SAN DIEGO
INTERNATIONAL AIRPORT

Portable Noise Monitor Report

Prepared By: SAN Aircraft Noise Office

Date Prepared: October 23, 2025

Monitoring Location: Hawk St., San Diego, CA

Community Represented: Uptown

Introduction

Aircraft noise at the San Diego International Airport (SAN) has been monitored since the 1970s.

The Airport Noise and Operations Monitoring System (ANOMS) collects, analyzes, and processes data from several sources of information.

These sources include noise events from 23 permanent Remote Monitoring Terminals (RMTs), Federal Aviation Administration (FAA) radar data, weather data, and noise complaints.

The purpose of the Portable Noise Monitoring program is to provide additional aircraft noise information beyond the Airport Authority's 23 RMTs.

This information augments the overall ANOMS data collection.

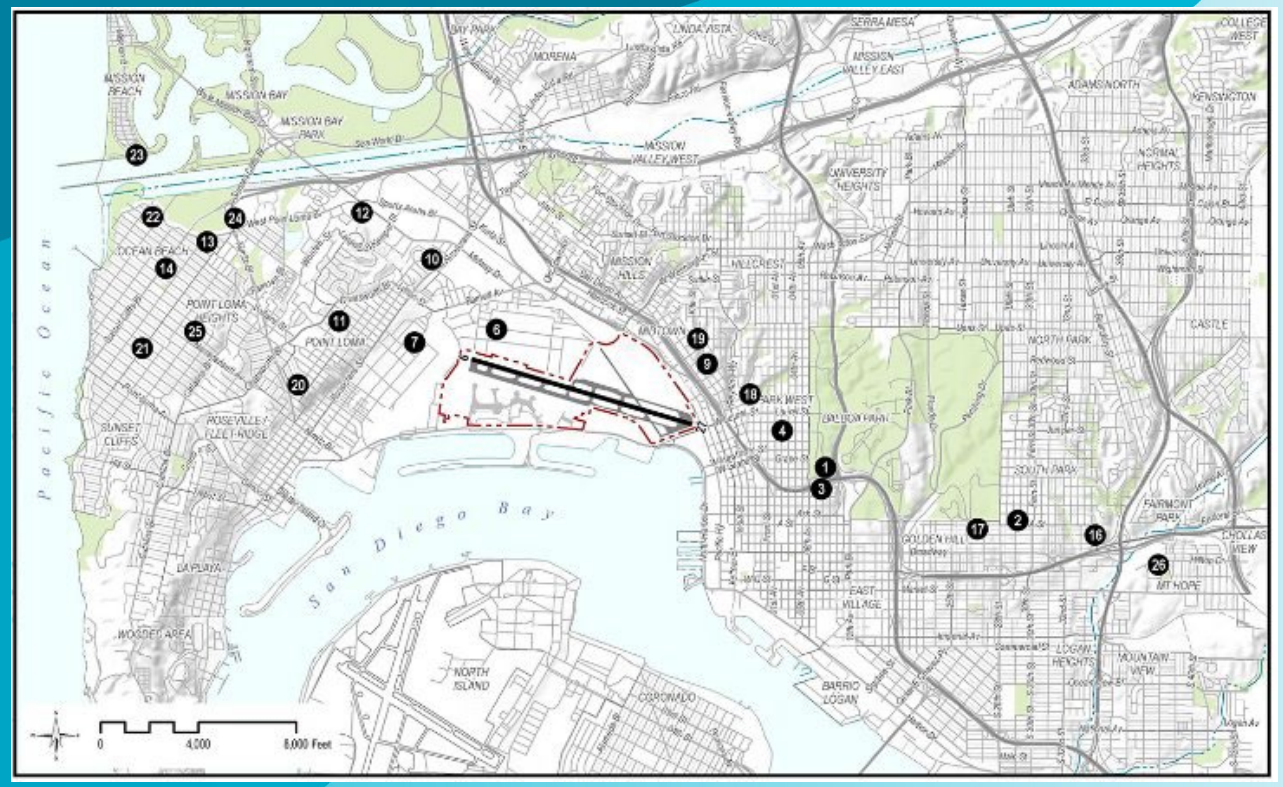

Figure 1. Map of the 23 permanent RMT locations at SAN, San Diego, CA.

Metrics

The FAA and other federal agencies have established land use compatibility guidelines based on the Community Noise Equivalent Level (CNEL).
CNEL is a weighted average of noise level over a 24–hour period.
For CNEL calculation, a penalty of 5 dBA is added for evening hours between 7:00 p.m. – 10:00 p.m.
A penalty of 10 dBA is added for the nighttime hours of 10:00 p.m. – 7:00 a.m.

The logic behind these applied penalties is that residents are usually more sensitive to noise at night and during evening hours.
CNEL is frequently used in regulations of airport noise impact on the surrounding community.
A CNEL (for aircraft noise) exceeding 65 dBA is generally considered a threshold for land use compatibility.

