# Meeting Agenda
## Regular Meeting

<div style="background-color:yellow">

**6:00 p.m. Aircraft Noise Terminology Tutorial**
**7:00 p.m. Regular Roundtable Meeting**

</div>

**Wednesday, October 4, 2023**

**\*VIA HYBRID ACCESS\***

**David J. Chetcuti Community Room**
**450 Poplar Ave | Millbrae, CA 94030**
\*see attached map & parking directions

Public may also join the virtual webinar:
https://smcgov.zoom.us/j/99504028352
Or Dial in:
US: +1(669)900-6833 Webinar ID: 995 0402 8352

**AIRCRAFT NOISE TERMINOLOGY TUTORIAL**
**6:00 pm**
Followed by the SFO Community Roundtable Meeting at 7:00 p.m. (approximately).
Public comment will be taken at the end of the tutorial.

1. Aircraft Noise Terminology Tutorial                                        pg. 8
   Gene Reindel, Technical Consultant
   *Attachment: Aircraft Noise Terminology Presentation*

2. Questions and discussion on Aircraft Noise Terminology from Roundtable Members
   Gene Reindel, Technical Consultant
   Bert Ganoung, Aircraft Noise Office Manager

**SFO Community Roundtable Regular Meeting**
**Meeting No. 346**
**7:00pm**

This meeting of the San Francisco Airport Community Roundtable will be in person at the above mentioned address. Members of the public will be able to participate in the meeting remotely via the Zoom platform or in person at David J. Chetcuti Community Room 450 Poplar Avenue, Millbrae, CA 94030 and Belle Haven Library, 413 Ivy Drive, Menlo Park, CA 94025. For information regarding how to

*Working together for quieter skies* ✈

San Francisco International Airport/Community Roundtable
455 County Center – 2nd Floor, Redwood City, CA 94063
T (650) 363-4220  sforoundtable.org

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participate in the meeting, either in person or remotely, please refer to instructions at the end of the agenda.

**HYBRID PUBLIC PARTICIPATION:**
List of attendees (using zoom sign-in credentials) will be displayed periodically throughout the meeting.

Public Comment
*Written public comments can be emailed to amontescardenas@smcgov.org, and should include specific agenda item to which you are commenting.
*Spoken public comments will also be accepted during the meeting in-person or via Zoom on Items NOT on the Agenda, Consent Agenda, for each Regular Agenda Item and at the end of Presentations, at the option of the speaker.

**Please see instructions for written and spoken comments at the end of this agenda.

**ADA Requests**
Individuals who require special assistance or a disability-related modification or accommodation to participate in this meeting, or who have a disability and wish to request an alternative format for the agenda packet or other writings that may be distributed at the meeting, should contact Angela Montes, as early as possible but no later than 10:00am the day before the meeting at amontescardenas@smcgov.org. Notification in advance of the meeting will enable Staff to make reasonable arrangements to ensure accessibility to this meeting, the materials related to it, and your ability to comment.

## AGENDA

Call to Order / Roll Call / Declaration of a Quorum Present
Sam Hindi, Roundtable Chairperson

Public Comment on Items NOT on the Agenda
Speakers are limited to two minutes. Roundtable members cannot discuss or take action on any matter raised under this item.

Action to set Agenda and to Approve Consent Items
Sam Hindi, Roundtable Chairperson

## CONSENT AGENDA

All items on the Consent Agenda are approved/accepted in one motion. A Roundtable Representative can make a request, prior to action on the Consent Agenda, to transfer a Consent Agenda item to the Regular Agenda. Any items on the Regular Agenda may be transferred on the Consent Agenda in a similar manner. Public Comment is received prior to approval of the Consent Agenda.

1.  Approval of Draft Minutes

        a. August 2, 2023 Regular Meeting                                                    pg. 31

2. Airport Director's Reports

## PRESENTATIONS
*Public Comment on Presentation items will be taken after the last item under presentations.*

4. FAA Update on NIITE/HUSSH - SFO Nighttime Noise Abatement Departure Procedure
   Joseph Bert, FAA Western Region Team Manager

5. NCT – NorCal TRACON – Northern California Terminal Radar Approach Control — pg. 50
   Jason Stoddard, HMMH Airspace Analyst
   *Attachment: Northern California Terminal Radar Approach Control (NorCal TRACON) Overview*

6. Chairman's Update — pg. 63
   Sam Hindi, Roundtable Chairperson
   *Attachment(s): TRACON flyer*

7. Airport Director's Update
   Ivar Satero, Airport Director

   a. Noise Office Update
      Bert Ganoung, SFO Noise Office Manager

8. Aircraft Noise Terminology Tutorial: Continued questions and discussion
   Gene Reindel, Technical Consultant
   Bert Ganoung, Aircraft Noise Office Manager

9. Subcommittee Updates

   a. Technical Working Group on August 29, 2023 — pg. 65
      Sam Hindi, Roundtable Chairperson
      *Attachment: Subcommittee Agenda*

   b. Portable Noise Monitor Placement Ad-Hoc on September 22, 2023 — pg. 68
      Cecilia Taylor, PNMP Ad-Hoc Subcommittee Chairperson
      *Attachment: Subcommittee Agenda*

## MEETING CLOSURE

10. Member Communications / Announcements
    Roundtable Members and Staff

11. Adjourn
    Sam Hindi, Roundtable Chairperson

<u>Information Only</u>

## **\*\*Instructions for Public Comment during Meeting**

During the meeting, members of the public may address the Membership as follows:

### **Written Comments:**
Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:
1. Your written comment should be emailed to sforoundtable@smcgov.org
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 5:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

### **Spoken Comments:**
In-person Participation:
1. If you wish to speak to the Membership, please fill out a speaker's slip located at the entrance. If you have anything you wish distributed to the Membership and included in the official record, please hand it to the Clerk who will distribute the information to the Membership and Staff.

Via Teleconference (Zoom):
1. The meeting may be accessed through Zoom online at https://smcgov.zoom.us/s/99504028352. The webinar ID: 995 0402 8352. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering webinar ID then press #. Members of the public can also attend this meeting physically in the David J. Chetcuti Community Room 450 Poplar Avenue, Millbrae, CA 94030 and Belle Haven Library, 413 Ivy Drive, Menlo Park, CA 94025.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.

### **\*Additional Information:**
For any questions or concerns regarding Zoom, including troubleshooting, privacy, or security settings, please contact Zoom directly.

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**Note:** Public records that relate to any item on the open session Agenda (Consent and Regular Agendas) for a Regular Airport/Community Roundtable Meeting are available for public inspection. Those records that are distributed less than 72 hours prior to a Regular Meeting are available for public inspection at the same time they are distributed to all Roundtable Members, or a majority of the Members of the Roundtable. The Roundtable has designated the San Mateo County Planning & Building Department, at 455 County Center, 2nd Floor Redwood City, California 94063, for the purpose of making those public records available for inspection. The documents are also available on the Roundtable website at: www.sforoundtable.org.

# Welcome

The Airport/Community Roundtable is a voluntary committee that provides a public forum to address community noise issues related to aircraft operations at San Francisco International Airport. The Roundtable encourages orderly public participation and has established the following procedure to help you, if you wish to present comments to the committee at this meeting in-person or via Zoom.

- For written comments you may email your comments ahead of time to sforoundtable@smcgov.org.

- To speak during the meeting in-person, submit a speaker slip to staff.

- To speak during the meeting via Zoom, you may use "raise-hand."

- The Roundtable Staff will call your name and allow you to speak. Full instructions in agenda below.

The Roundtable may receive several speaker requests on more than one Agenda item; therefore, each speaker is limited to two (2) minutes to present his/her comments on any Agenda item unless given more time by the Roundtable Chairperson. The Roundtable meetings are recorded. Video file of meeting will posted to website once available. Please contact the Roundtable Coordinator for any request.

Roundtable Meetings are accessible to people with disabilities. Individuals who need special assistance or a disability-related modification or accommodation to participate in this meeting, or who have a disability and wish to request an alternative format for the Agenda, Meeting Packet, or other writings that may be distributed at the meeting, should contact the Roundtable Coordinator at least two (2) working days before the meeting at the phone or e-mail listed below. Notification in advance of the meeting will enable Roundtable staff to make reasonable arrangements to ensure accessibility to this meeting.

# About the Roundtable

**The Airport/Community Roundtable was established in May 1981, by a Memorandum of Understanding (MOU), to address noise impacts related to aircraft operations at San Francisco International Airport (SFO).** The Airport is owned and operated by the City and County of San Francisco, but it is located entirely within San Mateo County.  This voluntary committee consists of 24 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and several cities in San Mateo County (see attached Membership Roster). It provides a forum for the public to address local elected officials, Airport management, FAA staff, and airline representatives, regarding aircraft noise issues. The committee monitors a performance-based aircraft noise mitigation program, as implemented by Airport staff, interprets community concerns, and attempts to achieve additional noise mitigation through a cooperative sharing of authority brought forth by the airline industry, the FAA, Airport management, and local government officials. The Roundtable adopts an annual Work Program to address key issues. In 2023, the Roundtable is scheduled to meet on the first Wednesday of the following months: February, April, June, August, October and December.  Regular Meetings are held on the first Wednesday of the designated month at 7:00 p.m. at **the David Chetcuti Community Room at 450 Poplar Avenue, Millbrae, California unless otherwise noted. Meetings are also broadcast via Zoom to encourage public participation.** Special Meetings and workshops are held as needed. The members of the public are encouraged to attend the meetings and workshops to express their concerns and learn about airport/aircraft noise and operations.

POLICY STATEMENT
The Airport/Community Roundtable reaffirms and memorializes its longstanding policy regarding the "shifting" of aircraft-generated noise, related to aircraft operations at San Francisco International Airport, as follows:

> **"The Airport/Community Roundtable members, as a group, when considering and taking actions to mitigate noise, will not knowingly or deliberately support, encourage, or adopt actions, rules, regulations or policies, that result in the "shifting" of aircraft noise from one community to another, when related to aircraft operations at San Francisco International Airport."**
> *(Source:  Roundtable Resolution No. 93-01)*

FEDERAL PREEMPTION, RE:  AIRCRAFT FLIGHT PATTERNS

The authority to regulate flight patterns of aircraft is vested exclusively in the Federal Aviation Administration (FAA). Federal law provides that:

> "No state or political subdivision thereof and no interstate agency or other political agency of two or more states shall enact or enforce any law, rule, regulation, standard, or other provision having the force and effect of law, relating to rates, routes, or services of any air carrier having authority under subchapter IV of this chapter to provide air transportation."
> *(Source: 49 U.S.C. A. Section 1302(a)(1)).*

# Member Roster

March 2023

**CITY AND COUNTY OF SAN FRANCISCO**
**BOARD OF SUPERVISORS**
Vacant

**CITY AND COUNTY OF SAN FRANCISCO MAYOR'S OFFICE**
Alexandra Sweet, (Appointed)

**CITY AND COUNTY OF SAN FRANCISCO AIRPORT COMMISSION REPRESENTATIVE**
Ivar Satero, Airport Director (Appointed)
Alternate: Doug Yakel, Public Information Officer

**COUNTY OF SAN MATEO**
**BOARD OF SUPERVISORS**
Dave Pine
Alternate: Warren Slocum

**CITY/COUNTY ASSOCIATION OF GOVERNMENTS AIRPORT LAND USE COMMITTEE (ALUC)**
Carol Ford (Appointed)

**TOWN OF ATHERTON**
Stacy Holland
Alternate: Diana Hawkins-Manelian

**CITY OF BELMONT**
Robin Pang-Maganaris
Alternate: Davina Hurt

**CITY OF BRISBANE**
Terry O'Connell
Alternate: Madison Davis

**CITY OF BURLINGAME**
Ricardo Ortiz
Alternate: Peter Stevenson

**TOWN OF COLMA**
John Goodwin
Alternate: Joanne del Rosario

**CITY OF DALY CITY**
Pamela DiGiovanni
Alternate: Rod Daus-Magbual

**CITY OF EAST PALO ALTO**
Vacant
Alternate: Antonio Lopez

**CITY OF FOSTER CITY**
Sam Hindi
Alternate: Jon Froomin

**CITY OF HALF MOON BAY**
Harvey Rarback
Alternate: Deborah Ruddock

**TOWN OF HILLSBOROUGH**
Alvin Royse
Alternate: Christine Krolik

**CITY OF MENLO PARK**
Cecilia Taylor
Alternate: Drew Combs

**CITY OF MILLBRAE**
Ann Schneider
Alternate: Angelina Cahalan

**CITY OF PACIFICA**
Christine Boles
Alternate: Sue Vaterlaus

**TOWN OF PORTOLA VALLEY**
Judith Hasko
Alternate: Craig Hughes

**CITY OF REDWOOD CITY**
Alicia Aguirre
Alternate: Elmer Martinez Saballos

**CITY OF SAN BRUNO**
Sandy Alvarez
Alternate: Tom Hamilton

**CITY OF SAN CARLOS**
Pranita Venkatesh
Alternate: John Dugan

**CITY OF SAN MATEO**
Rob Newsom
Alternate: Lisa Diaz Nash

**CITY OF SOUTH SAN FRANCISCO**
Mark Addiego
Alternate: Mark Nagales

**TOWN OF WOODSIDE**
Paul Goeld
Alternate: Vacant

<u>ROUNDTABLE ADVISORY MEMBERS</u>

**AIRLINES/FLIGHT OPERATIONS**
Chief Pilot Lawrence Ellis, United Airlines

**FEDERAL AVIATION ADMINISTRATION**
Erik Amend, Acting Regional Administrator
Faviola Garcia, Deputy Regional Administrator
Carlette Young, Office of Regional Administrator
Joseph Bert, Team Manager, Western Service Center

**ROUNDTABLE STAFF**
Kathleen Wentworth, Roundtable Coordinator
Angela Montes, Roundtable Administrative Secretary
Gene Reindel, Technical Consultant (HMMH)

**SFO AIRPORT NOISE OFFICE STAFF**
Nupur Sinha, Director of Planning & Environmental Affairs
Bert Ganoung, Aircraft Noise Office Manager

# Aircraft Noise Terminology

SFO Airport/Community Noise Roundtable
October 2023

# Purpose:

- To become familiar with aircraft noise terminology

- To understand single-event noise levels and metrics

- To understand cumulative noise levels and metrics

## Presentation Outline:

- Definitions of commonly used aircraft noise metrics

- How single-event noise levels build up to a cumulative noise level

- Introduction to other (less commonly used) noise metrics
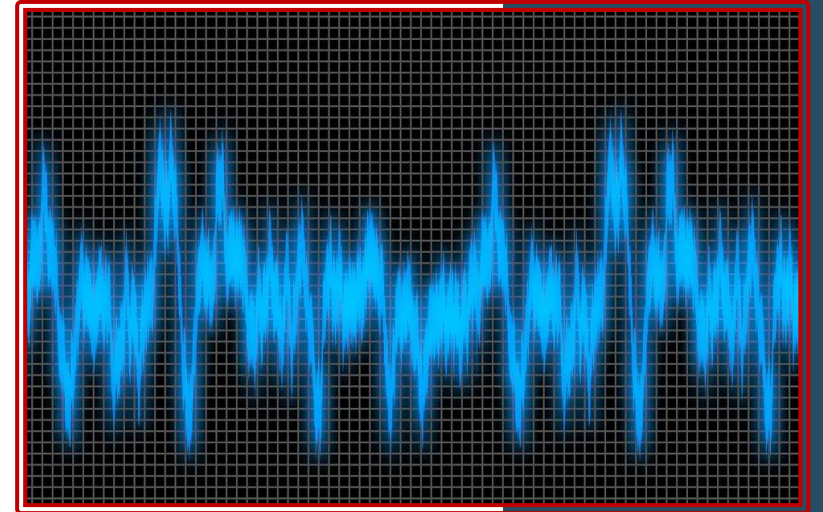
# A-Weighted Sound Level

- Human auditory system not equally sensitive to all frequencies

- A-weighting measures sound the way we hear it

- The EPA has adopted the A-weighted sound level for environmental analyses



Where *we* hear best
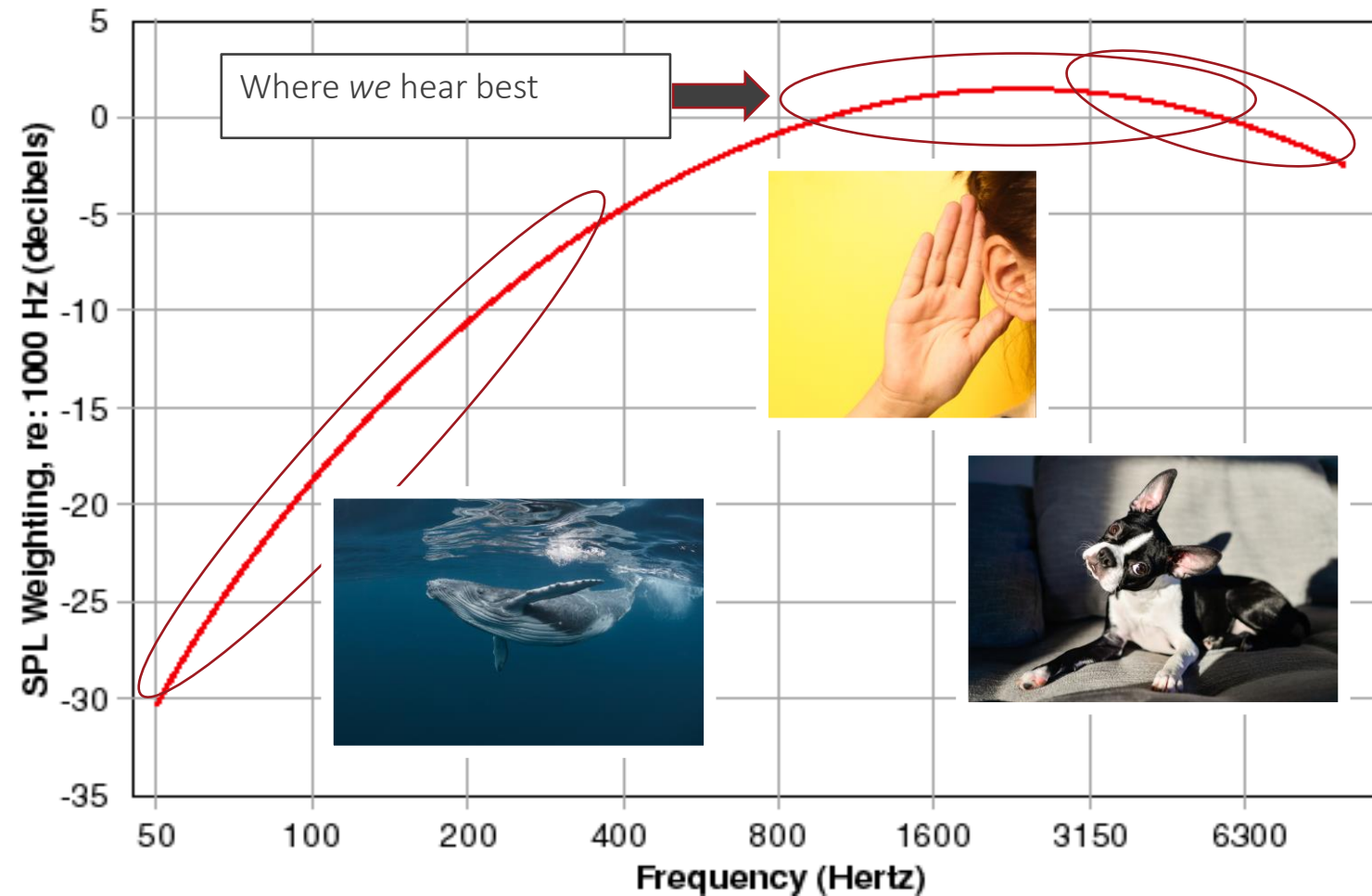
# Low-Frequency Noise

- At locations near an airport that are affected by ground noise, such as:

  - Behind the start-of-takeoff-roll

  - Sideline to runways where aircraft are still on the ground:

    - During departure roll

    - Upon arrival using thrust reverse to slow down on the runway

  - Locations protected by noise barriers

Note: *Jet aircraft maximum noise levels are generally directed 120 degrees from the aircraft heading (30 degrees back from sideline)*

# C-Weighting Versus A-Weighting

- **A-Weighting:** Like the human ear, discounts the lower and higher frequencies that the average person does not hear well

- **C-Weighting:** Represents what humans hear when the sound is very loud (like a noisy factory); becoming more sensitive to the lower frequencies



A- and C-weighting Correction Levels

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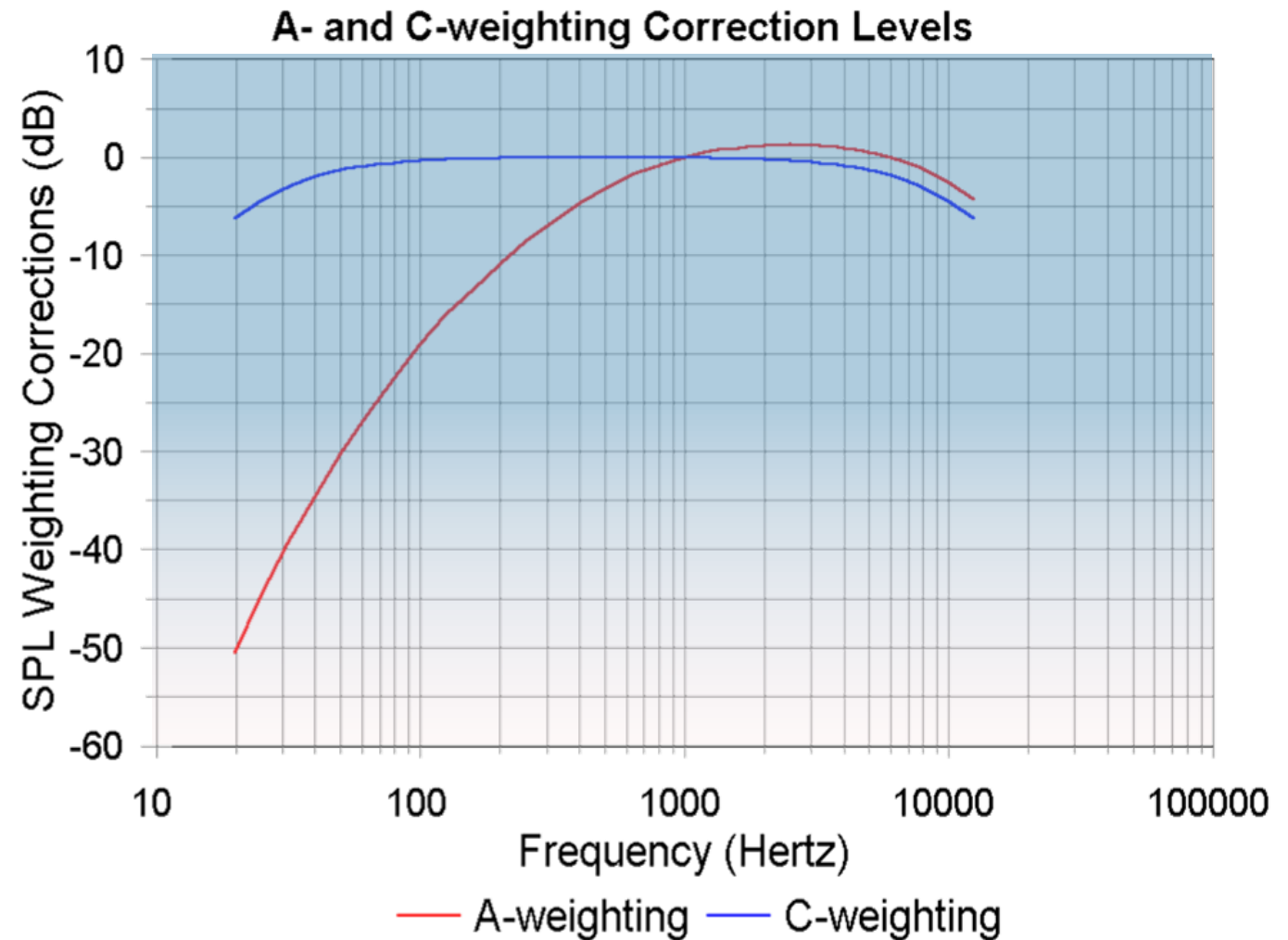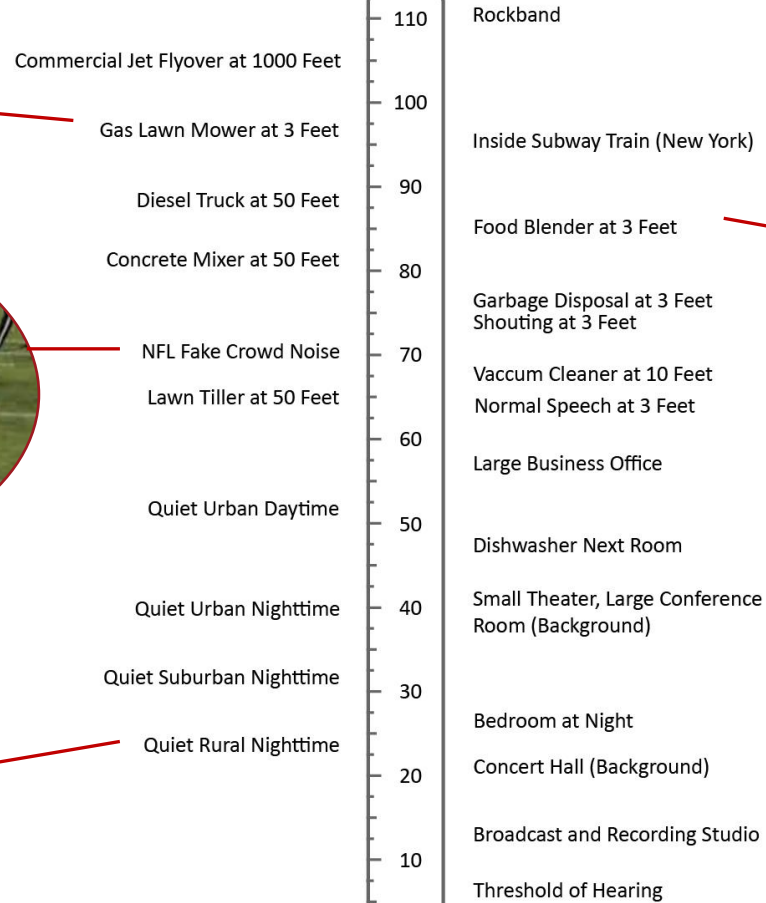
# Maximum Sound Level

- Because of the variation in level of a noise event, it is convenient to describe the event with its maximum sound level, abbreviated as $L_{max}$

- $L_{max}$ accounts only for sound amplitude (A-weighted sound level), not duration

