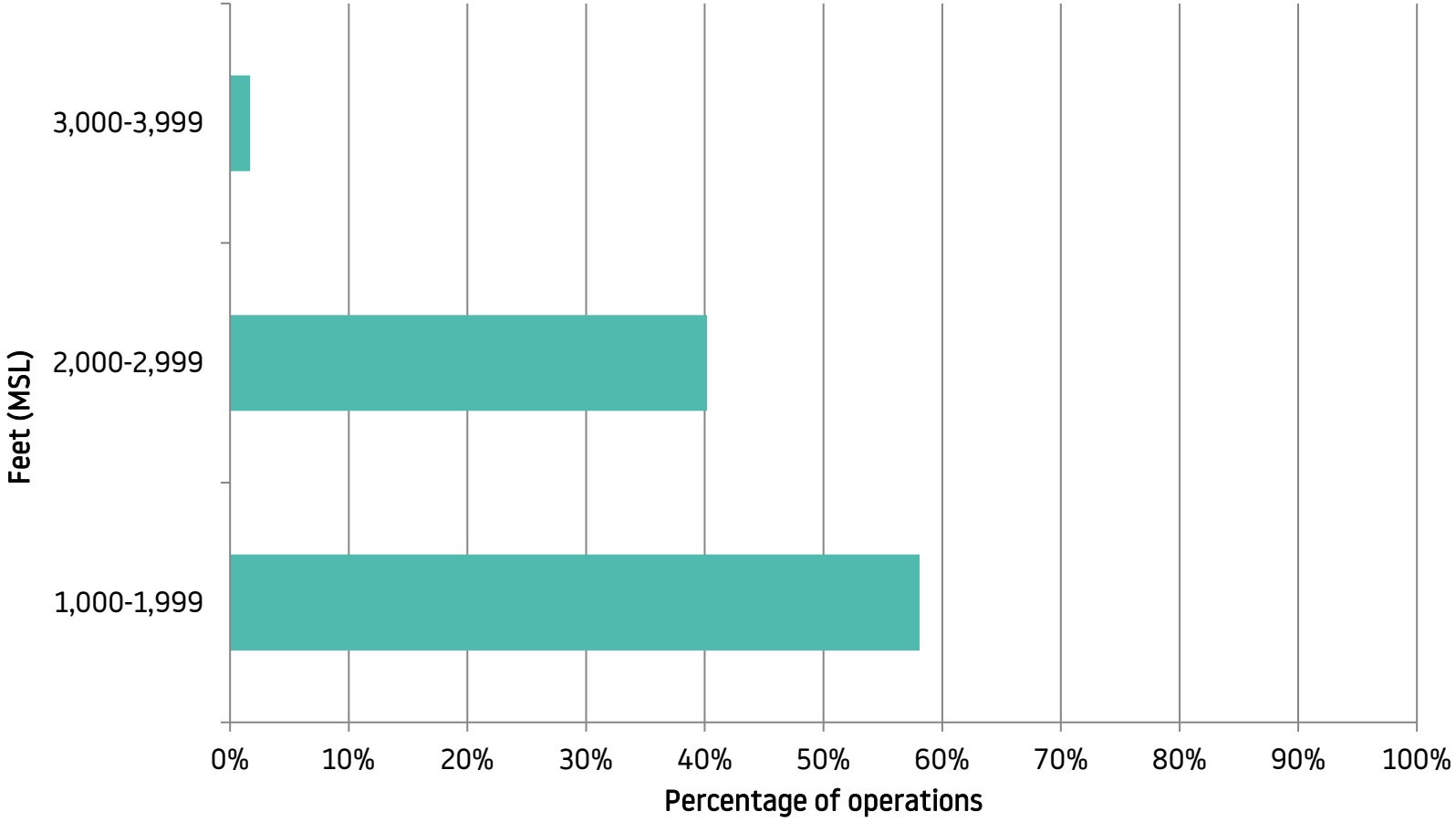
The average altitude of aircraft was 911 feet AMSL (376 feet AGL) when they reached the arrival gate. The bar chart below shows the percentage rate and altitude of aircraft arriving.