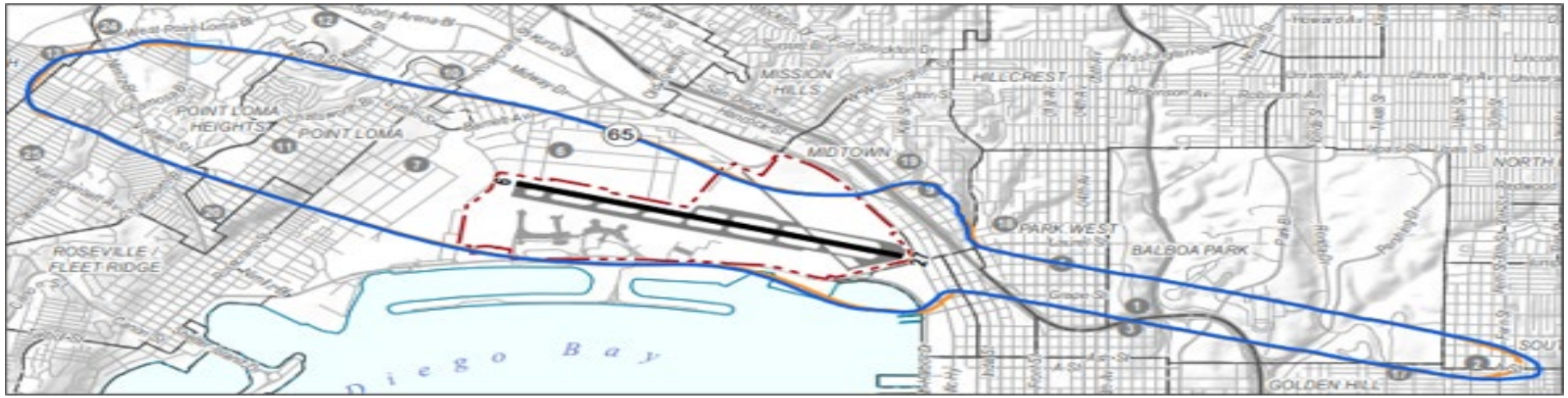

Figure 2. Example of CNEL contour
Source: 1st Quarter 2025, State of California Quarterly Noise Report for SAN.

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Noise Definitions

Noise, by definition, is unwanted sound. There are many ways to describe noise (metrics). However, the most commonly relied-on metric is the **decibel (dB)**.

A–weighting (dBA) is used to adjust (filter) for frequency range of human hearing.

A number of factors affect sound, including weather, ground effects, as well as human reaction to the noise source.

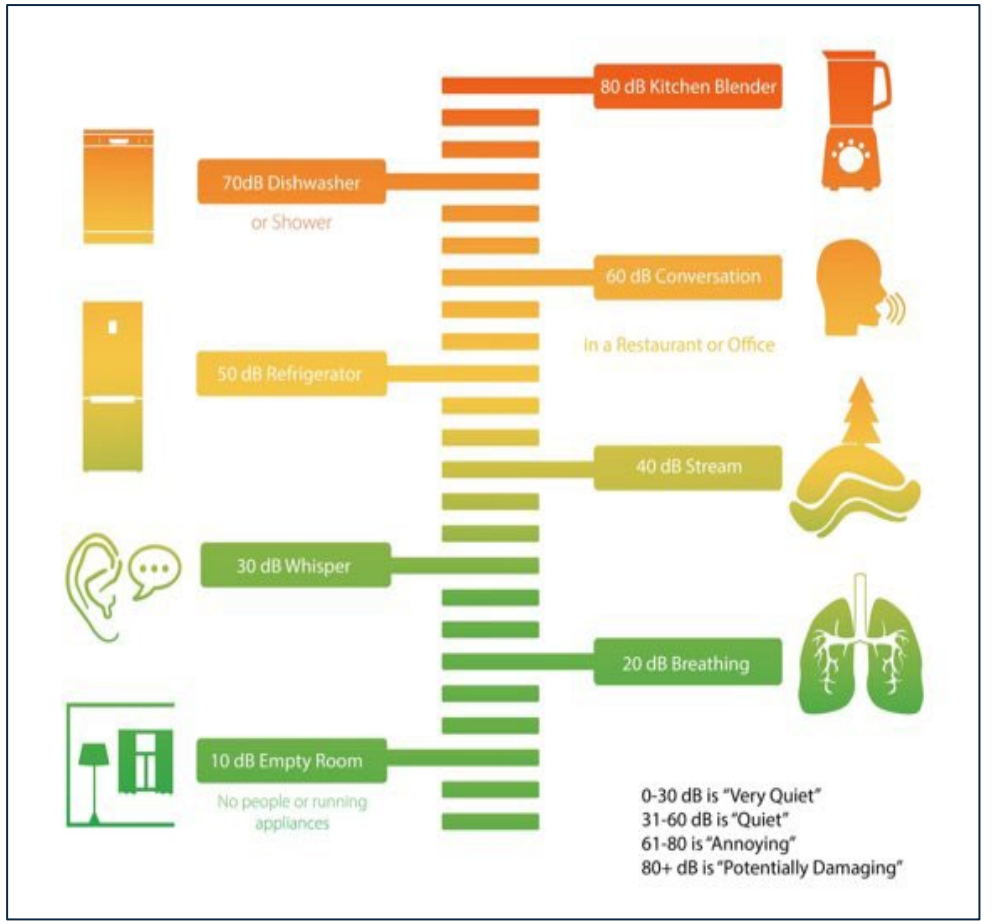

Figure 3. Common Sound Levels
Source: https://www.sylvane.com/blog/how-loud-is-a-decibel

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Noise Definitions - Continued

SEL – most common measure of cumulative noise exposure for a single aircraft flyover is the Sound Exposure Level (SEL).