- Two events may have the same maximum level, but much different exposures
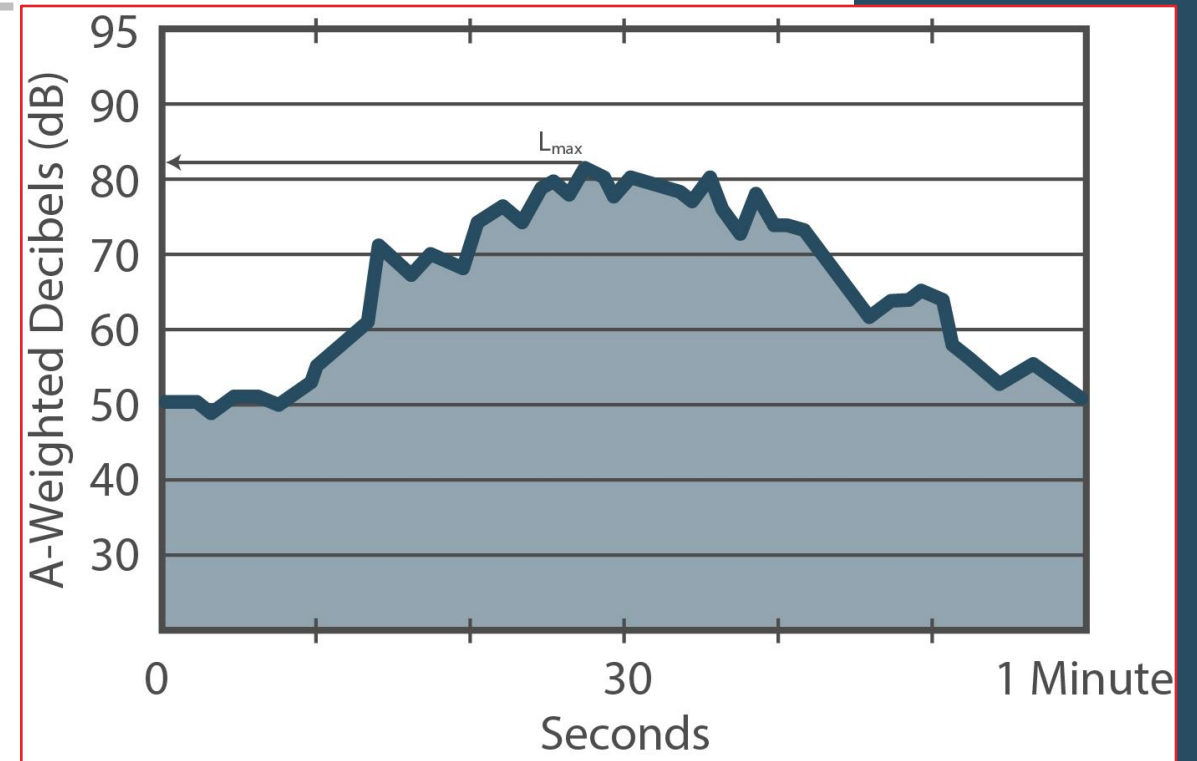
# Common Environmental A-weighted Sound Levels



| Common Outdoor Sound Levels | A-Weighted Noise Level (dB) | Common Indoor Sound Levels |
|---|---|---|
| | 110 | Rockband |
| Commercial Jet Flyover at 1000 Feet | | |
| | 100 | |
| Gas Lawn Mower at 3 Feet | | Inside Subway Train (New York) |
| | 90 | |
| Diesel Truck at 50 Feet | | Food Blender at 3 Feet |
| Concrete Mixer at 50 Feet | 80 | |
| | | Garbage Disposal at 3 Feet |
| | | Shouting at 3 Feet |
| NFL Fake Crowd Noise | 70 | Vaccum Cleaner at 10 Feet |
| Lawn Tiller at 50 Feet | | Normal Speech at 3 Feet |
| | 60 | |
| | | Large Business Office |
| Quiet Urban Daytime | 50 | |
| | | Dishwasher Next Room |
| Quiet Urban Nighttime | 40 | Small Theater, Large Conference Room (Background) |
| Quiet Suburban Nighttime | 30 | |
| | | Bedroom at Night |
| Quiet Rural Nighttime | 20 | Concert Hall (Background) |
| | | Broadcast and Recording Studio |
| | 10 | |
| | | Threshold of Hearing |
| | 0 | |

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# Time Above a Threshold Level (TA)

- Another means of describing noise events is TA, the amount of time the level is above a threshold sound level

- TA accounts only for duration, but not magnitude



Time Above 60 dBA = 38 sec.
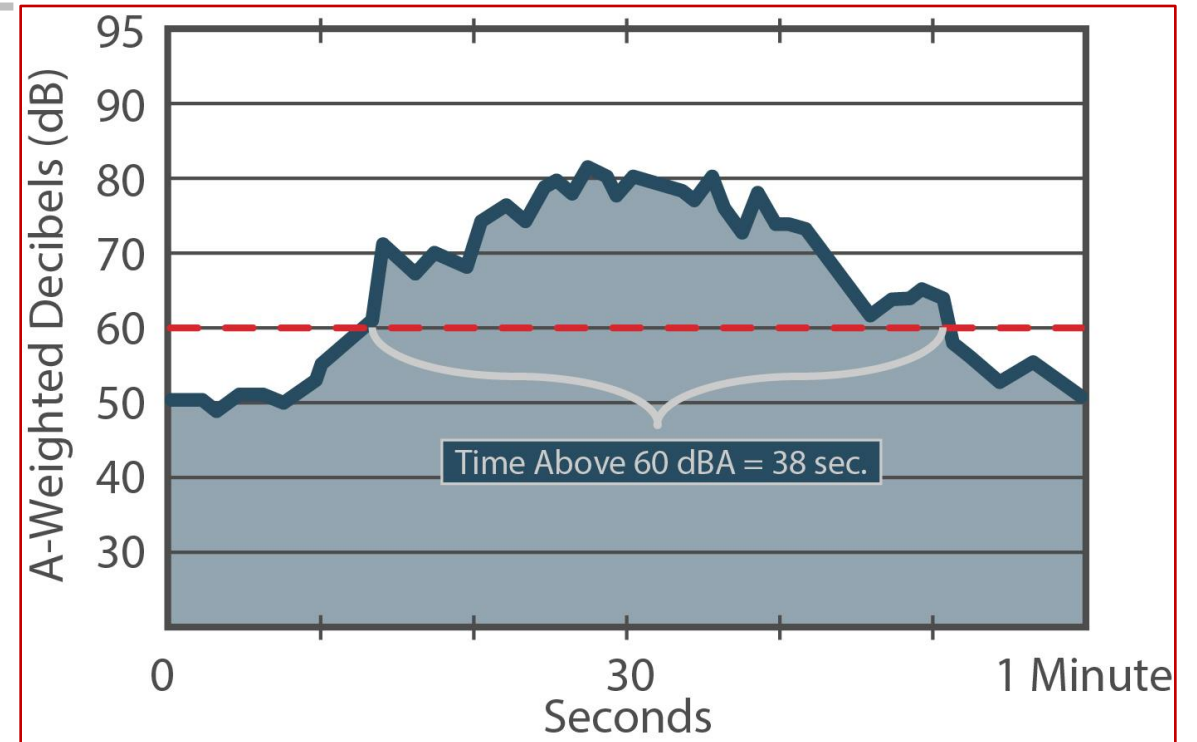
# Number of Events Above a Threshold Level (N-Above or NA)

- People often understand number of events above a given level better than DNL

- In this example:
  - N80= 1
  - N70= 3
  - N60= 6

- N-Above may be useful for evaluating sleep disturbance (select threshold based on sleep disturbance criterion)
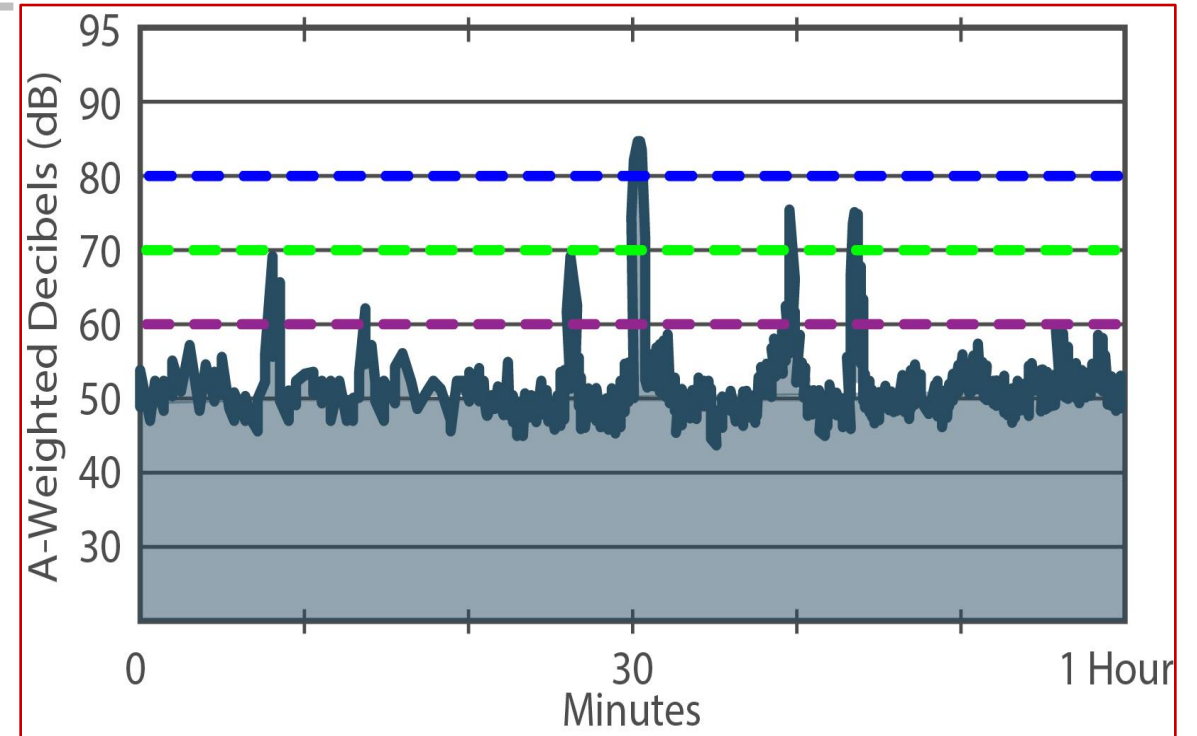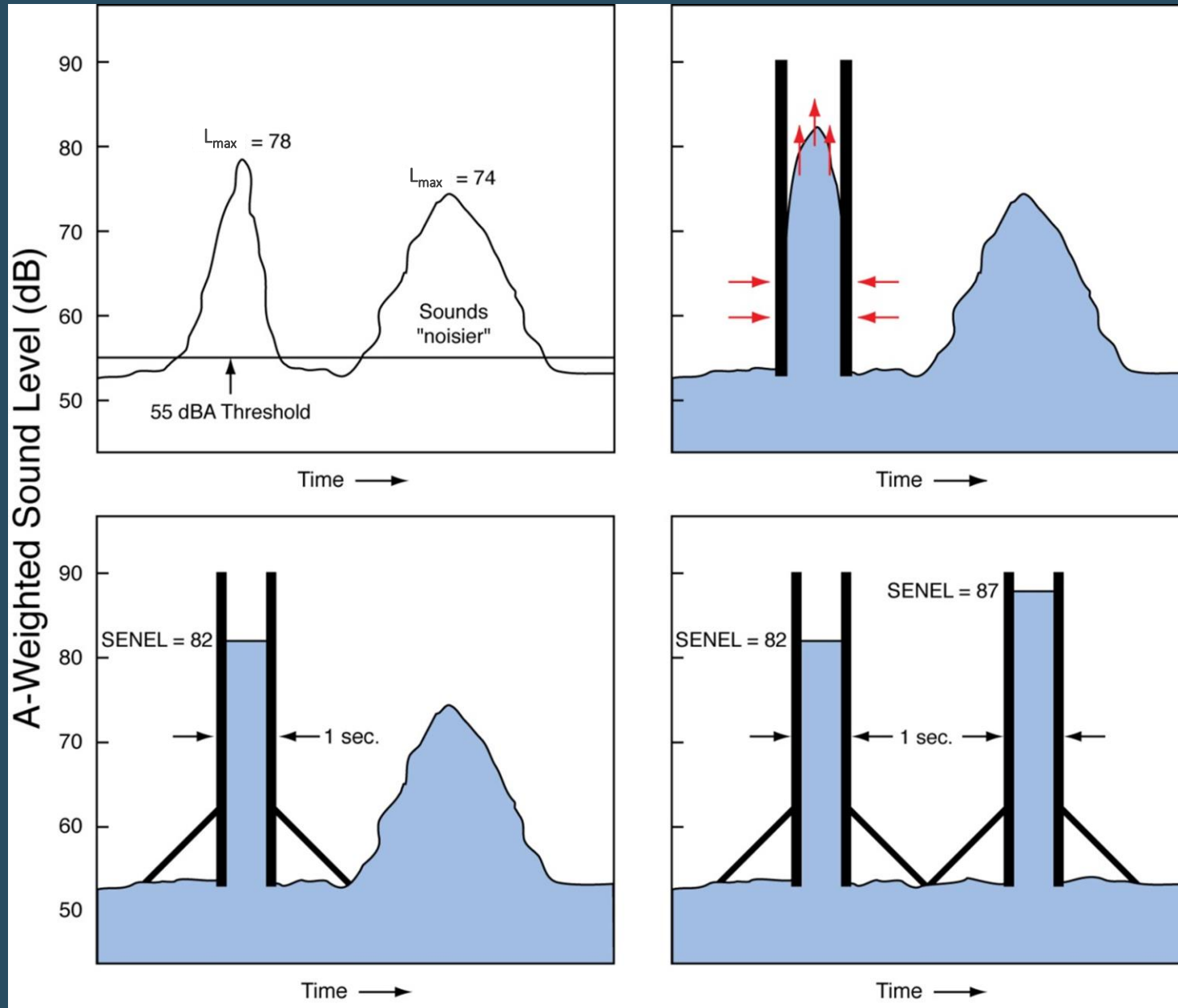
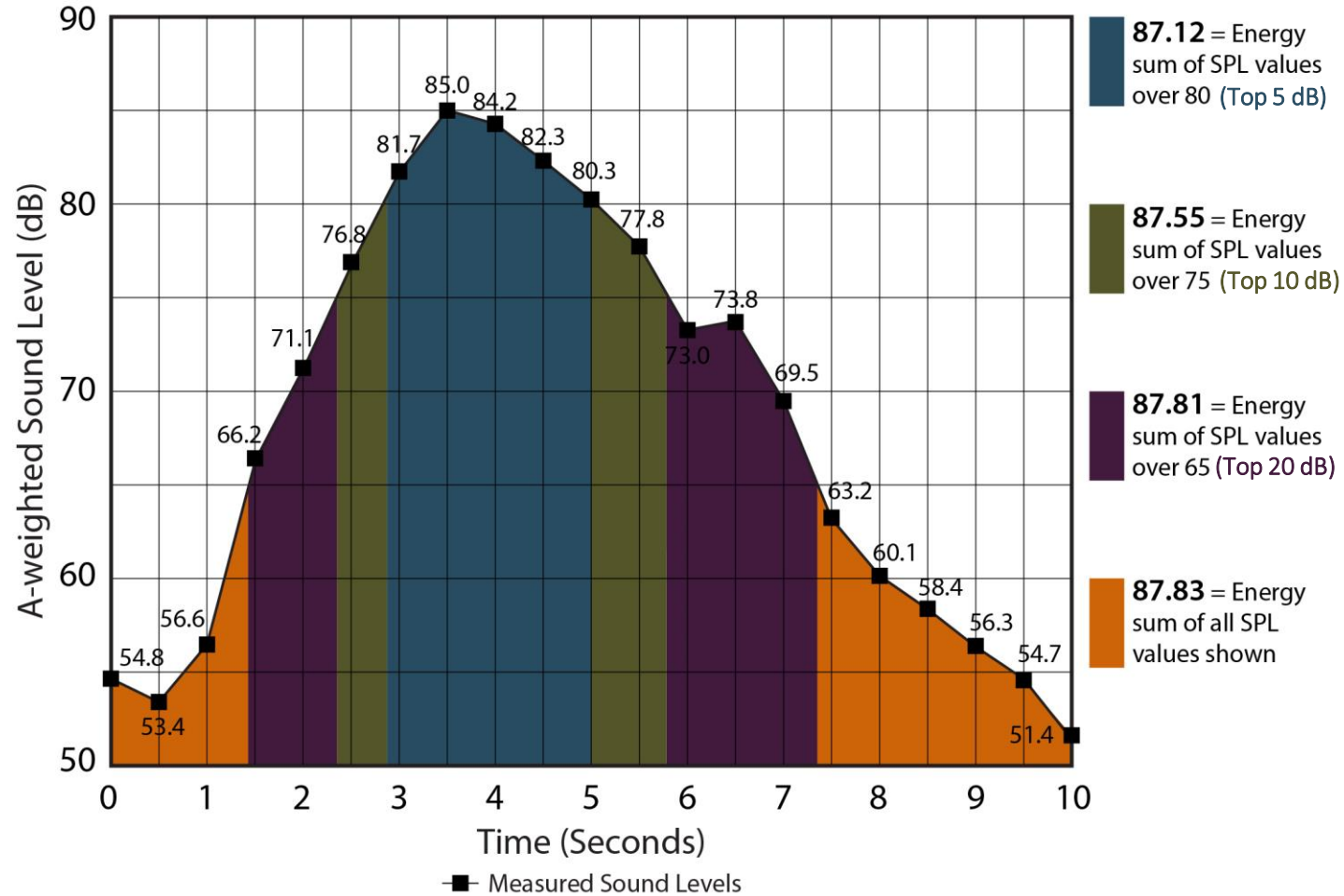# Sound Exposure Level (SEL)

- SEL is a way to describe the "noisiness" of a complete noise event

- SEL accounts for:

  - Noise level

  - Noise event duration

- Single Event Noise Exposure Level (SENEL)

  - Essentially the same as SEL

  - Requires a "predetermined threshold noise level"

SENEL / L$_{max}$ Comparison

Concept Illustration

# SEL Sample Calculation

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# Equivalent Sound Level ($L_{eq}$)

- $L_{eq}$ is a constant noise level, "equivalent" (on an energy basis) to a time-varying sound level over the same duration

- $L_{eq}$ is time-averaged

- $L_{eq}$ accounts for noise level and time

- $L_{eq}$ is a "cumulative" metric
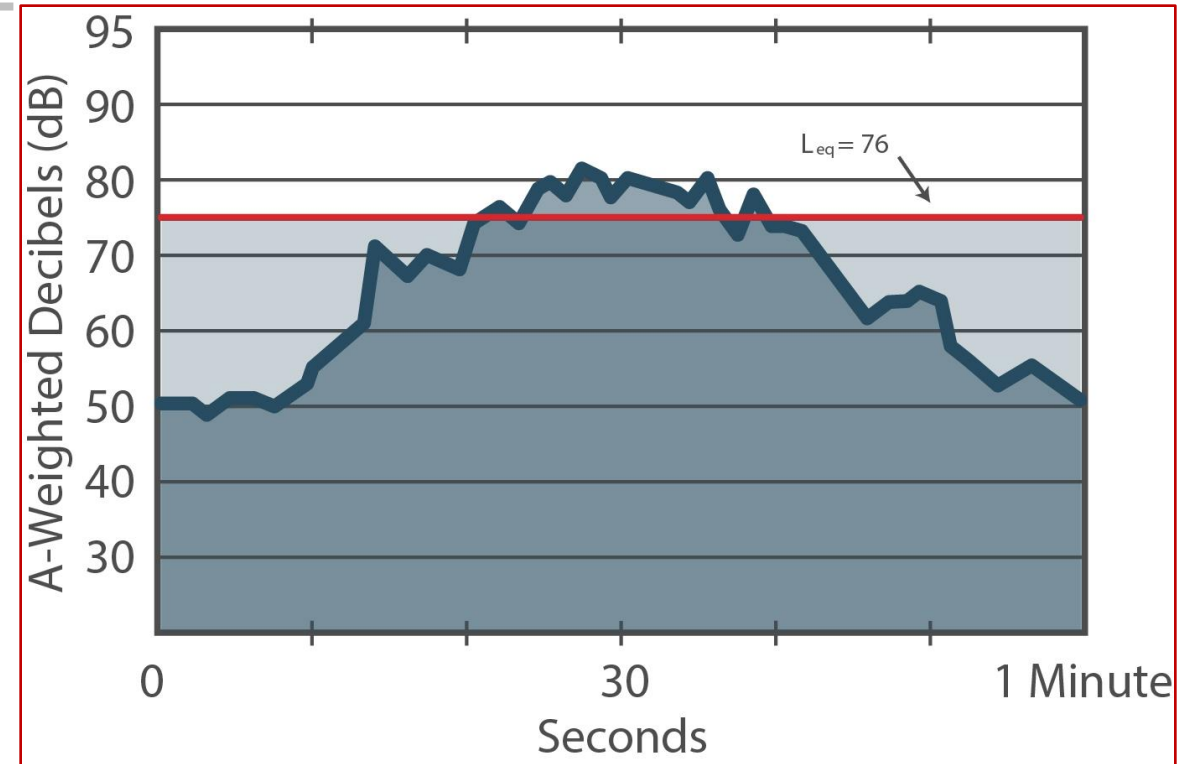
# Day-Night Average Sound Level (DNL)

- DNL is a way to describe the noise dose for a 24-hour period

- DNL accounts for event "noisiness" (SEL)

- DNL accounts for number of noise events

- DNL provides an additional weighting for nighttime operations
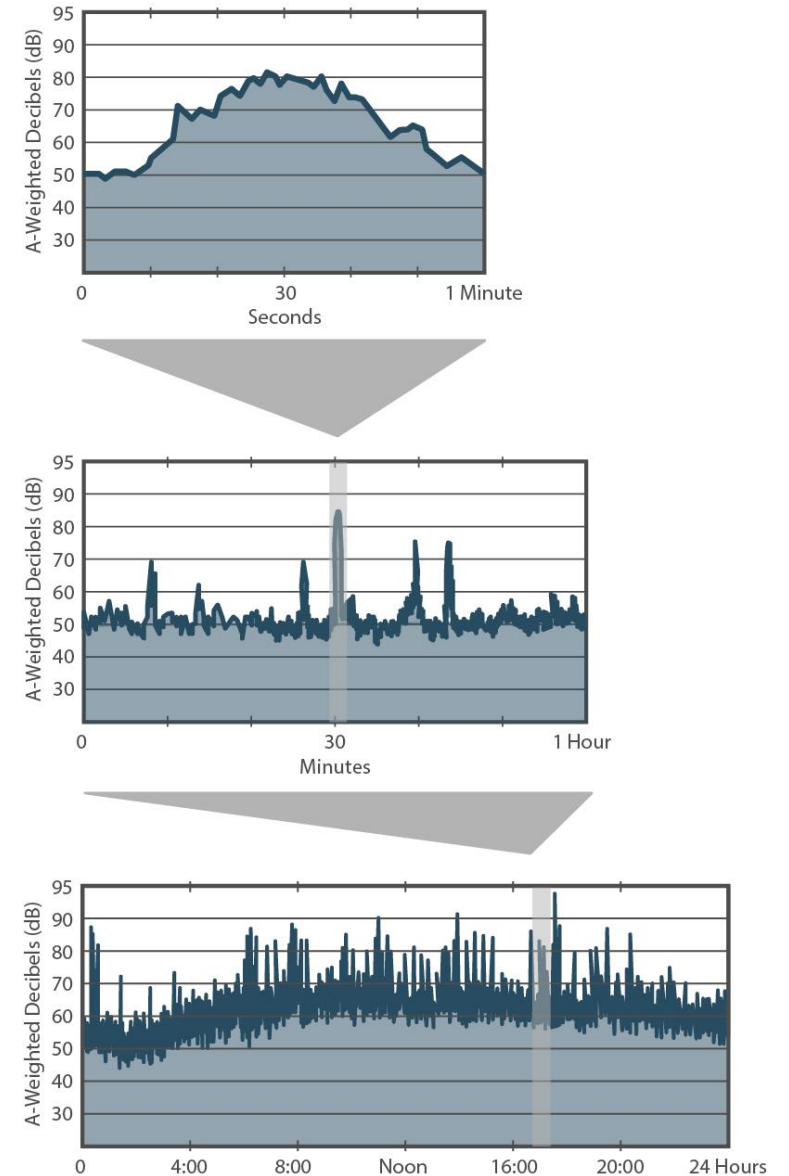
# DNL Nighttime Weighting
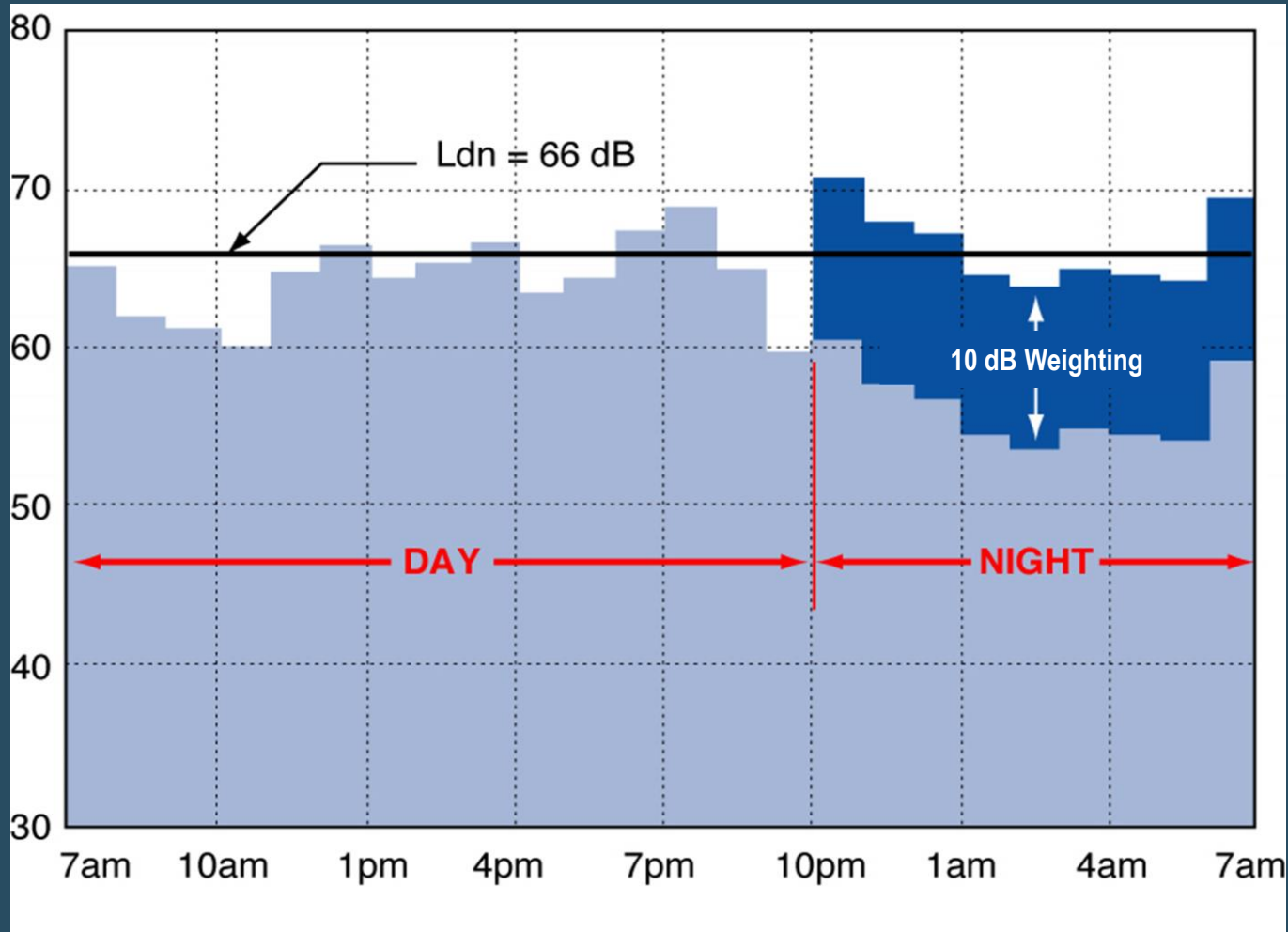


