# Noise Monitor Data

## Keilor - 2024

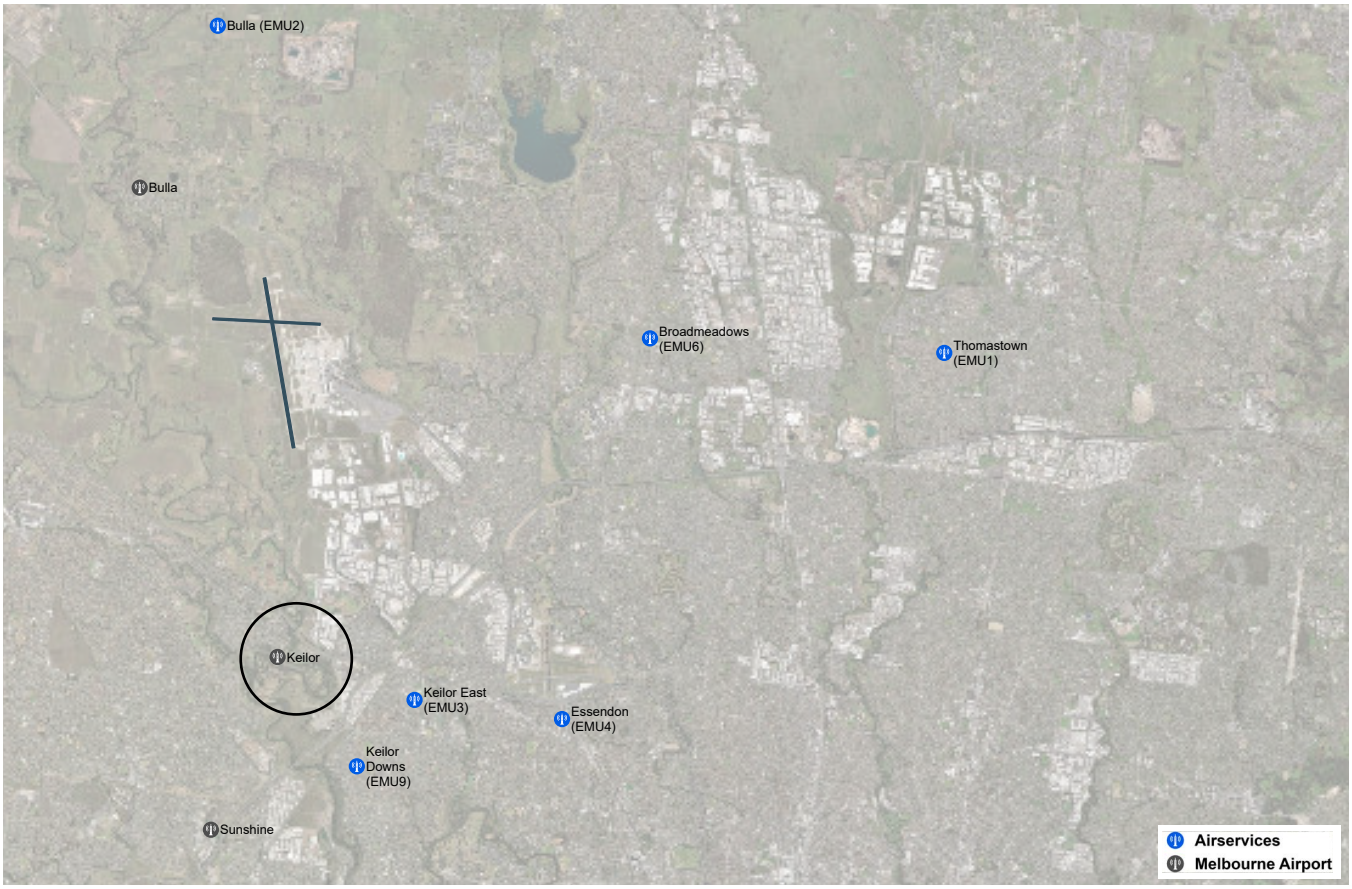
Melbourne Airport installed three new portable noise monitors in 2023 to increase and improve the data available for residents about aircraft noise around the airport. The installation of these monitors is a direct response to community feedback received during the 2022 public exhibition of Melbourne Airport's Third Runway Major Development Plan. The monitors provide the public with accurate measurements of overhead flight noise.

