SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

# AIRPORT NOISE ADVISORY COMMITTEE (ANAC)

## MEETING AGENDA
## Wednesday, December 16, 2020, 4:00 p.m.

**Electronically Via YouTube Livestream**
**https://youtu.be/k2dtXTBtiv0**

This meeting of the Airport Noise Advisory Committee will be conducted pursuant to the provisions of California Executive Order N-29-20 which suspends certain requirements of the Ralph M. Brown Act. During the current State of Emergency and in the interest of public health, all Committee members will be participating in the meeting electronically. In accordance with the Executive Order, there will be no members of the public in attendance at the Committee Meeting. We are providing alternatives to in-person attendance for viewing and participating in the meeting.

### Comments on Non-Agenda Items

Public comments on non-agenda items must be submitted to the Authority Clerk at clerk@san.org, no later than 4:00 p.m. the day prior to the posted meeting in order to be eligible to be read into the record. The Authority Clerk will read the first 30 comments received by 4:00 p.m. the day prior to the meeting into the record; each of these comments will be read for up to three minutes or for the time determined by the Facilitator. The maximum number of comments to be read into the record on a single issue will be 16. All other comments submitted, including those received after 4:00 p.m. the day prior and before 8:00 a.m. the day of the meeting, will be provided to the Committee and submitted into the written record for the meeting.

### Comments on Agenda Items

Public comment on agenda items may be submitted to the Authority clerk at clerk@san.org. Comments received no later than 8:00 a.m. on the day of the meeting will be distributed to the Committee and included in the record.

### Live Comments on Agenda and Non-Agenda Items

If you'd like to speak to the Committee live during the meeting, please follow these steps to request to speak:

- **Step 1**: Fill out the online **Request to Speak Form** to speak during the meeting via Zoom. The form must be submitted by 4:00 p.m. the day before the meeting.

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- **Step 2:** Watch the meeting via the YouTube link **https://youtu.be/k2dtXTBtiv0** and call into the number listed below followed by the Meeting ID. There is no participation code, just press #.

  Dial +1 669-900-9128
  Meeting ID: 845 6424 7754

  **NOTE:** There is a delay between the Zoom meeting and the YouTube livestream. **You must mute the YouTube livestream** before speaking.

- **Step 3:** The Facilitator will request public comment during each Item. Once the Facilitator has announced the public comment period for the item on which you would like to speak, please do the following.

  **USING A REGULAR PHONE:**

  - You must mute the YouTube livestream before speaking.
  - Facilitator will notify you when it is your turn to provide public comment (you will be identified by the phone number you provided in the Request to Speak Form.
  - You will have three minutes to provide public comment, an audible ding will be made to identify when you have 30 seconds left.
  - Once your public comment has ended, you will be muted. You may hang up and return to YouTube livestream.

**How to Watch the Meeting**

You may view the meeting online at the following link:

**https://youtu.be/k2dtXTBtiv0**

**REQUESTS FOR ACCESSIBILITY MODIFICATIONS OR ACCOMMODATIONS**

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# AIRPORT NOISE ADVISORY COMMITTEE (ANAC)

## MEETING AGENDA
## Wednesday, December 16, 2020, 4:00 p.m.

1. Welcome and Introductions
2. Roll Call
3. Presentations
   a. Fly Quiet Program Update
   b. Current Noise Concerns & Trends
   c. Airport Authority Updates
4. Action Items
   a. Approval of October 21, 2020 – Meeting Summary
5. Public Comment
6. Next Meeting: February 17, 2021
7. Adjourn

**Please note:** Noise Statistics are now found on the Airport's Website at: www.san.org/Airport-Noise

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# MEETING SUMMARY

## Airport Noise Advisory Committee

*Date | Time* 10/21/2020 4:00 p.m.

*Meeting called to order by:* Heidi Gantwerk

## In Attendance

| Name | Affiliation | In Attendance |
|---|---|---|
| **Community Planning Groups Within the 65 dB contour** | | |
| Erika Espinosa Araiza | Greater Golden Hill Planning Committee | Yes |
| Tania Fragomeno | Downtown Community Planning Council | Yes |
| Anthony Ciulla | Ocean Beach Planning Board | Yes |
| Chris Cole | Uptown Planners | Yes |
| Judy Holiday | Midway-Pacific Highway Community Planning Group | Yes |
| Char-Lou Benedict | Community Resident at Large within 65 dB CNEL - East | Yes |
| Fred Kosmo | Peninsula Community Planning Board | Yes |
| **Community Planning Groups Outside the 65 dB contour** | | |
| Jonathan Cole | Pacific Beach Planning Group | No |
| Michael Herron | Valley De Oro Community Planning Group | No |
| Matthew Price | La Jolla Community Planning Association | Yes |
| Deborah Watkins | Mission Beach Precise Planning Board | Yes |
| **Aviation Stakeholders** | | |
| Olivier Brackett | San Diego County Airports | Yes |
| Jorge Rubio | City of San Diego Airports | Yes |
| Carl "Rick" Huenefeld | MCRD | Yes |
| Robert Bates | Airline Pilot (Active) | Yes |
| Kallie Glover | Performance Engineer, Delta Airlines | No* |
| Dave Ryan | NBAA | No |
| **Ex-Officio Non-Voting Members** | | |
| Justin Cook | Acoustical Engineer | Yes |
| Maria Bojorquez-Gomez | Congress, 53rd District, for Rep. Susan Davis | Yes |
| Joshua Coyne | San Diego City Council, District 2, for Jennifer Campbell | Yes |
| Anthony Nguyen | Congress, 52nd District for Rep. Scott Peters | No |
| Genevieve Fong | S.D. County Board of Supervisors, District 1, for Sup. Greg Cox | Yes |
| Keith Lusk | FAA Representative | Yes |
| Ivan Gutierrez | FAA Representative | Yes |
| **Presenters** | | |
| Heidi Gantwerk | Facilitator | Yes |
| Ryk Dunkelberg | Mead & Hunt | Yes |
| Jim Payne | SDCRAA | Yes |
| Sjohnna Knack | SDCRAA | Yes |

**Staff** Dennis Probst (SDCRAA), McKinna Dartez (SDCRAA), Roman Lanyak (SDCRAA)

13 voting members in attendance

*Members contacted staff ahead of time and are considered excused.

## 1. Welcome and Introductions

Heidi Gantwerk, facilitator for the Airport Noise Advisory Committee (ANAC), opened the meeting at 4:00 p.m. with introductions. Ms. Gantwerk briefly shared the agenda and read the Executive Order N-29-20.

## 2. Roll Call

Heidi Gantwerk called a committee member roll call for attendance.

## 3. Presentations

Note: A copy of the information in the presentation can be found via our website using the following link:

http://www.san.org/Airport-Authority/Meetings-Agendas/ANAC

### a. Part 150 Update

Ryk Dunkelberg from Mead & Hunt shared where they are in the overall study process and their next steps with the FAR Part 150 study. The Noise Exposure Maps (NEMs), one of the two components of a Part 150 study, were recertified in November of 2016. The current updated Part 150 study was initiated in 2018 (toward the end of the Flight Procedures Study). The Part 150 study addresses aircraft noise issues within the 65 or greater Community Noise Equivalent Level (CNEL) noise contour. The Airport Authority completed the Flight Procedure Evaluation study in 2019 to address concerns from residents outside the 65 CNEL contour[1].