- Nighttime noise gets a 10 dB weighting
- Nighttime is defined as 10:00pm to 7:00am
- DNL is also denoted as $L_{dn}$

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# Calculation of DNL

These equations
are equivalent:

$$L_{dn} = 10 \log \left( \frac{1}{86,400} \sum_{i=1}^{n} 10^{\frac{SEL_i + w_i}{10}} \right)$$

$$L_{dn} = 10 \, Log_{10} \left[ \sum_{i=1}^{N} 10^{(SEL_i + w_i)/10)} \right] - 49.4$$

*where*

$SEL_i$     = SEL value of the ith noise event

$w_i$     = weighting (0 or 10) of the ith noise event

$N$ or $n$     = number of noise events

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# Outdoor DNL at Various Locations
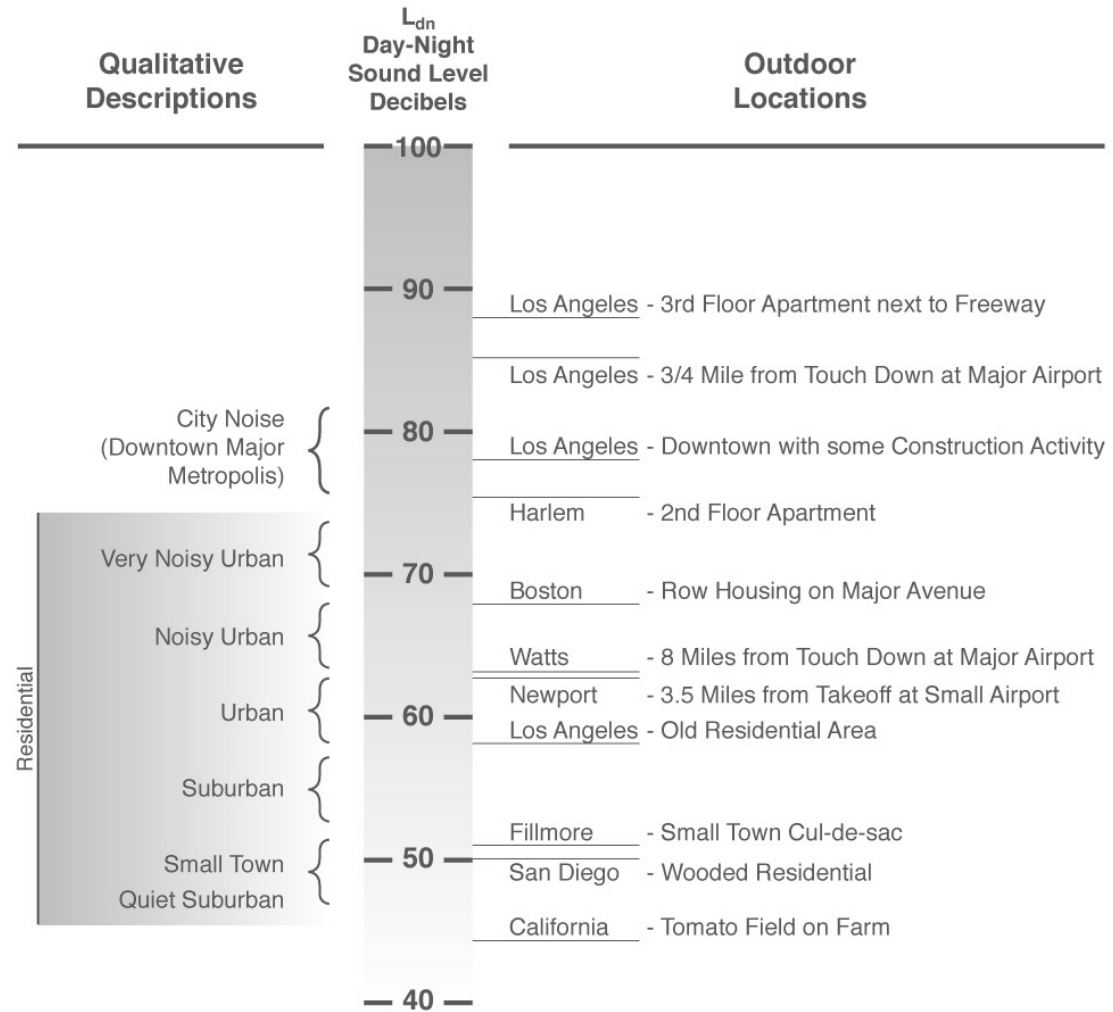


Source: EPA Levels document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety", U.S. Environmental Protection Agency, March 1974.

# Day-Night Average Sound Level (DNL)

**Identical DNL Levels**

**1 Event/Day SEL 114.4 dBA = DNL 65**



**10 Events/Day SEL 104.4 dBA = DNL 65**
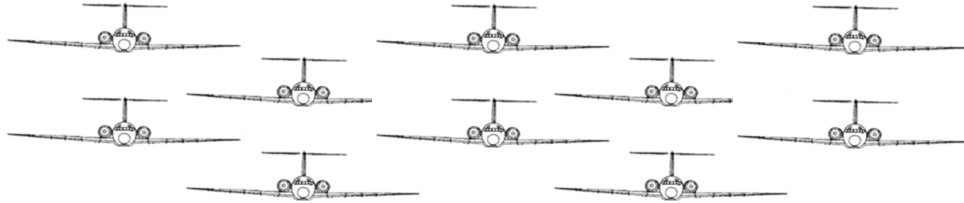


**100 Events/Day SEL 94.4 dBA = DNL 65**

Image credit for military jet: Vecteezy.com

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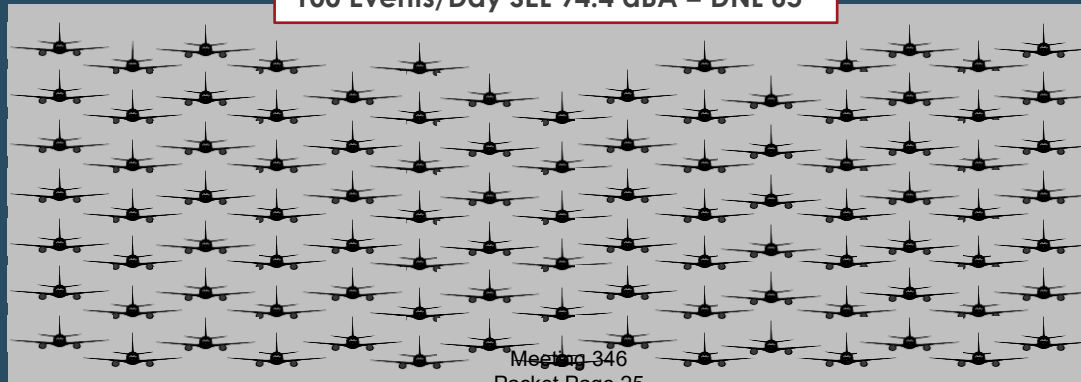
# Community Noise Equivalent Level (CNEL)

Similar concept to DNL, but CNEL includes an evening weighting

- Daytime is defined as 7:00 am to 7:00 pm

- Evening is defined as 7:00 pm to 10:00pm

- Nighttime is defined as 10:00pm to 7:00am
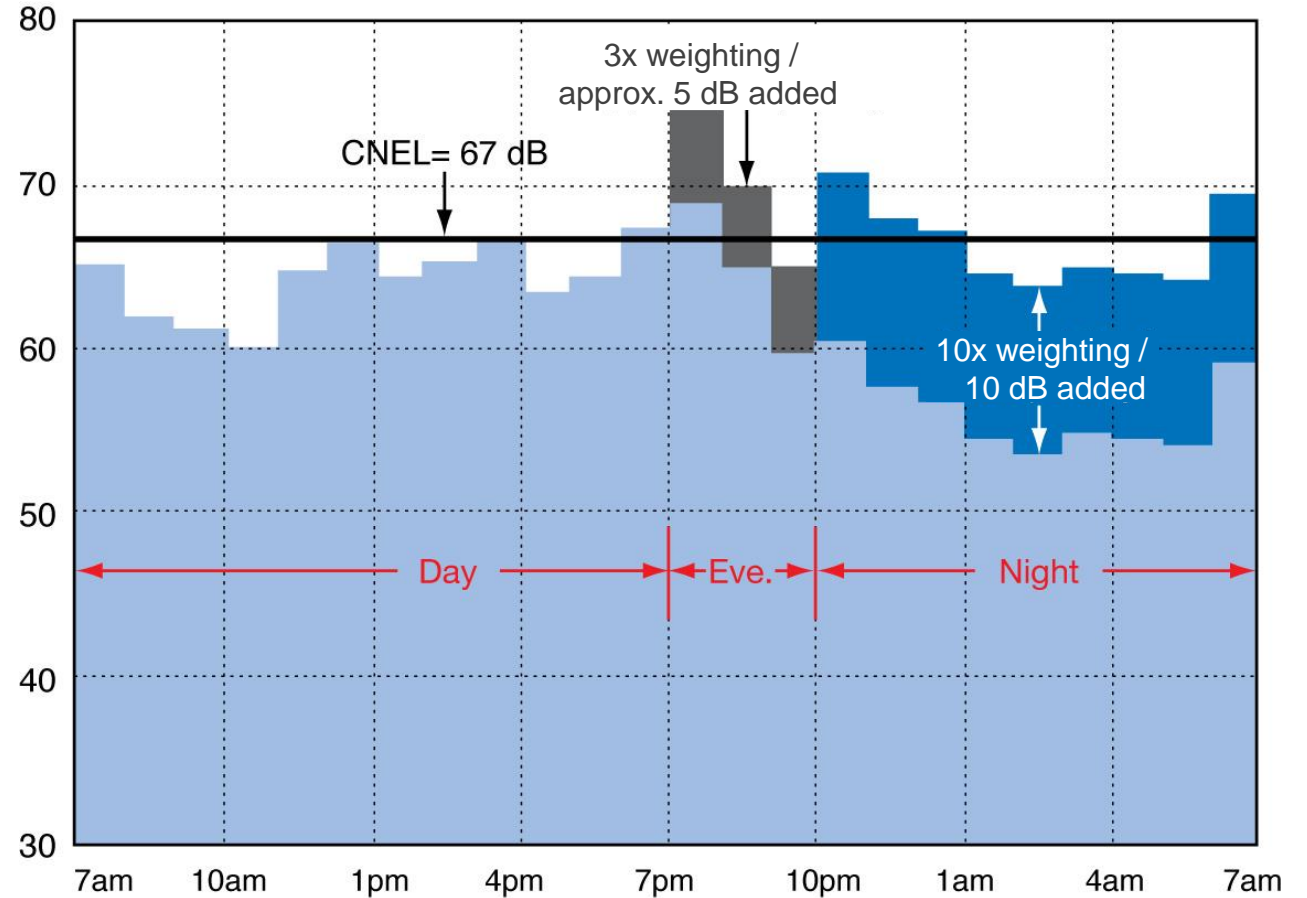
# Other Single-Event Metrics:
# Effective Perceived Noise Level (EPNL)
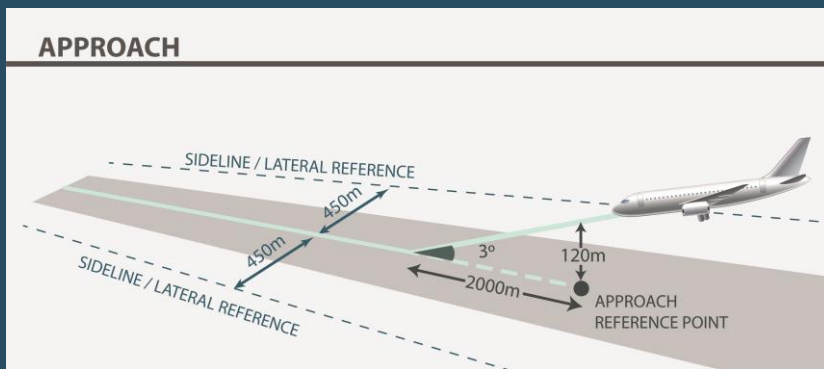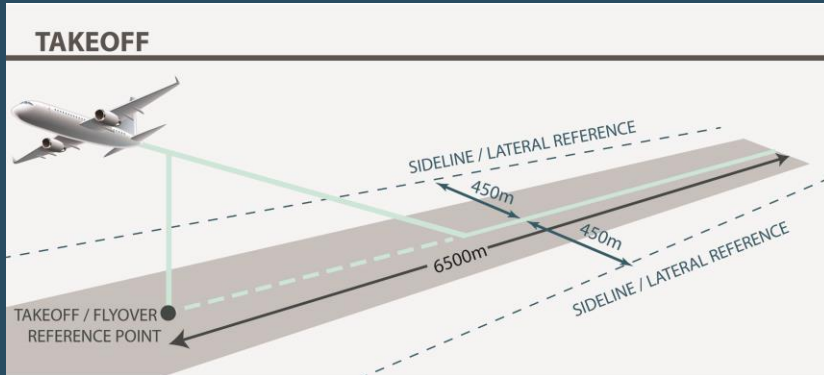


- Based on loudness curves and studies on "noisiness", "annoyance" or "unacceptability" with Perceived Noise (PN) levels reported in units called **noys**

- Further refinements for duration (D) and presence of pure tones (C):

    $$EPNL = L_{PN} + C + D$$

- Calculation of EPNL or EPNdB is complex, requires a spreadsheet.

- 14 CFR Part 36, App. A requires "measured" EPNdB as basis for noise certification of jet aircraft & helicopters

# Other Cumulative (24 hour) Metrics

| 24-Hour Metric | | based on Single Event Metric | Day Multiplier (7am - 7pm) | Evening Multiplier (7pm - 10pm) | Night Multiplier (10pm - 7am) | where used |
|---|---|---|---|---|---|---|
| DNL | Day-Night Average Sound Level | SEL | 1 | 1 | 10 | most of U.S. |
| CNEL | Community Noise Equivalent Level | SEL | 1 | 3 | 10 | California, Japan |
| LAEQ ($L_{eq(24)}$) | Equivalent A-weighted Sound Level (24 hrs) | SEL | 1 | 1 | 1 | |
| Lden | Day Evening Night Sound Level | SEL | 1 | 3* | 10* | European Union |
| NEF | Noise Exposure Forecast | EPNL | 1 | 1 | 16.7 | Canada |
| WECPNL | Weighted Equivalent Continuous Perceived Noise Level | EPNL | 1 | 3 | 10 | China |
| * definition of evening and night timeframes is left to the state to determine | | | | | | |

a multiplier of $\dfrac{3}{10}$ adds $\dfrac{4.77}{10}$ dB  17  12.23

# FAA-Recommended "Supplemental" Metrics

- Sound Exposure Level (SEL):
  - for analysis of noise abatement flight tracks, procedures
- Maximum Sound Level, $L_{max}$
  - for analysis of noise abatement flight tracks, procedures
  - for assessment of speech, sleep interference
- Time Above Threshold (TA):
  - for informational purposes
- Equivalent Noise Level ($L_{eq(x)}$):
  - for analysis of schools, etc.
- Number of events Above Threshold (NA)
  - for informational purposes

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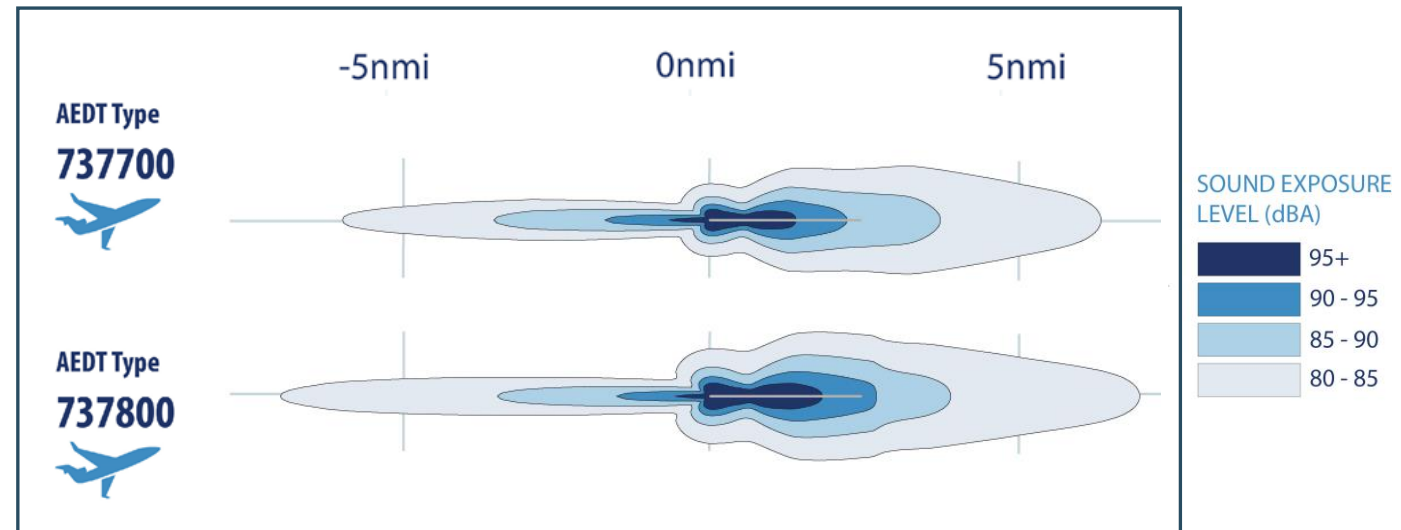
# Questions?

# The purpose of this presentation was to:

- To become familiar with aircraft noise terminology

- To understand single-event noise levels and metrics

- To understand cumulative noise levels and metrics

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<div align="center">

**SFO Airport/Community Roundtable**
Meeting No. 345 Minutes
Wednesday, August 2, 2023

</div>

**Call to Order / Roll Call / Declaration of a Quorum Present**

Roundtable Chairperson, Sam Hindi, called the Regular Meeting of the SFO Airport/Community Roundtable to order, at approximately 7:05 p.m., at the Millbrae Library and also via Zoom, Kathleen Wentworth called the roll. A quorum (at least 13 Regular Members) was present as follows:

REGULAR MEMBERS PRESENT
Doug Yakel – City and County of San Francisco Airport Commission
Dave Pine – County of San Mateo Board of Supervisors
Carol Ford – C/CAG Airport Land Use Committee (ALUC)
Robin Pang-Maganaris – City of Belmont
Ricardo Ortiz – City of Burlingame
Pamela DiGiovanni – City of Daly City
Sam Hindi – City of Foster City
Alvin Royse – Town of Hillsborough
Ann Schneider – City of Millbrae
Christine Boles – City of Pacifica
Judith Hasko – Town of Portola Valley
Kaia Eakin – City of Redwood City
Pranita Venkatesh – City of San Carlos
Rob Newsom – City of San Mateo
Mark Addiego – City of South San Francisco
Paul Goeld – Town of Woodside

REGULAR MEMBERS ABSENT
City and County of San Francisco Board of Supervisors
City and County of San Francisco Mayor's Office
Town of Atherton
City of Brisbane
Town of Colma
City of East Palo Alto
City of Half Moon Bay
City of Menlo Park
City of San Bruno

ROUNDTABLE STAFF
Kathleen Wentworth – Roundtable Coordinator
Angela Montes Cardenas – Roundtable Administrative Secretary
Eugene Reindel – Roundtable Technical Consultant (HMMH)
Lisa Aozasa – County of San Mateo, Deputy Community Development Director

ADDITIONAL ATTENDEES PRESENT
Linda Wolin – Chief of Staff to Supervisor Dave Pine

SAN FRANCISCO INTERNATIONAL AIRPORT STAFF
Bert Ganoung – Noise Office Manager
Luis Moreno – Project Manager
Anthony Carpeneti – Aircraft Noise Specialist

Anneliese Taing – Aircraft Noise Specialist

FAA STAFF
Moifair Chin, Community Engagement Officer

Chairman Hindi recognized that the meeting is taking place on the ancestral homeland of Ramaytush Ohlone. He reminded the Members of the best practices for an efficient, productive and respectful meeting. He noted that the expert information resources available at meetings for the Roundtable, are the Roundtable Technical Consultant, the SFO Aircraft Noise Office staff & the Roundtable Coordinator.

**Public Comments for Items NOT on the Agenda** (00:07:20)

Chairman Hindi opened public comments.

Darlene Yaplee – Palo Alto (00:08:15)
Mark Shull – Palo Alto (00:10:42)

Chairman Hindi closed public comments.

**Action to set Agenda and to Approve Consent Items 1-2** (00:13:03)

Chairman Hindi open and closed public comments for consent items, no comments were received.

ACTION: Ricardo Ortiz **MOVED** to set agenda and to approve consent items 1 & 2, The motion was seconded by Dave Pine and **CARRIED**, roll call vote passed.

**3. Action: Consideration of Approval: Annual Work Plan FY 23-24** (00:14:24)

Chairman Hindi summarized the subcommittee meeting on June 27, 2023. He summarized the staff report in the packet page 23. The changes or edits of the proposed Work Plan were noted.

Conversation ensued with Member Schneider regarding air pollution and use of the word *health* in the Work Plan.

Chairman Hindi opened public comment.

Mark Shull – Palo Alto (00:18:45)

Chairman Hindi closed public comment.

ACTION: Alvin Royse **MOVED** to approve the annual work plan FY23-24. The motion was seconded by Ann Schneider and **CARRIED**, roll call vote passed.

**4. Action: Consideration of Approval: Annual Budget FY 23-24** (00:21:37)

Ms. Wentworth summarized the staff report in packet page 35. She noted administrative changes to the budget format.

Conversation ensued with Member Ortiz regarding balance. Member Schneider noted cost for Millbrae in-kind donation and additional money for staff. Member Royse added that the

Roundtable should consider adding additional funds for additional staff. He also noted that membership costs have not increased. Member Eakin noted that at the Work Plan Subcommittee the budget was not fully discussed. Chairman Hindi agreed and said the budget was discussed at the Executive level.

Conversation ensued with Member Boles regarding SFO contribution.

Chairman Hindi opened and closed public comment, no comments were received.

ACTION: Carol Ford **MOVED** to approve the annual budget for FY23-24. The motion was seconded by Ricardo Ortiz and **CARRIED**, roll call vote passed.

**5. Action: Consideration of Approval: Legislative Subcommittee Letter to Select Members of Congress and FAA RE: FAA Reauthorization** (Minute 00:32:00)

Vice Chairman Royse summarized the letter in packet page 38. He provided background of the timeline of this letter and how the Legislative subcommittee has been working to draft the letter.

Mr. Royse, Ms. Wentworth and Mr. Reindel led review of the letter and the Membership provided feedback.

Chairman Hindi opened public comment.

Darlene Yaplee – Palo Alto (01:07:50)

Chairman Hindi closed public comment.

ACTION: Ann Schneider **MOVED** to approve Legislative Subcommittee letter to select members of Congress and make modifications as legislation changes. The motion was seconded by Ricardo Ortiz and **CARRIED**, roll call vote passed.

**6. Chairman's Update** (Minute 01:16:10)

Chairman Hindi gave a verbal update to the Membership. He noted that there is no update from the FPPC and Form 700 is not due until they approve the Code for the Membership. He added that Noise 101 videos are on the website and encourages everyone to watch them more than once. He updated the Membership on the future TRACON tour, noise metric tutorial, and advanced air mobility letter.

**7. Airport Director Update** (Minute 01:25:36)

Mr. Yakel gave a verbal update to the Membership. He noted passenger traffic recovery, flight operations, new airline service, and Air Taxi World Conference to be held at SFO in October 2023.

**a. Noise Office Update** (Minute 01:27:55)

Mr. Ganoung gave a verbal update to the Membership. He gave an update Colma being added to Noise Reports, Noise Office website update, GBAS, N-Above metric added to June 2023 report, Noise Action Plan update, NIITE/HUSSH tracking,

    **i. Noise Insulation in Schools** (Minute 01:36:48)

Mr. Moreno gave a verbal update to the Membership. He provided a Noise Insulation Program progress report, educational facilities study update. He continued to speak about each particular school withing the 65 contour. In summary, none of the facilities qualify under FAA Noise Insulation Program criteria, but SFO will continue to monitor eligibility.

Chairman Hindi thanked SFO for conducting the educational facilities study.

Conversation ensued with Member DiGiovanni, Member Schneider, Member Venkatesh, Member Royse, Member Boles, Member Ford and Chairman Hindi.

## 8. Subcommittee Updates

### a. Work Program Subcommittee Meeting on June 27, 2023 (02:01:55)

Subcommittee Chair Hindi noted that topics discussed were summarized under agenda item 3. Meeting may be viewed here.

### b. Ground-Based Noise Subcommittee meeting on July 11, 2023 (02:02:08)

Subcommittee Chair Schneider gave a verbal update to the Membership and summarized the July 11, 2023 meeting. Meeting may be viewed here.

### c. Legislative Subcommittee Meeting on July 20, 2023 (02:05:58)

Subcommittee Chair Royse noted that topics discussed were summarized under agenda item 5. Meeting may be viewed here.

### Public Comments on Presentation Items 6-8 (Minute 02:06:30)

Chairman Hindi opened and closed public comment, no comments were received.

### 9. Member Communications/Announcements (Minute 02:06:58)

Chairman Hindi shared that on September 9 the Palestine Culture Day will have its 44th annual festival in Foster City. Member Boles shared that on August 5, 2023 Pacifica is hosting the World Championship dog surfing competition.

Moifair Chin, FAA, Community Engagement Officer shared that the air mobility and noise policy review comment period have both been extended.

Chairman Hindi thanked staff for all their hard work.

## 10. Adjourn

Chairman Hindi adjourned the meeting at approximately 9:15 p.m.

*Roundtable action minutes are considered draft until approved by the Roundtable at a regular meeting. A video recording of this meeting is available on the Roundtable's website.*

# Airport Director's Report

Presented at the October 4, 2023
Airport/Community Roundtable Meeting

Aircraft Noise Office
July 2023

San Francisco
International
Airport

# Aircraft Noise Levels Summary

July 2023

## Nighttime N-Above 55 dBA Daily Average

Legend:
- 2022 Q1 (diamond)
- 2022 Q2 (triangle)
- 2022 Q3 (square)
- 2022 Q4 (circle)
- 2023 Q1 (×)
- 2023 Q2 (+)
- 2023 Q3 (asterisk)

The chart above depicts the average daily N-Above 55dBA SFO aircraft noise events per NMT during nighttime hours (10pm-7am) compared to the previous 4 quarters. Values are derived from the ANEEM algorythm.

## N-Above dBA level

- 85 dBA
- 75 dBA
- 65 dBA
- 55 dBA

## Count of Events

- 0
- 2,000
- 4,000
- 6,000
- 8,000
- ≥ 10,000

The map displays the N-Above counts at each NMT by N-Above Noise Level based on SFO aircraft noise events. Darker circles represent louder noise events and larger circles represent a larger number of noise events relative to the N-Above noise level. Values are derived from the ANEEM algorythm.

