LONDON GATWICK

Community noise information report
Ruckmans

June 2026

Introduction

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Summary

3.
Operations
and Trends

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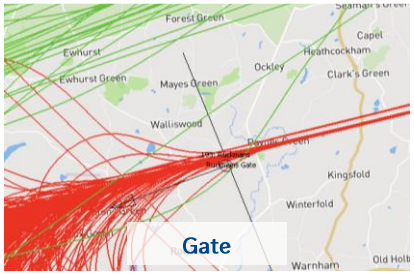
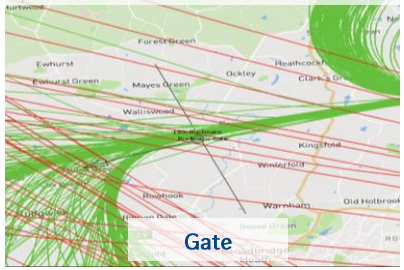
Ruckmans lies approximately 12km to the west of London Gatwick. Due to the prevailing wind, the area is affected by westerly departures approximately 68% of the time (20 year average to 2025) and easterly arrivals for the remainder.

A mobile noise monitoring terminal (NMT) was installed by London Gatwick in 2019.

Westerly Operations



Easterly Operations



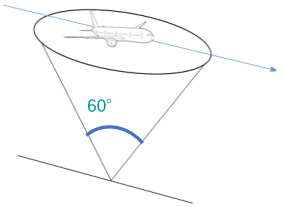
The report is set out as follows:

- **Section 2 – Summary** presenting key findings from Sections 3 & 4.
- **Section 3 – Operations and Trends** provides an overview of how the airport and aircraft have operated between 2022 and 2025. This analysis has been performed by drawing a notional 2D plane in space (the analysis gate – see images above) centred on the noise monitor at Ruckmans and recording the position and details of any flight that passes through the gate.
- **Section 4 – Noise Monitor Data** presents an analysis of aircraft noise events and overall community noise levels at the noise monitor for 2022–2025.
- **Section 5 – Appendix** presents pre-processing of the noise monitor data; details how many events have been excluded and the corresponding reasons.

This report presents an analysis of both operational and noise data in 2025, with trend data presented for the period 2022–2025 where relevant.

Overhead aircraft – At various points in this report, reference is made to overhead aircraft. Defining whether an aircraft is overhead or not is a subjective matter. However in February 2017 the CAA published guidance (CAP 1498) recommending the use of a theoretical cone over the receiver with an apex of 60 or 83 degrees. Wherever this report refers to overhead aircraft, the 60° cone has been used as shown below.

Flights are considered overhead if the aircraft pass within cone above the noise monitor



Westerly / Easterly Operations – Ruckmans is located close to the flight path of aircraft on both westerly (predominantly departures) and easterly (arrivals) operations. Many of the plots are presented for westerly and easterly operations separately. Where figures are presented relating to westerly operations only, **this colour** has been used. For easterly operations, **this colour** has been used.

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Summary

Operations and the community

Ruckmans is affected by both departures on westerly operations and arrivals on easterly operations. Based on the 10-year average, approximately 73% of London Gatwick operations are conducted in a westerly direction, covering both arrivals and departures.

On days of 100% westerly operations in 2025, an average of 216 departures passed over the noise monitor at Ruckmans. On days of 100% easterly operations an average of 365 arrivals flew over Ruckmans.

On westerly operations, the busiest time of day is 07:00-08:00 with an average of 19 flights passing overhead in the hour in 2025. The busiest hour on easterly operations was 22:00-23:00, during which an average of 24 flights passed overhead.

Over 75% of aircraft that passed over Ruckmans are in the A320 family, a narrow-bodied twin-engine aircraft. The B737 family, a similar sized aircraft, make up 13% of the fleet mix while the B777 and B787, larger wide-bodied aircraft, account for around 7%.

In 2025, departing aircraft on westerly operations passed over Ruckmans at an altitude of approximately at 4,600ft; approximately 6% lower compared to 2022. Arriving aircraft on easterly operations passed over Ruckmans at 2,250ft; this has not changed over the last 4 years.

Noise levels in the community based on measurements at Ruckmans noise monitor

Approximately 50% of the noise events recorded at Ruckmans in 2025 were from aircraft on easterly arrivals. The remainder are from aircraft on westerly departures. Approximately 11% of all noise events were recorded during night time hours (23:00-07:00).

During days of 100% westerly operations, there were, on average, 207 aircraft noise events recorded per day. During days of 100% easterly operations there was an average of 358 aircraft noise events per day.

Maximum noise levels of aircraft noise events measured at Ruckmans in 2025 generally fell in the range from 60-70 dB L_{AMax}. The average maximum noise levels for an aircraft on easterly arrivals and westerly departures were 65dBA and 64dBA respectively. The B777 is the loudest aircraft type regularly operating into London Gatwick with an average maximum noise level of 72dBA on departure and 68dBA on arrival.

The direction of operation at the airport impacts the average noise levels at the Ruckmans noise monitor. On easterly operations, hourly average noise levels ($L_{Aeq,1hr}$) during daytime hours ranged between 55 and 57dB in 2025. On westerly operations, the range was between 44 and 56dB.

In 2025 , the average day time level ($L_{Aeq,16hr}$) was 52dB on westerly operations and 56dB on easterly operations. The average night-time level ($L_{Aeq,8hr}$) was 43dB on westerly operations and 51dB on easterly operations.

Overview of Operations and Flight Track Data (2025)

There were an average of

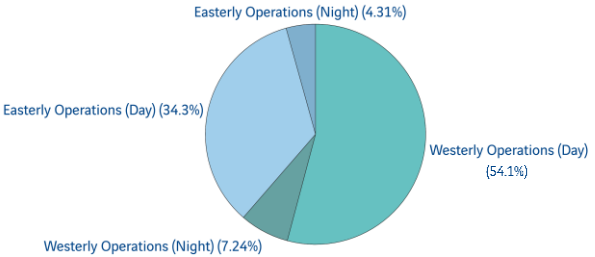
721

flights each day operating out of London Gatwick in 2025, of which

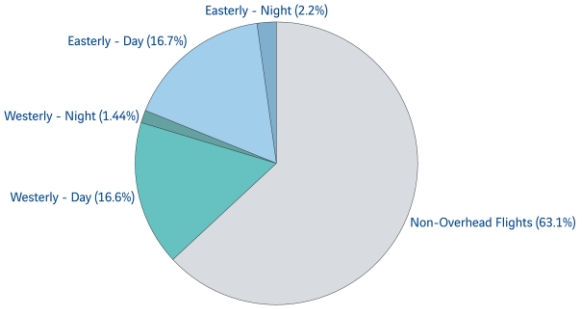
83

were during the night period*

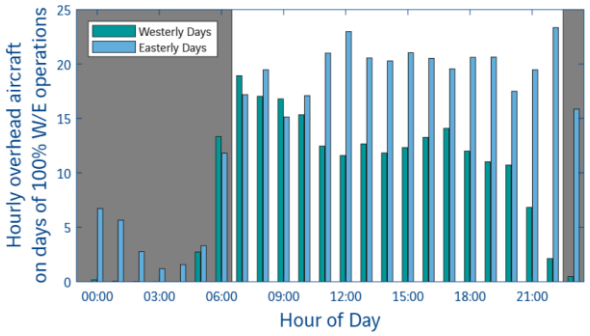
* Note the night period refers to the hours between 23:00 and 07:00