Mr. Dunkelberg then explained the three categories of alternatives, Operational (under control of the FAA), Land Use (under the control of the state and local governments), and Administrative (under control of the Airport proprietor). At prior meetings, the Technical Advisory Committee (TAC) and the Citizen Advisory Committee (CAC) reviewed aviation activity forecasts, aircraft operations and fleet mix, existing and future base case noise contours, land use and population analysis within the 65 CNEL contour along with identified preliminary alternatives (including several resulting from ANAC alternatives). In May 2020, the draft operational alternatives were presented to the TAC and CAC, and the refined and new alternatives were presented[2] in October. At the next TAC/CAC and public workshop, the preliminary study recommendations will be presented, followed by the draft report in February 2021 and then the public hearing in March 2021.

### Questions from ANAC:

Chris Cole asked if the City or developers with the new Midway development have been in contact with the Airport Authority.

Sjohnna Knack said that the City is a member of the TAC and the Airport Authority staff is aware and involved in the airport land use compatibility planning.

Judy Holiday asked if the public workshop date in December has been finalized and voiced her concern about low attendance if held virtually.

[1] SDIA Air Traffic Flight Procedure Evaluation (Ricondo & Associates, Published August 2019) https://www.san.org/Airport-Noise/FAR-Part-150?EntryId=13636

[2] Part 150 and TAC/CAC meeting October 15, 2020.

Ryk Dunkelberg said those dates have not been finalized and could be pushed back given the holidays. He mentioned they're having discussions on the best way to hold the workshop, with public safety being their number one priority.

Heidi Gantwerk said there's been an increase in participation since they've been holding meetings virtually.

Rob Bates asked about the timeframe and next steps for Mead & Hunt to do the modeling.

Ryk Dunkelberg explained they first have to get FAA agreement on each particular and significant aircraft to model, then they will evaluate from a single event level with the most common aircraft at the airport. Afterwards, they will probably make a recommendation that each of the airlines use that particular departure procedure for each of their aircraft flying at SDIA.

Matthew Price asked Mr. Dunkelberg four questions:

- If the NADP modeling will include looking at the effects outside the 65 CNEL
  Answer: They looked at the effects of both inside and beyond the 65 CNEL.
  (Note: since the NADP has no impact on the 65 CNEL, consultants used Lmax to show any subtle changes that could be expected with the NADP.)
- Asked for clarification on the new dispersion alternative
  Answer: The new dispersion alternative is to address different percentage allocation of aircraft on certain departure routes.
- If the nighttime noise abatement procedure is under Federal control
  Answer: Yes, there is under Federal control of where and how they fly.
- What will be the criteria for the consultants to recommend or deny moving a proposal forward?
  Answer: Criteria for recommendations or denial are based on the Program Standards (Section B150.7) of the Part 150 regulations that every alternative must meet, along with other federal laws and regulations.

Fred Kosmo asked what the modeling is showing and where the noise is being shifted.

Ryk Dunkelberg explained that each of the procedures they modeled resulted in a cumulative noise contour, the 65 CNEL contour. If the modeling of that particular recommended procedure results in the shifting of noise, which results in new non-compatible land uses within that contour compared to the future base-case contour where there were no operational changes, that is a shift of noise. Shifting noise from one non-compatible use and/or neighborhood to another is in violation of the Part 150 regulation goal.

## b. GAO Report – Stage 3 Phase Out & Operational Trends

Justin Cook from HMMH gave an update on the U.S. Government Accountability Office (GAO) report on the potential mandate of a Stage 3 aircraft phase out.[3] He gave an overview of the federal regulation of the Part 36[4], and its purpose of constantly looking at ways to reduce noise through aircraft design. He explained Stage 5 is the latest noise standard and that all aircraft flying today are certified at a minimum of Stage 3 or higher.

The report found that 96 percent of Stage 3 aircraft could meet Stage 4/5 noise standards but don't because the recertification cost and offer little to no noise reduction benefit. Due to the COVID-19 pandemic, there's an acceleration of some older Stage 3 aircraft being retired (e.g. British Airways B744 at SDIA), and a change in fleet mix, potentially leaving behind those Stage 3 aircraft, which, if recertified, would be considered Stage 4.

[3] Aircraft Noise: Information on a Potential Mandated Transition to Quieter Airports (GAO-20-661: Published August 20, 2020)

[4] FAA, Advisory Circular 36-4D, Noise Standards: Aircraft Type and Airworthiness Certification (Washington, D.C.: Oct. 12, 2017).

## Questions from ANAC:

Chris Cole asked if the Authority has ever denied any general or regular airline usage of the airport due to standards.

Ms. Knack mentioned there are noise limits in the Airport Use Regulation. To her knowledge, there's been one airline denied usage since her 15 years at the airport.

Judy Holiday asked how they determined that most Stage 3 aircraft could meet more stringent noise standards, and what were the "other benefits" of a mandatory phase-out of certified Stage 3 aircraft.

Justin Cook said they looked at the raw measurements and compared it to Stage 4 standards.

Ms. Knack mentioned with newer technology in aircraft, some of the other benefits, along with noise, are in environmental, air quality, and fuel consumption.

Deborah Watkins asked what could be done to make it mandatory to remove Stage 3 aircraft at the airport.

Justin Cook explained that an airport can't require certain types of aircraft at an airport, but they can have a program like the Fly Quiet Program that encourages airlines to fly the newer generation aircraft.

Ms. Knack said the louder fleet being retired due to the pandemic. It doesn't mean they won't have noise concerns when operation levels resume. She explained how the Fly Quiet Program gives them an opportunity to engage with the airlines. Staff will present a Fly Quiet overview and update at the next ANAC meeting[5].

Jorge Rubio said from an airport operator standpoint, he believes this is a positive change in the industry and that he saw the difference it made in the communities during the phase-out of Stage 2.

Tania Fragomeno asked if the cost for the recertification was for the modifications to the aircraft or for testing.

Justin Cook said it's the cost of the testing process (taking aircraft out of service to be tested) that cost the airlines money.

## c. Current Noise Concerns – Departures over La Jolla, Early Turns over Point Loma, and FedEx Arrival from Tijuana

Jim Payne discussed noise concerns that the noise office asked the FAA to review in September. The specific concerns included an egregious early turn over Point Loma and a particular FedEx flight from Tijuana with a high rate of Missed Approaches (essentially a visual flight that takes off in Mexico and is vectored into SDIA). The Noise office is looking into working with Tijuana Air Traffic Control to improve the handoff from domestic to international airspace to reduce missed approaches for this flight.

## Questions from ANAC:

Matthew Price asked if ANAC can get a noise dot off the coast of La Jolla.