## Significant Exceedances

Exceedances - NPD

2,225

Exceedances - ANEEM

1,905

Legend:
- 2020 (triangle)
- 2021 (square)
- 2022 (circle)
- 2023 (×)

Significant Exceedances (right) displays a total count of SFO aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

# Aircraft Noise Levels Details

| NMT | City | ANOMS Aircraft Noise Events (AVG Day) | CNEL (dBA) | SEL (dBA) | LMax (dBA) | Community CNEL (dBA) | Ambient Level (dBA) | ANEEM Aircraft Noise Events (AVG Day) | CNEL (dBA) | SEL (dBA) | LMax (dBA) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | San Bruno | 149 | 73 | 94 | 82 | 70 | 56 | 138 | 73 | 94 | 84 |
| 2 | San Bruno | 79 | 55 | 79 | 68 | 63 | 51 | 84 | 55 | 80 | 68 |
| 3 | SSF | 60 | 54 | 79 | 68 | 66 | 45 | 178 | 55 | 76 | 63 |
| 4 | SSF | 130 | 67 | 89 | 77 | 60 | 46 | 169 | 67 | 88 | 74 |
| 5 | San Bruno | 136 | 67 | 89 | 77 | 65 | 48 | 197 | 67 | 87 | 73 |
| 6 | SSF | 119 | 63 | 87 | 75 | 58 | 45 | 165 | 63 | 85 | 71 |
| 7 | Brisbane | 25 | 48 | 78 | 67 | 59 | 48 | 50 | 49 | 75 | 64 |
| 8 | Millbrae | 11 | 50 | 84 | 73 | 65 | 51 | 137 | 55 | 78 | 67 |
| 9 | Millbrae | 7 | 38 | 76 | 64 | 58 | 42 | 150 | 52 | 72 | 60 |
| 10 | Burlingame | 5 | 38 | 78 | 65 | 60 | 43 | 85 | 49 | 73 | 61 |
| 11 | Burlingame | 8 | 41 | 80 | 67 | 61 | 42 | 183 | 51 | 73 | 61 |
| 12 | Foster City | 358 | 62 | 82 | 71 | 58 | 43 | 436 | 63 | 81 | 69 |
| 13 | Hillsborough | 3 | 33 | 78 | 64 | 58 | 43 | 84 | 50 | 73 | 60 |
| 14 | SSF | 117 | 59 | 83 | 71 | 64 | 45 | 170 | 59 | 81 | 68 |
| 15 | SSF | 157 | 57 | 81 | 69 | 60 | 47 | 272 | 58 | 79 | 66 |
| 16 | SSF | 100 | 57 | 81 | 70 | 60 | 45 | 172 | 58 | 79 | 67 |
| 17 | SSF | 104 | 57 | 81 | 70 | 59 | 46 | 146 | 58 | 80 | 68 |
| 18 | Daly City | 104 | 62 | 86 | 75 | 62 | 48 | 147 | 62 | 84 | 71 |
| 19 | Pacifica | 92 | 59 | 83 | 72 | 64 | 42 | 112 | 59 | 82 | 70 |
| 20 | Daly City | 82 | 50 | 77 | 65 | 62 | 44 | 103 | 49 | 74 | 63 |
| 21 | San Francisco | 39 | 46 | 76 | 63 | 63 | 53 | 11 | 40 | 76 | 66 |
| 22 | San Bruno | 92 | 58 | 81 | 71 | 65 | 46 | 275 | 60 | 79 | 66 |
| 23 | San Francisco | 73 | 52 | 79 | 69 | 75 | 47 | 138 | 53 | 77 | 66 |
| 24 | San Francisco | 90 | 60 | 85 | 73 | 74 | 53 | 81 | 52 | 78 | 66 |
| 25 | San Francisco | 17 | 40 | 75 | 64 | 59 | 42 | 37 | 41 | 72 | 61 |
| 26 | San Francisco | 9 | 41 | 78 | 65 | 62 | 49 | 17 | 40 | 74 | 62 |
| 27 | San Francisco | 5 | 39 | 79 | 67 | 59 | 45 | 13 | 37 | 73 | 62 |
| 28 | Redwood City | 5 | 37 | 76 | 64 | 51 | 36 | 30 | 38 | 70 | 58 |
| 29 | San Mateo | 106 | 52 | 77 | 64 | 60 | 48 | 343 | 53 | 73 | 61 |

Noise Monitor's CNEL values (above) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft monthly CNELs from both ANOMS NPD and ANEEM algorithms for each monitor site are provided with daily average aircraft counts, the average Sound Exposure Level (SEL), and average Maximum Level (LMax). Noise levels from other noise sources in the community calculated by ANOMS is provided as Community CNEL. Ambient Level is represented by the LA90 noise value which is the noise level exceeded at the monitor for 90% of the time.

## SFO N-Above NPD

| NMT | Min:Max LMax | 55 dBA | 60 dBA | 65 dBA | 70 dBA | 75 dBA | 80 dBA |
|---|---|---|---|---|---|---|---|
| 1 | 65:98 | 4,570 | 4,570 | 4,570 | 4,267 | 3,810 | 3,106 |
| 2 | 61:84 | 2,516 | 2,516 | 2,171 | 580 | 28 | 3 |
| 3 | 62:91 | 1,766 | 1,766 | 1,448 | 346 | 104 | 26 |
| 4 | 61:94 | 4,043 | 4,043 | 3,945 | 3,463 | 2,869 | 1,690 |
| 5 | 62:93 | 4,148 | 4,148 | 4,108 | 3,685 | 2,769 | 1,341 |
| 6 | 62:90 | 3,689 | 3,689 | 3,622 | 3,205 | 2,161 | 463 |
| 7 | 61:83 | 639 | 639 | 466 | 104 | 10 | 2 |
| 8 | 68:87 | 312 | 312 | 312 | 267 | 88 | 22 |
| 9 | 60:76 | 74 | 72 | 27 | 8 | 1 | 0 |
| 10 | 59:78 | 50 | 48 | 18 | 9 | 1 | 0 |
| 11 | 60:80 | 44 | 44 | 23 | 5 | 3 | 0 |
| 12 | 63:86 | 11,263 | 11,263 | 11,162 | 7,127 | 675 | 24 |
| 13 | 60:74 | 14 | 12 | 4 | 2 | 0 | 0 |
| 14 | 61:87 | 3,611 | 3,611 | 3,462 | 2,145 | 458 | 17 |
| 15 | 61:83 | 4,935 | 4,935 | 4,484 | 1,710 | 130 | 14 |
| 16 | 62:87 | 3,126 | 3,126 | 2,994 | 1,622 | 102 | 1 |
| 17 | 61:81 | 3,213 | 3,213 | 3,012 | 1,569 | 119 | 2 |
| 18 | 65:89 | 2,804 | 2,804 | 2,801 | 2,402 | 1,517 | 264 |
| 19 | 65:91 | 2,840 | 2,840 | 2,839 | 2,071 | 442 | 18 |
| 20 | 59:87 | 2,360 | 2,279 | 934 | 287 | 97 | 14 |
| 21 | 59:81 | 665 | 627 | 209 | 23 | 2 | 1 |
| 22 | 64:93 | 2,813 | 2,813 | 2,801 | 1,692 | 199 | 15 |
| 23 | 63:85 | 2,218 | 2,218 | 2,049 | 585 | 62 | 7 |
| 24 | 59:87 | 2,616 | 2,611 | 2,328 | 1,783 | 968 | 135 |
| 25 | 58:81 | 404 | 365 | 132 | 26 | 7 | 1 |
| 26 | 60:73 | 155 | 154 | 77 | 9 | 0 | 0 |
| 27 | 62:77 | 20 | 20 | 13 | 3 | 1 | 0 |
| 28 | 59:79 | 76 | 69 | 18 | 4 | 3 | 0 |
| 29 | 59:87 | 3,462 | 3,374 | 875 | 285 | 92 | 24 |

## SFO N-Above ANEEM

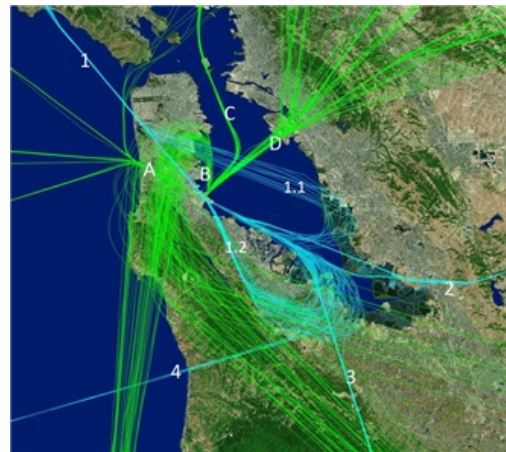| NMT | Min:Max LMax | 55 dBA | 60 dbA | 65 dBA | 70 dBA | 75 dBA | 80 dBA |
|---|---|---|---|---|---|---|---|
| 1 | 58:98 | 4,255 | 4,253 | 4,232 | 4,140 | 3,763 | 3,075 |
| 2 | 56:80 | 2,556 | 2,531 | 2,130 | 573 | 18 | 0 |
| 3 | 53:84 | 4,610 | 3,734 | 1,628 | 308 | 72 | 14 |
| 4 | 53:94 | 5,004 | 4,815 | 4,119 | 3,495 | 2,888 | 1,698 |
| 5 | 54:90 | 5,960 | 5,824 | 4,910 | 3,731 | 2,749 | 1,322 |
| 6 | 53:90 | 4,966 | 4,643 | 3,727 | 3,196 | 2,148 | 460 |
| 7 | 53:82 | 1,188 | 996 | 497 | 99 | 9 | 1 |
| 8 | 54:87 | 4,147 | 4,014 | 2,879 | 810 | 150 | 35 |
| 9 | 53:78 | 3,905 | 1,764 | 438 | 100 | 15 | 0 |
| 10 | 53:80 | 2,288 | 1,450 | 456 | 86 | 13 | 0 |
| 11 | 53:82 | 4,957 | 2,494 | 969 | 374 | 103 | 12 |
| 12 | 53:83 | 13,458 | 12,626 | 11,216 | 7,089 | 646 | 11 |
| 13 | 53:71 | 2,322 | 1,346 | 331 | 7 | 0 | 0 |
| 14 | 53:87 | 5,010 | 4,736 | 3,701 | 2,138 | 451 | 12 |
| 15 | 54:83 | 8,184 | 7,607 | 5,066 | 1,723 | 120 | 7 |
| 16 | 53:79 | 4,945 | 4,428 | 3,338 | 1,671 | 103 | 0 |
| 17 | 53:81 | 4,388 | 4,203 | 3,209 | 1,541 | 112 | 2 |
| 18 | 53:89 | 3,815 | 3,586 | 3,054 | 2,430 | 1,519 | 265 |
| 19 | 53:88 | 3,452 | 3,352 | 3,023 | 2,035 | 428 | 14 |
| 20 | 53:80 | 2,622 | 2,163 | 692 | 121 | 14 | 1 |
| 21 | 61:72 | 217 | 217 | 135 | 13 | 0 | 0 |
| 22 | 53:85 | 8,180 | 7,318 | 5,083 | 2,219 | 242 | 11 |
| 23 | 53:81 | 3,539 | 3,352 | 2,210 | 569 | 37 | 1 |
| 24 | 53:84 | 1,839 | 1,642 | 1,083 | 534 | 153 | 17 |
| 25 | 53:76 | 767 | 504 | 134 | 16 | 2 | 0 |
| 26 | 54:72 | 265 | 210 | 63 | 8 | 0 | 0 |
| 27 | 54:70 | 92 | 62 | 15 | 1 | 0 | 0 |
| 28 | 53:75 | 371 | 98 | 9 | 2 | 1 | 0 |
| 29 | 53:79 | 10,600 | 6,470 | 698 | 68 | 7 | 0 |

Noise Monitor N-Above values (above) are derived from actual measured events and assigned to aircraft overflights using both ANOMS NPD and ANEEM algorithms. N-Above represents the count of events where the peak noise (LMax) reached above the designated dBA value. Note, the charts on this page represent only SFO aircraft-related noise events.

# Operations

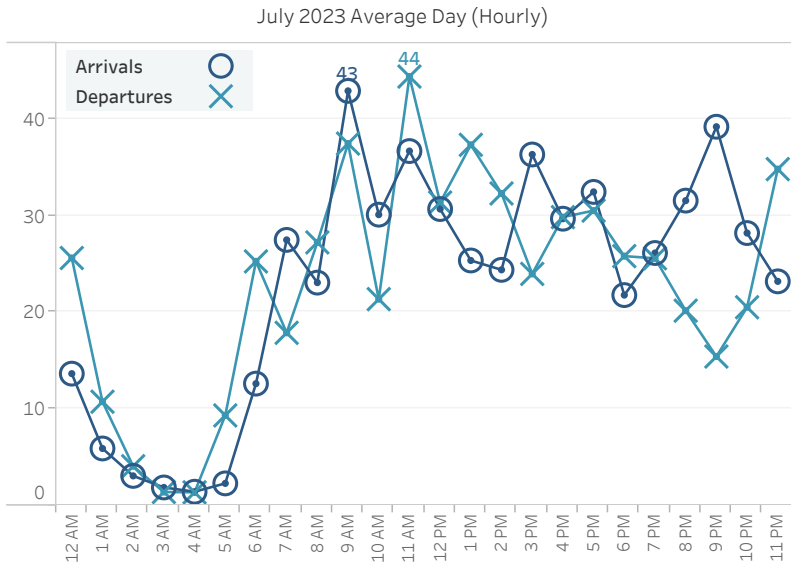| Monthly Ops | AVG Daily Ops | 12 Month AVG | YOY Growth |
|---|---|---|---|
| 34,176 | 1,102 | 30,613 | 6% |

## July 2023 Average Day (Hourly)



Arrivals ○
Departures ✕

43   44

## Major Arrival and Departure Routes (West Flow)



West Flow is depicted in the above image and is a predominate flow at SFO.

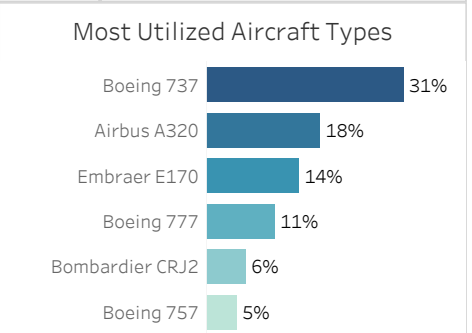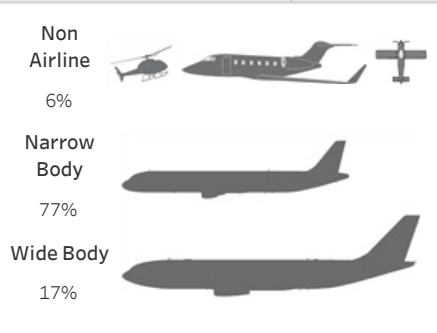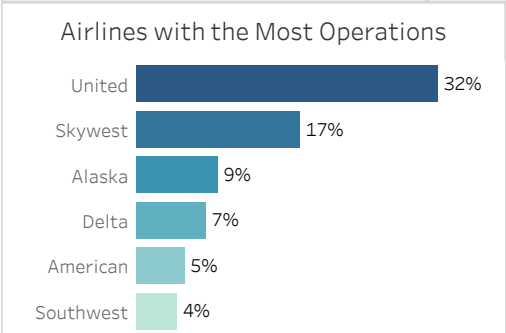| West Flow |
|---|
| 100% |

| Arrival Route | | Departure Route | |
|---|---|---|---|
| 1. BDEGA | 32% | A. GAP | 22% |
| 2. DYAMD | 34% | B. SSTIK | 26% |
| 3. SERFR | 28% | C. NIITE | 12% |
| 4. PIRAT | 6% | D. TRUKN RWY 01 | 37% |
| | | D. TRUKN RWY 28 | 3% |

### Top Destinations

| Los Angeles | JFK | Seattle |
|---|---|---|
| 6% | 4% | 4% |

### Down the Bay vs Peninsula

| 1.1 Down the Bay Visual | 40% |
|---|---|
| 1.2 BDEGA Arrival | 60% |

## Airlines with the Most Operations

| United | 32% |
|---|---|
| Skywest | 17% |
| Alaska | 9% |
| Delta | 7% |
| American | 5% |
| Southwest | 4% |

**Non Airline** 6%

**Narrow Body** 77%

**Wide Body** 17%



## Most Utilized Aircraft Types

| Boeing 737 | 31% |
|---|---|
| Airbus A320 | 18% |
| Embraer E170 | 14% |
| Boeing 777 | 11% |
| Bombardier CRJ2 | 6% |
| Boeing 757 | 5% |

## Daily Aircraft Operations



Average= 1,102

1,008

1,166

Operations

Date

# Runway Usage and Nighttime Operations

Leftmost Runway Utilization table shows percent of runway usage for arrivals and departures by runway based on air carrier operations using jet, regional jet, and turboprop aircraft. Late Night Preferential Runway Use table depicts departure runway usage between 1am - 6am for jet aircraft for the whole month (top) and during nighttime hours only (bottom). Percentages [%] are rounded to the nearest whole number.

## Runway Utilization

| | Arrivals | Departures |
|---|---|---|
| 01 L/R | | 76% 12,302 |
| 28 L/R | 100% 16,127 | 24% 3,867 |

## Late Night Preferential Runway Use (1 am - 6 am)

| | Departures |
|---|---|
| 10 L/R | 0% 1 |
| 01 L/R | 52% 410 |
| 28 L/R | 48% 372 |

## Runway Utilization
### Arrivals

| 28L | 28R |
|---|---|
| 39% | 61% |

### Night (10pm-7am)

| 28L | 28R |
|---|---|
| 32% | 68% |

## Nighttime Power Run-Ups
10pm-7am

| | |
|---|---|
| **American Airlines** | 3 |
| **United Airlines** | 15 |

A power runup is a procedure used to test an aircraft engine after maintenance is completed. This is done to ensure safe operating standards prior to returning the aircraft to service. The Aircraft power settings range from idle to full power and may vary in duration.

Designated Power Runup locations are 19 L/R depicted on the airfield map (right) with airlines nighttime power runup counts shown above.

Map labels: 1 L/R, 10 L/R, 19 L/R, 28 L/R, V@L Engine Run-Up Area, E@L Engine Run-Up Area, C2@C Engine Run-Up Area

## Hourly Nighttime Operations

Legend: 12 AM, 1 AM, 2 AM, 3 AM, 4 AM, 5 AM

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 AM | 42 | 41 | 39 | 29 | 39 | 44 | 39 | 35 | 32 | 45 | 42 | 39 | 41 | 43 | 30 | 39 | 48 | 39 | 42 | 34 | 37 | 36 | 41 | 43 | 37 | 43 | 41 | 41 | 44 | 30 | 45 |
| 1 AM | 22 | 10 | 18 | 14 | 13 | 14 | 18 | 17 | 21 | 20 | 23 | 25 | 17 | 17 | 15 | 17 | 15 | 20 | 17 | 14 | 14 | 18 | 11 | 14 | 18 | 13 | 14 | 18 | 13 | 18 | 19 |
| 2 AM | 6 | 3 | 2 | 6 | 4 | 7 | 6 | 6 | 8 | 6 | 4 | 6 | 7 | 5 | 12 | 7 | 10 | 5 | 9 | 9 | 4 | 4 | 7 | 6 | 10 | 10 | 12 | 7 | 12 | 13 | 6 |
| 3 AM | 3 | 2 | 3 | 1 | 3 | 2 | 2 | 4 | 2 | 1 | 1 | 3 | | 1 | 1 | 3 | 2 | 1 | 4 | 1 | 4 | 4 | 1 | | 1 | 1 | 2 | 3 | 4 | 7 | 4 |
| 4 AM | 1 | 3 | 3 | 1 | 1 | 4 | 1 | 1 | 3 | 5 | 1 | 3 | 1 | 2 | 1 | 3 | 1 | 2 | 1 | 2 | | 1 | 2 | 2 | | 4 | 2 | 4 | 3 | 4 | 1 |
| 5 AM | 10 | 9 | 9 | 12 | 12 | 14 | 14 | 11 | 10 | 15 | 14 | 13 | 14 | 13 | 12 | 11 | 12 | 13 | 13 | 12 | 13 | 9 | 8 | 11 | 10 | 12 | 12 | 11 | 9 | 11 | 11 |

# Noise Reports

| | Noise Reporters / Noise Reports | |
|---|---|---|
| **Roundtable** | | |
| Atherton | 2 | 89 |
| Belmont | 1 | 1 |
| Brisbane | 16 | 303 |
| Burlingame | 6 | 7 |
| Daly City | 6 | 1,252 |
| El Granada | 1 | 941 |
| Emerald Hills | 7 | 629 |
| Foster City | 10 | 155 |
| Hillsborough | 1 | 116 |
| Menlo Park | 11 | 714 |
| Millbrae | 5 | 9 |
| Montara | 1 | 218 |
| Pacifica | 11 | 1,295 |
| Pescadero | 1 | 1 |
| Portola Valley | 20 | 7,974 |
| Redwood City | 5 | 250 |
| San Bruno | 6 | 227 |
| San Carlos | 2 | 3 |
| San Francisco | 12 | 1,720 |
| San Mateo | 5 | 152 |
| South San Francisco | 7 | 217 |
| Woodside | 5 | 1,180 |
| **Other** | | |
| Aptos | 1 | 3 |
| Berkeley | 3 | 449 |
| Boulder Creek | 2 | 10 |
| Capitola | 2 | 57 |
| Castro Valley | 1 | 3 |
| Cupertino | 2 | 18 |
| Felton | 3 | 61 |
| Fremont | 1 | 137 |
| Los Altos | 43 | 7,047 |
| Los Altos Hills | 10 | 767 |
| Los Gatos | 29 | 3,302 |
| Moraga | 3 | 71 |
| Mountain View | 13 | 2,243 |
| Oakland | 7 | 2,399 |
| Orinda | 1 | 16 |
| Palo Alto | 101 | 19,115 |
| Richmond | 3 | 95 |
| Santa Cruz | 40 | 8,344 |
| Scotts Valley | 22 | 3,525 |
| Soquel | 23 | 3,194 |
| Stanford | 4 | 384 |
| Sunnyvale | 2 | 220 |
| Union City | 1 | 245 |
| Watsonville | 1 | 72 |
| **Grand Total** | **459** | **69,230** |

Notes:
Address validation Relies on USPS-provided ZIP Code look up table and USPS-specified default city values.

| | |
|---|---|
| Reporters Annual AVG | 524 |
| Reports Annual AVG | 89,825 |
| New Reporters | 14 |
| New Reporters Top City | Foster City |
| Furthest Report | 64 miles |
| Reports per SFO Operation | 2 |
| Top Aircraft Types | B737 / A320 / E75L |
| Top Flight Numbers | JBU536 / KAL214 / UAL1272 |

## Noise Reporters Location Map



© 2023 Mapbox © OpenStreetMap

## Noise Reports by Airport



SJC 3%  OAK 4%  SFO 73%  PAO 9%  SQL 8%  Other 2%

**99%** of noise reports correlate to a flight origin/destination airport.
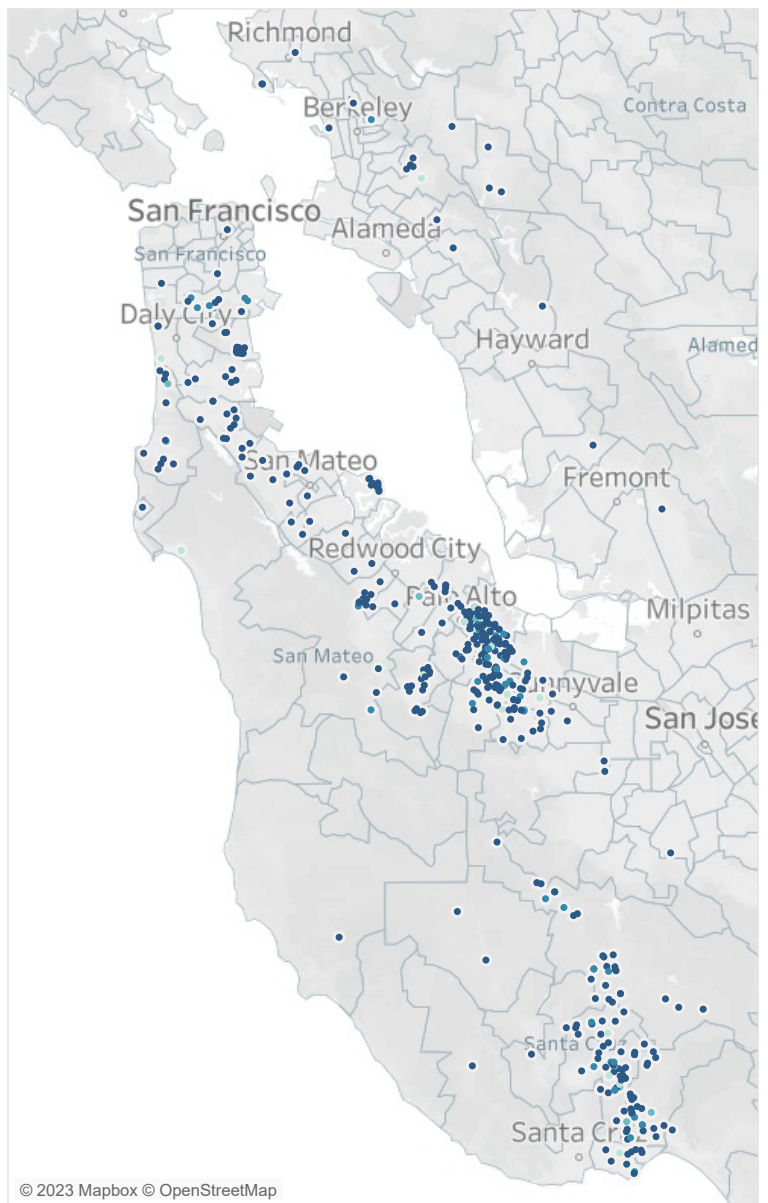
## Hourly Noise Reporters (Average Day in a Month)



Noise Reports | Operations
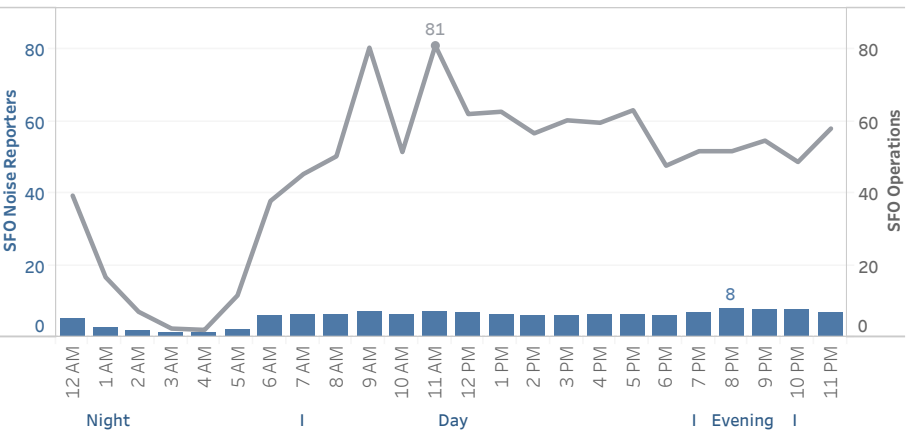
Night — Day — Evening