Mathematically, it represents the sum of sound energy over the duration of a noise event.

Conceptually, it equates to an equivalent noise event with a one–second duration.

Lmax – Maximum Sound Level is a measurement of the peak level of a sound event.

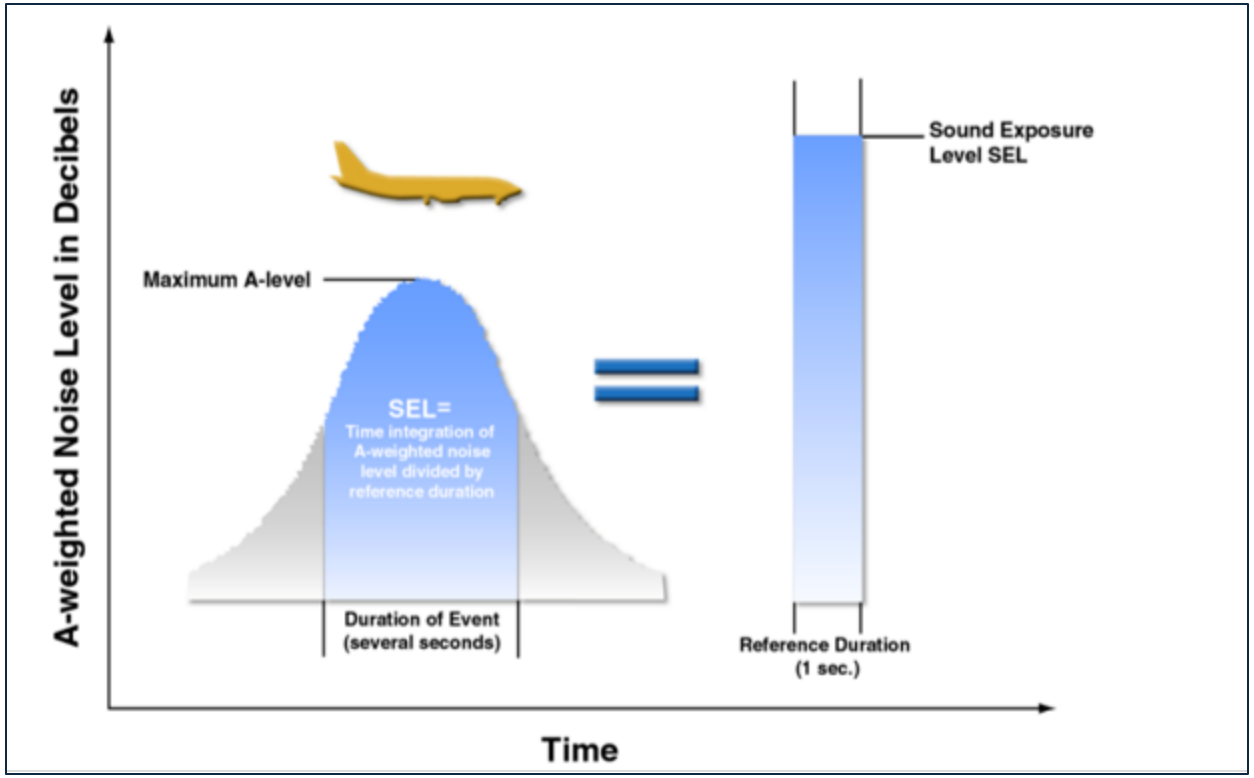

Figure 4. Sound Exposure Level and Maximum Sound Level.
Source: Brown-Buntin Associates, Inc.

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Location

Location: Hawk St, San Diego, CA 92103

Monitoring Dates: September 23 – October 6, 2025.

Distance from SAN: The monitor was located approximately 1.2 miles northeast from the center of the Airport.

On-Site Set Up: The noise monitor was placed on the patio of a private and secure property. The monitor operated continuously during the entire 14–day measurement period. The first and last days were partial measurement days, used for set–up and take–down. Adjustments to sound level thresholds were made on day four (explained on *Methodology* slides).

The monitor was placed on a dry, solid surface, and the microphone was approximately six feet above the surface and was obstruction free.

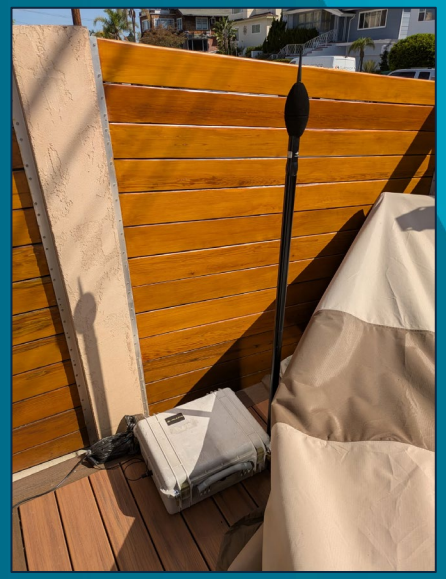


Figure 6. Portable Monitor.