The relocatable noise monitors were positioned in Keilor, Sunshine and Bulla and supplement the six permanent noise monitors already located in nearby suburbs (see below).

The portable noise monitors linked directly to Airservices Australia's Webtrak system allowing anyone to access the data online in almost real time.

This report provides a summary of the aircraft noise data collected during 2024 for the Keilor Noise Monitor (see below). Other reports have been prepared on the Bulla and Sunshine monitor locations.

Data presented in this report covers the maximum noise level detected for an aircraft event.

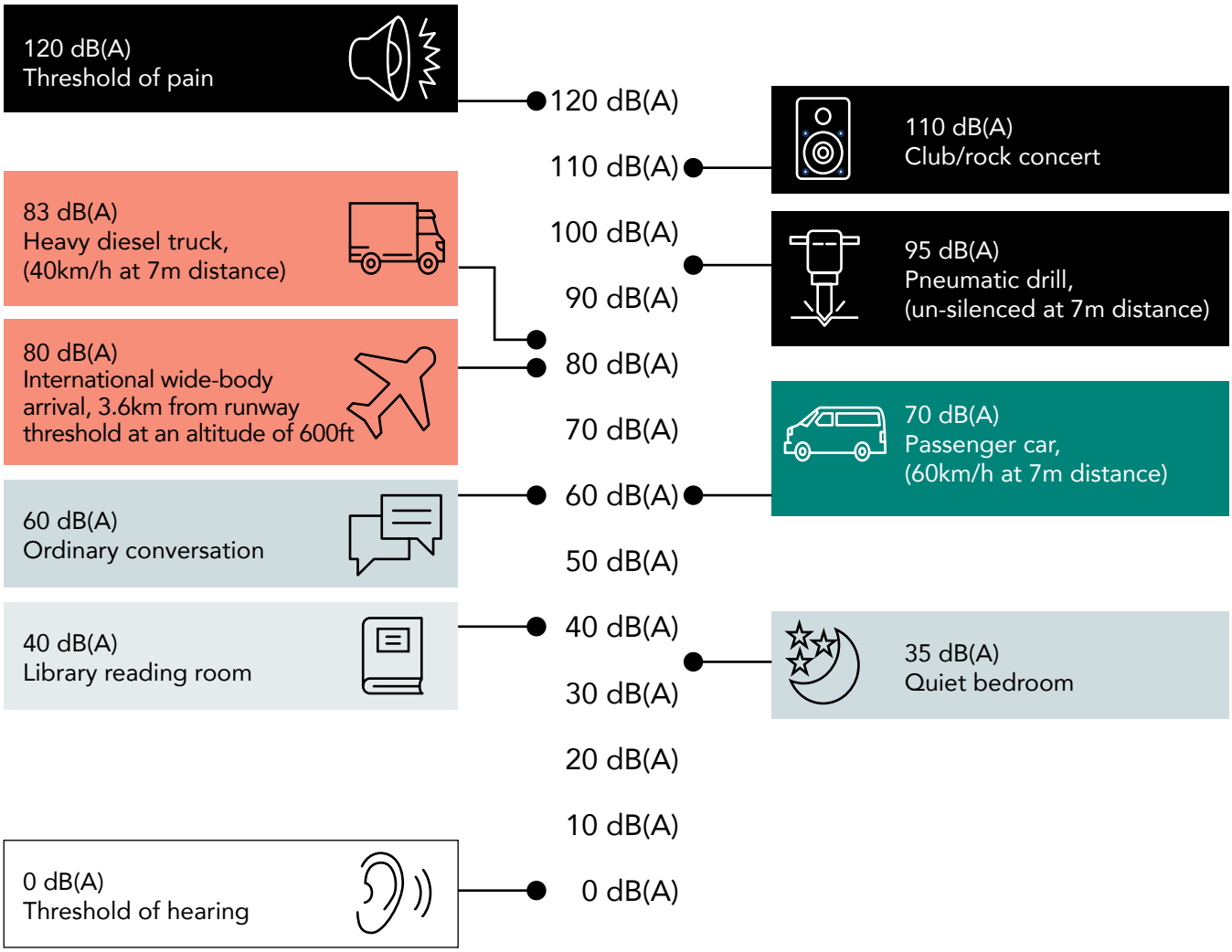



NOTE: The noise levels presented in this report may include aircraft noise events contaminated by neighbourhood noise events, such as birds or vehicles.

# Noise scale

The scale below explains noise in the context of common experiences. It describes the noise modelled 3,600 metres south of Melbourne Airport's third runway, at the intersection of the Calder Freeway and Green Gully Rd, for wide-body[1] jet arrivals (typically serving international routes).

Noise Scale dB(A) with examples of noise




*Source: APAM and NASF Guideline A: Attachment 1*

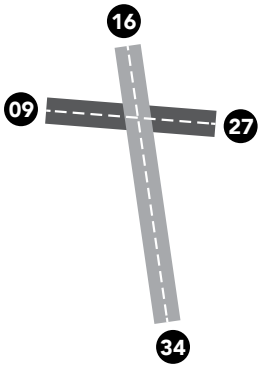
**3.6km is approximately the distance from Runway 34R threshold to the Calder Freeway. Aircraft noise values are based on modelling used in Melbourne Airport's Third Runway Major Development Plan.*

*1 'Wide-body' refers to aircraft that have two passenger aisles. Examples include Boeing 787 and Airbus A380 fleets.*

Want to understand more about the data in this fact sheet? Contact us at **community@melair.com.au**

# Aircraft movements

Below are the number of aircraft movements captured by the Keilor monitor by operation (arrivals / departures) and runway for 2024.