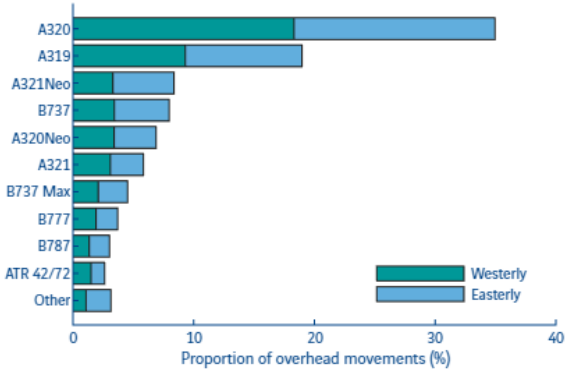
Due to wind direction, 61% of flights were on westerly operations in 2025



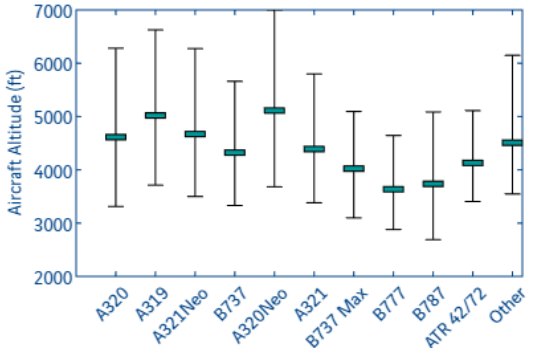
A total of 37% of movements operating into London Gatwick passed over the noise monitor in 2025



More aircraft passed overhead on a full day of easterly operations (365), compared to a full day of westerly operations (216)



The proportion of aircraft types passing overhead in 2025. Over 75% of aircraft were in the A320 family



The average height of overhead aircraft on westerly departures was 4,630ft. The average height on easterly arrivals is determined by the 3° glideslope and was around 2,250ft for all aircraft types

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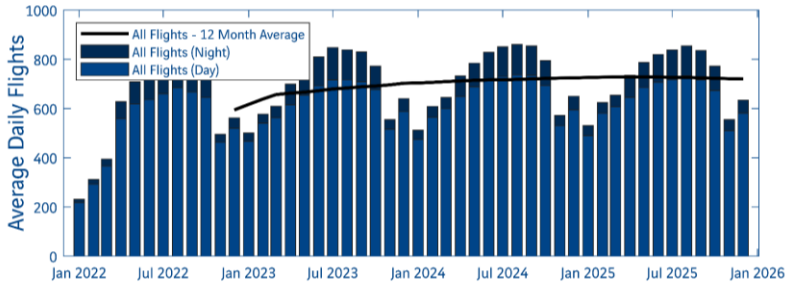
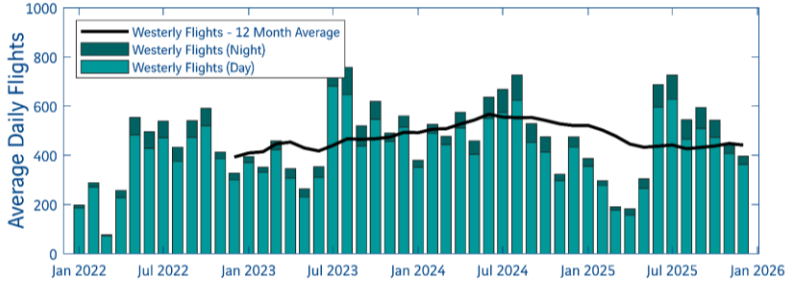
How many aircraft operate into Gatwick?

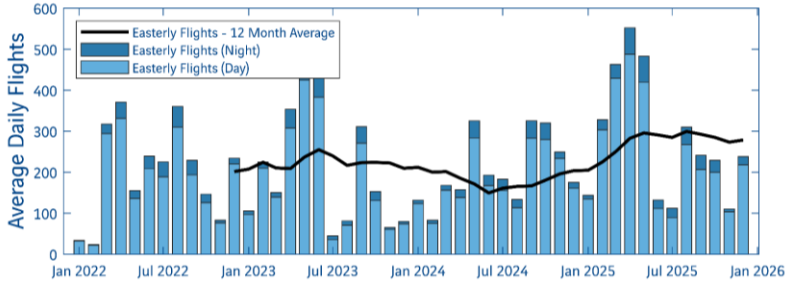
- The table below shows the overall number of flights operating into London Gatwick has increased between 2022 and 2025 from circa 218,000 to circa 263,000 in 2025. However, traffic number have still not reached the pre-Covid years where flights numbers were 280-286 thousand between 2016 and 2019.
- The proportion of easterly/westerly operations is dependent on wind direction with proportion of westerly operations ranging between 61 and 72% annually.
- The number of night flights has not increased between 2023 and 2025.
- Proportion of westerly operations dropped significantly in 2025 due to wind direction.
- The figures to the top right shows the total number of flights operating out of Gatwick each month from 2022 to 2025. The average number of daily flights fluctuates through the course of the year. January was typically the quietest month with around 450 flights per day while the busiest period was during the summer months. The figures to the bottom right show the numbers of easterly and westerly flights over the same period.