Source: SFO Intl Airport Noise Monitoring System
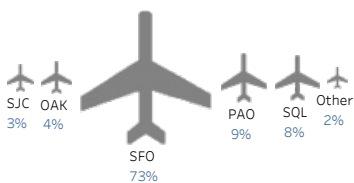
# NIITE to GOBBS 1 am to 5 am (July 2023)
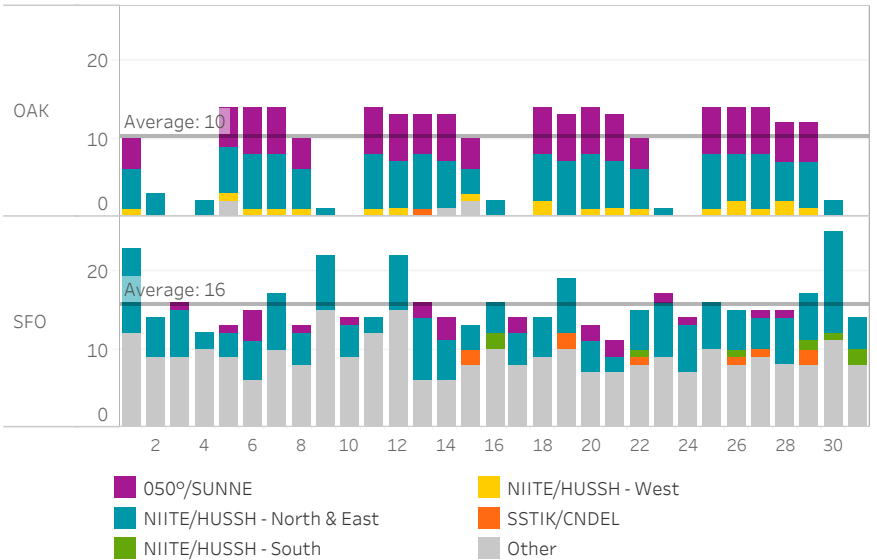


West-Bound NIITE/HUSSH

North/East-Bound NIITE/HUSSH

Other

South-Bound NIITE/HUSSH

SSTIK/CNDEL

Other Departures to be routed onto NIITE/HUSSH: SUNNE & southbound 050 Heading

## Count of Departures per Night



Average: 10 (OAK)
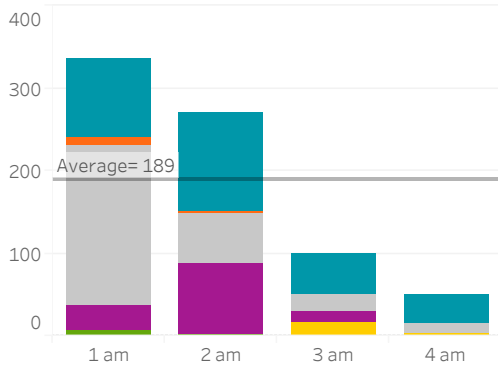
Average: 16 (SFO)

- 050°/SUNNE
- NIITE/HUSSH - North & East
- NIITE/HUSSH - South
- NIITE/HUSSH - West
- SSTIK/CNDEL
- Other

## Average Total Departures per Hour



Average= 189

## Departure Runway Usage

| OAK | SFO | | | |
|---|---|---|---|---|
| 30 | 01L | 01R | 28L | 28R |
| 100% | 8% | 24% | 53% | 14% |

## CNDEL and SSTIK Departures vs HUSSH and NIITE

### OAK



HUSSH - West 20

CNDEL 1

SUNNE 108

### SFO



SSTIK 9

050 Heading 23

NIITE - South 8

## How Close are Aircraft Flying to GOBBS?



- <2 mi
- 2-5 mi
- >5 mi

Count of Flights



- NIITE/HUSSH - South
- NIITE/HUSSH - West

Count of Flights

## Average Altitude at NIITE and GOBBS



| OAK-HUSSH | SFO-NIITE |
|---|---|
| Above NIITE: 6,742 ft | Above NIITE: 6,339 ft |
| Above GOBBS: 12,506 ft | Above GOBBS: 9,944 ft |
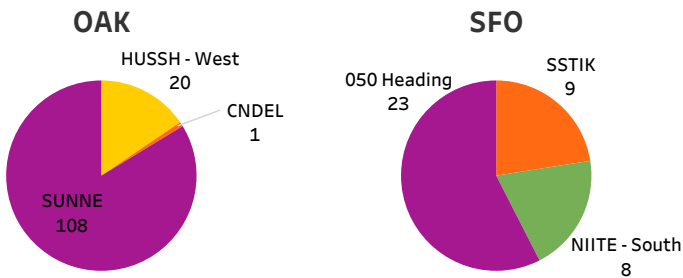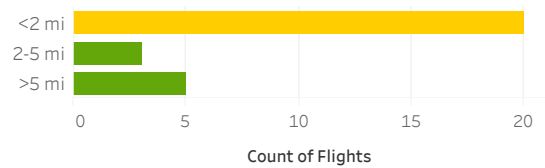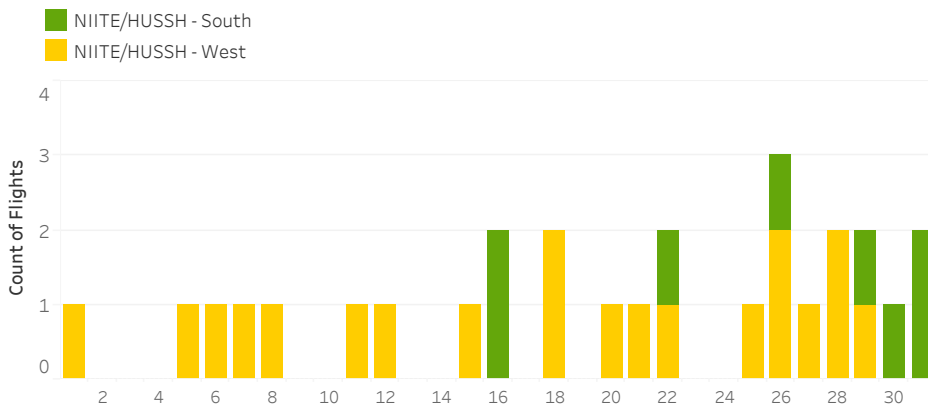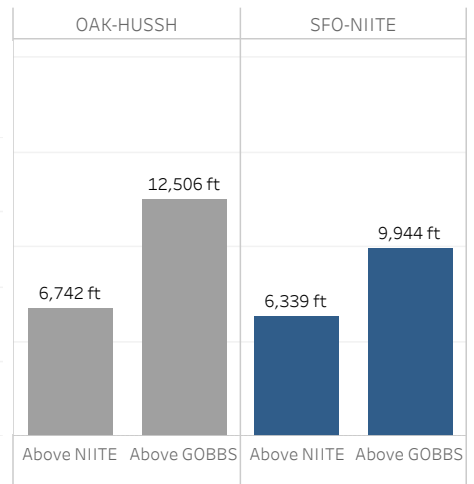
# Airport Director's Report

Presented at the October 4, 2023
Airport/Community Roundtable
Meeting

Aircraft Noise Office
August 2023

**SFO** San Francisco
International
Airport

# Aircraft Noise Levels Summary

## Nighttime N-Above 55 dBA Daily Average

Legend:
- 2022 Q4 (○)
- 2023 Q1 (✕)
- 2023 Q2 (+)
- 2023 Q3 (✳)

NMT: 1–29 (vertical axis)
Horizontal axis: 0, 10, 20, 30, 40, 50, 60, 70, 80

The chart above depicts the average daily N-Above 55dBA SFO aircraft noise events per NMT during nighttime hours (10pm-7am) compared to the previous 4 quarters. Values are derived from the ANEEM algorythm.

### N-Above dBA level
- 85 dBA
- 75 dBA
- 65 dBA
- 55 dBA

### Count of Events
- 0
- 2,000
- 4,000
- 6,000
- 8,000
- ≥ 10,000

The map displays the N-Above counts at each NMT by N-Above Noise Level based on SFO aircraft noise events. Darker circles represent louder noise events and larger circles represent a larger number of noise events relative to the N-Above noise level. Values are derived from the ANEEM algorythm.

## Significant Exceedances
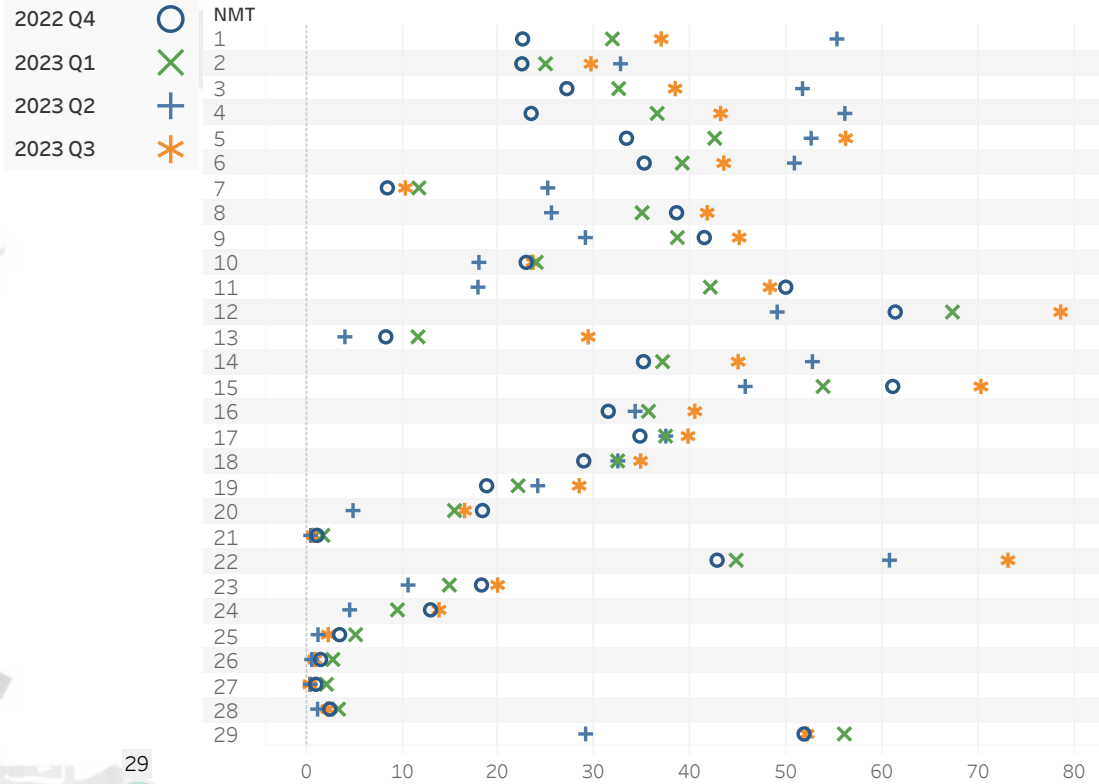
Exceedances - NPD (0K, 1K, 2K, 3K)
1,913

Exceedances - ANEEM (0K, 1K, 2K, 3K)
1,819

Months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

Legend:
- 2020 (△)
- 2021 (□)
- 2022 (○)
- 2023 (✕)

Significant Exceedances (right) displays a total count of SFO aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

# Aircraft Noise Levels Details

| | | ANOMS | | | | | | ANEEM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aircaft | | | Community | | | Aircraft | | | |
| NMT | City | Noise Events (AVG Day) | CNEL (dBA) | SEL (dBA) | LMax (dBA) | CNEL (dBA) | Ambient Level (dBA) | Noise Events (AVG Day) | CNEL (dBA) | SEL (dBA) | LMax (dBA) |
| 1 | San Bruno | 136 | 73 | 94 | 83 | 67 | 55 | 131 | 72 | 94 | 84 |
| 2 | San Bruno | 87 | 55 | 79 | 68 | 63 | 51 | 93 | 56 | 80 | 68 |
| 3 | SSF | 57 | 53 | 79 | 68 | 60 | 45 | 183 | 55 | 76 | 63 |
| 4 | SSF | 127 | 67 | 90 | 78 | 59 | 46 | 176 | 67 | 88 | 73 |
| 5 | San Bruno | 126 | 66 | 88 | 77 | 61 | 47 | 193 | 66 | 86 | 72 |
| 6 | SSF | 118 | 64 | 87 | 76 | 58 | 44 | 184 | 64 | 85 | 70 |
| 7 | Brisbane | 27 | 49 | 78 | 67 | 59 | 46 | 58 | 49 | 76 | 63 |
| 8 | Millbrae | 11 | 51 | 84 | 73 | 65 | 49 | 142 | 55 | 77 | 67 |
| 9 | Millbrae | 7 | 37 | 75 | 64 | 58 | 40 | 160 | 52 | 72 | 60 |
| 10 | Burlingame | 4 | 36 | 77 | 65 | 57 | 41 | 78 | 48 | 73 | 61 |
| 11 | Burlingame | 8 | 42 | 80 | 68 | 62 | 41 | 205 | 52 | 73 | 61 |
| 12 | Foster City | 356 | 62 | 82 | 71 | 57 | 41 | 442 | 62 | 81 | 69 |
| 13 | Hillsborough | 3 | 34 | 79 | 65 | 57 | 42 | 71 | 48 | 72 | 60 |
| 14 | SSF | 120 | 60 | 83 | 71 | 59 | 44 | 183 | 60 | 81 | 68 |
| 15 | SSF | 154 | 58 | 81 | 69 | 59 | 45 | 283 | 58 | 79 | 66 |
| 16 | SSF | 102 | 58 | 82 | 71 | 59 | 44 | 184 | 59 | 80 | 66 |
| 17 | SSF | 110 | 58 | 81 | 70 | 58 | 45 | 169 | 58 | 80 | 67 |
| 18 | Daly City | 106 | 63 | 87 | 76 | 59 | 45 | 163 | 63 | 85 | 71 |
| 19 | Pacifica | 95 | 59 | 83 | 73 | 57 | 40 | 110 | 60 | 83 | 71 |
| 20 | Daly City | 94 | 51 | 77 | 65 | 60 | 42 | 128 | 50 | 75 | 63 |
| 21 | San Francisco | 40 | 45 | 76 | 64 | 62 | 52 | 16 | 41 | 76 | 66 |
| 22 | San Bruno | 80 | 57 | 81 | 71 | 62 | 45 | 289 | 60 | 78 | 66 |
| 23 | San Francisco | 88 | 53 | 79 | 69 | 59 | 46 | 151 | 54 | 78 | 66 |
| 24 | San Francisco | 79 | 54 | 81 | 67 | 69 | 48 | 108 | 50 | 75 | 63 |
| 25 | San Francisco | 22 | 41 | 76 | 65 | 56 | 41 | 47 | 42 | 72 | 61 |
| 26 | San Francisco | 8 | 40 | 78 | 66 | 59 | 45 | 23 | 40 | 74 | 62 |
| 27 | San Francisco | 5 | 36 | 77 | 66 | 58 | 45 | 19 | 38 | 73 | 62 |
| 28 | Redwood City | 7 | 39 | 77 | 64 | 52 | 37 | 33 | 41 | 71 | 58 |
| 29 | San Mateo | 105 | 51 | 78 | 65 | 59 | 47 | 341 | 53 | 73 | 61 |

Noise Monitor's CNEL values (above) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft monthly CNELs from both ANOMS NPD and ANEEM algorithms for each monitor site are provided with daily average aircraft counts, the average Sound Exposure Level (SEL), and average Maximum Level (LMax). Noise levels from other noise sources in the community calculated by ANOMS is provided as Community CNEL. Ambient Level is represented by the LA90 noise value which is the noise level exceeded at the monitor for 90% of the time.

## SFO N-Above NPD

| NMT | Min:Max LMax | 55 dBA | 60 dBA | 65 dBA | 70 dBA | 75 dBA | 80 dBA |
|---|---|---|---|---|---|---|---|
| 1 | 66:99 | 4,157 | 4,157 | 4,157 | 3,967 | 3,673 | 3,104 |
| 2 | 61:84 | 2,715 | 2,715 | 2,307 | 625 | 33 | 5 |
| 3 | 62:88 | 1,628 | 1,628 | 1,338 | 351 | 112 | 17 |
| 4 | 61:93 | 3,906 | 3,906 | 3,798 | 3,391 | 2,915 | 1,752 |
| 5 | 62:90 | 3,854 | 3,854 | 3,827 | 3,437 | 2,622 | 1,252 |
| 6 | 61:88 | 3,654 | 3,654 | 3,557 | 3,176 | 2,238 | 552 |
| 7 | 61:80 | 704 | 704 | 554 | 147 | 19 | 0 |
| 8 | 68:87 | 323 | 323 | 323 | 270 | 78 | 15 |
| 9 | 60:78 | 72 | 71 | 21 | 8 | 1 | 0 |
| 10 | 60:72 | 48 | 48 | 19 | 5 | 0 | 0 |
| 11 | 60:84 | 43 | 42 | 26 | 12 | 9 | 3 |
| 12 | 63:85 | 11,230 | 11,230 | 11,122 | 7,134 | 735 | 26 |
| 13 | 59:76 | 23 | 22 | 7 | 2 | 1 | 0 |
| 14 | 61:86 | 3,704 | 3,704 | 3,529 | 2,219 | 522 | 14 |
| 15 | 62:83 | 4,782 | 4,782 | 4,388 | 1,592 | 112 | 11 |
| 16 | 62:88 | 3,166 | 3,166 | 3,064 | 1,940 | 248 | 2 |
| 17 | 61:81 | 3,426 | 3,426 | 3,201 | 1,705 | 136 | 4 |
| 18 | 64:90 | 3,282 | 3,282 | 3,274 | 2,955 | 2,016 | 415 |
| 19 | 65:83 | 2,951 | 2,951 | 2,951 | 2,297 | 700 | 22 |
| 20 | 59:88 | 2,698 | 2,654 | 1,202 | 316 | 113 | 18 |
| 21 | 59:80 | 665 | 619 | 206 | 29 | 1 | 1 |
| 22 | 64:83 | 2,428 | 2,428 | 2,419 | 1,463 | 141 | 14 |
| 23 | 63:84 | 2,635 | 2,635 | 2,458 | 749 | 55 | 6 |
| 24 | 59:85 | 2,048 | 2,035 | 1,217 | 375 | 187 | 29 |
| 25 | 58:78 | 527 | 483 | 196 | 44 | 11 | 0 |
| 26 | 60:80 | 143 | 143 | 80 | 12 | 5 | 0 |
| 27 | 62:73 | 32 | 32 | 15 | 3 | 0 | 0 |
| 28 | 59:80 | 128 | 115 | 32 | 12 | 3 | 0 |
| 29 | 59:86 | 3,468 | 3,379 | 1,170 | 398 | 93 | 15 |

## SFO N-Above ANEEM

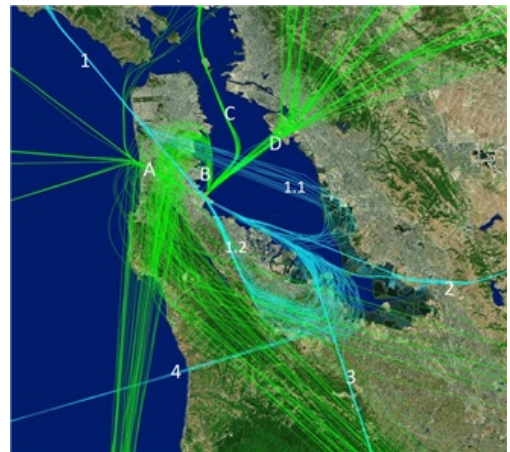| NMT | Min:Max LMax | 55 dBA | 60 dbA | 65 dBA | 70 dBA | 75 dBA | 80 dBA |
|---|---|---|---|---|---|---|---|
| 1 | 55:99 | 4,037 | 4,034 | 4,019 | 3,924 | 3,634 | 3,077 |
| 2 | 56:81 | 2,813 | 2,787 | 2,352 | 614 | 20 | 2 |
| 3 | 53:88 | 4,734 | 3,833 | 1,525 | 310 | 92 | 14 |
| 4 | 53:93 | 5,113 | 4,820 | 3,938 | 3,379 | 2,905 | 1,746 |
| 5 | 53:90 | 5,756 | 5,474 | 4,498 | 3,459 | 2,608 | 1,244 |
| 6 | 53:88 | 5,391 | 4,909 | 3,680 | 3,157 | 2,223 | 548 |
| 7 | 53:80 | 1,285 | 1,028 | 532 | 138 | 18 | 0 |
| 8 | 53:89 | 4,268 | 4,066 | 2,816 | 805 | 140 | 20 |
| 9 | 53:80 | 4,035 | 1,837 | 491 | 140 | 25 | 0 |
| 10 | 53:76 | 2,013 | 1,152 | 329 | 61 | 7 | 0 |
| 11 | 53:84 | 5,372 | 2,771 | 1,179 | 476 | 132 | 16 |
| 12 | 53:87 | 13,594 | 12,530 | 11,187 | 7,066 | 689 | 17 |
| 13 | 53:73 | 1,838 | 962 | 223 | 6 | 0 | 0 |
| 14 | 53:82 | 5,314 | 4,999 | 3,722 | 2,216 | 514 | 11 |
| 15 | 53:83 | 8,478 | 7,545 | 4,896 | 1,616 | 96 | 5 |
| 16 | 53:80 | 5,263 | 4,568 | 3,333 | 1,962 | 235 | 1 |
| 17 | 53:81 | 5,013 | 4,686 | 3,414 | 1,690 | 133 | 3 |
| 18 | 53:90 | 4,811 | 4,361 | 3,501 | 2,945 | 2,016 | 417 |
| 19 | 53:83 | 3,388 | 3,325 | 3,066 | 2,276 | 694 | 21 |
| 20 | 53:80 | 3,246 | 2,700 | 969 | 140 | 18 | 1 |
| 21 | 60:74 | 296 | 296 | 167 | 16 | 0 | 0 |
| 22 | 53:83 | 8,551 | 7,399 | 4,798 | 1,981 | 216 | 11 |
| 23 | 54:80 | 3,778 | 3,587 | 2,568 | 721 | 36 | 1 |
| 24 | 53:82 | 2,483 | 2,051 | 864 | 153 | 30 | 5 |
| 25 | 53:77 | 968 | 653 | 187 | 24 | 2 | 0 |
| 26 | 54:74 | 336 | 247 | 87 | 9 | 0 | 0 |
| 27 | 55:72 | 103 | 72 | 13 | 3 | 0 | 0 |
| 28 | 53:80 | 519 | 168 | 18 | 2 | 1 | 0 |
| 29 | 53:81 | 10,491 | 6,098 | 866 | 116 | 19 | 1 |

Noise Monitor N-Above values (above) are derived from actual measured events and assigned to aircraft overflights using both ANOMS NPD and ANEEM algorithms. N-Above represents the count of events where the peak noise (LMax) reached above the designated dBA value. Note, the charts on this page represent only SFO aircraft-related noise events.
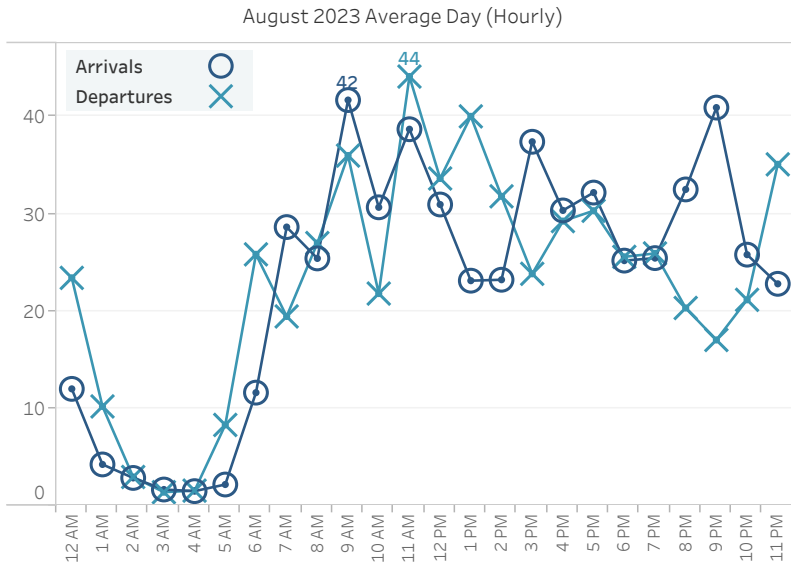
# Operations

| Monthly Ops | AVG Daily Ops | 12 Month AVG | YOY Growth |
|---|---|---|---|
| 34,316 | 1,107 | 30,825 | 7% |

## August 2023 Average Day (Hourly)



Arrivals ○
Departures ✕

## Major Arrival and Departure Routes (West Flow)



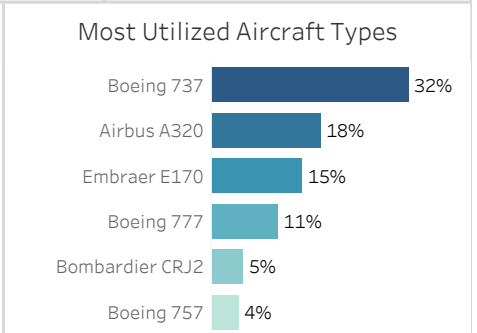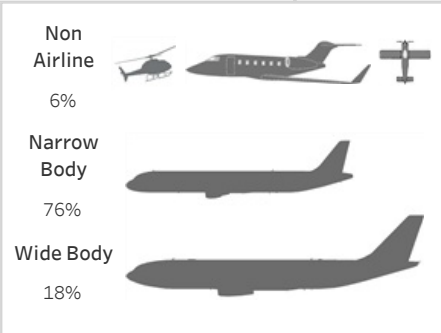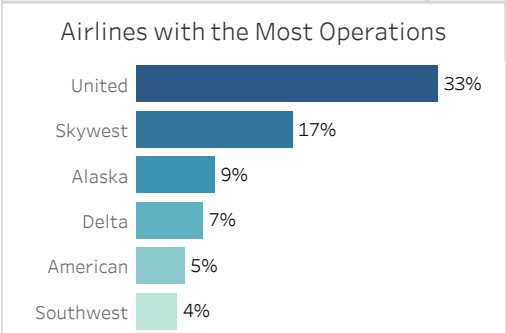West Flow is depicted in the above image and is a predominate flow at SFO.

| West Flow |
|---|
| 99% |

| Arrival Route | | Departure Route | |
|---|---|---|---|
| 1. BDEGA | 32% | A. GAP | 21% |
| 2. DYAMD | 35% | B. SSTIK | 27% |
| 3. SERFR | 26% | C. NIITE | 13% |
| 4. PIRAT | 6% | D. TRUKN RWY 01 | 37% |
| | | D. TRUKN RWY 28 | 3% |
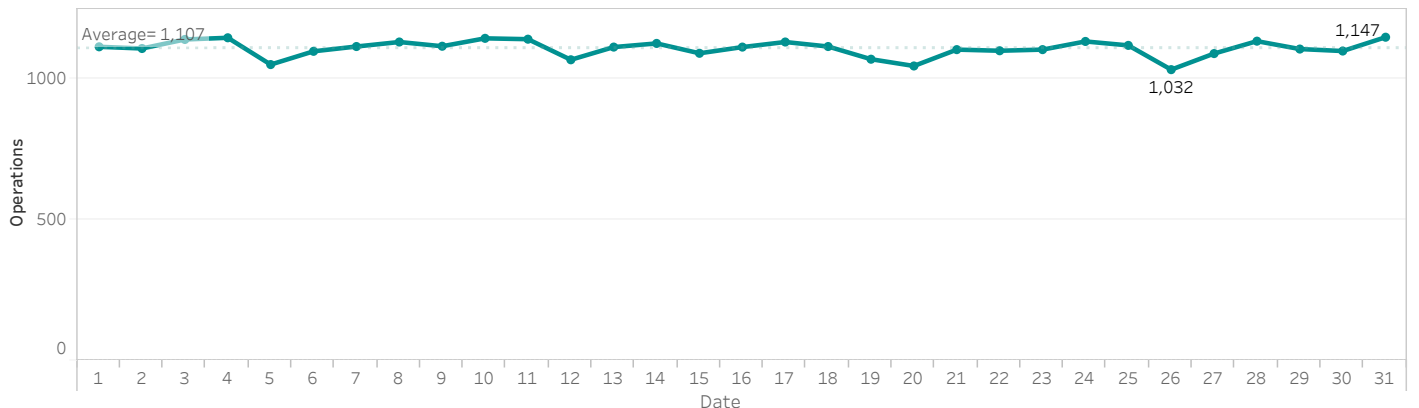
## Top Destinations

| Los Angeles | JFK | Seattle |
|---|---|---|
| 6% | 4% | 4% |

## Down the Bay vs Peninsula

| 1.1 Down the Bay Visual | 40% |
|---|---|
| 1.2 BDEGA Arrival | 60% |

## Airlines with the Most Operations

| United | 33% |
| Skywest | 17% |
| Alaska | 9% |
| Delta | 7% |
| American | 5% |
| Southwest | 4% |



Non Airline
6%

Narrow Body
76%

Wide Body
18%

## Most Utilized Aircraft Types

| Boeing 737 | 32% |
| Airbus A320 | 18% |
| Embraer E170 | 15% |
| Boeing 777 | 11% |
| Bombardier CRJ2 | 5% |
| Boeing 757 | 4% |

## Daily Aircraft Operations



Average= 1,107

1,147

1,032

Operations

Date

# Runway Usage and Nighttime Operations

Leftmost Runway Utilization table shows percent of runway usage for arrivals and departures by runway based on air carrier operations using jet, regional jet, and turboprop aircraft. Late Night Preferential Runway Use table depicts departure runway usage between 1am - 6am for jet aircraft for the whole month (top) and during nighttime hours only (bottom). Percentages [%] are rounded to the nearest whole number.