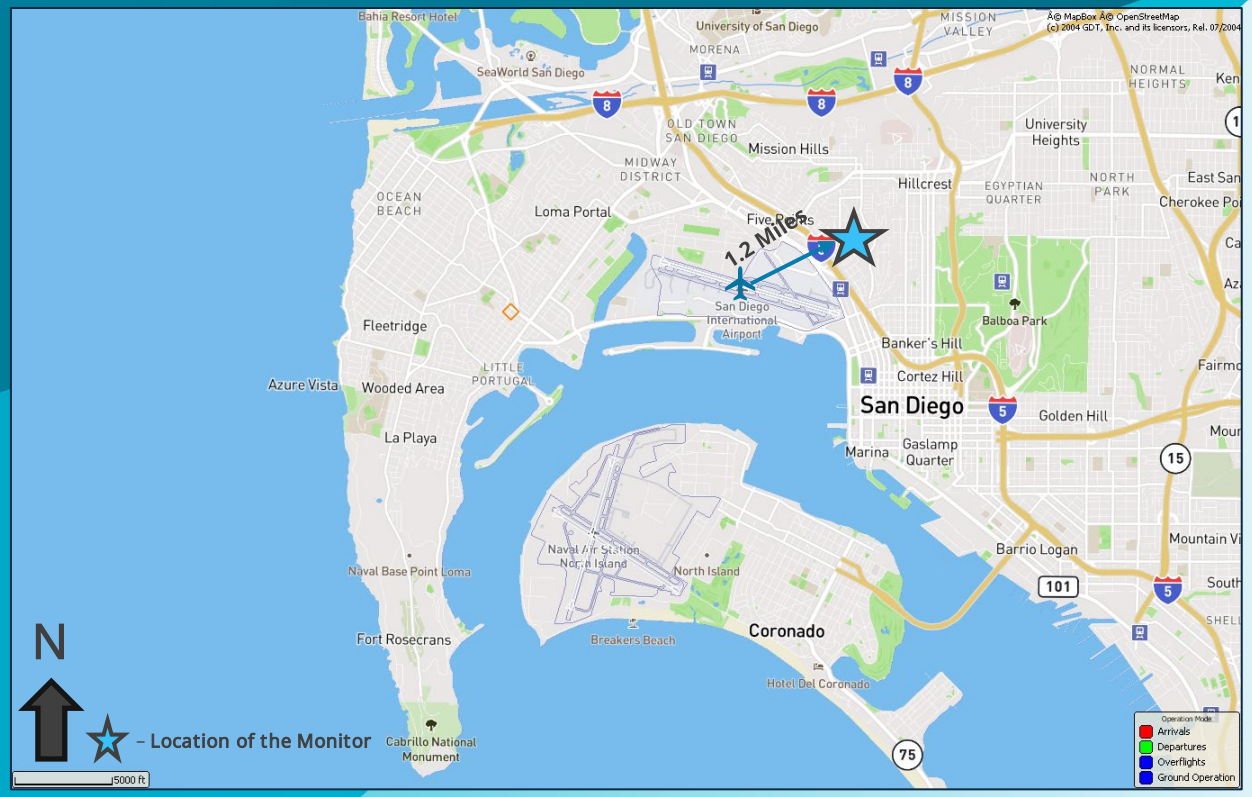


Figure 5. Map of the Portable Noise Monitoring location during September 23 – October 6, 2025

Methodology

Measurements were taken using a B&K Class I, 2250 Sound Level Meter.*
The meter is a 'precision' grade analyzer, which was calibrated prior to the test.

The following baseline thresholds were *initially* established:

64 dBA for Daytime (5:00 a.m. – 7:00 p.m.)
64 dBA for Evening (7:00 p.m. – 10:00 p.m.)
64 dBA for Nighttime (10:00 p.m. – 5:00 a.m.)

Baseline threshold levels were established to match the nearest permanent NMT. For a sound event to register, the Equivalent Continuous Sound Level (LEQ) needs to exceed the corresponding threshold, and last for a predetermined minimum duration of time:

8 seconds for Daytime
9 seconds for Evening
6 seconds for Nighttime

The maximum duration was 75 seconds for daytime, evening, and nighttime. An event would be discarded beyond that time.

For consistency, the portable monitor clock was synchronized to the same source used by ANOMS. The sound level meter recorded the following information about each noise event: date, time, duration, and noise levels.

Figure 7. B&K Class I, 2250 Sound Level Meter and associated field equipment.

Note: https://www.bksv.com/en/instruments/handheld/sound-level-meters/2250-series/type-2250-l
This meter meets Class I American National Institute Standards, Inc. (ANSI) S1.4:2014*

Methodology – Continued

After the first two full days of monitoring, it was determined the thresholds set for the B&K Class I, 2250 Sound Level Meter were not registering noise events from local aircraft. As there were only 16 recorded noise events over the first two days.

After a discussion with our consultant, *Envirosuite*, an adjustment was made to the baseline thresholds of the B&K Class I, 2250 Sound Level Meter.

The following baseline thresholds were adjusted to the numbers below on the afternoon of September 26th:

58 dBA for Daytime (5:00 a.m. – 7:00 p.m.)
58 dBA for Evening (7:00 p.m. – 10:00 p.m.)
58 dBA for Nighttime (10:00 p.m. – 5:00 a.m.)