Keith Lusk said for that process to happen, it would first have to be agreed upon by the ANAC, then presented to the FAA as a formal recommendation, and then the FAA would be in a position to evaluate the recommendation.

[5] ANAC meeting December 16, 2020.

Ms. Knack asked the FAA why these aircraft, that are compliant with the noise dot, are being taken off and not rejoining the published route, both at night and during the day, without evidence due to traffic separation or weather.

Keith Lusk said John Nelson did conduct a review of the submitted procedures specific to this, but did not indicate the reasoning before he left. Mr. Lusk said he will get the answers to the noise office.

Ms. Knack mentioned the intent of Jim's presentation was to bring to the Committee's attention that her team is not just taking noise complaints, they're watching for unique operations with commonality between concerns and the most egregious flights within their own system before reaching out to the FAA for possible resolutions. This will be ongoing and a standing topic at ANAC meetings.

Heidi Gantwerk mentioned there is a public comment on this agenda item that is in the member materials.

## d. Airport Authority Updates

Sjohnna Knack reminded everyone that the monthly stats are on Tableau, published the second Friday of the month. She gave an update on QHP and how staff and contractors continue to work through COVID-19 while maintaining safe procedures in the field. The Program has completed to date around 4,400 homes. In August 2020 they received their largest FAA AIP grant in a single year from the FAA for $18 million dollars. This grant allows them to maintain the current spending on the residential component of the Quieter Home Program, and start the non-residential program.

To date, they've established the policies and procedures and identified Dewey Elementary as the first non-residential facility to treat, hopefully starting in December 2020. Currently there are 28 non-residential properties on their list, made up of public and private schools, preschools, places of worship, and some other ancillary properties. They will rank schools as first priority, working from the loudest to quietest areas.

She reported SDIA has been running at about 50 percent of their operation levels from this time last year, while passenger levels are around 30 to 35 percent and have been leveling out the last few weeks. She mentioned she is currently working with the Airports Council International noise working group, looking at ways they can work with their communities, within the Federal restriction parameters, before aircraft come back to normal operating levels.

### Questions from ANAC:

Chris Cole asked about low participation rate from Bankers Hill, and if there's a way to reach out to homeowners to apply for the Quieter Home Program.

Ms. Knack explained that they reach out to all owners, and tenants if unable to reach the owner. The main reasons for the low participation rate in Bankers Hill area are the owners have significant amount of code violation work they must complete before their property can be treated and so they chose not to participate. Or, they are commercially zoned properties therefore not eligible.

Erika Espinosa-Araiza asked if the non-residential properties are able to apply or are they selected specifically by the Authority.

Ms. Knack said any non-compatible use would be eligible to apply, but they've done an extensive research and identified pretty much all properties. She encouraged the Committee to send her any eligible non-residential properties they believe should be considered.

Fred Kosmo asked for the reasoning that caused the Early Turns presented.

Heidi Gantwerk said the audio connection with Keith Lusk, FAA, was dropped. Once she receives the FAA's response she will send it to the Committee. Note: the following information was emailed to ANAC members:

ANAC Members,

During our last ANAC meeting, several questions were posed regarding the current noise concerns presented by Jim Payne. We have reached out to the FAA for additional information regarding these flights and the answer is below.

Per the FAA:

Point Loma Early Turns– While this type of event is never planned, and rarely occurs, sometimes it is simply unavoidable. Controllers often rely on the expeditious compliance of their instructions by pilots. When for reasons beyond our control that is not possible, controllers need to take quick and decisive action to ensure the safety of the aircraft under their control.

La Jolla – All of the flights you shared were NAP compliant. (In other words, they adhered to the FAA noise dots). However, our initial review does indicate that there may be some additional aircraft overflying La Jolla. Due to the reduction in competing arrivals, and in an effort to expedite an aircraft's turn on course, it appears that we may be vectoring aircraft off the ZZOOO departure (using right turns over La Jolla). We are working diligently to complete an internal review of our procedures and we will address any issues of noncompliance.

If you need clarification, or have any other questions, please let me know.

Have a good weekend all,

Heidi

## 4. Action Items

### a. Approval of August 19, 2020 Meeting Summary

Anthony Ciulla made a motion to approve the meeting summary from the August 2020 meeting, it was seconded by Olivier Brackett. The motion was approved.

## 5. Public Comment

Tony Russell (SDCRAA staff) reported there was one Public Comment that was emailed to the Authority Clerk by the deadline posted on the agenda. The Public Comment was distributed to staff and Committee members and posted online.

## 6. Next Meeting/Adjourn

Next meeting is December 16, 2020.

Meeting was adjourned.

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# Airport Noise Advisory Committee

December 16, 2020

# Agenda

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# Fly Quiet Program Update

December 16, 2020

# What is the Fly Quiet Program?

Introduced in 2017 to encourage operators to reduce their noise impacts at SDIA.




Program refinements have been made to encourage use of quieter aircraft, particularly at night by increasing the weighting of the exceedance component.

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# Curfew Compliance

Cancellation component has been removed.

## Cancellations

Too many cancellations outweighed other components

## Score Deductions

Curfew Violation remains a one point deduction, penalty assessment results in a second point deduction



## New Method

New method gives greater weight to other components

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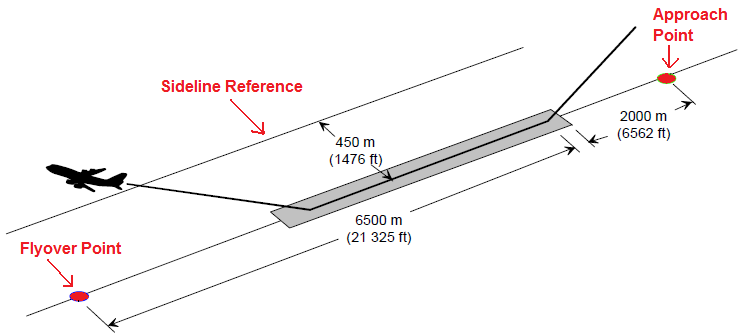
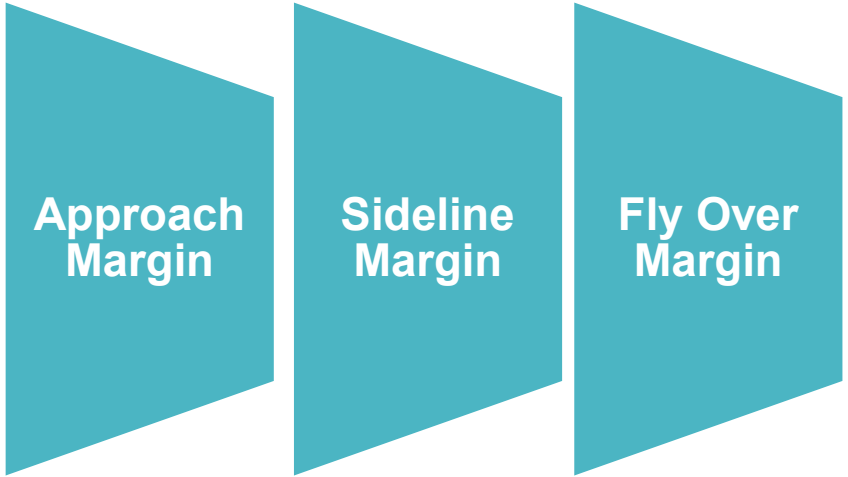
# Fleet Quality

Measures the certified cumulative margin of a given airline fleet as it operates at the Airport.