	2022	2023	2024	2025
Total flights operating from London Gatwick (of which during the night period) ('000s)	218 (24)	257 (30)	265 (30)	263 (30)
Westerly flights (of which during the night period) ('000s)	144 (16)	181 (20)	191 (22)	161 (19)
Easterly flights (of which during the night period) ('000s)	74 (9)	76 (10)	75 (8)	102 (11)
Westerly/Easterly Split (%)	66/34	70/30	72/28	61/39

* All data rounded to the nearest 1000







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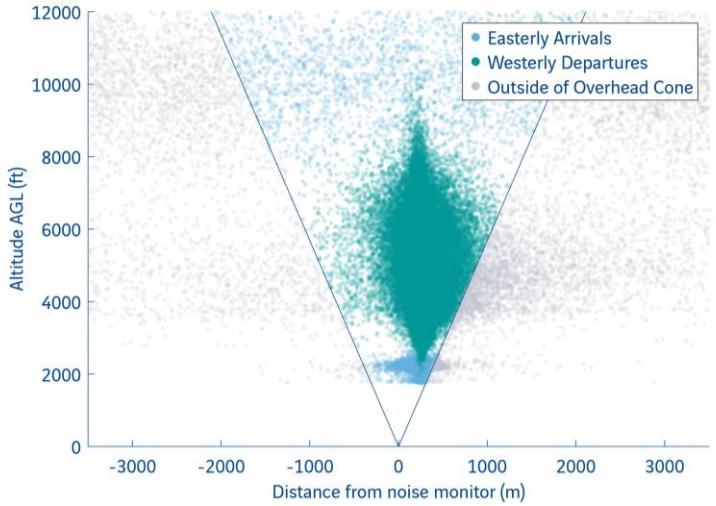
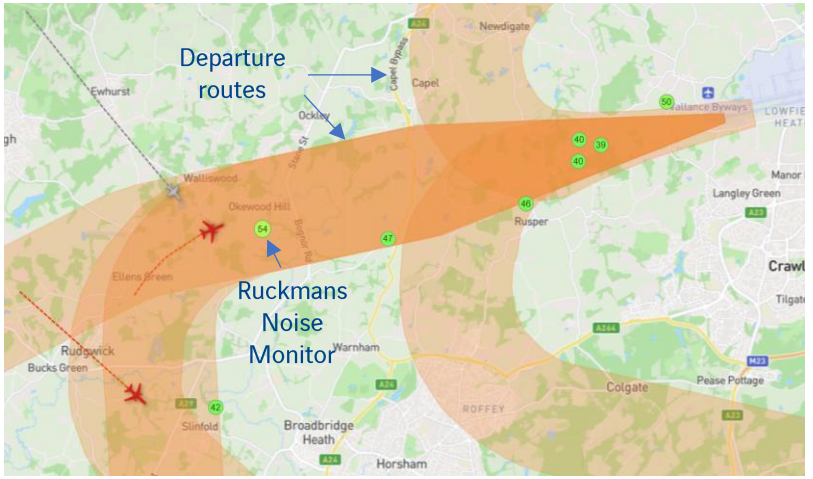
Where do aircraft fly in relation to Ruckmans?

- The image to the right represents a 2D plane (henceforth referred to as the 'gate') in space, perpendicular to the flight paths operating into and out of London Gatwick (see Images on Page 2).
- Overhead flights have been defined as those passing within an upside-down code where the angle of the point of the cone is 60 degrees.
- The image shows that both arrivals and departures pass over Ruckmans.
- On easterly operations, all arrivals into London Gatwick pass close to Ruckmans. The aircraft are at a height of between 2,000 and 2,500ft. There is not much variation in the height of arrivals since all aircraft will have joined the ILS (a high precision guidance system to help aircraft land safely).
- Three of the five departure routes on westerly operations pass over Ruckmans. The height of these aircraft are spread over a much wider swathe between 2,000 and 8,000ft due to a range of factors such as destination, weight, aircraft type and departure profile amongst others.

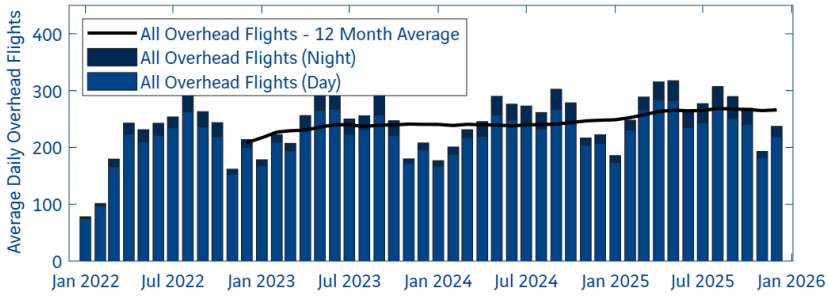


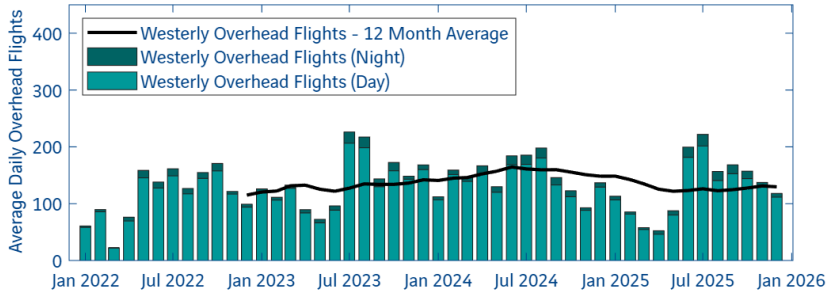


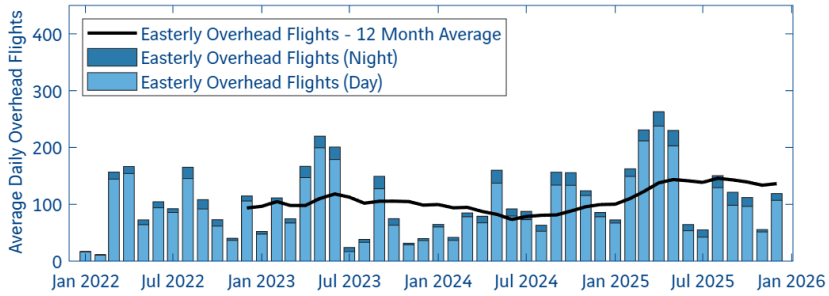
How many aircraft pass over Ruckmans?

- The figures on this page are similar to those shown on Page 5 but is limited to those flights that pass overhead. The table below shows the overall number of flights passing overhead has increased between 2022 and 2025 from 76,000 to 97,000 a year.
- Over the same period, the number of flights passing overhead during the night period has increased from 6,000 to 10,000 per year.
- Due to monthly fluctuations, the average number of flights that pass over Ruckmans each day can vary from 185 to 320.