## Runway Utilization

| | Arrivals | Departures |
|---|---|---|
| 01 L/R | | 77% 12,429 |
| 10 L/R | | 1% 242 |
| 19 L/R | 1% 224 | |
| 28 L/R | 99% 15,880 | 22% 3,473 |

## Late Night Preferential Runway Use (1 am - 6 am)

| | Departures |
|---|---|
| 01 L/R | 54% 377 |
| 28 L/R | 46% 324 |

## Runway Utilization
### Arrivals

| 28L | 28R |
|---|---|
| 39% | 61% |

### Night (10pm-7am)

| 28L | 28R |
|---|---|
| 24% | 76% |

## Nighttime Power Run-Ups
10pm-7am

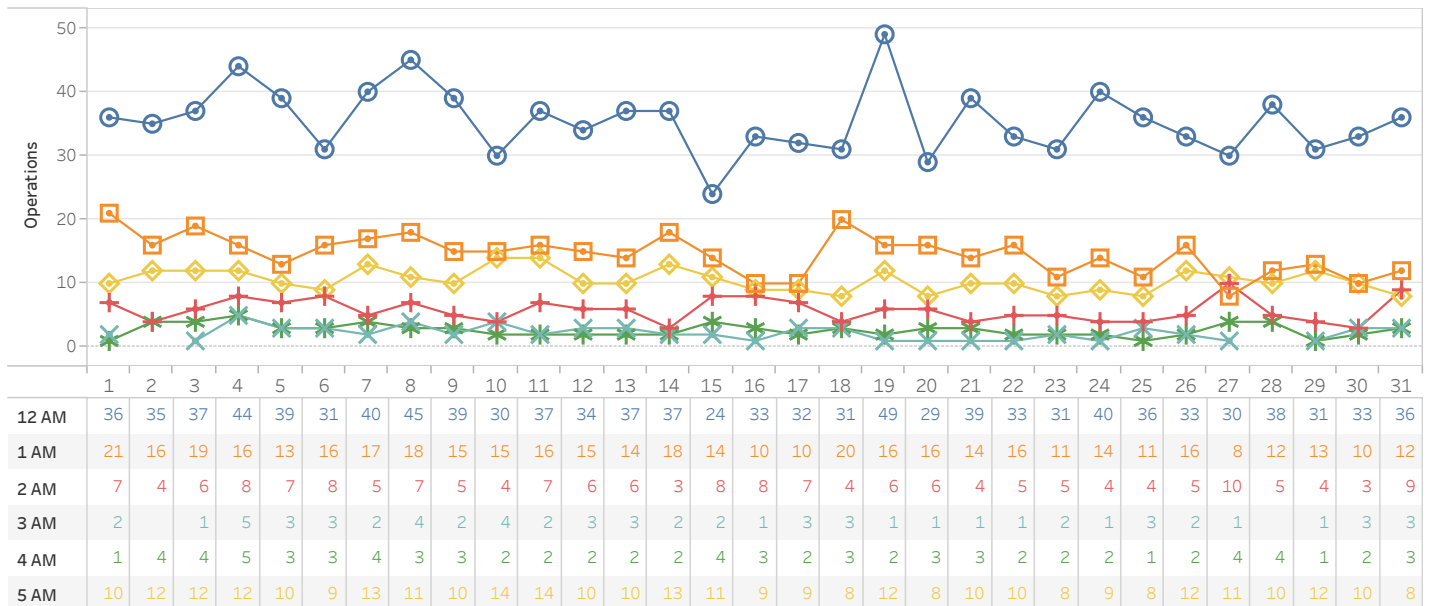| | |
|---|---|
| Alaska Airlines | 2 |
| American Airlines | 4 |
| United Airlines | 16 |

A power runup is a procedure used to test an aircraft engine after maintenance is completed. This is done to ensure safe operating standards prior to returning the aircraft to service. The Aircraft power settings range from idle to full power and may vary in duration.

Designated Power Runup locations are 19 L/R depicted on the airfield map (right) with airlines nighttime power runup counts shown above.



10 L/R
1 L/R
V@L Engine Run-Up Area
E@L Engine Run-Up Area
19 L/R
C2@C Engine Run-Up Area
28 L/R

## Hourly Nighttime Operations

Legend: 12 AM, 1 AM, 2 AM, 3 AM, 4 AM, 5 AM



| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 AM | 36 | 35 | 37 | 44 | 39 | 31 | 40 | 45 | 39 | 30 | 37 | 34 | 37 | 37 | 24 | 33 | 32 | 31 | 49 | 29 | 39 | 33 | 31 | 40 | 36 | 33 | 30 | 38 | 31 | 33 | 36 |
| 1 AM | 21 | 16 | 19 | 16 | 13 | 16 | 17 | 18 | 15 | 15 | 16 | 15 | 14 | 18 | 14 | 10 | 10 | 20 | 16 | 16 | 14 | 16 | 11 | 14 | 11 | 16 | 8 | 12 | 13 | 10 | 12 |
| 2 AM | 7 | 4 | 6 | 8 | 7 | 8 | 5 | 7 | 5 | 4 | 7 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 6 | 6 | 4 | 5 | 5 | 4 | 4 | 5 | 10 | 5 | 4 | 3 | 9 |
| 3 AM | 2 | | 1 | 5 | 3 | 3 | 2 | 4 | 2 | 4 | 2 | 3 | 3 | 2 | 2 | 1 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | | 1 | 3 | 3 | 3 |
| 4 AM | 1 | 4 | 4 | 5 | 3 | 3 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 4 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 4 | 4 | 1 | 2 | 3 | |
| 5 AM | 10 | 12 | 12 | 12 | 10 | 9 | 13 | 11 | 10 | 14 | 14 | 10 | 10 | 13 | 11 | 9 | 9 | 9 | 8 | 12 | 9 | 10 | 10 | 8 | 9 | 9 | 12 | 11 | 10 | 12 | 8 |

# Noise Reports

| | Noise Reporters | Noise Reports |
|---|---|---|
| **Roundtable** | | |
| Atherton | 2 | 205 |
| Belmont | 3 | 34 |
| Brisbane | 21 | 342 |
| Burlingame | 3 | 3 |
| Daly City | 12 | 1,184 |
| East Palo Alto | 1 | 6 |
| El Granada | 1 | 1,226 |
| Emerald Hills | 7 | 969 |
| Foster City | 10 | 60 |
| Hillsborough | 1 | 143 |
| Menlo Park | 20 | 1,342 |
| Millbrae | 5 | 35 |
| Montara | 1 | 70 |
| Pacifica | 18 | 1,881 |
| Portola Valley | 26 | 13,935 |
| Redwood City | 7 | 384 |
| San Bruno | 13 | 265 |
| San Carlos | 2 | 10 |
| San Francisco | 16 | 2,957 |
| San Mateo | 8 | 597 |
| South San Francisco | 17 | 430 |
| Woodside | 6 | 1,860 |
| **Other** | | |
| Alameda | 2 | 3 |
| Aptos | 2 | 5 |
| Berkeley | 3 | 1,262 |
| Boulder Creek | 2 | 24 |
| Capitola | 4 | 96 |
| Castro Valley | 1 | 8 |
| Concord | 1 | 1 |
| Cupertino | 1 | 265 |
| Felton | 3 | 120 |
| Fremont | 1 | 133 |
| Lafayette | 1 | 14 |
| Los Altos | 50 | 7,491 |
| Los Altos Hills | 10 | 1,275 |
| Los Gatos | 33 | 4,670 |
| Moraga | 3 | 144 |
| Mountain View | 15 | 3,701 |
| Oakland | 11 | 3,541 |
| Palo Alto | 113 | 23,231 |
| Richmond | 4 | 240 |
| San Jose | 1 | 2 |
| Santa Cruz | 41 | 7,123 |
| Scotts Valley | 27 | 4,459 |
| Soquel | 27 | 3,966 |
| Stanford | 4 | 524 |
| Sunnyvale | 4 | 739 |
| Union City | 1 | 276 |
| Watsonville | 1 | 65 |
| **Grand Total** | **566** | **91,316** |

**Notes:**
Address validation Relies on USPS-provided ZIP Code look up table and USPS-specified default city values.

| Metric | Value |
|---|---|
| Reporters Annual AVG | 524 |
| Reports Annual AVG | 87,654 |
| New Reporters | 39 |
| New Reporters Top City | Foster City |
| Furthest Report | 64 miles |
| Reports per SFO Operation | 3 |
| Top Aircraft Types | B737, A320, E75L |
| Top Flight Numbers | KAL214, CAL5107, JBU536 |
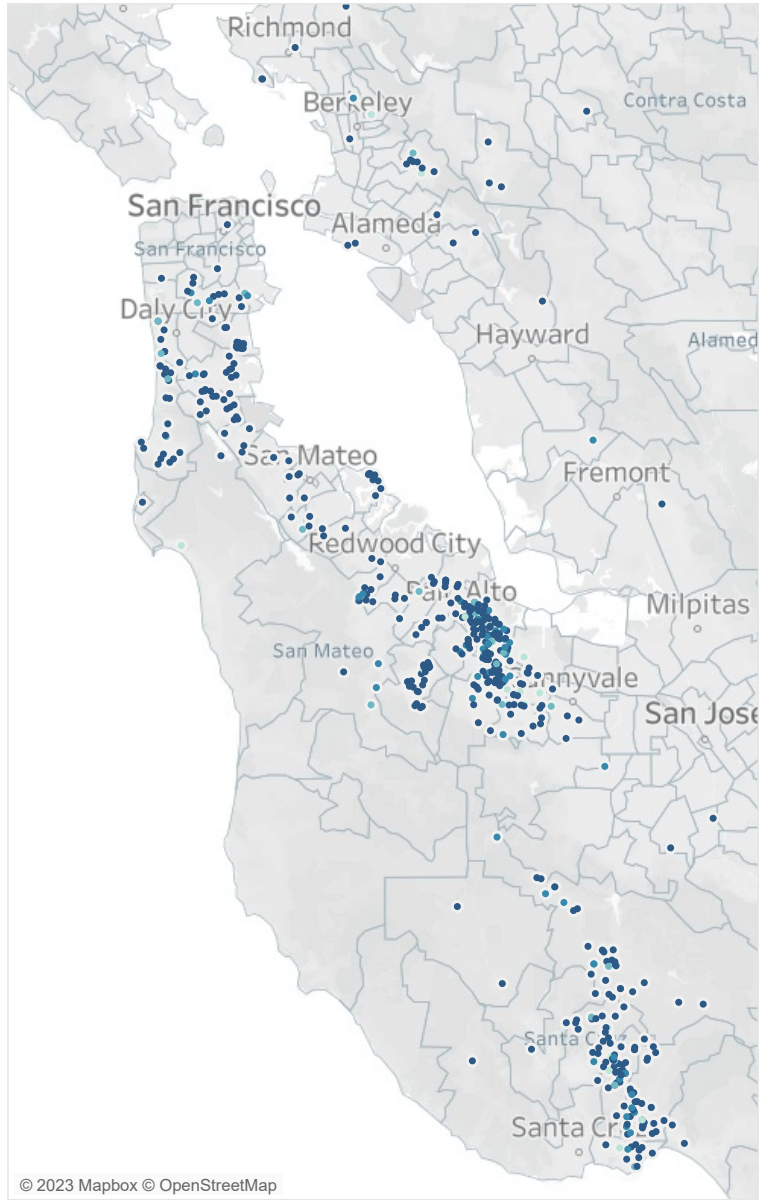
## Noise Reporters Location Map



© 2023 Mapbox © OpenStreetMap

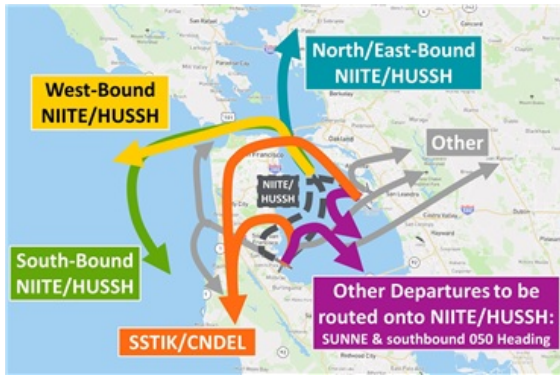## Noise Reports by Airport



SJC 5% | OAK 5% | SFO 70% | PAO 10% | SQL 8% | Other 2%

**99%** of noise reports correlate to a flight origin/destination airport.

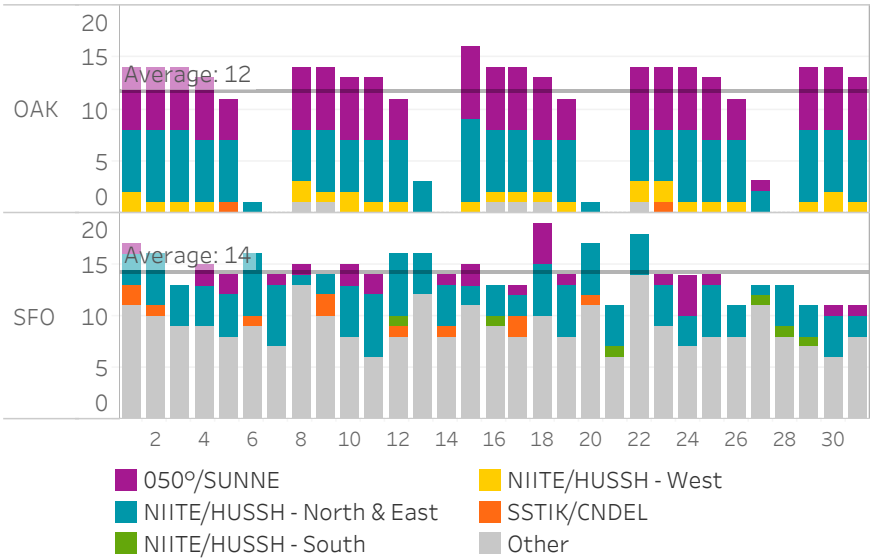## Hourly Noise Reporters (Average Day in a Month)



Night | Day | Evening
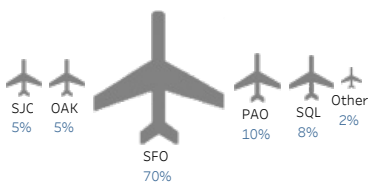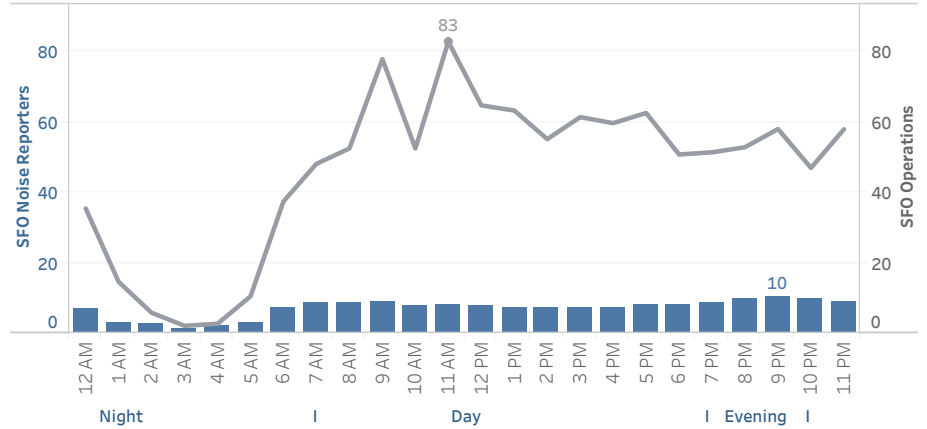
Source: SFO Intl Airport Noise Monitoring System

# NIITE to GOBBS 1 am to 5 am (August 2023)



## Count of Departures per Night

Legend:
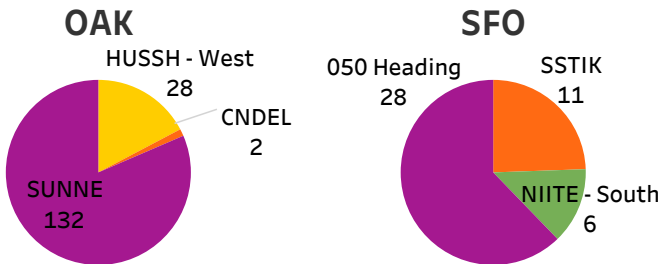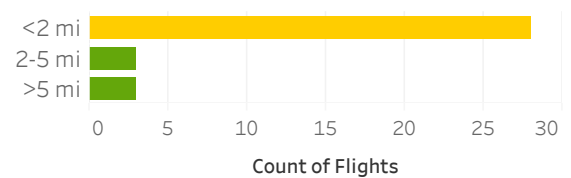- 050°/SUNNE
- NIITE/HUSSH - North & East
- NIITE/HUSSH - South
- NIITE/HUSSH - West
- SSTIK/CNDEL
- Other

OAK Average: 12
SFO Average: 14

## Average Total Departures per Hour

Average= 189

(Bar chart with hours: 1 am, 2 am, 3 am, 4 am)
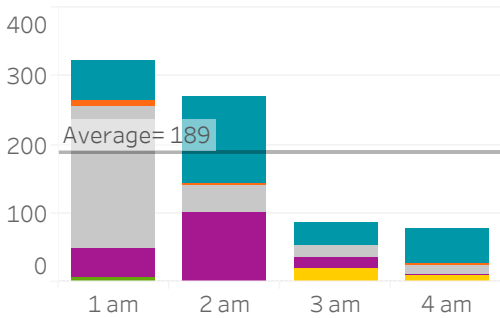
## Departure Runway Usage

| OAK | SFO | | | |
|-----|-----|-----|-----|-----|
| 30 | 01L | 01R | 28L | 28R |
| 100% | 6% | 28% | 51% | 16% |

## CNDEL and SSTIK Departures vs HUSSH and NIITE

### OAK
- HUSSH - West 28
- CNDEL 2
- SUNNE 132

### SFO
- 050 Heading 28
- SSTIK 11
- NIITE - South 6

## How Close are Aircraft Flying to GOBBS?

- <2 mi
- 2-5 mi
- >5 mi

Count of Flights

## Average Altitude at NIITE and GOBBS

| OAK-HUSSH | SFO-NIITE |
|-----------|-----------|

- OAK-HUSSH Above NIITE: 6,663 ft
- OAK-HUSSH Above GOBBS: 12,589 ft
- SFO-NIITE Above NIITE: 7,994 ft
- SFO-NIITE Above GOBBS: 11,903 ft

(Bottom left chart legend:)
- NIITE/HUSSH - South
- NIITE/HUSSH - West

Count of Flights
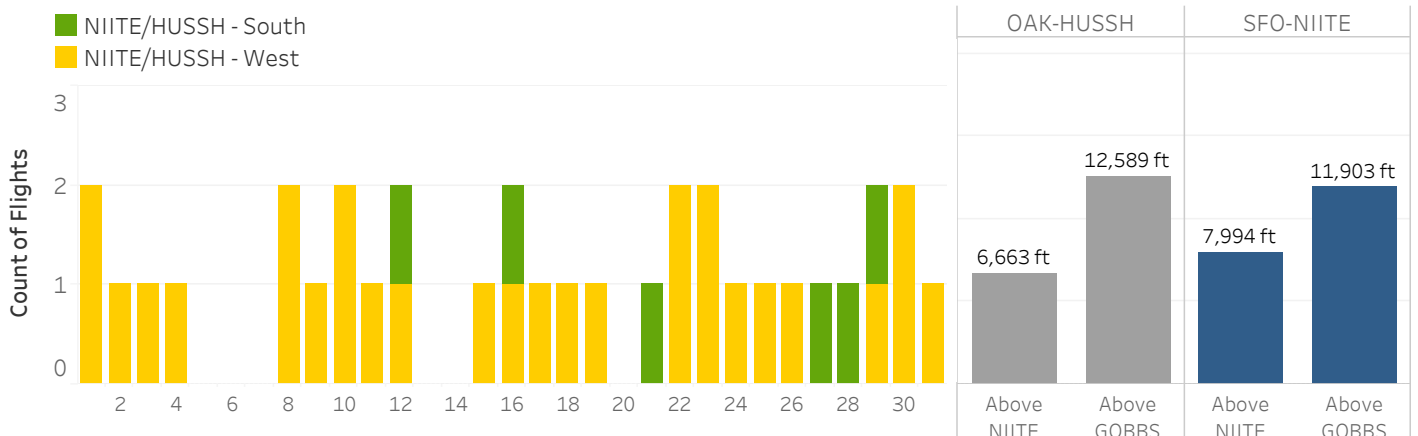
*As of 8/31/2023*

| A | SOURCES | 2023-24 | 2023-24 |
|---|---|---|---|
| | *Revenue* | BUDGET | ACTUAL |
| | San Francisco Airport Commission | $ 220,000 | |
| | Roundtable Membership | $ 43,500 | $ 19,500 |
| | *In Kind Contributions** | | |
| | | $ 263,500 | $ 19,500 |

| | *Other Sources* | BUDGET | ACTUAL |
|---|---|---|---|
| | Fund Balance Contribution | $ 9,490 | |
| | **SOURCES TOTAL** | $ 272,990 | $ 19,500 |

| B | EXPENSES | 2023-24 | 2023-24 |
|---|---|---|---|
| | *Staffing & Coordination* | BUDGET | ACTUAL |
| | County of San Mateo Coordination Services | $ 155,000 | $ 22,130 |
| | Roundtable Aviation Technical Consultant | $ 90,000 | $ 9,829 |
| | | $ 245,000 | $ 31,959 |

| ADMINISTRATION / OPERATIONS | BUDGET | ACTUAL |
|---|---|---|
| Meeting Room * In-Kind Millbrae | | |
| Postage / Printing | $ 1,500 | |
| Website | $ 1,800 | |
| Data Storage & Conference Services | $ 990 | |
| Miscellaneous Office Expenses/Equipment | $ 3,000 | |
| Video Services | $ 8,000 | $ 236 |
| | $ 15,290 | $ 236 |

| PROJECTS, PROGRAMS, & OTHER | BUDGET | ACTUAL |
|---|---|---|
| Noise Conferences Attendance, Coordinator | $ 1,500 | |
| Noise Conferences Attendance, Members | $ 3,000 | |
| TRACON Field Trip(s) | $ 950 | |
| Airport Noise Report subscription | $ 2,500 | |
| N.O.I.S.E. Membership | $ 4,300 | |
| Fly Quiet Awards | $ 450 | |
| Special Study | $ - | $ - |
| | $ 12,700 | $ - |

| | EXPENSES TOTAL | $ 272,990 | $ 32,195 |
|---|---|---|---|

| YEAR END BALANCE | PROPOSED | ACTUAL |
|---|---|---|
| | $ - | $ (12,695) |

| C | UNCOMMITTED FUNDS | 2023-24 | 2023-24 |
|---|---|---|---|
| | | PROPOSED | ACTUAL |
| | Fund Balance | $ 411,863 | |
| | Contingency Reserve | $ 40,000 | |
| | **UNCOMMITTED FUNDS TOTAL** | $ 451,863 | $ - |

*Meeting venue in-kind contributions from Millbrae, Foster City, Hillsborough and County of San Mateo

# Northern California Terminal Radar Approach Control (NorCal TRACON) Overview

## Presented to the SFO Roundtable

Jason R. Stoddard, HMMH

October 4, 2023

hmmh

# Introduction

Purpose:

- Acquaint Roundtable Members with the Northern California Terminal Radar Approach Control (NorCal TRACON)

- Provide an overview of the operational framework within which flights operate under NorCal's control

# NorCal TRACON – What is it?

- NorCal TRACON is a Terminal Radar Approach Control Facility that provides aircraft sequencing, separation and safety alerts for aircraft arriving, departing and transiting the airspace under their control.

- Created in 2002 with the consolidation of Sacramento TRACON, Monterey TRACON, Stockton TRACON, Bay TRACON and Reno TRACON.

- NorCal TRACON controls over 21,000 square nautical miles of airspace and is located in Mather, CA – approximately 10 miles east of Sacramento.

- NorCal TRACON services all the major airports in the region including, SFO, OAK, SJC, RNO and SMF. It also coordinates with 19 smaller towered airports throughout the region.

- NorCal TRACON has been classified as the 2nd busiest TRACON in the United States, just behind SoCal TRACON. In 2020, NorCal TRACON handled roughly 1.1 million operations.

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# Air Traffic Control and the National Airspace System

- Facility Types
    - Air Traffic Control Tower (ATCT) – *Airport Surface & Immediate Environs*
    - Terminal Radar Approach Control (TRACON) – *region & low-altitude strata (~5 to 40 miles from airport, ~4,000 feet - ~19,000 feet)*
    - Air Route Traffic Control Center (ARTCC) – *en route phase of flight between terminal areas (spans several states)*

**TOWER** | **TRACON** | **EN ROUTE (CENTER)** | **TRACON** | **TOWER**
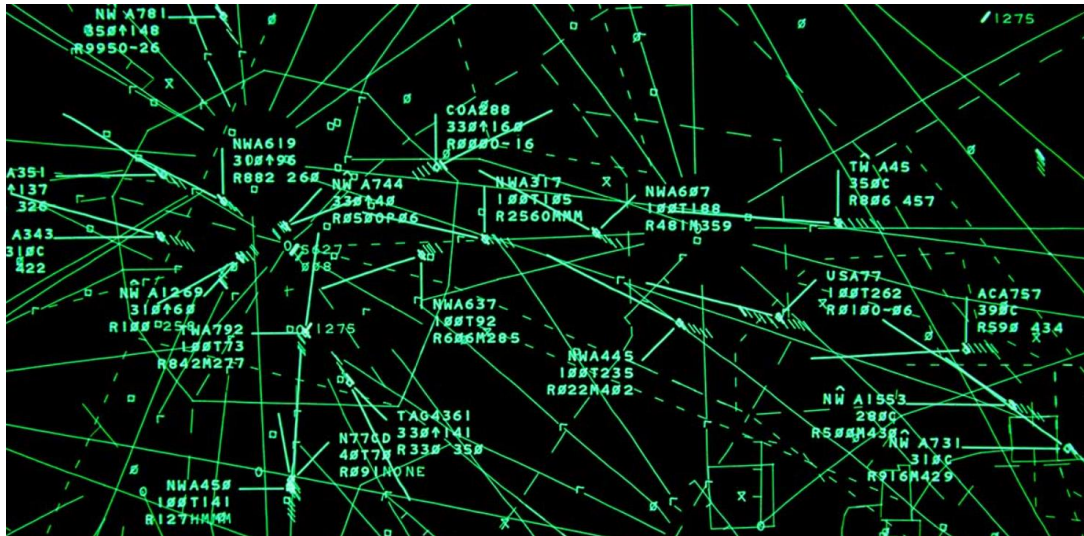
# Air Traffic Control and the NAS cont.