*Higher the margin, the quieter the aircraft

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# Fleet Quality Score


## Score

Accounts for each aircraft type, engine and frequency of use.

## Entire Fleet Mix

Is captured as the aircraft are utilized at the Airport.

## Fleet Data

Is updated continually to capture new deliveries and engine modifications.

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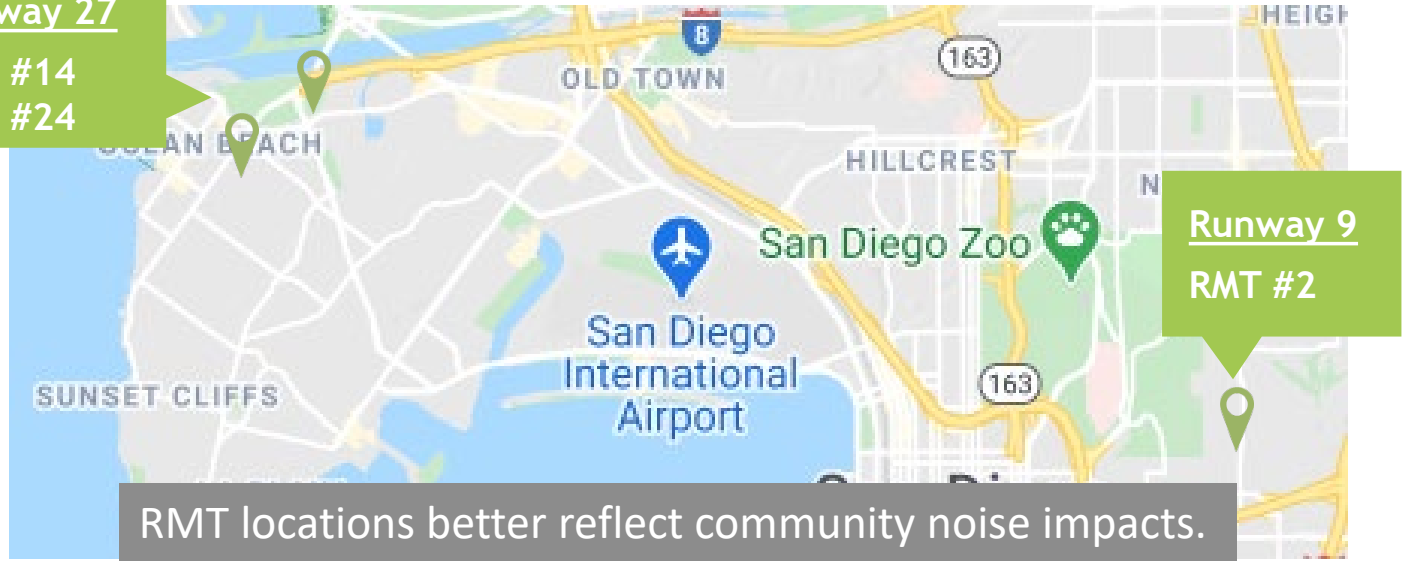
# Noise Exceedance Measurements

Measures exceedance 3.5 nautical miles (6.5 km) from the start of the take-off roll.

**Runway 27**

**RMT #14**
**RMT #24**




**Runway 9**

**RMT #2**

RMT locations better reflect community noise impacts.

****Remote Monitoring Terminal (RMT):** Noise monitoring sites in the community where permanent microphones are placed to measure aircraft noise and define the areas most adversely affected by aircraft operations.*

# Noise Exceedance

Penalty for evening and nighttime operations.

## Daytime 90 dB

*90dB or greater during daytime hours (7 a.m. to 7 p.m.)*

## Evening 85 dB

*85dB or greater during evening hours (7 p.m. to 10 p.m.)*

## Nighttime 80 dB

*80dB or greater during nighttime hours (10 p.m. to 7 a.m.)*

# Pre-COVID and COVID Environments

Observations between Pre-COVID and COVID Environments.

### Fleet Quality

Fleet Quality has improved by 8.2%

### Noise Exceedance

Noise Exceedance has improved by 38%

**New use of Stage 4 and 5 aircraft for Domestic and International Air**

(A220/A320Neo/A350/737MAX/787)

**Substantial permanent changes in long term fleet use**

**Retirement of older Stage 3 aircraft**

(MD-80/757/767/747)

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# Recognition for 2020

Public recognition for the pre-COVID evaluation period.

**Small Domestic Carrier**

SkyWest AIRLINES

**Large Domestic Carrier**

Southwest

**International Carrier**

JAPAN AIRLINES

**Air Cargo Carrier**

AIRBORNE EXPRESS

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# Questions ?

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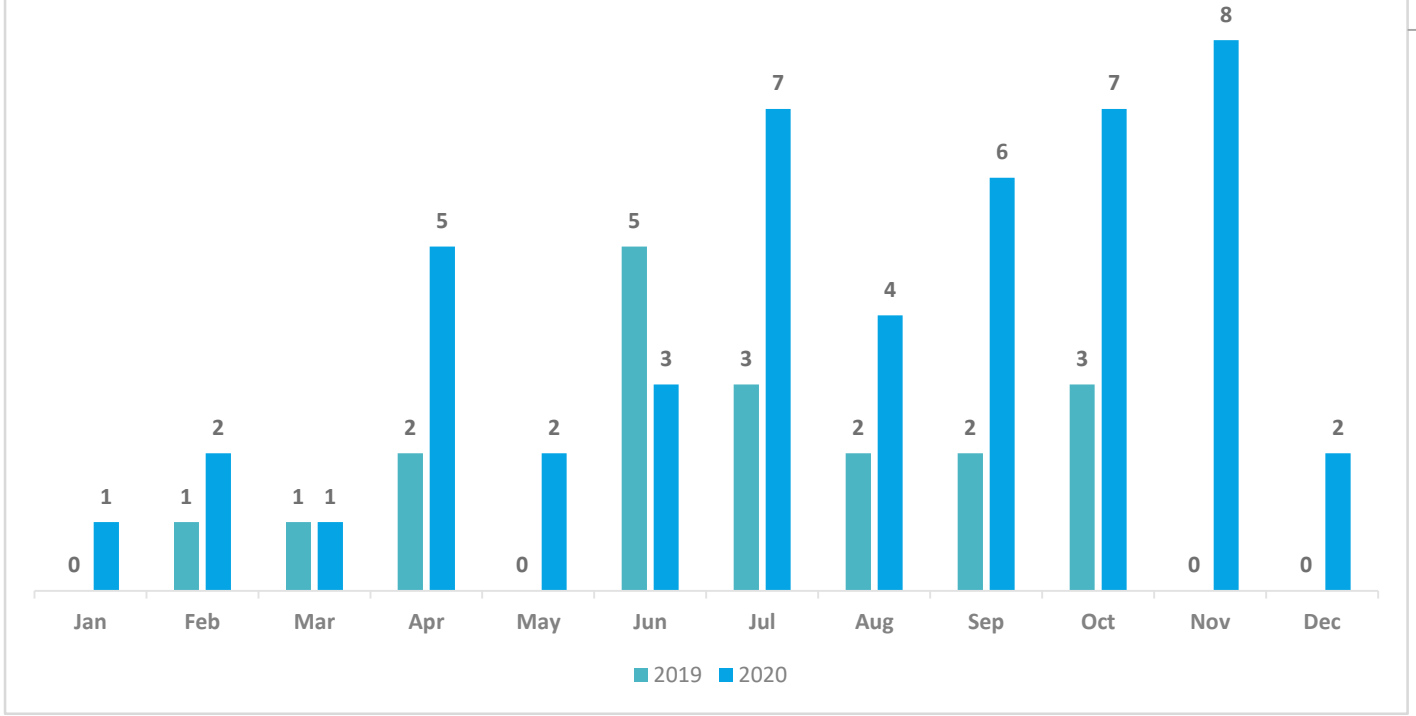
# Current Noise Concerns & Trends