	2022	2023	2024	2025
Total overhead flights (of which during the night period) ('000s)	76 (6)	88 (8)	91 (9)	97 (10)
Westerly overhead flights (of which during the night period) ('000s)	42 (3)	52 (4)	54 (4)	47 (4)
Easterly overhead flights (of which during the night period) ('000s)	34 (4)	36 (4)	36 (5)	50 (6)







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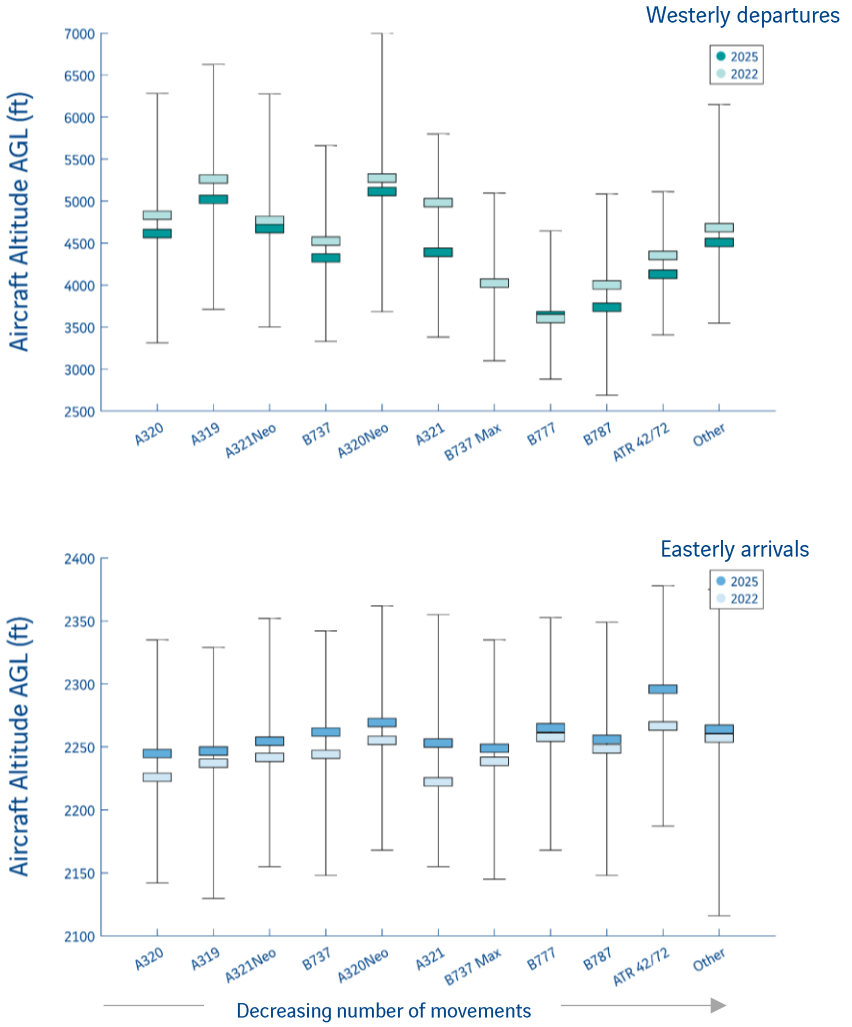
At what altitude do aircraft fly over Ruckmans?

- The table below presents the average height of aircraft above Ruckmans as they pass through the gate on both westerly and easterly operations.(top: westerly departures, bottom: easterly arrivals) along with the corresponding 5th and 95th percentile*.
- On Westerly departures, the average height of all aircraft passing through the gate in 2025 was 4,600 ft, approximately 300ft lower than in 2022 when skies were less busy due to Covid impacts. Ignoring all other factors (e.g. change in fleet mix, thrust settings), this equates to a change of about 0.5dB.
- On average, the A320Neo is the highest aircraft type on departure (amongst the most common aircraft types) while the B777 and B787 are the lowest.
- On easterly arrivals, the altitude of aircraft has not changed significantly between 2022 and 2025. At this point, the aircraft will have joined the Instrument Landing System (ILS), a high precision guidance system to help aircraft land safely.
- There is little variation amongst aircraft types on easterly arrivals.

* A percentile is a measure which indicates the value below which a given percentage of observations fall. In this case, the 5th percentile indicates the altitude under which 5 percent of movements of a given aircraft type would fly through the gate.

Average height through gate (ft)*	2022	2023	2024	2025
Westerly operations	4,900	4,800	4,600	4,600
Easterly operations	2,300	2,300	2,300	2,300

* Rounded to the nearest 100ft



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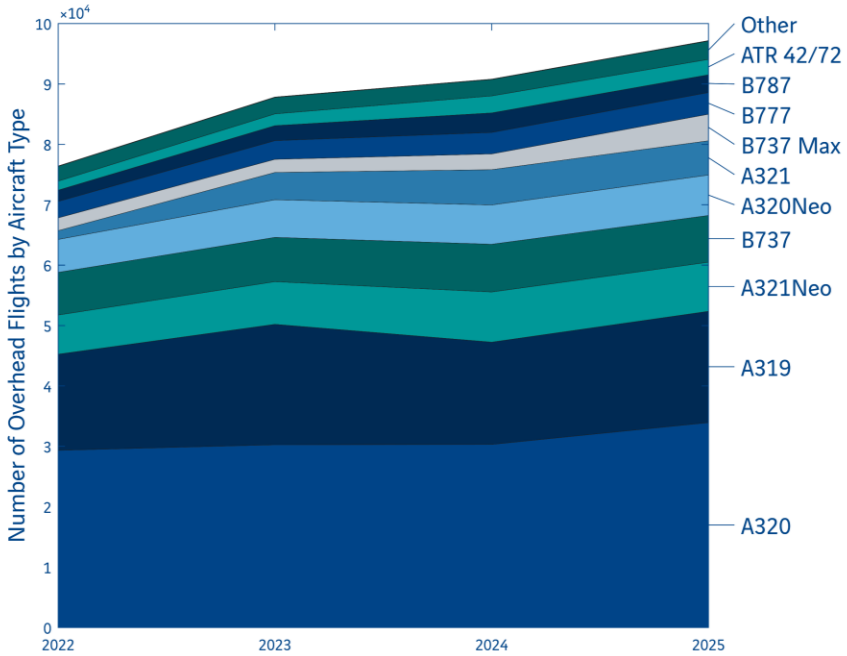
Which aircraft types fly over Ruckmans?

- The figure to the right demonstrates how the fleet mix (the proportion of each aircraft type) passing overhead at Ruckmans has changed between 2022 and 2025.
- The A320 family (A319, A320, A321, A320Neo and A321Neo) accounted for 75% of all aircraft movements in 2025 while the B737 family made up approximately 12% of all movements.
- The B777 and B787 are the largest aircraft that regularly operate out of London Gatwick. These aircraft types account for around 7% of all movements.
- Changes in the proportion of different aircraft types between 2022 and 2025 have been fairly modest although there has been a small increase in the proportion of A321 and B737Max flights passing above Ruckmans.