| Arrivals | |
|---|---|
| Runway 16 | 94 |
| Runway 34 | 30,320 |
| Runway 09 | 1 |
| Runway 27 | 24 |
| **Runway 16/34** | **30,414** |
| **Runway 09/27** | **25** |

| Departures | |
|---|---|
| Runway 16 | 29,475 |
| Runway 34 | 1 |
| Runway 09 | - |
| Runway 27 | 7 |
| **Runway 16/34** | **29,476** |
| **Runway 09/27** | **7** |

# N-above noise events

One way to describe aircraft-noise impacts is by the number of noise events that exceed a certain level. These metrics are referred to as 'N-above' (as in, number above) contour levels.

It aims to provide information in a form that is better understood by the public. It does this by providing a description of aircraft noise exposure at a given location and time period. The National Airports Safeguarding Framework (NASF) Guideline A: Measure for Managing Impacts of Aircraft Noise, recommends the use of N-contours for strategic planning purposes.

The data collected from the Keilor noise monitor is presented in the N-above format below, indicating the average number of events during 2024.

For example, on average there were
**48 daily departure events above 70 dB(A)** and
**67 daily arrival events above 60 dB(A).**

| | | Arrival Events | Departure Events | Total Events |
|---|---|---|---|---|
| N60 24hr | N60 24 hours provides the number of events at or above 60dB(A) over a 24-hour period | **67** | **78** | **145** |
| N70 24hr | N70 24 hours provides the number of events at or above 70dB(A) over a 24-hour period | **<2** | **48** | **49** |
| N60 night | N60 night provides the number of events at or above 60dB(A) over the night period (11pm to 6am) | **8** | **5** | **13** |

Aircraft noise can be different for arrivals and departures. The following pages provide information broken down by operation (arrival and departures).