- SFO ATCT
  - Ground and local controllers provide taxi and takeoff/landing instructions and clearances
- NorCal TRACON
  - A TRACON serves as interface between the high-altitude, en route environment and the airport surface
  - Operations at other Primary Airports (OAK, SJC) and satellite airports (HAF, SQL, HWD) influence arrival and departure flows at SFO
- ZOA ARTCC (Oakland Center)
  - An Air Route Traffic Control Center provides separation services in the "en route" environment, away from the terminal area (TRACON) and the immediate vicinity of the airport (Air Traffic Control Tower)

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# NorCal Airport Complexes

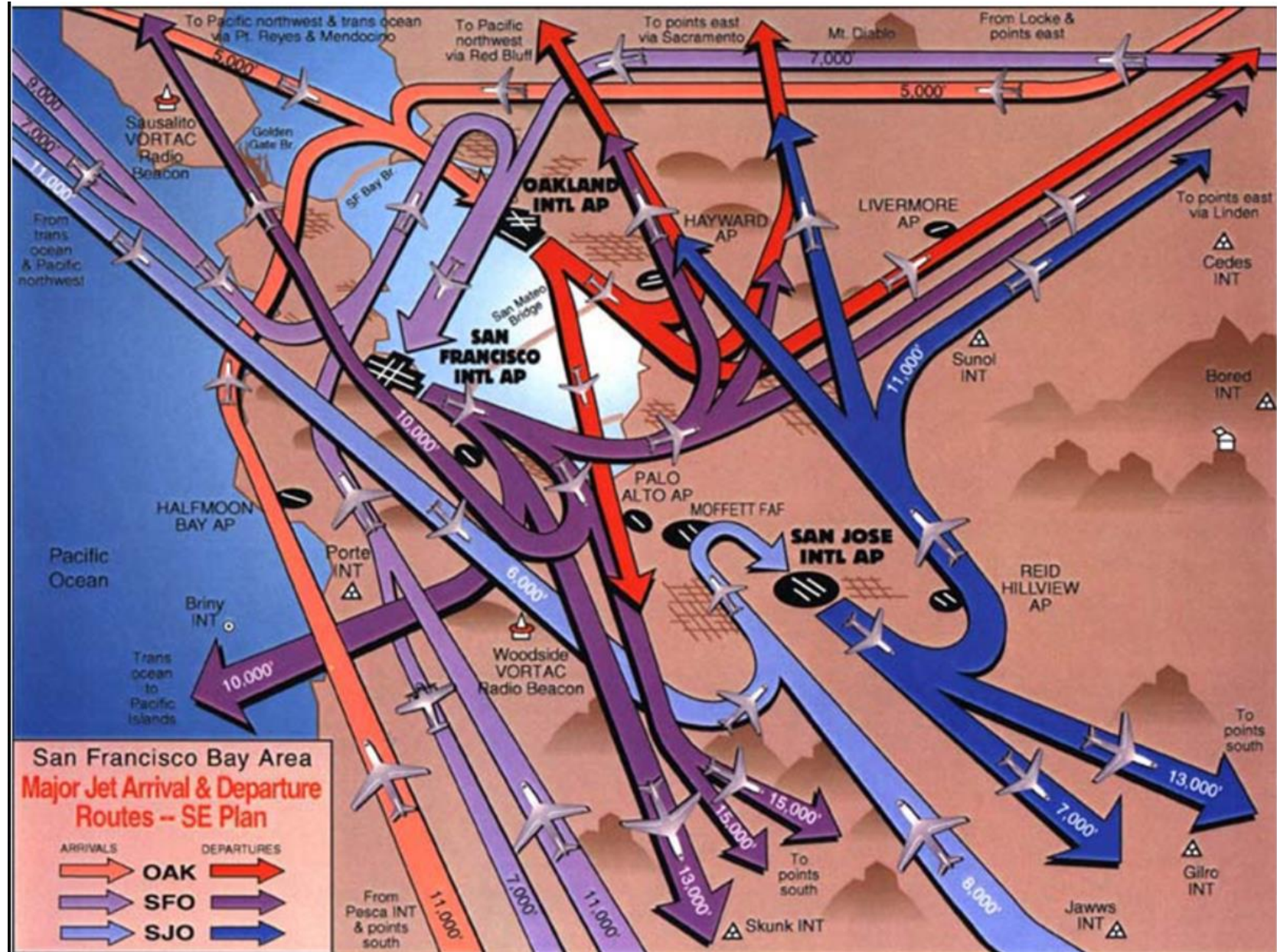| | |
|---|---|
| Mather CX | MHR, AUN, BAB, LHM, MCC, MYV, OVE, PVF, O17, |
| Modesto CX | MOD, LSN, MCE, MER |
| Monterey CX | MRY, SNS, WVI, OAR, 3O7 |
| Napa CX | APC, DVO, STS, O69 |
| Oakland CX | OAK, HWD |
| Sacramento CX | SMF, SAC, O88 |
| San Francisco CX | SFO, HAF, SQL |
| San Jose CX | SJC, NUQ, PAO, RHV, E16 |
| Stockton CX | SCK, LVK, TCY, C83, O27, 1O3 |
| Travis CX | SUU, CCR, VCB, O41, 0O5, 2Q3 |
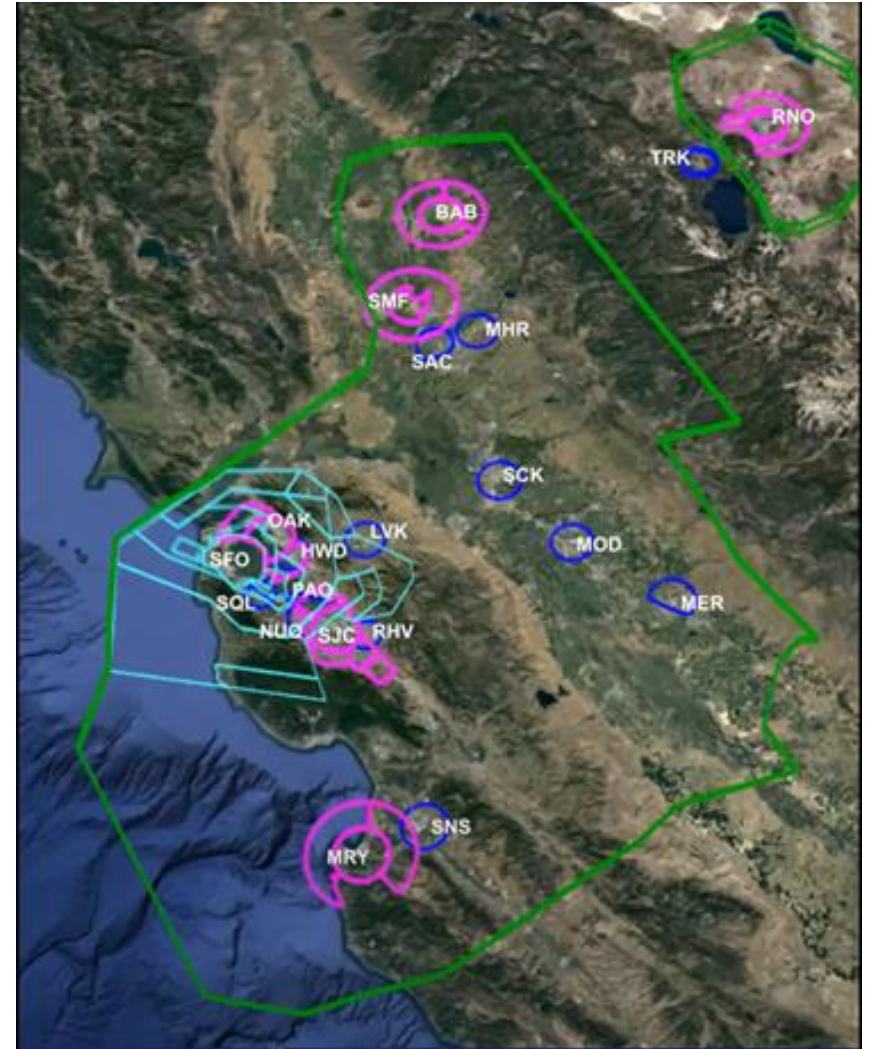
# NorCal Traffic Flow Descriptions

| | |
|---|---|
| SFOW | SFO Landing Runways 01 or 28 |
| SFOE | SFO Landing Runways 10 or 19 |
| SJCE | SJC Landing Runways 12 during SFOW operations |
| SJCW | SJC Landing Runways 30 during SFOE operations |
| OAKE | OAK Landing Runways 9/11 during SFOW operations |
| SMFS | SMF Landing Runways 16 |
| SMFN | SMF Landing Runways 34 |

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# Example West Traffic Flow



San Francisco Bay Area
**Major Jet Arrival & Departure Routes**
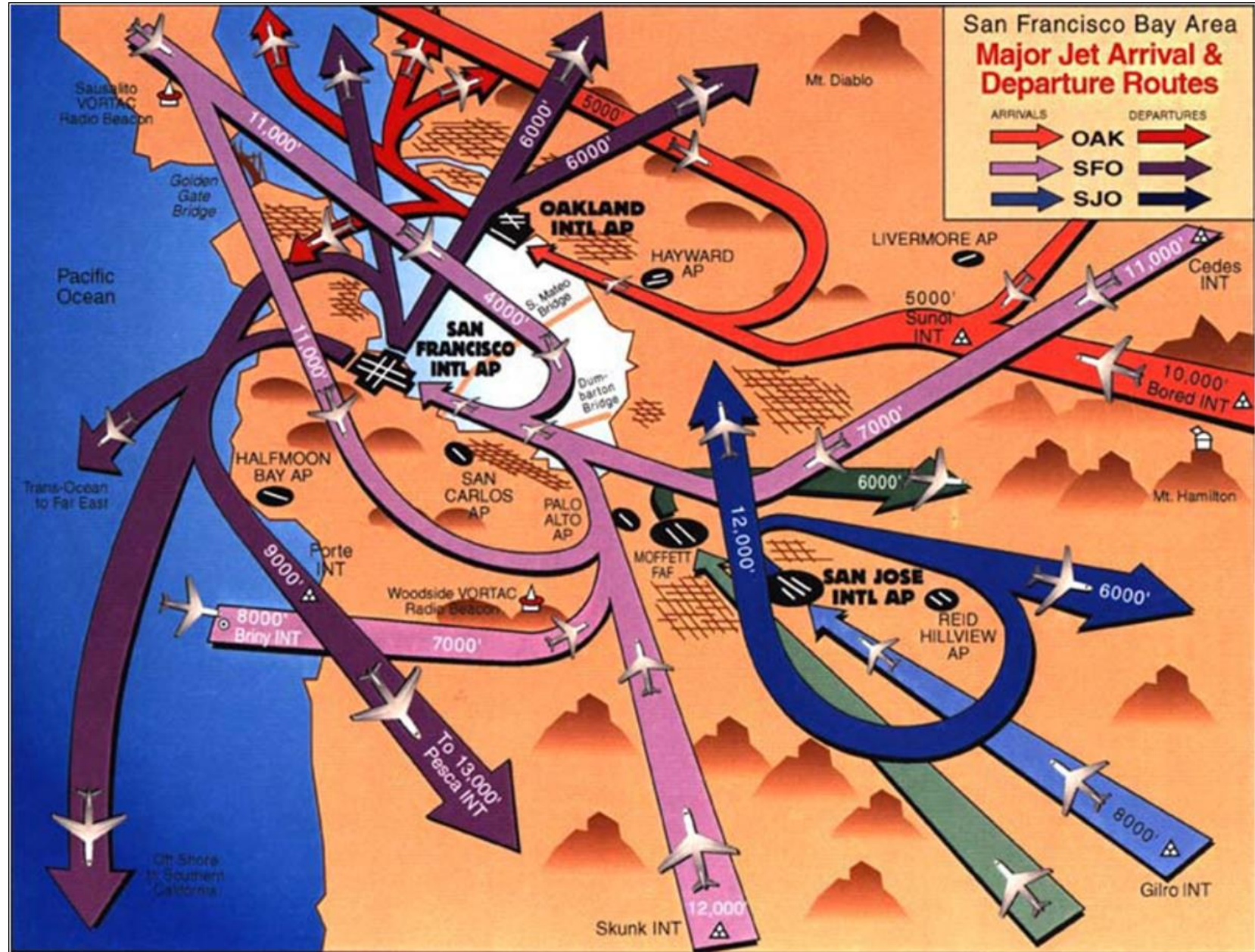
# Example East Traffic Flow



San Francisco Bay Area
**Major Jet Arrival & Departure Routes -- SE Plan**

# NorCal Sectors

- Area A (South Bay)
  - Fremont
  - Hooks
  - Licke
  - Morgan
  - Seca
  - Toga
  - Turlock

- Area B (SFO Arrivals)
  - Boulder
  - Cedar
  - Coyote
  - Foster
  - Laguna
  - Niles
  - Wiley
  - Woodside

- Area C (East Bay)
  - Castle
  - Grove
  - Mulford
  - Sunol
  - Tracy
  - Valley

- Area D (SFO Departures)
  - Diablo
  - Fairfield
  - Quake
  - Richmond
  - Sutro

- Area E (Reno/Sacramento)
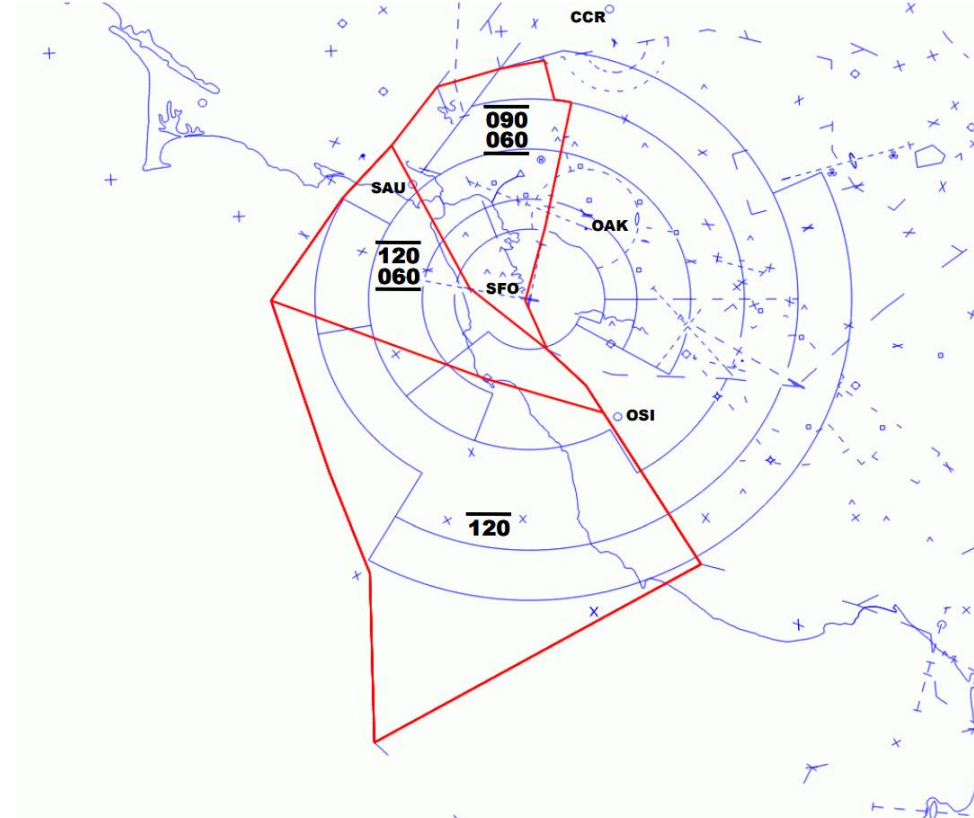  - Buttes
  - Delta
  - Elkhorn
  - Expo
  - Kirkwood
  - Paradise

# NorCal Area B Sectors – Boulder

SFOW
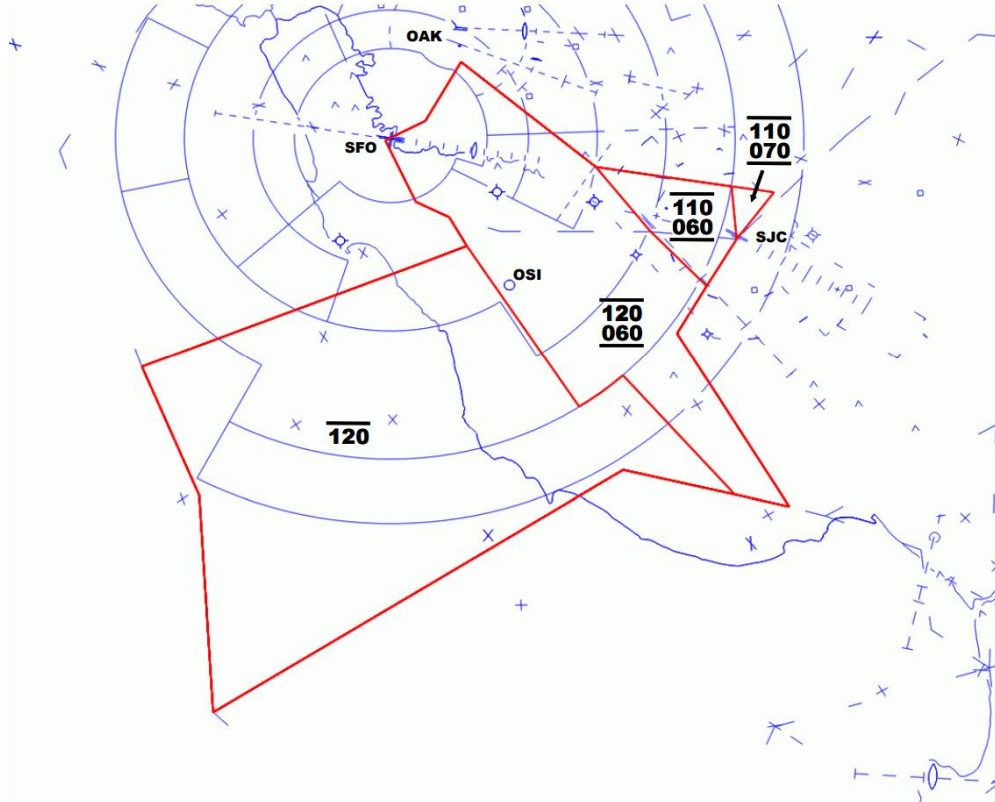
SFOE

# NorCal Noise Abatement

- The 7110.65 (FAA Air Traffic Control Manual) has numerous references to Noise Abatement procedures.
  - Section 6. Vectoring
    - 5-6-1: "Vector aircraft: In controlled airspace for separation, safety, noise abatement, operational advantage, confidence maneuver, or when a pilot requests"
- NorCal TRACON's Facility Manual also has sections dedicated to noise abatement
  - Chapter 5. NOISE ABATEMENT
    - Traffic permitting, control room personnel shall apply the following Noise Abatement Procedures:
      - NorCal has specific procedures dedicated to Noise Abatement at SFO that encompass approximately 2.5 pages

# Questions?

# SFO AIRPORT/COMMUNITY ROUNDTABLE
## FAA NORCAL TRACON (TERMINAL RADAR APPROACH CONTROL)

Highly experienced NORCAL TRACON controllers provide safety alerts, aircraft separation, and sequencing of air traffic arriving, departing, and transiting the airspace and airports in Northern California. They monitor flights which are flying published arrivals and published departures as well as providing vectoring.



NORCAL TRACON controls aircraft after they take off and leave the airspace of a departure airport such as SFO or OAK until the aircraft is handed off (at about 17,000') to the high altitude En Route (Center) facility.

NORCAL TRACON also controls arriving aircraft leaving the high altitude En Route-Center, until being handed off to the destination airport such as SFO or OAK.
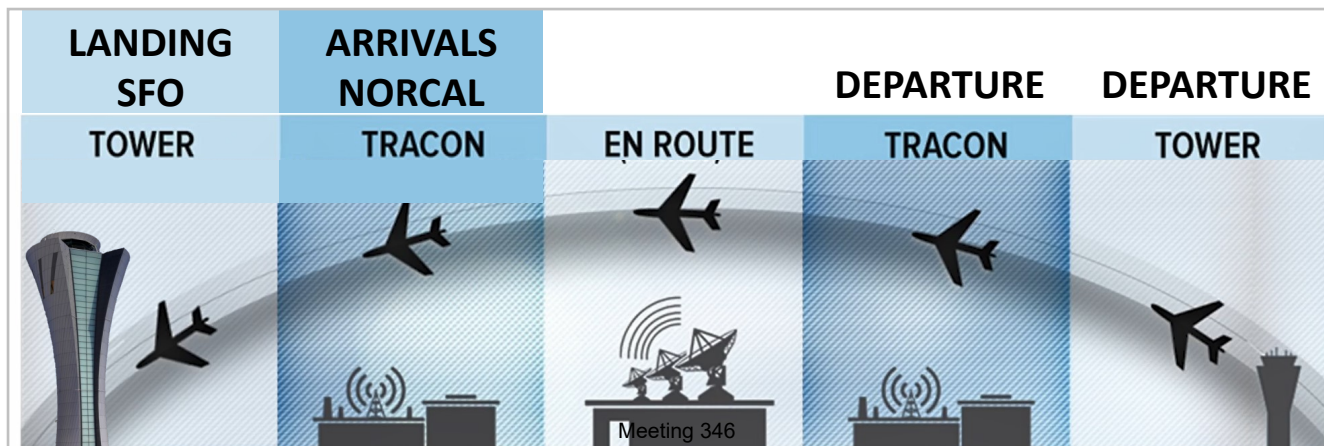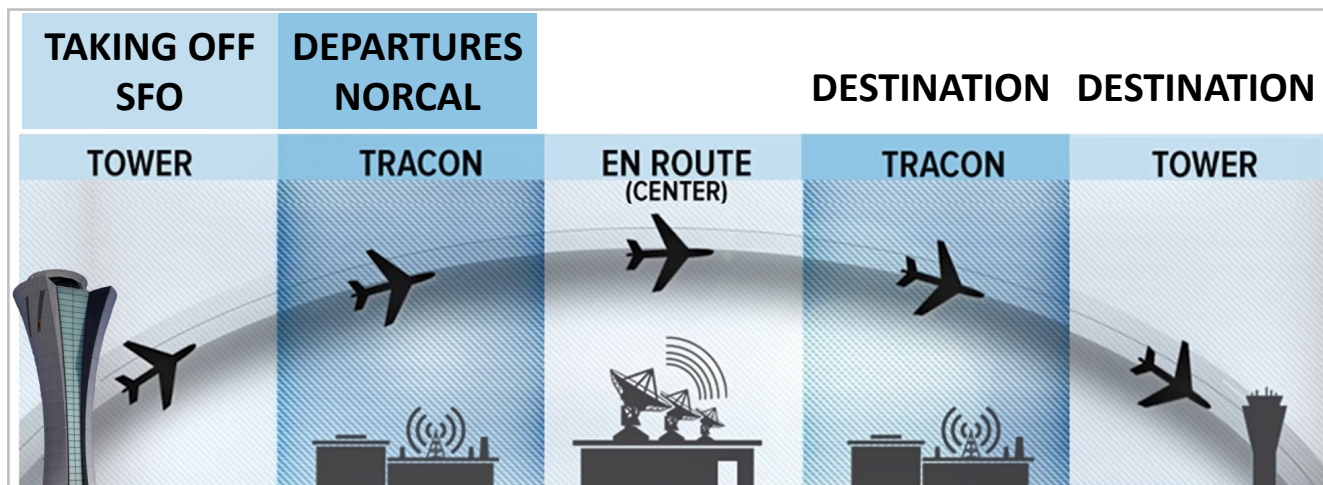
# SFO AIRPORT/COMMUNITY ROUNDTABLE

## NORCAL TRACON FIELD TRIP

This NORCAL TRACON field trip is open to members of the SFO Airport/Community Roundtable. It is a full day event, leaving the mid-Peninsula by chartered bus at about 8:30am and returning in the late afternoon.

The TRACON radar facility is located about 11miles east of Sacramento near to Mather Airport; we will plan about 2+ (fun-filled) hours each way on a chartered bus. **More logistical details will be provided closer to the date chosen for the field trip**.

When we reach the TRACON facility, we will all undergo security processing (see *The Rules* below).

When we arrive at the NORCAL TRACON facility, many of you who have been associated with the Roundtable for some time will recognize a previously frequent visitor to our meetings — Thann McLeod, the FAA Manager of Airspace & Procedures —  an experienced Bay Area controller and a highly knowledgeable and effective communicator.

1. Thann will conduct an initial briefing for everyone in the conference room. This briefing will be an overview of Air Traffic Control and in addition to Thann, there will be a couple of additional controllers available to provide a more in depth operational briefing for the OAK and SFO airports. The briefing will take about an hour to and hour and a half (longer if there are many questions). (Thann also said that they may be also able to discuss other specific topics of interest to the members.) Then...a group of 4 visitors will go into the Control Room for a tour lasting about 15 minutes.

2. Then subsequent groups of 4 people will cycle into the Control Room for their tour. While waiting for your group's "turn", Thann and/or other controllers will be available for Roundtable Member Q+A.

3. When everyone has completed their tour, it's time to thank the FAA NORCAL TRACON team and board the bus for the return home.

---

### "THE RULES"

- **All guests must have photo ID and must be US citizens.**
- **Guests will need to be processed through the guards and will go through metal detectors.**
- **No electronics, cell phones, apple watches etc. can be taken into the control room and will need to be left in the conference room.**
- **No photography is allowed.**

# Meeting Announcement
## Technical Working Group

**Tuesday, August 29, 2023**
**3:30 p.m. – 5:00 p.m.**
**\*VIA HYBRID ACCESS\***

Foster City Council Chambers Conference Room
620 Foster City Blvd. – Foster City, CA 94404

Public may also join the webinar:
https://smcgov.zoom.us/j/98025302813
Or Dial-in:
US: +(669)900-6833 Webinar ID: 980 2530 2813

This meeting of the Technical Working Group (TWG) will be in person at the above mentioned address. Members of the public will be able to participate in the meeting remotely via the Zoom platform or in person at 620 Foster City Boulevard, Foster City, CA 94404. For information regarding how to participate in the meeting, either in person or remotely, please refer to instructions at the end of the agenda.

**HYBRID PUBLIC PARTICIPATION:**
List of attendees (using zoom sign-in credentials) will be displayed periodically throughout the meeting.