Overview of Noise Monitor Data (2025)

In 2025, there was an average of

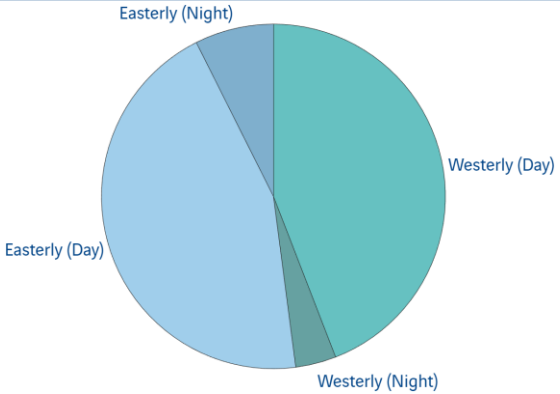
238

daily aircraft noise events measured at Ruckmans, of which

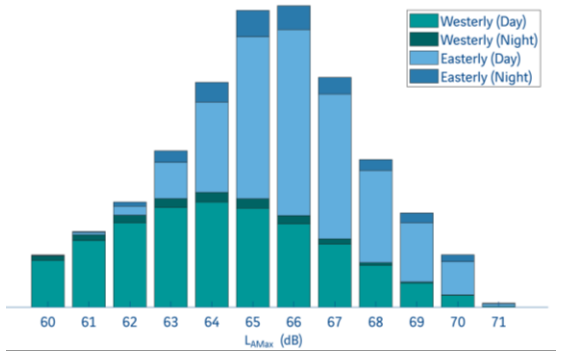
30

were during the night period*

* Note the night period refers to the hours between 23:00 and 07:00

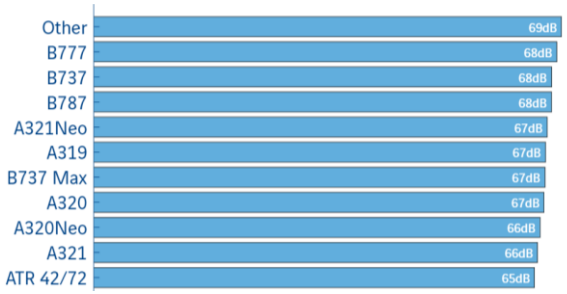


The proportion of noise events recorded at Ruckmans was split equally between aircraft on westerly departures and easterly arrivals

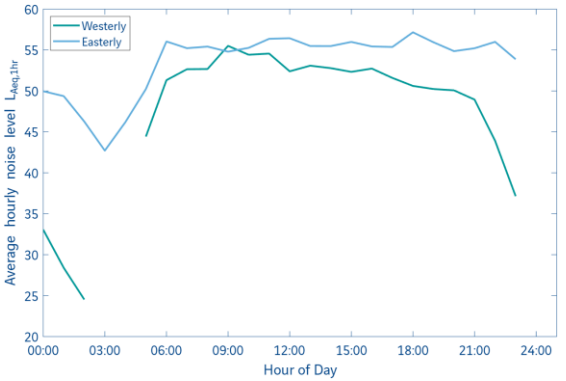


Most aircraft noise events were recorded as being between 60 and 70dB L_{Amax}. On average events recorded on easterly operations were slightly louder

Noise events by aircraft type
westerly departures*
*Overhead aircraft only



Noise events by aircraft type
easterly arrivals*
*Overhead aircraft only

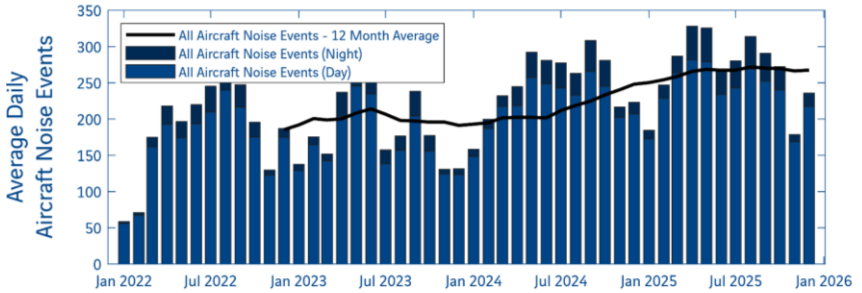


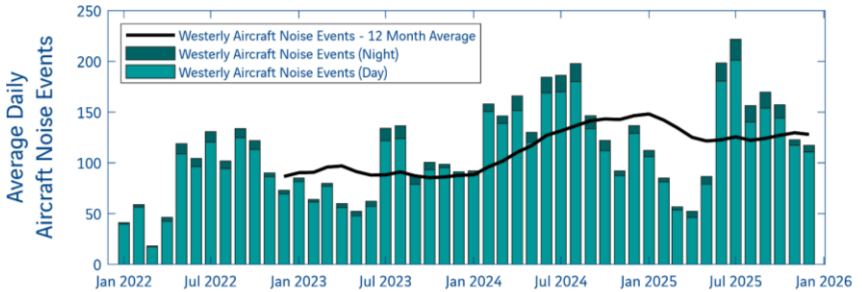
Hourly average noise levels on full days of westerly and easterly operations

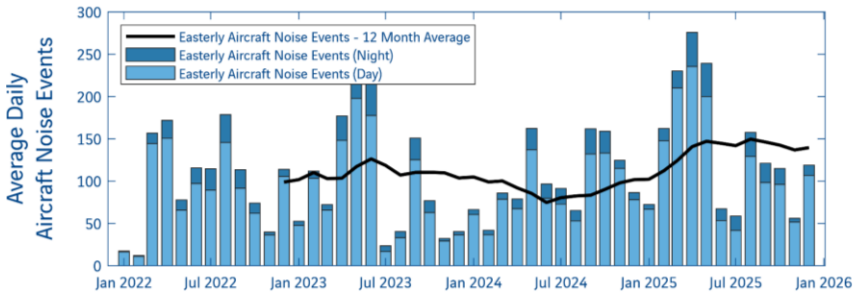
How does wind direction affect the number of aircraft noise events?

- An aircraft noise event is recorded when the noise level at the noise monitor exceeds a pre-determined threshold for a given duration and can be matched to a passing aircraft. In this case the threshold was set at 50dB. An explanation of metrics is given in Appendix B on Page 17.
- The total number of aircraft noise events recorded annually has increased from 68,000 in 2022 to 98,000 in 2025.
- At Ruckmans, there is almost an equal split between the number of noise events recorded on westerly and easterly operations.
- While there are more days on westerly operations, there are a greater number of noise events recorded on days of easterly operations.
- In 2025, during days of 100% westerly operations, there were, on average, 207 aircraft noise events triggered per day.
- In 2025, during days of 100% easterly operations there was an average of 358 aircraft noise events per day.
- It is noted that an absence of aircraft noise events does not mean that aircraft would not necessarily be audible or even visible. There may be aircraft further away that are audible but have not triggered the noise event detection threshold.