December 16, 2020

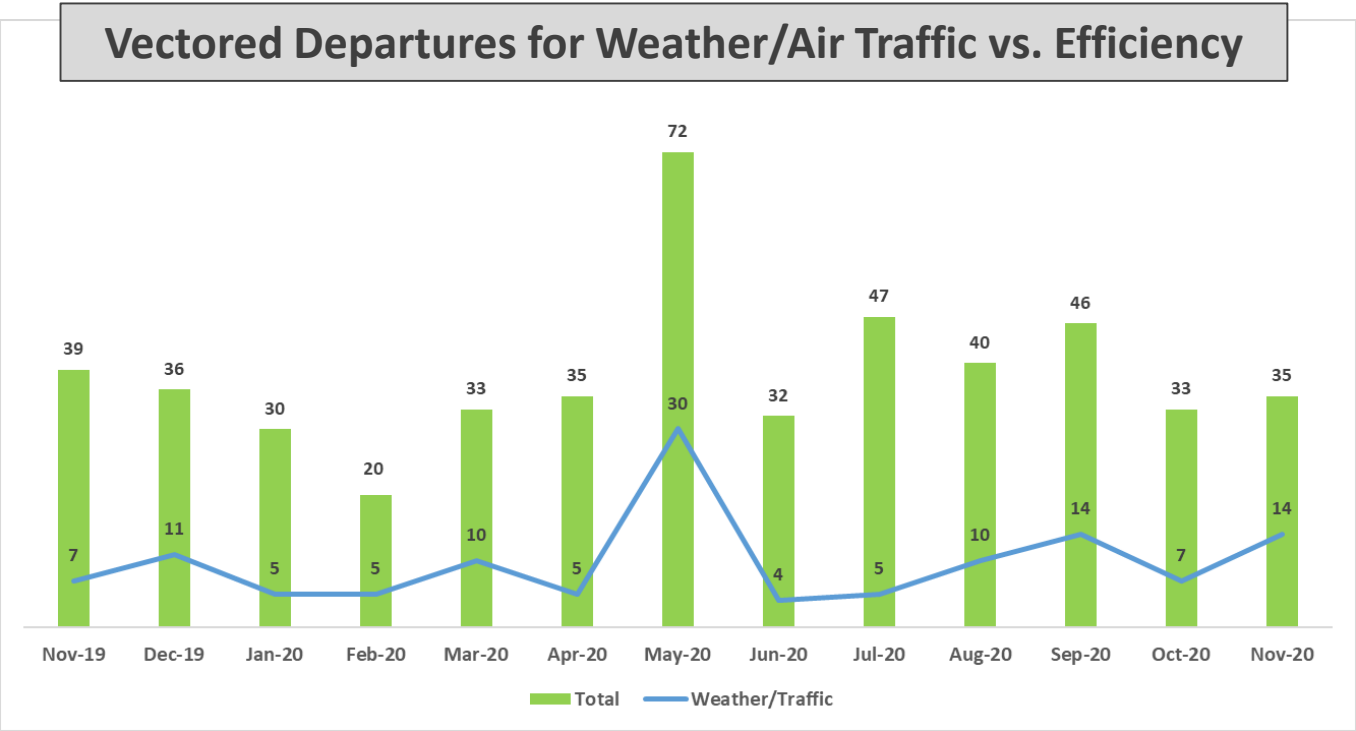
# Medical Emergency Flights (MEDIVAC)

**MEDIVAC Departure Flights (11:30 p.m. to 6:30 a.m.)**
**2019 vs 2020**




Increase in departures from 11:30 p.m. to 6:30 a.m. due to COVID-19.

# Departures Vectored Over La Jolla




About 80% occur at night off of the 290 departure.

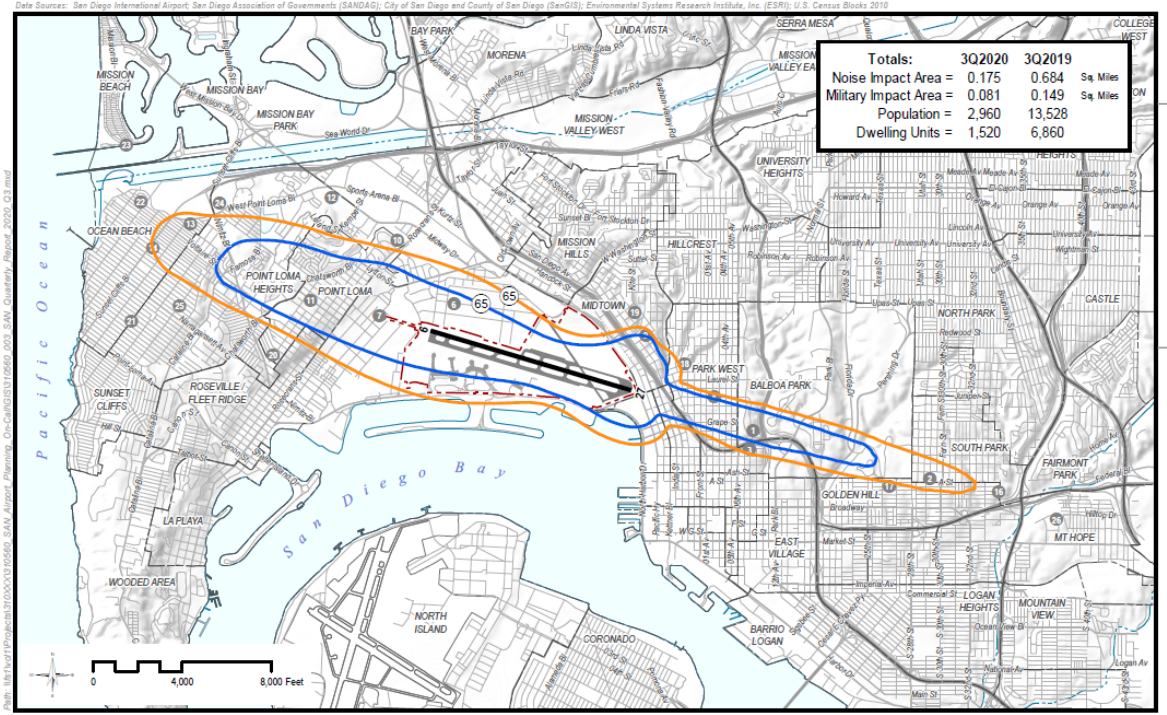
Pre-Metroplex shows an average of 37 per month.