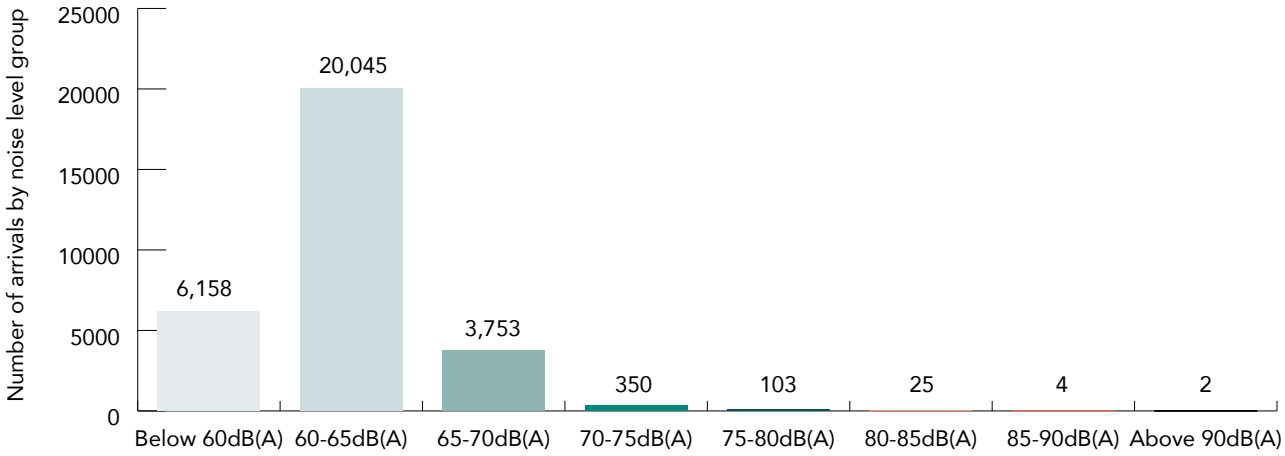
# Arrivals

Noise results from the 30,439 arrivals collected in 2024 have been allocated into noise level 'groups' and by periods of the day.

Graph below highlights the number of arrivals during 2024 by noise level group.

For example, there were

- **over 20,000 arrivals** detected between **60-65 dB(A)**
- **103 arrivals** detected between **75-80 dB(A).**




The number of arrivals during 2024 by noise level group and time of day are highlighted below.

For example, there were

- **more than 8,900 events** detected between **60-65 dB(A)** in the **Morning (6am-1pm)**
- **15 events** detected between **75-80 dB(A)** in the **Evening (5pm-11pm).**

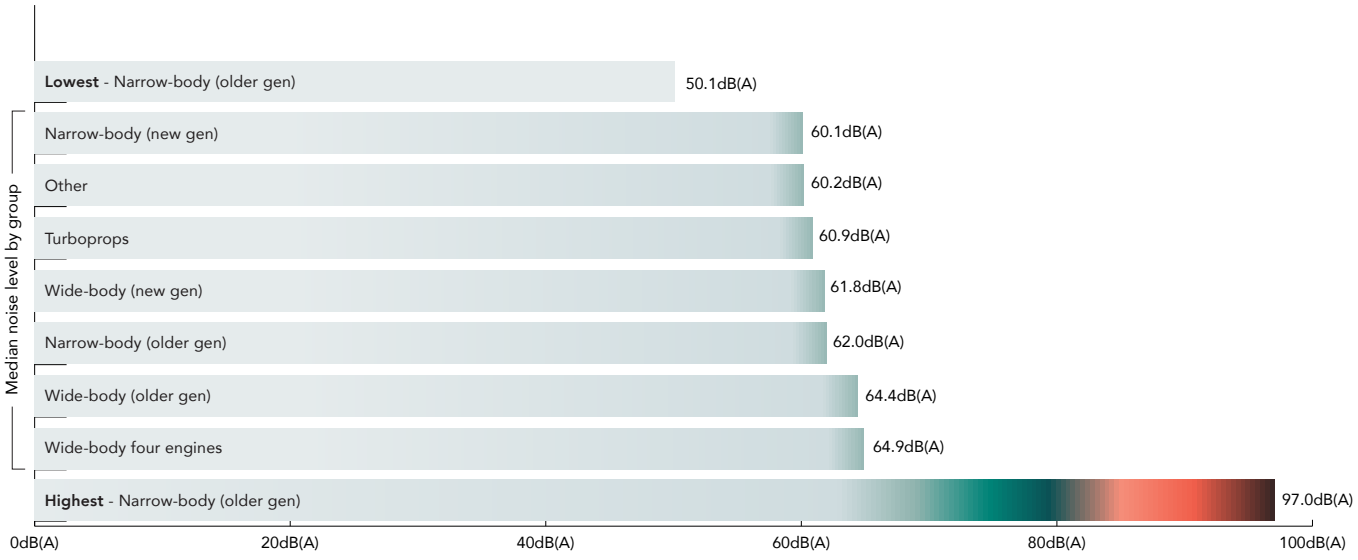
| | < 60 dB(A) | 60-65 dB(A) | 65-70 dB(A) | 70-75 dB(A) | 75-80 dB(A) | 80-85 dB(A) | 85-90 dB(A) | > 90 dB(A) |
|---|---|---|---|---|---|---|---|---|
| Morning 6am-1pm | 2,163 | 8,902 | 1,757 | 181 | 65 | 11 | 3 | - |
| Afternoon 1pm-5pm | 1,526 | 4,166 | 671 | 83 | 21 | 7 | 1 | - |
| Evening 5pm-11pm | 1,732 | 4,693 | 844 | 63 | 14 | 4 | - | 2 |
| Night 11pm-6am | 737 | 2,284 | 481 | 23 | 3 | 3 | - | - |
| TOTAL | 6,158 | 20,045 | 3,753 | 350 | 103 | 25 | 4 | 2 |