The duration thresholds for sound events to register were also adjusted. The Equivalent Continuous Sound Level (LEQ) needed to exceed the corresponding threshold, and last for a predetermined minimum duration of time. These times were adjusted to:

5 seconds for Daytime
5 seconds for Evening
5 seconds for Nighttime

The maximum duration was adjusted to 60 seconds for daytime, evening, and nighttime. An event would be discarded beyond that time.

Figure 7. B&K Class I, 2250 Sound Level Meter and associated field equipment.

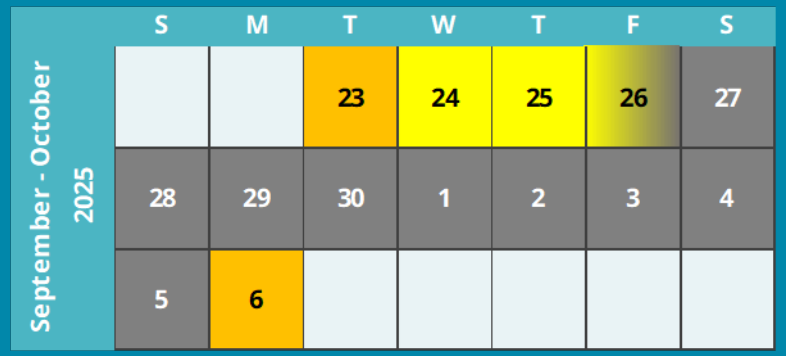
Note: https://www.bksv.com/en/instruments/handheld/sound-level-meters/2250-series/type-2250-l
This meter meets Class I American National Institute Standards, Inc. (ANSI) S1.4:2014*

Portable Noise Monitoring Summary

WHEN
WAS NOISE MEASURED

14 Days

September 23 – October 6, 2025



Partial measurement (setup / takedown) days.

Full (24–hour) initial threshold measurement days.

Full (24–hour) adjustment threshold measurement days.

HOW MANY
NOISE EVENTS OCCURRED

1,818 SAN AIRCRAFT NOISE EVENTS

39 NON–SAN AIRCRAFT NOISE EVENTS

652 COMMUNITY NOISE EVENTS

MOST FREQUENT AIRCRAFT FLIGHTS DURING THE MEASUREMENT PERIOD

Rank	Aircraft Type		Airport ID
1	B737		SAN
2	A321		SAN
3	E75L		SAN
4	B753		SAN

CONCLUSION

During the full (24-hour) nine day measurement period, post threshold adjustment, the Community Noise Equivalent Level (CNEL) from aircraft noise* was 49.4 decibels (dB), while the CNEL from community noise was 54.0 dB.

The FAA and State of California's threshold for land use compatibility is an aircraft CNEL of 65 dB.

*Aircraft CNEL only includes operations from SAN.

Aircraft CNEL	Community CNEL	Total CNEL
49	54	55

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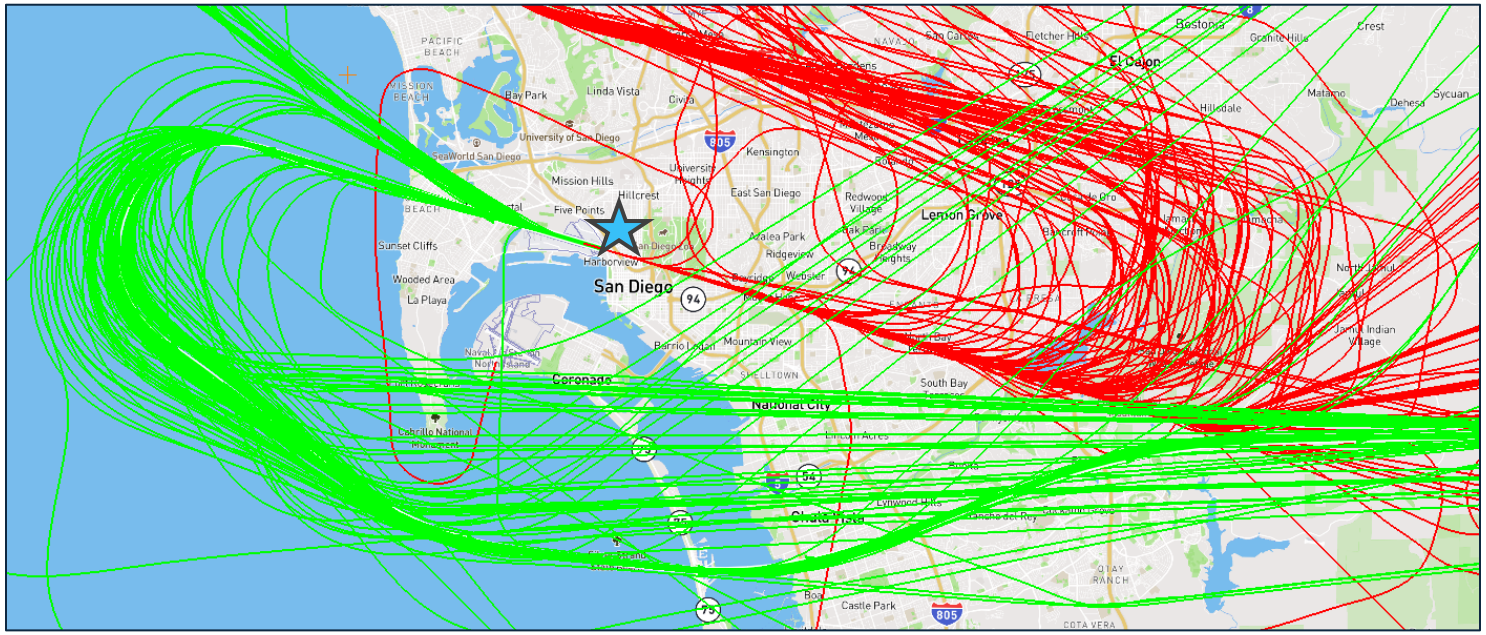
Aircraft Operations