Decrease after spike in May (FAA Awareness).

# La Jolla Overflight Chain


Weather and Air Traffic Vectoring will always occur on some level.

# Pre-COVID vs. Present Day 65 dB Contour




Comparison of the 2019 and 2020 Third Quarter 65 dB Community Noise Equivalent Level (CNEL) Contours

Roughly 45% decrease in the size of the 65 dB contour.

Smallest known contour in the Jet Age for SDIA.

# Questions ?

December 1, 2020

# Fly Quiet Report

## Pre-COVID 2020

**Prepared by:**

Jim Payne
Senior Aircraft Noise Specialist
Planning & Environmental Affairs
San Diego County Regional Airport Authority

# 1.0 Summary of the 2020 Report

Each quarter, the Airport Noise Mitigation Office publishes a report that outlines the trends on how quietly each operator flies in and out of San Diego International Airport (SDIA). This is a summary of the Fly Quiet Report for 2020. Due to COVID, we have limited the scoring period to account for the loss of service at the end of March.

**Changes to the Program Scoring**

Due to the unexpected weight of the curfew category in 2019, we have reviewed the program and made several changes intended to provide better balance in the results across all categories. This is not to discount the efforts of the carriers last year, but we believe the changes will give greater weight to the Fleet Quality and Noise Exceedance components.

Below is a brief summary of those changes:

- All score rounding has been eliminated to avoid ties.

- Fleet Quality "ranging" use has been removed. The cumulative noise score is based on a 30dB cumulative noise scale adjusted to 10 points. As quieter Stage 4 aircraft reach critical mass, the 30dB scale will be adjusted upward to 40dB to reflect the Stage 5 certification metric.

- The Noise Exceedance component includes a new evening and nighttime penalty based on a specific dB level measurement at Remote Monitoring Terminal (RMT) 2, 14, and 24 (east and west of the airport). This concept is taken from the method used at London/Gatwick Airport where they utilize a noise measurement metric to deter the use of certain aircraft types during nighttime hours in lieu of a curfew. Negative scores are possible if an operator triggers multiple RMTs reflecting the overall impact to the community rather than targeted areas (i.e. a Boeing 747 will trigger both RMTs west of the airport resulting in two (2) exceedances).

- The Curfew Element will use a modified scoring method. The cancellation bonus is removed ensuring the cancellations do not outweigh the other categories. All violations will result in a deduction of at least one (1) point per violation and a second point for a penalized violation. Excessive violations can result in a negative score for this category.

## 2.0 Fly Quiet Program Description

The purpose of the SDIA Fly Quiet Program is to encourage individual Air Carriers to fly as quietly as possible in the San Diego area by acknowledging those Carriers that operate the quietest fleets and adhere to Authority Use Regulations (Curfew). By grading an Air Carrier's performance and making the scores available to the public, the program creates a participatory atmosphere for Carriers to actively reduce noise impacts.

The Fly Quiet Program offers a dynamic venue for reviewing noise abatement initiatives by praising and publicizing active participation rather than a system that admonishes violations from essentially voluntary procedures.

### 2.1 Reports

Fly Quiet reports communicate individual category results on a quarterly basis on a scale of 0-10 per element. These quantitative scores allow air carrier management and flight personnel to measure exactly how they stand compared to other carriers and how their proactive involvement can positively reduce noise in the San Diego area. Each year has a maximum value of 30 points.

### 2.2 Awards

At the end of the year, awards will be presented to the carriers in the following categories:

- Small Domestic Carrier (Less than 10% of passengers)
- Large Domestic Carrier (10% of passengers or more)
- International Carrier
- Air Cargo Carrier (All Cargo Carriers)

### 2.3 Elements

Currently the Fly Quiet Program scores Air Carriers on the following three elements that will be described in detail in the next section. Over time, changes can be made to adjust to new or modified metrics. The elements are:

- Fleet Quality
- Noise Exceedance
- Curfew Compliance

### 2.3.1 Fleet Quality

The Fleet Quality score evaluates the noise contribution of each operator's fleet mix as it actually operates at SDIA. Carriers generally own a variety of aircraft types and schedule them according to operational needs, passenger/cargo demand and other marketing considerations. The Fly Quiet Program assigns a higher rating to carriers flying quieter, newer aircraft and to those that adhere to the curfew.

Historically airports have rated Fleet Quality by the relative percentage of Stage 2 vs. Stage 3 operations[1]. Since the completion of the phase out of Stage 2 aircraft mandated by the Airport Noise and Capacity Act (ANCA) of 1990, all aircraft in the U.S. over 75,000 pounds meet the more stringent Stage 3 noise standards. However, within the allowable Stage 3 criteria, there is a wide range of noise levels, and the Federal Aviation Administration (FAA) does not distinguish between these aircraft types.

There are now Stage 4 and Stage 5 aircraft types entering service. All *new design aircraft* over 12,500 pounds issued a type certificate after January 1, 2006 were required to meet Stage 4 standards. The new Stage 5 noise standard applies to any application for a new airplane type design that has a Maximum Certificated Takeoff Weight (MTOW) of 121,254 pounds or more on or after December 31, 2017; or that has a MTOW of less than 121,254 pounds on or after December 31, 2020.

The method used here bases an operator's Fleet Quality Rating on aircraft manufacturer noise certification data. For each aircraft type, 14 CFR Part 36 specifies allowable noise levels at three measurement locations: approach, departure, and sideline[2]. Per 14 CFR Part 36 allowable noise limits increase with weight, so that larger aircraft, serving more passengers, are not penalized as compared to smaller types.

The rating method for the Fleet Quality totals the difference between each aircraft's certified noise levels at all three measuring points (takeoff, approach and sideline) and the Stage 3 standard for that aircraft type, weight and engine type.

Similar to and consistent with 14 CFR Part 36, the Fleet Quality Rating allows for higher noise levels for larger aircraft. It is important to credit larger aircraft serving more passengers, because they offer more air service in fewer flights and less total noise than multiple operations in smaller aircraft types.

Calculation of Rating:

The Fleet Quality rating calculation takes the takeoff, approach and sideline noise sume of the allowable Part 36 Stage 3 limit from the Part 36 certification level and then produces a total. Table 1 demonstrates this methodology for a B737-700 aircraft where the difference between the Stage 3 limit and certificated value is 4.1dB on takeoff, 3.8 dB on approach and 6.8 dB for sideline noise; for a cumulative sum of 14.7dB.