Below highlights the number of arrivals during 2024 by aircraft type groups along with the highest, lowest and median noise level events.

For example, there were

- **more than 18,000 narrow-body (older gen) arrivals** with a **median** noise level of **62.0 dB(A)**
- **more than 3,600 wide-body (new gen) arrivals** with a **median** noise level of **61.8 dB(A).**

| Grouping | Example Aircraft Type | Number of arrivals captured | Maxium Noise Level dB(A) | | |
|---|---|---|---|---|---|
| | | | Highest | Median | Lowest |
| Wide-body four engines | Airbus A380, Boeing 747 | 526 | 77.5 | 64.9 | 52.5 |
| Wide-body (older gen) | Boeing 777, Airbus A330 | 3,626 | 90.3 | 64.4 | 52.9 |
| Wide-body (new gen) | Airbus A350, Boeing 787, Airbus A330neo | 3,649 | 87.4 | 61.8 | 51.2 |
| Narrow-body (older gen) | Airbus A321/A320, Boeing 737, Boeing 717, Embraer 190, BAe-146 | 18,128 | 97.0 | 62.0 | 50.1 |
| Narrow-body (new gen) | Airbus A321neo/A320neo, Boeing 737 MAX, Airbus A220 | 2,055 | 80.1 | 60.1 | 52.1 |
| Turboprops | Dash-8 Q400, Saab 340, Metroliner | 2,310 | 83.4 | 60.9 | 51.7 |
| Other | Global Express, Cessna 172 etc. | 146 | 70.6 | 60.2 | 51.7 |