	2022	2023	2024	2025
Total aircraft noise events operating (of which during the night period) ('000s)	68 (7)	70 (8)	91 (9)	98 (11)
Westerly aircraft noise events (of which during the night period) ('000s)	36 (5)	38 (6)	37 (5)	51 (7)
Easterly aircraft noise events (of which during the night period) ('000s)	32 (2)	32 (2)	54 (4)	47 (4)







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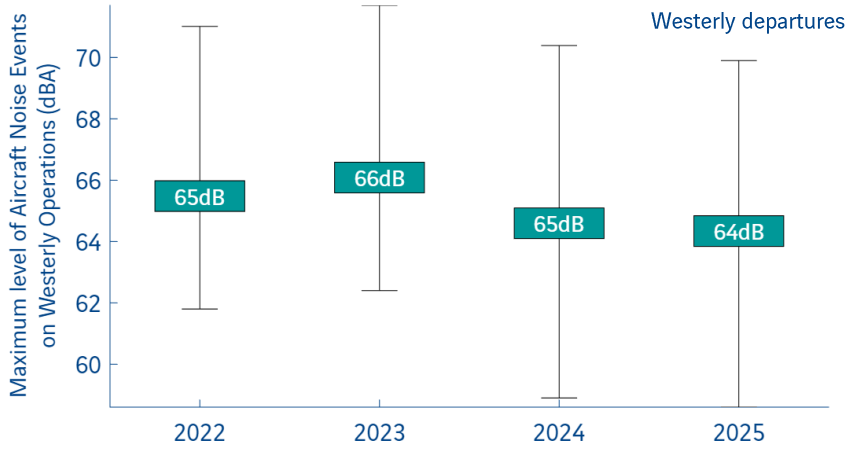
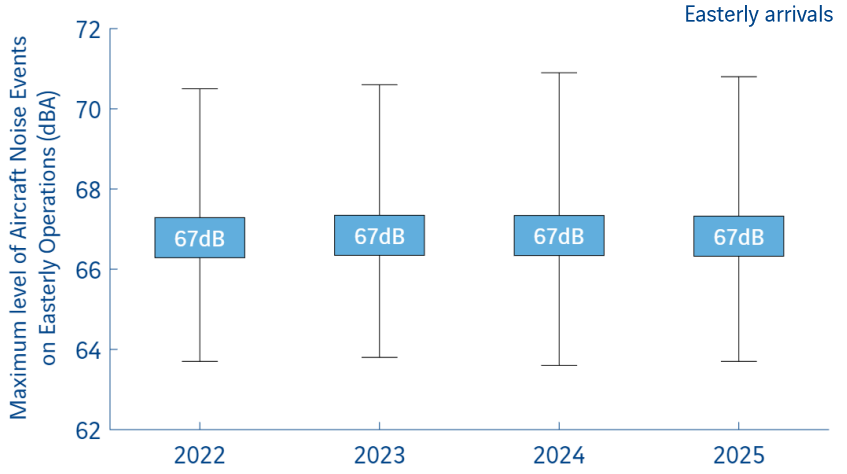
What are the maximum noise levels of measured aircraft noise events?

- The figures to the right present the average maximum noise levels of all measured events on westerly (top) and easterly (bottom) operations.
- The average L_{Amax} of all westerly departures was 64dB in 2025. This has reduced by 2dB over the last two years. The maximum level of 90% of all events fall between 59 and 70dB L_{Amax}.
- The average L_{Amax} of all easterly arrivals was 67dB in 2025. This has not changed over the last four years. The maximum level of 90% of all events fall between 64 and 71dB L_{Amax}.

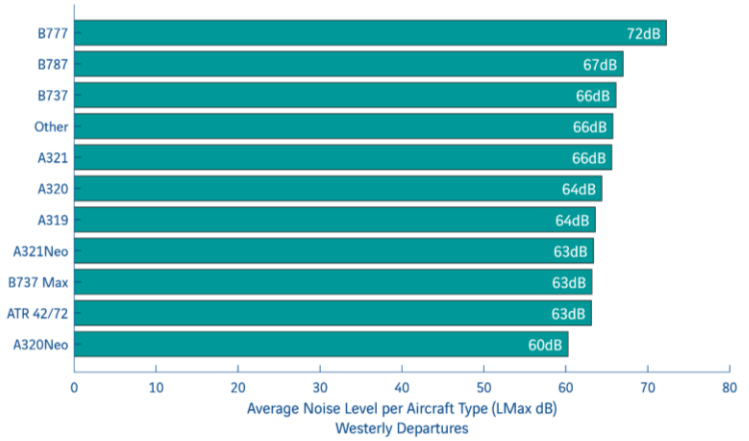




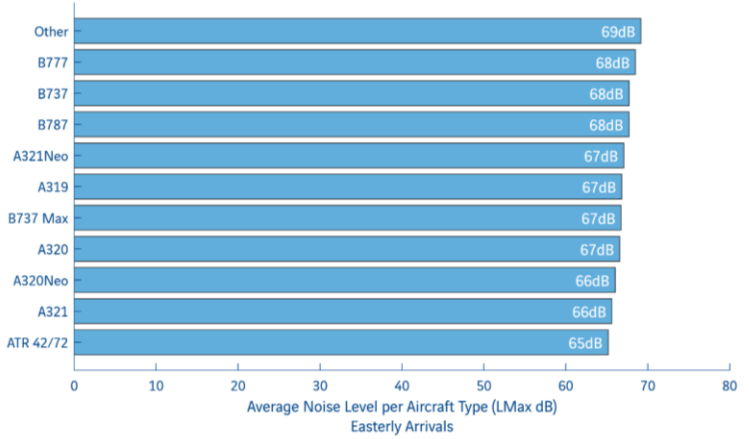
What are the average maximum noise levels of different aircraft types?

- The plots to the right show the average (arithmetic mean) L_{Amax} of the most common aircraft operating out of London Gatwick that pass within the 60°overhead cone on westerly (top) and easterly (bottom) operations (note that Other aircraft refers to all types that operate out of London Gatwick that do not fall within the 10 most common aircraft types).
- On westerly operations, the B777 is the loudest aircraft type with an average maximum noise level of 72dB L_{AMax}. The B777 accounts for approximately 3% of aircraft passing over Ruckmans. The average maximum noise level from the A320, the most common aircraft operating out of London Gatwick is 64dB L_{AMax}.
- On easterly operations, aircraft types that do not make up the 10 most common aircraft types at London Gatwick and represent less than 3% of aircraft passing above Ruckmans have the highest average maximum noise level; 69dB L_{Amax}. The average maximum noise level of the most common aircraft types fall between 66 and 68dB L_{AMax}.