[1] Stages 1-4 were established by a Federal Aviation Regulation called 14 CFR Part 36 which mandated the allowable noise levels for the manufacture of aircraft. Over time both Stage 1 and Stage 2 aircraft have been phased out of operation in the U.S. as a result of subsequent federal regulations.

[2] 14 CFR Part 36 standards are measured in terms of the single event metric Effective Perceived Noise Level (EPNdB), which accounts for different frequency characteristics of noise, such as low frequency.

**Table 1** – B737-700 Aircraft Example

| B737-700 Aircraft | Takeoff (EPNdB) | Approach (EPNdB) | Sideline (EPNdB) | Total dB Below Stage 3 Limits |
|---|---|---|---|---|
| Part 36 Stage 3 Limit | 91.2 | 99.7 | 96.6 | - |
| Part 36 Certification Level | 87.1 | 95.9 | 89.8 | - |
| **Difference** | **4.1** | **3.8** | **6.8** | **14.7** |

The Part 36 certification database for commercial aircraft is very extensive in listing many different noise values for variations on the same aircraft type depending on weight, flap settings, engine types, and other specifications. The Fleet Quality rating methodology looks at each operator at SDIA and their specific aircraft fleet. Certifications values for each aircraft type are averaged together per operator.

Table 2 provides an example for computing the Fleet Quality Sub Score. The example airline has four different aircraft types in their fleet that operate at SDIA. The number of operations is multiplied by the Cumulative Noise Level of the aircraft type to generate a cumulative noise level. The cumulative noise level is then divided by the sum of operations for the carrier to create a fleet average sub score.

**Table 2** – Example for Computing the Fleet Quality Sub Score.

| Aircraft Types | Cumulative Noise Level | Operations | Sum of Cumulatives Noise |
|---|---|---|---|
| B737 | 14.3 | 80.0 | 1144.0 |
| B737MAX | 25.2 | 10.0 | 252.0 |
| B738 | 13.1 | 50.0 | 655.0 |
| B738MAX | 25.3 | 10.0 | 253.0 |
| **Fleet Avg (sum of CNEL divided by Total Operations):** | | | **15.4** |

Table 3 demonstrates the impact to a particular Fleet Quality score as they incorporate quieter aircraft, like the 737Max or A320neo into their operation at the airport.

**Table 3** – Example of Fleet Quality Improvement

| Aircraft Types | Cumulative Noise Level | Operations | Sum of Cumulatives Noise |
|---|---|---|---|
| B737 | 14.3 | 70.0 | 1001.0 |
| B737MAX | 25.2 | 20.0 | 504.0 |
| B738 | 13.1 | 40.0 | 524.0 |
| B738MAX | 25.3 | 20.0 | 506.0 |
| **Fleet Avg (sum of CNEL divided by Total Operations):** | | | **16.9** |

The Fleet Quality Score for each operator is determined based upon the sub score with a target cumulative noise level of 30dB. The sub score is divided by 30 then grossed up to 10-points to determine the Fleet Quality Score. As Stage 5 aircraft become significant enough to be measurable, the cumulative noise level target of 40 dB will be used.

In the example of Table 2, the sub score is 15.4 and therefore the operator's final Fleet Quality score would be 5.13 (15.4/30*10). In Table 3, that score increases to 5.63 through the utilization of newer aircraft (16.9/30*10).

### 2.3.2 Noise Exceedances

Eliminating loud aircraft noise events is a long-standing goal of the Airport, as a result, the Airport has established an element that identifies the loudest aircraft departing SDIA. The arrival and departure exceedances are captured at Daytime, Evening and Nighttime levels.

- The locations of the monitors where exceedances are captured are as follows:
    - RMT #2 – Approximately 3.5-nautical miles (6.5km) along the departure path to the east of the airport.
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    - RMT #24 – Approximately 3.5-nautical miles (6.5km) along the departure corridor to the northwest of the airport for right turn departures.

Calculation of Rating:

The Noise Exceedances Score for each operator is determined by adding the different categories of noise exceedances together and adjusting them to the number of operations to generate a score of up to ten (10) points per quarter. The current threshold settings are 90 dB for daytime departures (7:00 am to 7:00 pm), 85 dB in the shoulder hours (7:00 pm to 10:00 pm), and 80 dB during nighttime hours (10:00 pm to 7:00 am). Multiple exceedances for a single departure may be captured if they exceed the thresholds at both RMTs 14 and 24. As Stage 4 and 5 use increases, these threshold levels can be adjusted downward to reflect the noise improvements of the fleet and maintain measurement validity in fleet comparisons.

### 2.3.3 Curfew Compliance

SDIA has had a curfew in place since 1976. SDIA's curfew is governed as part of the Airport Use Regulations and may result in a monetary fine if an operator violates the curfew. All departures are restricted from 11:30 p.m. to 6:30 a.m. Aircraft may arrive at SDIA 24 hours a day.

The departure curfew is mandatory; however, there are exemptions for Emergency/Mercy flights. Compliance is at the discretion of the pilot or operator. Penalties may be waived in certain circumstances. Typical circumstances include local maintenance issues discovered near departure time, weather that significantly disrupts the SAN operation, or other operational issues such as FAA system outages that preclude an aircraft from an on time departure due to FAA implementation of ground delay programs. This component is designed to encourage a cancellation, even under these circumstances, rather than depart during the curfew window. Fee waivers are done through a review of the individual circumstances.

The curfew violations system includes administrative fines if $2,000 for the first violation by a particular operator in a compliance period; $6,000 for the second violation in a compliance period, and, $10,000 for the third violation in a compliance period. Additionally, a multiplier is added to reflect the number of violations from the previous compliance period. The Fly Quiet Program formalizes the effort of working with the carriers to reduce the number of curfew violations.

<u>Calculation of Rating:</u>

An operator that does not log any curfew violations in a quarter will receive a score of ten (10) points. The ten (10) point score is adjusted based upon the following:

1. Curfew Violations:

   *If a carrier violates the curfew, they will be assessed a penalty of one (1) point.*

2. Curfew Violations that are fined:

   *If the Airport's Curfew Violation Review Panel (CVRP) determines that a fine should be imposed on a curfew violation, they will be assessed an additional penalty of one (1) point.*

It is possible that a carrier will receive a negative score in this category. If a carrier continues to violate the curfew, an excessive number of violations will become more punitive to the final overall score.

## 3.0 Score Sheets

The following pages show the scores for the carriers in each element for the evaluation period.

- The first three charts show the scoring in each element for a given carrier, there is no ranking associated with the individual elements. There is no preference to a given operator.

- The summary page shows the total points in each element and rankings by carrier group utilized for the awards to the best carrier in each operating category.