The TWG Subcommittee meeting may be accessed through the above mentioned Zoom webinar. Members of the public may also attend this meeting physically in the Foster City Council Chambers Conference Room at 620 Foster City Blvd. Foster City, CA 94404.
\*Written public comments can be emailed to amontescardenas@smcgov.org, and should include specific agenda item to which you are commenting.
\*Spoken public comments will also be accepted during the meeting in-person or via Zoom on Items NOT on the Agenda and for each Agenda Item at the option of the speaker.

\*\*Please see instructions for written and spoken comments at the end of this agenda.

## ADA Requests
Individuals who require special assistance or a disability-related modification or accommodation to participate in this meeting, or who have a disability and wish to request an alternative format for the agenda packet or other writings that may be distributed at the meeting, should contact Angela Montes, as early as possible but no later than 10:00am the day before the meeting at amontescardenas@smcgov.org. Notification in advance of the meeting will enable Staff to make reasonable arrangements to ensure accessibility to this meeting, the materials related to it, and your ability to comment.

*Working together for quieter skies*

San Francisco International Airport/Community Roundtable
455 County Center – 2nd Floor, Redwood City, CA 94063
T (650) 363-4220   sforoundtable.org

Meeting 346
Packet Page 65

# AGENDA

**Call to Order**

**Public Comment on Items NOT on the Agenda**

## REGULAR AGENDA

1. **Ground Based Augmentation System (GBAS) Update**
   Paul Hannah, SFO, Consultant, Chief Airspace and Flight Operations Engineer

2. **Flight Procedures, Flight Tracks & Airport Director's Report Data**
   Bert Ganoung, SFO, Noise Office Manager
   *Attachment: Airport Director's Report, SFO Layout, Arrivals & Departures Presentation*

3. **Adjourn**

**\*\*Instructions for Public Comment during Videoconference Meeting**

During the TWG Subcommittee hybrid meeting, members of the public may address the Membership as follows:

**Written Comments:**
Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:
1. Your written comment should be emailed to amontescardenas@smcgov.org
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 5:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

**Spoken Comments:**
In-person Participation:
1. If you wish to speak to the Membership, please fill out a speaker's slip located at the entrance. If you have anything you wish distributed to the Membership and included in the official record, please hand it to the Clerk who will distribute the information to the Membership and Staff.
Via Teleconference (Zoom):
1. The TWG Subcommittee meeting may be accessed through Zoom online at https://smcgov.zoom.us/s/98025302813. The webinar ID: 980 2530 2813. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering webinar ID then press #. Members of the public can also attend this meeting physically in the Foster City Council Chambers Conference Room at 620 Foster City Blvd, Foster City, CA 94404.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.

**\*Additional Information**:

For any questions or concerns regarding Zoom, including troubleshooting, privacy, or security settings, please contact Zoom directly.

# Meeting Announcement
## Ad-Hoc Portable Noise Monitor Placement

**Friday, September 22, 2023**
**11:00 a.m. – 12:30 p.m.**
**\*VIA HYBRID ACCESS\***

Room 101, First Floor
455 County Center – Redwood City, CA 96063
Map & Parking Instructions

Public may also join the webinar:
https://smcgov.zoom.us/j/93782051374
Or Dial-in:
US: +(669)900-6833 Webinar ID: 937 8205 1374

This meeting of the Ad-Hoc Portable Noise Monitor Placement Subcommittee (PNMP) will be in person at the above mentioned address. Members of the public will be able to participate in the meeting remotely via the Zoom platform or in person at 455 County Center, Redwood City, CA 94063. For information regarding how to participate in the meeting, either in person or remotely, please refer to instructions at the end of the agenda.

**HYBRID PUBLIC PARTICIPATION:**
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The Ad-Hoc Portable Noise Monitor Placement Subcommittee meeting may be accessed through the above mentioned Zoom webinar. Members of the public may also attend this meeting physically in Room 101 First Floor at 455 County Center, Redwood City, CA 94063.
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*Working together for quieter skies*

## AGENDA

**Call to Order**

**Public Comment on Items NOT on the Agenda**

## REGULAR AGENDA

1.  **Review and Update of Prior Portable Noise Monitor Placement Ad-Hoc Subcommittee Meetings**
    Cecilia Taylor, Chair, Ad-Hoc PMNP Subcommittee
    *Attachment(s): a. Policy on Permanent Noise Monitor vs. Temporary August 2, 2017*   pg. 4
    *b. Recommendations Regarding Portable Noise Monitoring Terminals May 26, 2020*   pg. 5

2.  **SFO Noise Office Update**
    Bert Ganoung, SFO Aircraft Noise Office Manager
    *Attachment(s): a. Roundtable Assigned Portable Noise Monitoring Presentation October 24, 2022*   pg. 7

    a.  **Current and recent locations of the portable noise monitors**
    b.  **Planned or requested locations for portable noise monitors**
    c.  **Noise Office deployment of portable noise monitors and reporting**
    d.  **How will GBAS innovative approach noise monitoring requirements (estimated for 2024/2025) impact future deployments?**

1.  **Member Discussion and Recommendations**

2.  **Public Comment**

3.  **Adjourn**

**\*\*Instructions for Public Comment during Videoconference Meeting**

During the Ad-Hoc PNMP Committee hybrid meeting, members of the public may address the Membership as follows:

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3.  Members of the public are limited to one comment per agenda item.
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5.  If your emailed comment is received by 5:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

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Via Teleconference (Zoom):

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**<u>*Additional Information</u>**:
For any questions or concerns regarding Zoom, including troubleshooting, privacy, or security settings, please contact Zoom directly.

# MEMORANDUM

| | |
|---|---|
| **To:** | SFO Community Roundtable Members and Interested Parties |
| **From:** | Jason R. Stoddard, Senior Airspace Analyst |
| | Eugene M. Reindel, Vice President |
| **Date:** | August 18, 2023 |
| **Subject:** | Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP) Information Gateway Review |
| **Reference:** | HMMH Project Number 312310 |

At the request of the Roundtable, Harris Miller Miller & Hanson Inc. (HMMH) is monitoring and reviewing updates to procedures published onto the FAA's IFP Information Gateway in the regions of San Francisco International Airport (SFO), Metropolitan Oakland International Airport (OAK), and Norman Y. Mineta San Jose International Airport (SJC).

After analyzing the documents posted, HMMH determines proposed changes and the reason for the changes. The FAA IFP Information Gateway published six updates for SFO in the August 10, 2023 publication. There is currently one open comment period. The next publication is expected on September 7, 2023.

**Important Terms and Items:**

- FAA Stage Definitions
    1. FPT: Procedures are coordinated with Air Traffic, Tech Ops and Airports for feasibility, preparation, and priority (FPO)
    2. DEV: Development of the procedures
    3. FC: FAA Flight Inspection of the developed procedures
    4. PIT: Production Integration Team (TS)
    5. CHARTING: Procedures at Arnav Products Charting for publication (NACO)

- FAA Status Definitions
    1. At Flight Check: At Flight Inspection for procedure validation
    2. Awaiting Publication: At Arnav Products Charting for publication
    3. Complete: Procedure development action finished
    4. On Hold: Procedure waiting data/information to allow it to proceed/continue to next stage
    5. Pending: Procedure development work on-going
    6. Published: Procedure charted and published
    7. Under Development: Procedure is being worked on by the FAA
    8. Terminated: Procedure/project terminated

- Glossary
    - RNAV: Area Navigation
    - IAP: Instrument Approach procedure
    - STAR: Standard Terminal Arrival Route
    - SID: Standard Instrument Departure
    - GPS: Global Positioning System
    - ILS: Instrument Landing System
    - LOC: Localizer

**Updates:**

- SFO GLS RWY 19R AMDT 1
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to October 5, 2023

- SFO GLS RWY 19L AMDT 1
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to October 5, 2023

- SFO ILS OR LOC RWY 19L AMDT 23
  - Status remains At Flight Check (Comment period extended to September 4, 2023)
  - Scheduled Publication Date updated to October 5, 2023

- SFO RNAV (GPS) RWY 19L AMDT 4
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to October 5, 2023

- SFO RNAV (GPS) Y RWY 19R AMDT 4
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to October 5, 2023

- SFO RNAV (GPS) Z RWY 19R ORIG
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to October 5, 2023

**Open Comment Periods:**

- ILS OR LOC RWY 19L AMDT 23 at SFO
  - Comment period ends September 4, 2023
    The following changes are expected:
    - Primary missed approach procedure changed from "Climb to 980 then climbing left turn to 4000 on SFO VOR/DME R-135 to PRTLA INT/SFO 15.75 DME and hold" to "Climb to 1100 then climbing left turn to 4000 direct to PRTLA and hold".
    - Alternate missed approach procedure was deleted.
    - Additional administrative remarks were added that are not expected to change flight paths or altitudes.

  - Concerns can be submitted via
    https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical_Inquiries/?details=SFO%20(%20KSFO)%20SAN%20FRANCISCO%20INTL,%20SAN%20FRANCISCO,%20CA%20-%20ILS%20OR%20LOC%20RWY%2019L%20AMDT%2023&procedureName=ILS%20OR%20LOC%20RWY%2019L%20AMDT%2023&airportCode=%20SFO&airportName=SAN%20FRANCISCO%20INTL&airportState=CA

**Next Publication:** We do not expect any updates in the September 7, 2023 publication

## SFO ILS or LOC RWY 19L AMDT 23
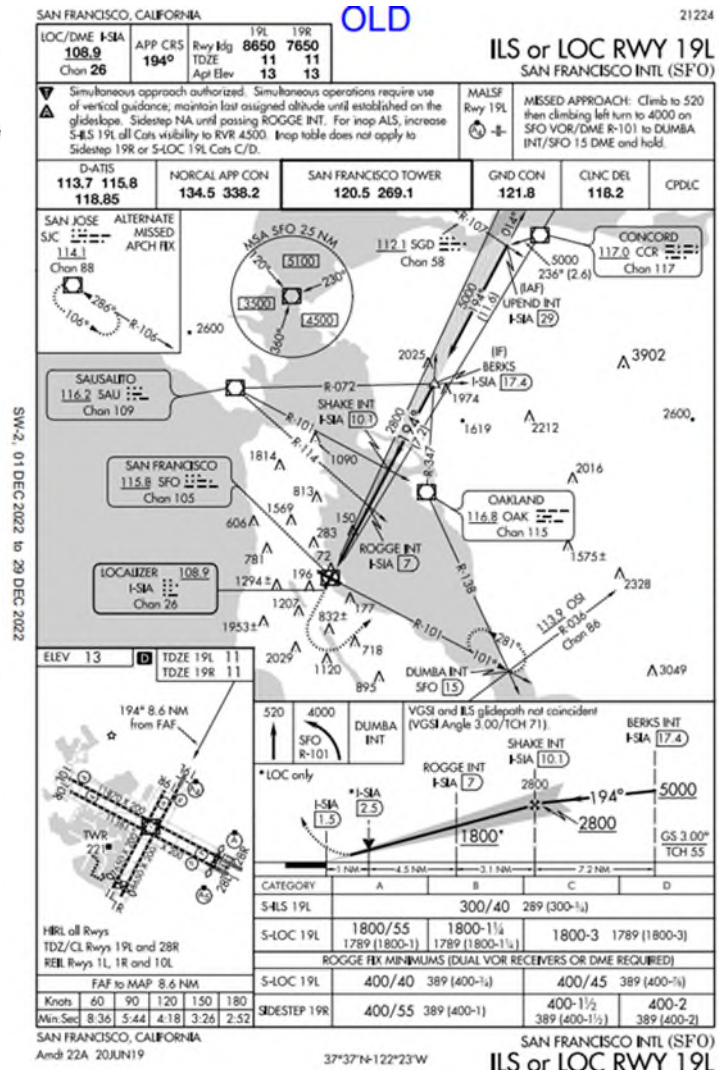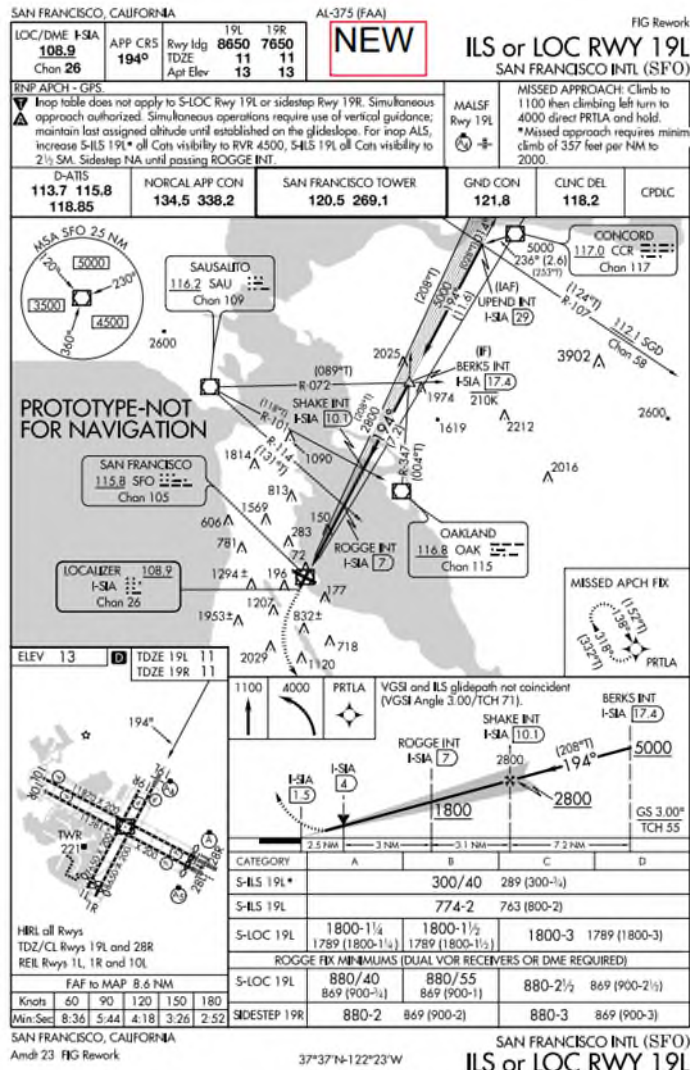
# MEMORANDUM

| | |
|---|---|
| **To:** | SFO Community Roundtable Members and Interested Parties |
| **From:** | Jason R. Stoddard, Senior Airspace Analyst |
| | Eugene M. Reindel, Vice President |
| **Date:** | September 15, 2023 |
| **Subject:** | Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP) Information Gateway Review |
| **Reference:** | HMMH Project Number 312310 |

At the request of the Roundtable, Harris Miller Miller & Hanson Inc. (HMMH) is monitoring and reviewing updates to procedures published onto the FAA's IFP Information Gateway in the regions of San Francisco International Airport (SFO), Metropolitan Oakland International Airport (OAK), and Norman Y. Mineta San Jose International Airport (SJC).

After analyzing the documents posted, HMMH determines proposed changes and the reason for the changes. The FAA IFP Information Gateway published six updates for SFO, and two updates for SJC. There are currently no open comment periods. The next publication is expected on October 5, 2023.

**Important Terms and Items:**

- FAA Stage Definitions
    1. FPT: Procedures are coordinated with Air Traffic, Tech Ops and Airports for feasibility, preparation, and priority (FPO)
    2. DEV: Development of the procedures
    3. FC: FAA Flight Inspection of the developed procedures
    4. PIT: Production Integration Team (TS)
    5. CHARTING: Procedures at Arnav Products Charting for publication (NACO)

- FAA Status Definitions
    1. At Flight Check: At Flight Inspection for procedure validation
    2. Awaiting Publication: At Arnav Products Charting for publication
    3. Complete: Procedure development action finished
    4. On Hold: Procedure waiting data/information to allow it to proceed/continue to next stage
    5. Pending: Procedure development work on-going
    6. Published: Procedure charted and published
    7. Under Development: Procedure is being worked on by the FAA
    8. Terminated: Procedure/project terminated

- Glossary
    - RNAV: Area Navigation
    - IAP: Instrument Approach procedure
    - STAR: Standard Terminal Arrival Route
    - SID: Standard Instrument Departure
    - GPS: Global Positioning System
    - ILS: Instrument Landing System
    - LOC: Localizer

**Updates:**

- SFO GLS RWY 19R AMDT 1
  - Status remains Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SFO GLS RWY 19L AMDT 1
  - Status remains Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SFO ILS OR LOC RWY 19L AMDT 23
  - Status updated to Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SFO RNAV (GPS) RWY 19L AMDT 4
  - Status remains Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SFO RNAV (GPS) Y RWY 19R AMDT 4
  - Status remains Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SFO RNAV (GPS) Z RWY 19R ORIG
  - Status remains Awaiting Publication
  - Scheduled Publication Date updated to November 30, 2023

- SJC SID LOUPE ONE (RNAV)
  - Status changed to Under Development
  - Scheduled Publication Date of March 21, 2024

- SJC STAR BRIXX FOUR (RNAV)
  - Status changed to Under Development
  - Scheduled Publication Date of March 21, 2024

**Open Comment Periods:**

- None

**Next Publication:** We do not expect any updates in the October 5, 2023 publication

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August 16, 2023

The Honorable Maria Cantwell, Chair
Committee on Commerce, Science, and Transportation
United States Senate
Washington, DC 20510

The Honorable Ted Cruz, Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate
Washington, DC 20510

The Honorable Sam Graves, Chair
Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

The Honorable Rick Larsen, Ranking Member
Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

RE: FAA Reauthorization

Dear Chair Cantwell, Chairman Graves, Ranking Member Cruz, and Ranking Member Larsen:

Established in 1981, the San Francisco Airport/Community Roundtable, (Roundtable) represents more than 1.5 million residents in the City and County of San Francisco and San Mateo County. Roundtable members include elected officials of the Boards of Supervisors of the City and County of San Francisco and San Mateo County as well as members from the City Councils of all twenty cities within San Mateo County.

The Roundtable collaborates with the San Francisco International Airport, the Federal Aviation Administration, airlines, members of Congress and other elected officials, noise-impacted communities, and the public with the purpose of developing, evaluating, implementing policies, aircraft procedures, and mitigation actions that will reduce aircraft noise exposure in the neighborhoods and communities in San Francisco and San Mateo Counties. The Roundtable advocates for aircraft noise related legislation and programs, and supports research that reduces aircraft noise impacts. The pre-eminent goal of the Roundtable is to improve all aircraft procedures and operations which have detrimental noise impacts to residents whether from ground operations or flight operations.

A special focus for the SFO Airport/Community Roundtable is nighttime airplane noise especially as a health issue. If aircraft noise is seen only as "annoying" to residents, it would overlook the well-documented deleterious effects of airplane noise on the health of residents. Documented in peer-reviewed scientific and medical journals, noise adversely and seriously affects blood pressure, cardiovascular and other health issues in adults. Studies with children indicate that aircraft noise can result in an increase in children's blood pressure and can cause negative impacts on children's education as shown by lower levels in cognitive testing, task perseverance, long term memory, short term memory and reading achievement. Other studies show that sleep interruption seriously affects health and is a concern for both adults and children.

The SFO Airport/Community Roundtable thanks the House of Representatives for the focus they have placed on the

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issue of aircraft noise impacts on residents. The Senate is now undertaking the review of its bill as of this date, and, we would urge the Senate to include similar noise provisions in the final bill sent to the President's desk.

The SFO Airport/Community Roundtable recognizes and appreciates the importance of the work done every day by the FAA to keep our skies safe. We support robust funding for the FAA, especially in areas which avert and remediate the noise and health impacts caused by aircraft operations. We recognize the role that the FAA and our Airport Sponsors play in maintaining a safe and robust aviation system for both national and local economies.

The following recommendations were considered and approved at a regularly noticed Meeting of the SFO Airport/Community Roundtable on August 2, 2023.

With regard to H.R. 3935, we specifically support the following sections:

> Sec. 476 - Part 150 Noise Standards Update
> Sec. 477 - Reducing Community Aircraft Noise Exposure
> Sec. 481 - Recommendations on Reducing Rotorcraft Noise in DC
> Sec. 482 – Study of ultrafine particles
> Sec. 483 – Aviation and airport Community Engagement
> Sec. 484 – Community Collaboration
> Sec. 485 - Third Party Study on Aviation Noise Metrics

We thank the many Members of Congress who submitted amendments to improve the flight impacts to communities. We especially acknowledge our local Members of Congress who introduced seven important amendments originally introduced as bills by former Congresswoman Jackie Speier. Thank you, Congresswoman Anna Eshoo, Congressman Kevin Mullin and Congressman Jimmy Panetta.

With regard to the Amendments Agreed to for H.R. 3935, we specifically support the following amendments:

24 - Eshoo (CA): Requires the FAA to solicit feedback from communities impacted by aircraft noise as part of the Community Collaboration Program (#136). **(Section 484)**

57 - Lynch (MA): Revises the representative in the task force on Aviation and Airport Community Engagement to ensure that multiple airport communities and communities around airports are included (#192). (**Section 483)**

58 - Lynch (MA): Ensures deliberate engagement with local community groups for the Community Collaboration Program (#82). **(Section 484)**

63 - Meng (NY): Clarifies that as part of the Part 150 Noise Standard Update, feedback should be solicited from individuals living in overflight communities (#17). (**Section 477)**

66 - Neguse (CO): Requires the Community Collaboration Program to directly interview impacted residents (#180). **(Section 484)**

78 - Pettersen (CO): Strikes "in decision-making processes" in Sec. 135 to allow more avenues for the public to have their concerns relayed to the Aviation Noise Officer to provide to the Administrator. **(Section 135)**

83. Porter (CA), Westerman (AR): Requires the Comptroller General of the United States to conduct a study on the response time of the FAA Administrator in regard to Congressional inquiries and requests, in addition to requiring the FAA Administrator to annually testify before Congress on the agency's efforts activities, objectives, plans, and efforts to engage with Congress and the public.

90. Scott, David (GA): Revises Sec. 483 (Engagement Events) to increase the number of annual events the FAA must convene to engage with aviation-impacted communities in each geographic region of the Administration from one to two.

We would also respectfully submit for your consideration the following recommendations herein made by the SFO Airport/Community Roundtable:

1. Modify **Section 40103(b)(1) of title 49**, United States Code, to allow the FAA to expand the <u>secondary</u> priorities for use **of airspace. With safety, of course, remaining the primary priority, it would specify two co-equal priorities -** the **efficient use of airspace**—as co-equal with the **minimization of aircraft noise impacts and other environmental health impacts on the community**. See detailed language below:

   > *(a) In General.--Section 40103(b)(1) of title 49, United States*
   > *Code, is amended to read as follows:*
   > > *(1)(A) The Administrator of the Federal Aviation Administration*
   > > *shall develop plans and policy for the use of the navigable airspace*
   > > *and assign by regulation or order the use of the airspace necessary to*
   > > *ensure--*
   > > > *``(i) as a primary priority, the safety of aircraft; and*
   > > > *``(ii) as secondary co-equal priorities--*
   > > > > *``(I) the efficient use of airspace; and*
   > > > > *``(II) the minimization of the impact of aviation*
   > > > > *noise, and other health impacts, on residents and*
   > > > > *communities, and other impacts of the use of airspace*
   > > > > *on the environment.*

2. Modify 14 CFR 161 -- Notice and Approval of Airport Noise and Access Restrictions: Allow the Part 161 process criteria to consider health and other impacts to residents, ***including residents outside the 65 DNL contour,*** in a decision and to modify criteria and sufficiency standards so as to expand an airport director's authority to require use of reasonable nighttime noise abatement procedures, including limiting hours of operation.

3. Modify direction given to the FAA to allow some discretion for Airport Directors to grant incentives to airlines willing to request and implement **voluntary** nighttime noise abatement procedures.

4. Modify direction given to the FAA to allow them to include community impacts in implementing new or modified flight procedures, use of non-safety flight vectoring, or other flight path changes that might affect nighttime aircraft noise and its health impacts to residents.

5. Modify direction given to the FAA to allow them to measure, report and use alternative metrics such as C-weighting and N/Above to better reflect the impacts of noise to the community.

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6. Modify direction given to the FAA, in accord with the results of the Neighborhood Environmental Study showing high annoyance at much lower dB levels, to allow increased access to insulation and other noise mitigation measures for residences and schools outside of the 65 DNL/CNEL levels.

7. Modify direction given to the FAA regarding the recognition, measurement and mitigation of aircraft source, ground-based low frequency noise and its health impacts.

8. Modify direction given to protect the public from evolving technologies such as Supersonic Aircraft, Urban Air Mobility (UAM), Advanced Air Mobility (AAM), flying cars and similar operations.

9. Modify direction given to the FAA regarding the need to fully consider impacts to marginal communities and disproportionately impacted communities in the establishment and implementation of aviation programs.

10. Modify direction given to the FAA to recognize that every airport is different, including San Francisco International, which has unique characteristics such as topography, location in a metroplex with three international airports, and the dominant airport traffic pattern, which should be considered by the FAA in determining the most appropriate decision-making metrics to use.

In addition, we have included three documents, which are incorporated by reference, and which further detail the recommendations of the SFO Airport/Community Roundtable; 1) SFO Airport Roundtable Comments Submitted to FAA Docket 2023-0855 regarding the FAA Civil Aviation Noise Policy Review and 2) the SFO Roundtable Recommendations to the FAA's Norcal Initiative, and 3) Aviation legislation introduced by former Representative Jackie Speier which proposes still salient solutions to many aircraft noise impact issues.

Thank you for an opportunity to submit these recommendations to you.

Very Respectfully,

Sam Hindi, Chairman
SFO Airport/Community Roundtable
Councilmember, (Former Mayor)
City of Foster City

Al Royse, Vice Chairman
SFO Airport/Community Roundtable
Chair, Legislative Subcommittee
Councilmember, (Former Mayor)
Town of Hillsborough

ATTACHMENTS and LINKS
A. SFO Airport Roundtable Comments Submitted to FAA Docket 2023-0855 regarding the FAA Civil Aviation Noise Policy Review via LINK
B. Aviation legislation introduced by former Representative Jackie Speier via ATTACHMENT
C. 2016 SFO Airport Roundtable Recommendation to the FAA NorCal Initiative via LINK

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cc:
   Members and Alternates of the SFO/Airport Community Roundtable
   FAA Regional Administrator Dr. Raquel Girvin
   Ivar Satero, Director, San Francisco International Airport
   Senator Diane Feinstein
   Senator Alex Padilla
   Speaker Emerita Nancy Pelosi
   Representative Anna Eshoo
   Representative Kevin Mullin
   Representative Jimmy Panetta
   Congressional Quiet Skies Caucus, Co-Chairs Representatives Eleanor Holmes Norton (D-DC) and Stephen Lynch
   California State Senator Scott Weiner
   California State Senator Josh Becker
   California Assemblymember Matt Haney
   California Assemblymember Philip Ting
   California Assemblymember Diane Papan
   California Assemblymember Marc Berman
   San Francisco Mayor London Breed
   San Mateo County Board of Supervisors: Dave Pine, President, Warren Slocum, Vice-President, Noelia Corzo, Ray Mueller, David Canepa
   San Francisco County Board of Supervisors: Aaron Peskin, President, Connie Chan, Matt Dorsey, Joel Engardio, Rafael Mandelman, Myrna Melgar, Dean Preston, Hillary Ronen, Ahsha Safai, Catherine Stefani, Shamann Walton
   SFO Airport Commissioners: Malcolm Yeung, President; Everett A. Hewlett, Jr., Vice President; Jane Natoli, Jose Fuentes Almanza

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