N

↑ ★ – Location of the Monitor

Figure 8. Flight Tracks during an average day in the testing period.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Aircraft at SAN typically operate in a "west flow" pattern, where they arrive from the east and depart to the west. During inclement weather or high wind conditions, aircraft might operate in a reverse flow, departing to the east and arriving from the west. However, this "east flow" pattern is infrequent and represents approximately 2% – 5% of the total annual operations.

During the full 12–day measurement period, there were 7,695 total SAN operations: 3,848 Arrivals, and 3,846 Departures. One aircraft operated as a "Touch & Go." The average number of flights per day was 641 (rounded to nearest whole number).

Flight tracks in Figure 8 are a sample of a "typical" day taken from October 1, 2025, and represent 604 flights.

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Daily Noise Event Data: Part One

	SAN Aircraft			Multiple SAN Aircraft			Community Events		
Date	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)
9/27/2025	115	74	67	6	73	64	45	71	65
9/28/2025	154	72	65	11	72	65	34	72	67
9/29/2025	173	72	65	18	73	65	62	71	65
9/30/2025	221	73	66	14	73	65	81	72	65
10/1/2025	186	73	66	9	72	64	85	76	69
10/2/2025	236	72	65	12	74	65	80	71	65
10/3/2025	261	72	65	7	72	65	81	72	65
10/4/2025	212	77	66	7	78	66	118	78	66
10/5/2025	154	73	65	2	72	64	29	72	66

Figure 9. Daily noise events averages.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Note: Full 24–hour days of measurements, *post threshold adjustments*, are displayed.
Partial measurement (setup / takedown) and initial threshold setting days are not shown.

Note: There were multiple noise events where more than two different noise classifications occurred at the same time. Since the PNM can only detect a maximum of two events at the same time, SAN aircraft were left out when this occurred. This is due to the fact that to measure SAN aircraft noise levels accurately, less "contaminated" noise events are best.
It should be noted that total CNEL measurements, on previous and later slides, still take all recorded sound levels into account.

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Daily Noise Event Data: Part One