Westerly departures



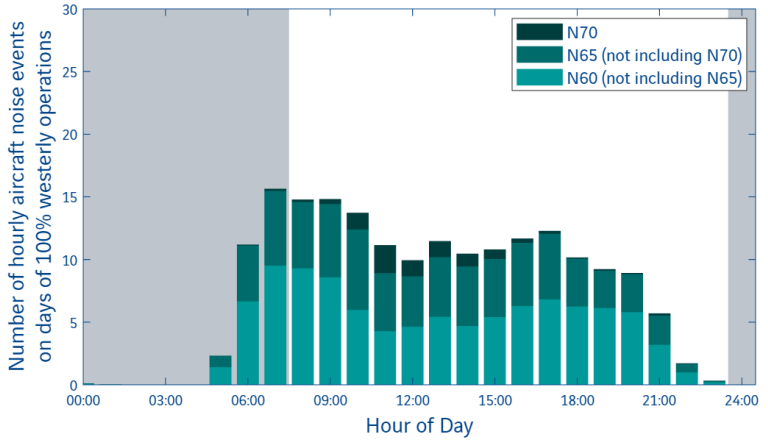
Easterly arrivals



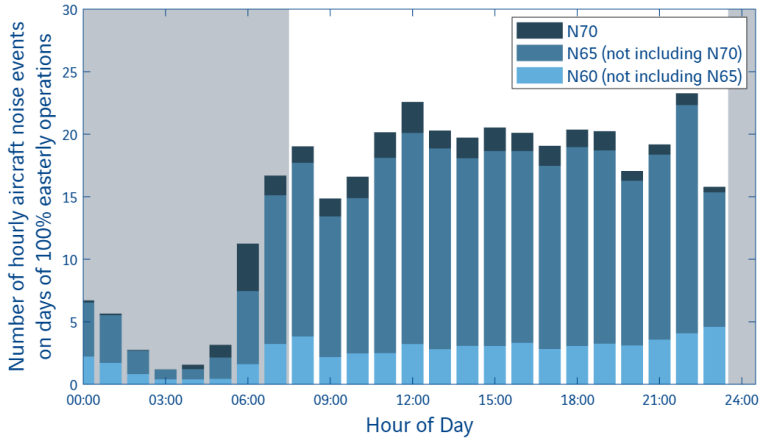
How does the noise level of aircraft events vary across the day?

- It is recognised that the response to aircraft noise is related to more than average noise levels alone. The number of events and their individual levels are becoming increasingly recognised as a useful indicator of community response to aircraft noise.
- The N_{above} metrics describe the number of events in a period where the L_{Amax} exceeds a given value. For example, an $N65_{1hr}$ of 10 means that ten aircraft generated a maximum noise level greater than 65dBA in a single hour.
- The figures to the right shows the average hourly N60, N65 and N70 values across an average 24hr day for days of 100% of westerly (top) and easterly (bottom) operations.
- On days of 100% westerly operations, there are generally none, or very few, events in between midnight and 05:00. The first noise events occur between 05:00 and 06:00 before peaking between 07:00 and 11:00 during which there are typically around 12 noise events per hour.
- The number of events tend to decrease throughout the day however the greatest number of louder events (>70dB L_{AMax}) occur between 11:00 and 13:00.
- On days of 100% easterly operations, there are significantly more aircraft noise events through the night with the fewest occurring between 04:00 and 05:00.
- After 07:00, the number of noise events is relatively constant throughout the remainder of the day with 15-20 being recorded each hour.

Westerly departures



Easterly arrivals

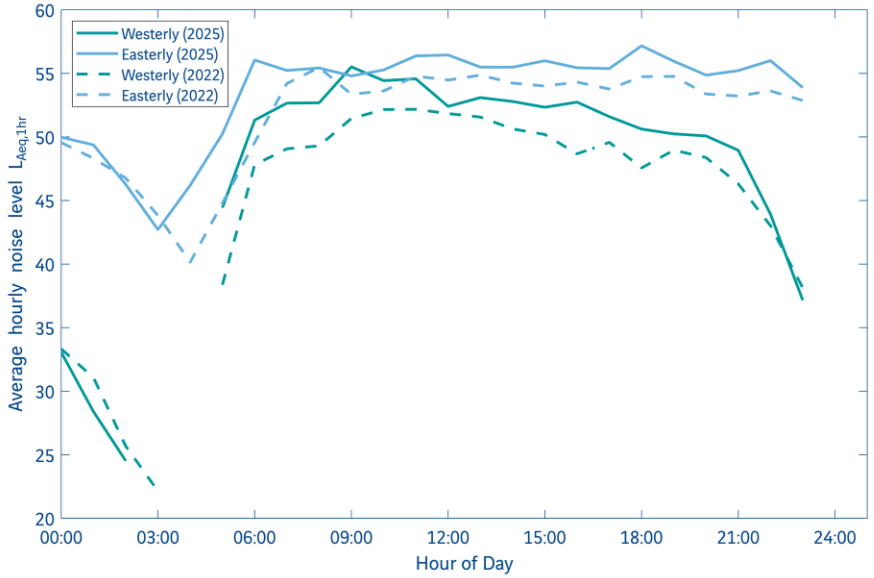


What are the overall ambient noise levels at the noise monitor?

- The figure to the right shows the average (arithmetic mean) hourly $L_{Aeq,1h}$) on days of either 100% westerly or easterly operations.
- Between the hours of 06:00 and 22:00 on days of 100% westerly operations average $L_{Aeq,1h}$ values fall between 49 and 56dB. Noise levels outside these hours are much lower due to the reduced number of flights.
- Noise levels peak between 09:00 and 10:00 and is the only hour that is louder on westerly operations than easterly operations.
- On days of 100% easterly operations, noise levels are consistently between 54 and 57dB between the hours of 06:00 and midnight.
- With the exception of some periods during night time hours, the hourly L_{Aeq} has increased in all daytime hours on both modes of operation between 2022 and 2025.