Aircraft Type	Number of movements detected	Average Altitude (AMSL in ft)
A306	21	923
A319	329	909
A320 CEO	438	907
A320 NEO (A20N)	510	915
A321 CEO	118	897
A321 NEO (A21N)	972	918
B737-800 NG (B738)	202	906
B737 Max 8 (B38M)	214	903
Global Express (GLEX)	66	914
Cessna 560X (C56X)	63	920
All	2,933	911

Altitude Gate Analysis – Westerly Departures

The average altitude of aircraft was 2,093 feet AMSL (1,558 feet AGL) when they reached the arrival gate. The bar chart below shows the percentage rate and altitude of aircraft arriving.



Aircraft Type	Number of movements detected	Average Altitude (AMSL in ft)
A306	42	2530
A319	566	1908
A320 CEO	720	1970
A320 NEO (A20N)	793	2005
A321 CEO	194	2027
A321 NEO (A21N)	1561	1932
B737-800 NG (B738)	316	1968
B737 Max 8 (B38M)	369	1945
Global Express (GLEX)	117	2194
Cessna 560X (C56X)	94	2450
All	4,772	2093

Handheld Noise Monitor Results

The handheld noise monitor was passed to a resident and used for monitoring in the area of South Luton on West Hill Road.

600 noise events were captured during the period between 8th December 2025 to 3rd February 2026.

It is noteworthy that the noise results were captured from a balcony on the 3rd storey, approximately 30-40ft above ground, which may have an effect on noise results compared to noise levels on the ground.

The results were captured over a period of 24 days.

- A total of 69 aircraft types were captured.
- A split of 221 arrival aircraft and 379 departure aircraft.
- A split of 12 airline operators.

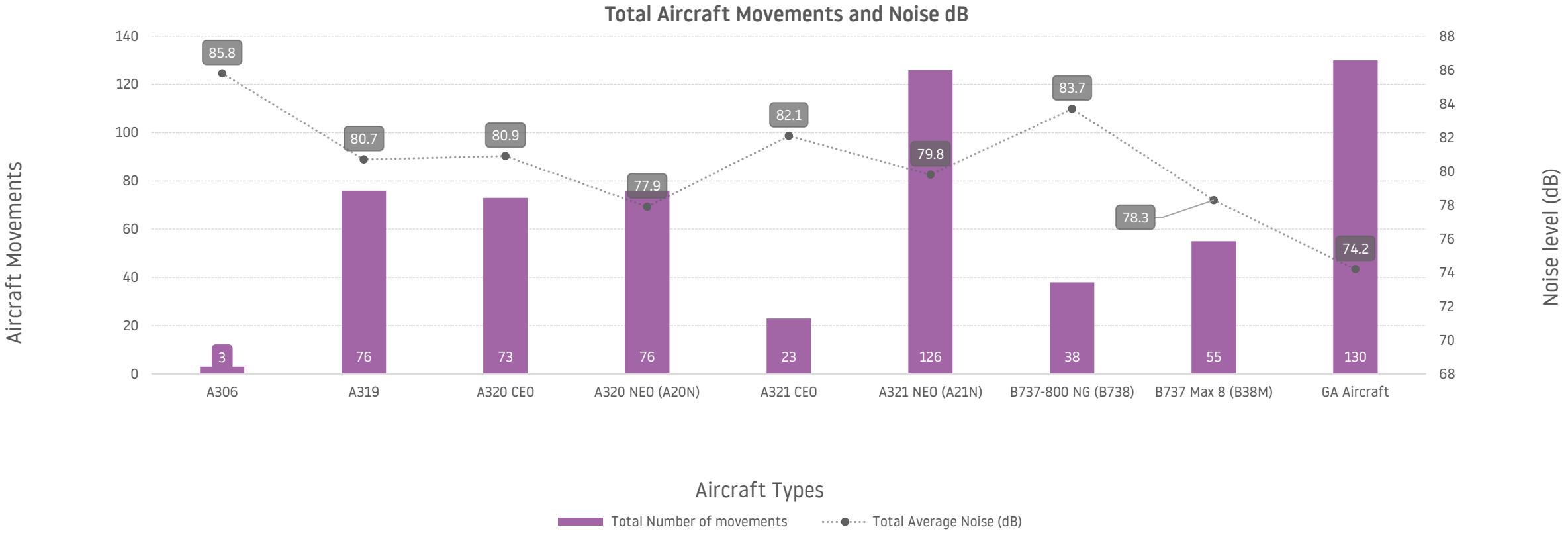
Noise Results – Easterly Arrivals

During the monitoring period, the noise recording samples were gathered from the most popular aircraft types at London Luton Airport.