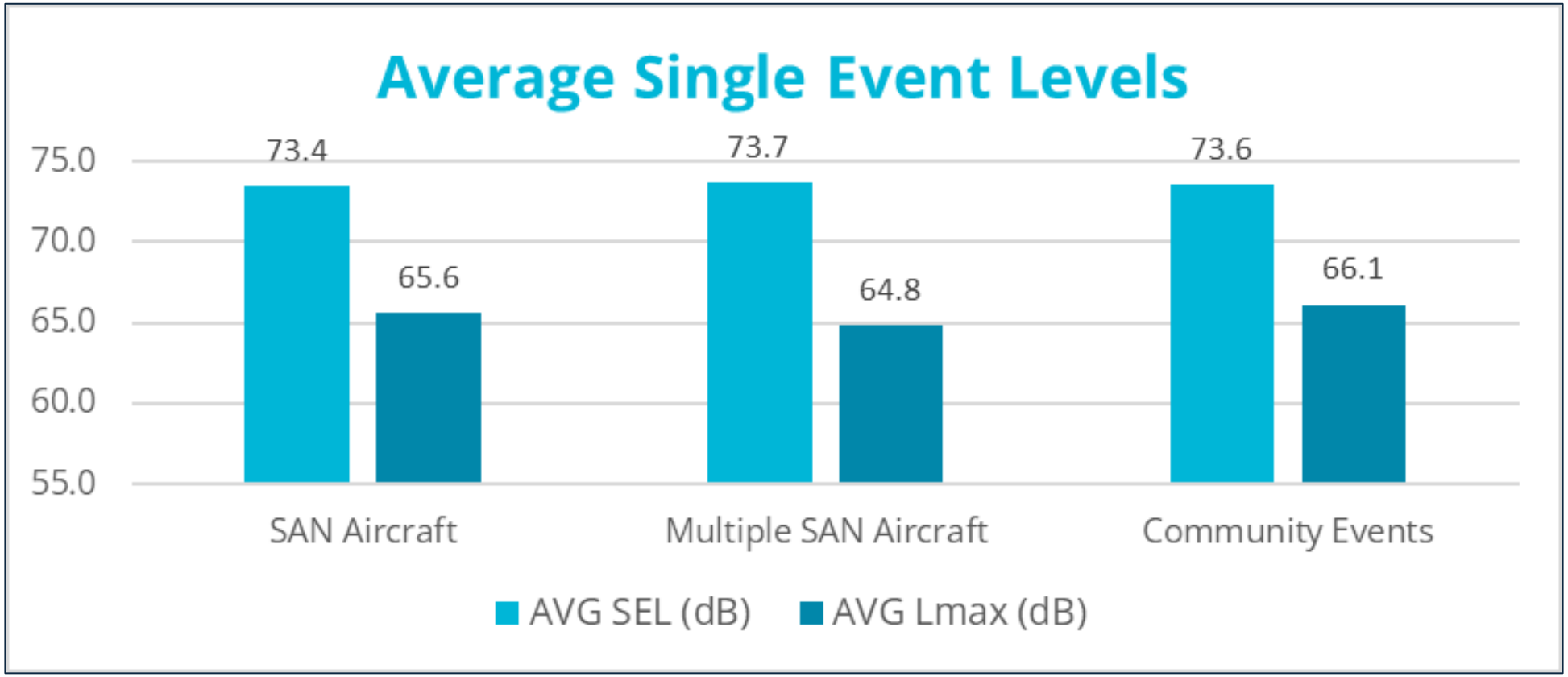

Figure 10. Daily noise events averages.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Note: Full 24–hour days of measurements, *post threshold adjustments*, are displayed.
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Daily Noise Event Data: Part Two

Date	Simultaneous SAN Aircraft & Non-SAN Aircraft			Simultaneous SAN Aircraft & Community Events			Simultaneous Non-SAN Aircraft & Community Events		
	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)	Noise Events (Quantity)	Average SEL (dB)	Average Lmax (dB)
9/27/2025	0	0	0	0	0	0	2	74	64
9/28/2025	2	74	65	1	70	64	0	0	0
9/29/2025	0	0	0	0	0	0	3	70	63
9/30/2025	0	0	0	1	69	60	0	0	0
10/1/2025	0	0	0	2	68	63	3	69	62
10/2/2025	2	72	62	0	0	0	3	71	65
10/3/2025	4	75	68	4	71	64	12	74	68
10/4/2025	2	73	63	0	0	0	3	69	62
10/5/2025	1	66	61	1	74	63	2	73	72

Figure 11. Daily noise events averages.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Note: Full 24–hour days of measurements, *post threshold adjustments*, are displayed.
Partial measurement (setup / takedown) and initial threshold setting days are not shown.

Note: There were multiple noise events where more than two different noise classifications occurred at the same time. Since the PNM can only detect a maximum of two events at the same time, SAN aircraft were left out when this occurred. This is due to the fact that to measure SAN aircraft noise levels accurately, less "contaminated" noise events are best.
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Daily Noise Event Data: Part Two