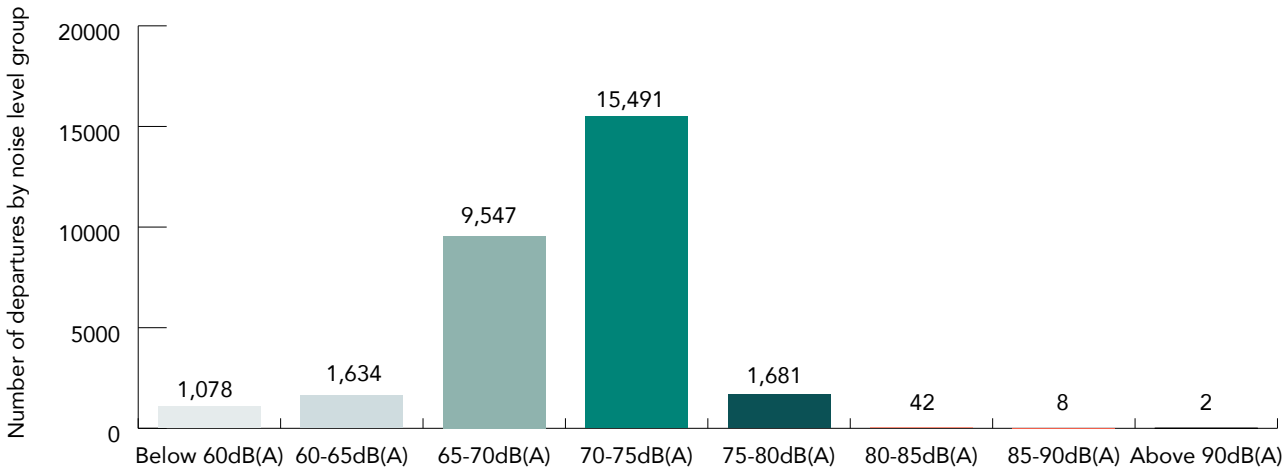
# Departures

Noise results from the 29,483 departures collected in 2024 and have been allocated into noise level 'groups' and by periods of the day.

The graph below highlights the number of departures during 2024 by noise level group.

For example, there were

- **over 15,400 departures** detected between **70-75 dB(A)**
- **over 1,600 departures** detected between **75-80 dB(A).**




The number of departures during 2024 by noise level group and time of day are highlighted below.

For example, there were

- **more than 8,900 departures** detected between **60-65 dB(A)** in the **Morning (6am-1pm)**
- **15 departures** detected between **75-80 dB(A)** in the **Evening (5pm-11pm).**

| | < 60 dB(A) | 60-65 dB(A) | 65-70 dB(A) | 70-75 dB(A) | 75-80 dB(A) | 80-85 dB(A) | 85-90 dB(A) | > 90 dB(A) |
|---|---|---|---|---|---|---|---|---|
| Morning 6am-1pm | 347 | 477 | 2,713 | 4,368 | 503 | 9 | - | - |
| Afternoon 1pm-5pm | 358 | 574 | 2,781 | 4,666 | 525 | 10 | 2 | - |
| Evening 5pm-11pm | 362 | 528 | 3,356 | 5,609 | 544 | 22 | 6 | 2 |
| Night 11pm-6am | 11 | 55 | 697 | 848 | 109 | 1 | - | - |
| TOTAL | 1,078 | 1,634 | 9,547 | 15,491 | 1,681 | 42 | 8 | 2 |

Below highlights the number of departures during 2024 by aircraft type groups along with the highest, lowest and median noise level events.

For example, there were

- **more than 15,800 narrow-body (older gen)** events with a **median** noise level of **71.4 dB(A)**
- **more than 4,800 Wide-body (new gen)** events with a **median** noise level of **68.3 dB(A).**

| Grouping | Example Aircraft Type | Number of departures captured | Maxium Noise Level dB(A) | | |
|---|---|---|---|---|---|
| | | | Highest | Median | Lowest |
| Wide-body four engines | Airbus A380, Boeing 747 | 658 | 84.3 | 72.6 | 59.5 |
| Wide-body (older gen) | Boeing 777, Airbus A330 | 3,948 | 92.5 | 73.7 | 53.0 |
| Wide-body (new gen) | Airbus A350, Boeing 787, Airbus A330neo | 4,861 | 87.8 | 68.3 | 53.0 |
| Narrow-body (older gen) | Airbus A321/A320, Boeing 737, Boeing 717, Embraer 190, BAe-146 | 15,876 | 93.5 | 71.4 | 52.8 |
| Narrow-body (new gen) | Airbus A321neo/A320neo, Boeing 737 MAX, Airbus A220 | 2,032 | 88.2 | 66.3 | 53.6 |
| Turboprops | Dash-8 Q400, Saab 340, Metroliner | 1,930 | 87.3 | 60.0 | 51.8 |
| Other | Global Express, Cessna 172 etc. | 176 | 76.0 | 67.6 | 54.6 |