Aircraft Type	Arrival Movements	Arrival Noise (dB)	Departure Movements	Departure Noise (dB)	Total Number of movements	Total Average Noise (dB)
A306	2	87.5	1	82.3	3	85.8
A319	27	82.9	45	79.5	76	80.7
A320 CEO	27	82.9	46	79.7	73	80.9
A320 NEO (A20N)	33	80.4	43	76.0	76	77.9
A321 CEO	11	82.1	11	82.9	23	82.1
A321 NEO (A21N)	43	81.3	83	79.1	126	79.8
B737-800 NG (B738)	11	83.6	27	83.9	38	83.7
B737 Max 8 (B38M)	15	77.8	40	78.5	55	78.3
GA Aircraft	52	76.9	78	73.2	130	74.2
All	221	80.5	379	78.1	600	78.9

Handheld Noise Results- South Luton

A handheld monitor was used capturing 600 noise events. It is noteworthy that the monitor was used on the balcony of a 3-storey building roughly 30-40 feet above ground. The first graph on the left shows the split of arrival and departure aircraft movements and their average dB noise level recorded by each aircraft type. The graph shows the total movements and total average noise level dB recorded by each aircraft type.



Noise Results - Summary

- The average arrival noise in South Luton was 80.5dB, based on a sample size of 221 and an average departure noise of 78.1dB based on a sample size of 379 and an overall average noise of 78.9dB.

- From the results, South Luton's most popular aircraft type by operators include Airbus and Boeing.

- Airbus operate the A320 CEO, A321 CEO and Boeing the B738-800NG.
- Both Airbus and Boeing also operate the newer generation aircraft. Airbus- A320 NEO (A20N) and A321 NEO (A21N). Boeing- operate the B737 Max 8 (B38M).
- These newer generation aircraft are quieter and more fuel efficient which also impacts the reduction in emissions.

- The table below shows the 6 types of aircraft operated by Airbus and Boeing, with three of the aircraft A20N, A21N and B38M being the newer and more efficient aircraft. It breaks down these results by showing both their arrival decibel (dB) levels. In red/ green it shows the difference between the older and newer generation aircraft.
- Around 43% of all noise results movements were newer generation aircraft which are more fuel efficient and quieter.

Aircraft type	Arrival dB	Departure dB	New aircraft type	Arrival dB	Departure dB
A320	82.9	79.7	**A320N (A20N)**	80.4 (-2.5dB)	76.0 (-3.7dB)
A321	82.1	82.1	**A321N (A21N)**	81.3 (-0.8dB)	79.1 (-3.0dB)
B738	83.6	83.9	**B737 MAX8 (B38M)**	77.8 (-5.8dB)	78.5 (-5.4dB)

Conclusion

- A handheld noise monitor was used at a residential property on West Hill Road from 8th December 2025 to 3rd February 2026 over a period of 24 days.
- For South Luton, it specifically related to easterly arrivals and westerly departures. During the monitoring period, the airport operated in the direction of easterly and westerly for 38% and 62% of the time, respectively. Generally, over the year, LLA operate in the westerly direction for 70% of the time due to the prevailing wind.
- 43% of the noise events recorded in South Luton were created by the newer generation aircraft, A320 NEO, A321 NEO and B737 Max 8.
- During the monitoring period, 15 aircraft were investigated as part of the Noise and Track violation scheme. Of these, 13 aircraft were fined. All fines generated by this scheme go directly into the community trust fund, more information on the community trust fund can be found on https://www.london luton.co.uk/corporate/community/community-trust-fund.
- LLA publish other monitoring reports on a regular basis. These reports can be viewed and downloaded from the Noise webpage on the LLA website - https://www.london-luton.co.uk/corporate/community/noise.

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 route in the direction of South Luton.

Easterly Operations: Easterly operations refers to the time when the wind is blowing from the east and aircraft land on the easterly runway and would fly above South Luton.

Standard Instrument Departure (SID): Published route that an aircraft must follow on departure.

Noise Preferential Route (NPR): All aircraft except propeller aircraft leaving London Luton Airport should follow flight paths known as Noise Preferential Routes (NPRs) up to an altitude of 3,000 feet or 4,000 feet depending on the route. They lead from the runway to the main UK air traffic routes and form the first part of the Standard Instrument Departure routes (SIDs).

Aircraft Movement: A single aircraft departing or arriving at the airport.

Altitude Gate Analysis: A gate which is drawn across an area and will gather flight date 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).