		2022	2023	2024	2025
100% Westerly operations	Number of days	171	197	208	167
	$L_{Aeq,16hrs}$ (day)*	50	50	54	52
	$L_{Aeq,8hrs}$ (night)	40	41	44	43
100% Easterly operations	Number of days	78	76	63	108
	$L_{Aeq,16hrs}$ (day)	54	55	56	56
	$L_{Aeq,8hrs}$ (night)	48	50	51	51

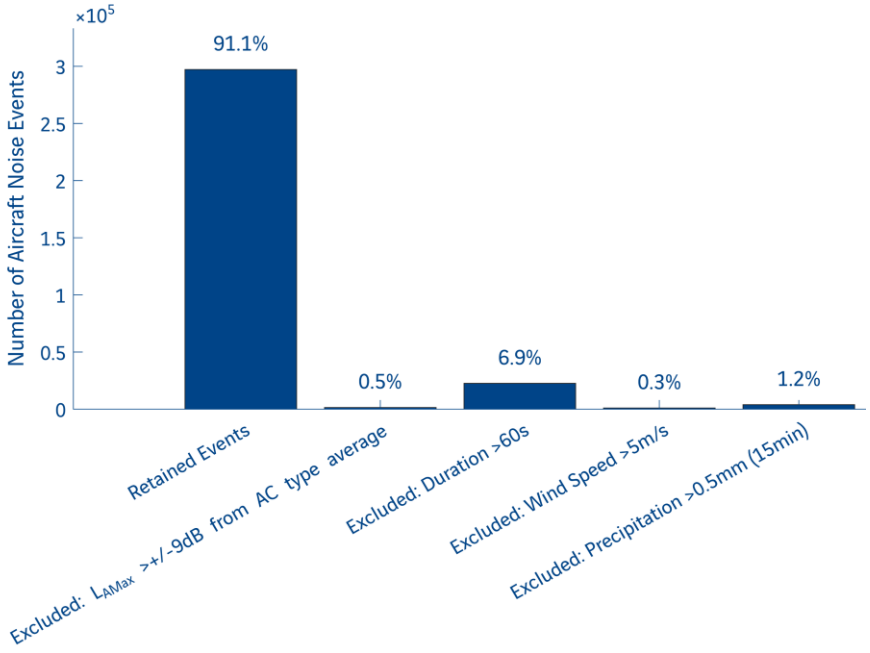
- It should be noted that the $L_{Aeq,16h}$ has been calculated using the average of the hourly values for 100% easterly and westerly days during each year. This is different to the published annual contours which calculate the $L_{Aeq,16hr}$ over a 92-day period over the summer



* Hourly average noise levels could not be calculated for some hours during the night period since no aircraft noise events were recorded during these hours on days on 100% westerly operations.

Appendix A – Pre-processing of noise data

- The matching of noise events to aircraft movements is carried out in a Noise and Track Keeping (NTK) system. This relies on the time synchronisation between the noise monitor and radar. The NTK software determines whether an aircraft passed within a user-defined area around the monitor at the time of L_{AMax}. If an aircraft is found, the software correlates the event with that particular flight.
- When recording aircraft noise events, it is impossible to guarantee that events are not contaminated by noise sources other than those generated by aircraft. Through careful placement of the noise monitoring terminal (NMT), it is possible to minimise the influence of other noise sources such as passing cars for example however weather conditions should be taken into account where possible.
- Although a weather station was not installed at the Ruckmans NMT, data were being collected at nearby Russ Hill at 15 minute intervals. This data has been used to reject aircraft noise events from the analysis in this report in instances where:
    - Average wind speeds exceed 5m/s over the 15 minute interval.
    - Precipitation exceeds 0.5mm over the 15 minute intervals.
    - Event duration exceeds 60 seconds.
    - Individual aircraft event levels (L_{AMax}) are greater than 9dB above the average for the same aircraft type.
- Applying the above criteria resulted in approximately 9% of aircraft noise events being omitted from the analysis in this report where noise levels are directly compared (eg different aircraft types). These events have not been omitted from counts of noise events through the day.



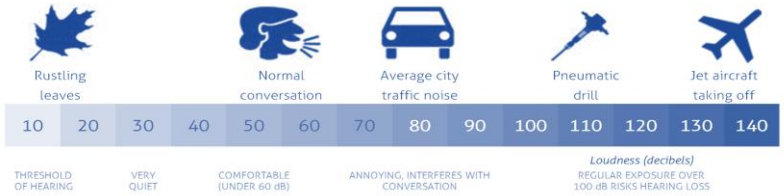
Appendix B – Noise Terminology

Sound vs Noise

Sound can be measured by a sound level meter or other measuring system. **Noise** is related to a human response, and is routinely described as unwanted sound. In most reference documents, however, and, indeed, in common parlance, 'sound' and 'noise' are used interchangeably. Consequently, just because 'noise' is used doesn't necessary mean a negative effect exists or will occur.

How is sound measured?

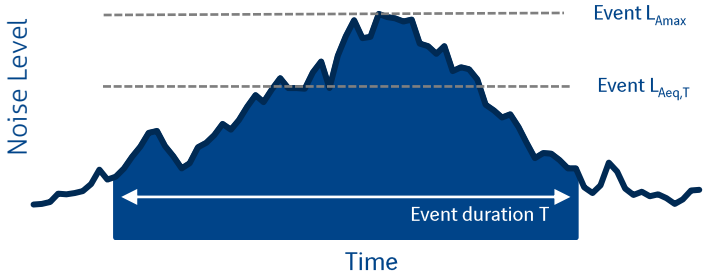
There is a million to one ratio between the threshold of hearing and the highest tolerable sound pressure. Sound is therefore measured using a logarithmic scale, to account for this wide range, called the decibel (dB) scale. Typical levels of everyday sounds are shown in the figure below.



The human ear (subject to age and health) is capable of detecting sound over a range of frequencies from around 20 Hz to 20 kHz; however, it does not respond equally to all frequencies, being most sensitive to sounds in the mid frequency range around 1 kHz to 5 kHz. Typically, therefore, measured sound levels are weighted across the frequency bands to broadly represent the sensitivity of the ear. The most commonly used mechanism is the A-weighting scale, hence levels are denoted as L_{Aeq} or dBA or dB(A), for example. All units in this report are A-weighted.

How is aircraft sound/noise measured and described?

As an aircraft passes over a location, sound levels slowly increase from ambient levels, reach a maximum, and decrease back down to ambient levels. The levels and durations involved depend on a number of factors, including the level of ambient sound. An example flyover is shown below.



There are a number of metrics that can then be used to characterise a noise event; the following being the most common:

- The L_{Amax} is the highest sound pressure level during the event (based on a 'fast' response time of 1/8th of a second.
- The $L_{Aeq,T}$ is the equivalent continuous sound pressure level over the period, T. It is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound. It is in effect the average noise level over the time of the event or period of interest.

Night Period

Throughout this report, the night is defined as the period between 23:00 and 07:00.