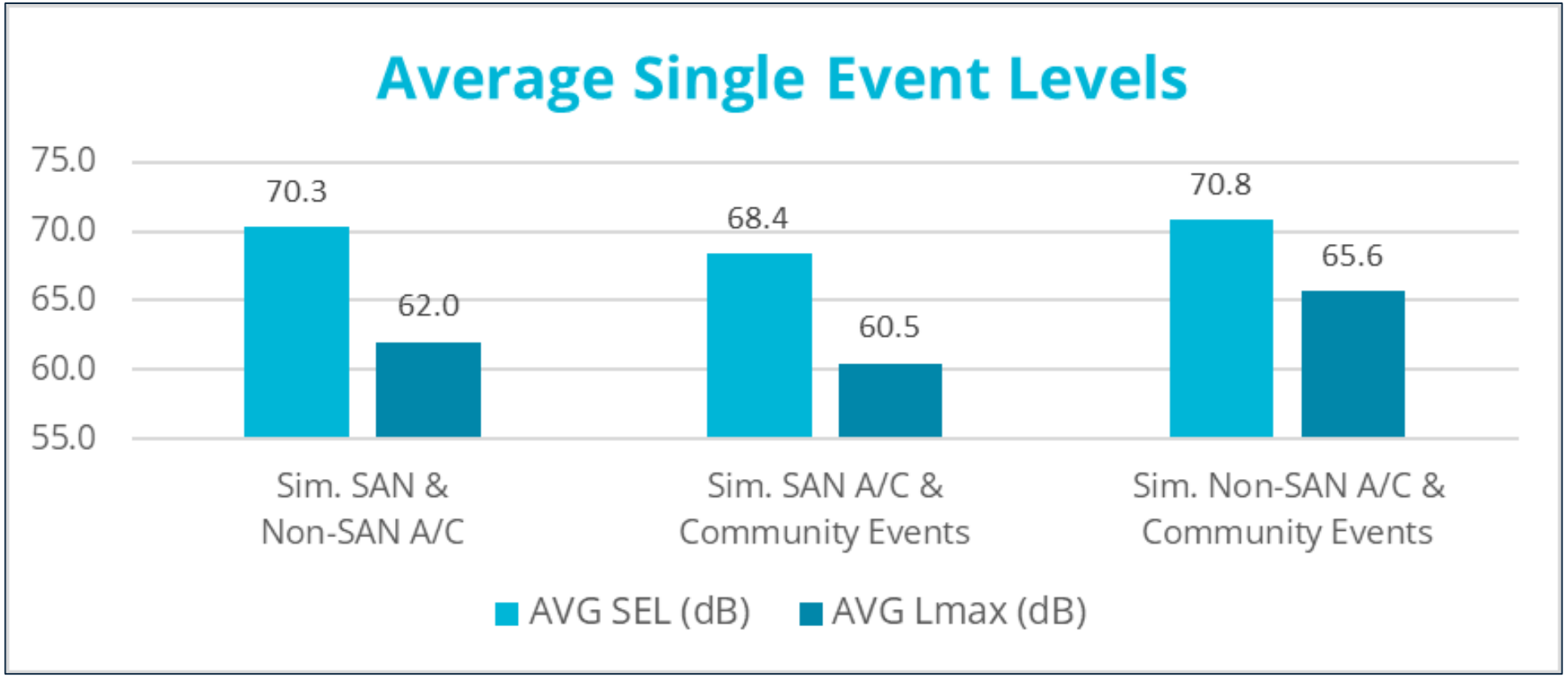

Figure 12. Daily noise events averages.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Note: Full 24–hour days of measurements, *post threshold adjustments*, are displayed. Partial measurement (setup / takedown) and initial threshold setting days are not shown.

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Loudest Aircraft Noise Events

Aircraft Type	Airline	Event Date / Time	Airport	SEL (dB)	Lmax (dB)	Altitude[1] at Lmax (Feet MSL[2])
B738	Alaska Airlines	10/3/25 6:16 PM	San Diego International Airport	89.9	79.0	-206
B739	Alaska Airlines	9/30/25 4:18 PM	San Diego International Airport	81.7	76.5	-199
B738	United Airlines	10/5/25 3:37 PM	San Diego International Airport	80.7	71.7	949
B738	Southwest Airlines	9/27/25 12:06 PM	San Diego International Airport	80.6	69.2	-199
B738	Southwest Airlines	10/4/25 6:37 AM	San Diego International Airport	79.9	69.2	-206
A321	Delta Air Lines	10/4/25 6:35 AM	San Diego International Airport	79.5	68.5	-199
B739	Alaska Airlines	9/28/25 2:39 PM	San Diego International Airport	79.3	70.9	-199
B739	United Airlines	9/27/25 12:22 PM	San Diego International Airport	79.2	69.3	-199
B739	Alaska Airlines	9/27/25 11:16 AM	San Diego International Airport	79.0	70.3	-199
B739	United Airlines	10/4/25 6:30 AM	San Diego International Airport	78.5	66.4	-206

Figure 13. Loudest aircraft noise events.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Note: Negative altitudes indicate noise event occurred below the PNM's location.
One noise event with positive altitude was due to aircraft on a missed approach procedure.

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Noise Summary

Date	Daily SAN Aircraft CNEL (dB)
9/27/2025	46
9/28/2025	46
9/29/2025	47
9/30/2025	49
10/1/2025	47
10/2/2025	50
10/3/2025	50
10/4/2025	54
10/5/2025	46

Figure 14. Daily CNEL average, SAN aircraft.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

Noise Event Breakdown	
SAN Aircraft	1,712
Multiple SAN Aircraft	86
Simultaneous SAN & Non-SAN Aircraft	11
Community Events	615
Simultaneous SAN Aircraft & Community Events	9
Simultaneous Non-SAN Aircraft & Community Events	28

Figure 15. Noise event breakdown.
Location: Hawk St., San Diego, CA.
Source: ANOMS.

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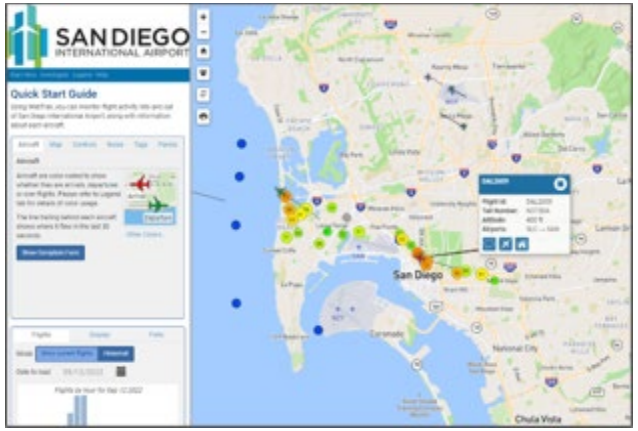
Additional Resources

If you have any additional questions about the information in this report, or any other aircraft noise related concerns, please contact our Noise Abatement Office at (619) 400 – 2660 and ask for a Noise Abatement Specialist.

For additional information you can review aircraft flight tracks, file a noise complaint, or attend an Airport Noise Advisory Committee (ANAC) meeting.



If you want to research an aircraft, you can view the near-real time flight tracks on our website:

https://webtrak.emsbk.com/san

Three ways to file a complaint:

1. On the Web: https://webtrak.emsbk.com/san
2. Through the Mobile App:
3. By Telephone: (619) 400 – 2799

Learn more about what efforts have been done to reduce aircraft noise in the community or voice a concern about aircraft noise by attending a quarterly **Airport Noise Advisory Committee meeting.**

More information can be found on our website:

https://www.san.org/meetings-and-agendas/

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Thank You
For Your Participation!

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