- The operating categories are:

    - Small Carrier
    - Large Carrier
    - International Carrier
    - Air Cargo Carrier

| Fleet Quality Report | | | | | |
|---|---|---|---|---|---|
| San Diego International Airport's Fly Quiet Program | | | | | |
| Pre-COVID 2020 (October 2019 - March 2020) | | | | | |
| **Airline** | | **Operations** | **Percent of Operations** | **Sub Score** | **Fleet Quality Score** |
| AAL | American Airlines | 8,708 | 9.1% | 13.5 | 4.50 |
| AAY | allegiant air | 25 | 0.0% | 19.5 | 6.50 |
| ABX | AIRBORNE EXPRESS | 134 | 0.1% | 13.7 | 4.57 |
| ASA | Alaska | 11,652 | 12.1% | 12.6 | 4.20 |
| BAW | BRITISH AIRWAYS | 311 | 0.3% | 15.0 | 5.00 |
| DAL | DELTA | 8,440 | 8.8% | 11.6 | 3.87 |
| DLH | Lufthansa | 214 | 0.2% | 18.5 | 6.17 |
| EDW | edelweiss | 0 | 0.0% | 0.0 | 0.00 |
| FDX | FedEx | 1,323 | 1.4% | 14.8 | 4.93 |
| FFT | FRONTIER | 1,752 | 1.8% | 19.7 | 6.57 |
| HAL | HAWAIIAN AIRLINES | 712 | 0.7% | 20.9 | 6.97 |
| JAL | JAPAN AIRLINES | 351 | 0.4% | 27.7 | 9.23 |
| JBU | jetBlue AIRWAYS | 1,930 | 2.0% | 15.3 | 5.10 |
| JZA | Jazz | 926 | 1.0% | 13.8 | 4.60 |
| NKS | spirit | 1,650 | 1.7% | 19.3 | 6.43 |
| ROU | rouge | 348 | 0.4% | 9.5 | 3.17 |
| SCX | sun country airlines | 348 | 0.4% | 12.7 | 4.23 |
| SKW | SkyWest | 7,927 | 8.3% | 15.3 | 5.10 |
| SWA | Southwest | 38,830 | 40.5% | 14.2 | 4.73 |
| UAL | UNITED | 9,589 | 10.0% | 15.0 | 5.00 |
| UPS | ups | 490 | 0.5% | 15.9 | 5.30 |
| WJA | WESTJET | 280 | 0.3% | 14.1 | 4.70 |

| Noise Exceedance Report<br>San Diego International Airport's Fly Quiet Program<br>Pre-COVID 2020 (October 2019 - March 2020) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Airline | | Operations | Daytime Exceedances (90+ dB) | Evening Exceedances (85+ dB) | Nighttime Exceedances (80+ dB) | Total Exceedances | Noise Exceedance Score |
| AAL | American Airlines | 8,708 | 293 | 1,020 | 2,897 | 4,210 | 5.17 |
| AAY | allegiant air | 25 | 0 | 1 | 4 | 5 | 8.00 |
| ABX | AIRBORNE EXPRESS | 134 | 9 | 6 | 13 | 28 | 7.91 |
| ASA | Alaska | 11,652 | 286 | 1,361 | 2,146 | 3,793 | 6.74 |
| BAW | BRITISH AIRWAYS | 311 | 212 | 156 | 6 | 374 | -2.03 |
| DAL | DELTA | 8,440 | 172 | 1,047 | 2,249 | 3,468 | 5.89 |
| DLH | Lufthansa | 214 | 125 | 0 | 0 | 125 | 4.16 |
| EDW | edelweiss | 0 | 0 | 0 | 0 | 0 | 0.00 |
| FDX | FedEx | 1,323 | 175 | 310 | 517 | 1,002 | 2.43 |
| FFT | FRONTIER | 1,752 | 3 | 251 | 483 | 737 | 5.79 |
| HAL | HAWAIIAN AIRLINES | 712 | 27 | 253 | 44 | 324 | 5.45 |
| JAL | JAPAN AIRLINES | 351 | 2 | 0 | 0 | 2 | 9.94 |
| JBU | jetBlue AIRWAYS | 1,930 | 39 | 843 | 91 | 973 | 4.96 |
| JZA | Jazz | 926 | 1 | 3 | 212 | 216 | 7.67 |
| NKS | spirit | 1,650 | 7 | 123 | 324 | 454 | 7.25 |
| ROU | rouge | 348 | 6 | 0 | 0 | 6 | 9.83 |
| SCX | sun country airlines | 348 | 18 | 83 | 10 | 111 | 6.81 |
| SKW | SkyWest AIRLINES | 7,927 | 22 | 285 | 571 | 878 | 8.89 |
| SWA | Southwest | 38,830 | 433 | 4,727 | 4,694 | 9,854 | 7.46 |
| UAL | UNITED | 9,589 | 1,164 | 1,224 | 1,802 | 4,190 | 5.63 |
| UPS | ups | 490 | 25 | 129 | 244 | 398 | 1.88 |
| WJA | WESTJET | 280 | 4 | 0 | 0 | 4 | 9.86 |

| Curfew Violation Report<br>San Diego International Airport's Fly Quiet Program<br>Pre-COVID 2020 (October 2019 - March 2020) | | | | | | |
|---|---|---|---|---|---|---|
| **Airline** | | **Operations** | **Violations** | **Penalized Violations** | **Curfew Penalty Points** | **Curfew Violation Score** |
| AAL | American Airlines | 8,708 | 3 | 0 | 3 | 7.00 |
| AAY | allegiant air | 25 | 1 | 1 | 2 | 8.00 |
| ABX | AIRBORNE EXPRESS | 134 | 1 | 0 | 1 | 9.00 |
| ASA | Alaska | 11,652 | 1 | 0 | 1 | 9.00 |
| BAW | BRITISH AIRWAYS | 311 | 1 | 0 | 1 | 9.00 |
| DAL | DELTA | 8,440 | 3 | 0 | 3 | 7.00 |
| DLH | Lufthansa | 214 | 0 | 0 | 0 | 10.00 |
| EDW | edelweiss | 0 | 0 | 0 | 0 | 0.00 |
| FDX | FedEx | 1,323 | 0 | 0 | 0 | 10.00 |
| FFT | FRONTIER | 1,752 | 0 | 0 | 0 | 10.00 |
| HAL | HAWAIIAN AIRLINES | 712 | 0 | 0 | 0 | 10.00 |
| JAL | JAPAN AIRLINES | 351 | 0 | 0 | 0 | 10.00 |
| JBU | jetBlue AIRWAYS | 1,930 | 6 | 2 | 8 | 2.00 |
| JZA | Jazz | 926 | 0 | 0 | 0 | 10.00 |
| NKS | spirit | 1,650 | 1 | 0 | 1 | 9.00 |
| ROU | rouge | 348 | 0 | 0 | 0 | 10.00 |
| SCX | sun country airlines | 348 | 1 | 1 | 2 | 8.00 |
| SKW | SkyWest | 7,927 | 0 | 0 | 0 | 10.00 |
| SWA | Southwest | 38,830 | 1 | 1 | 2 | 8.00 |
| UAL | UNITED | 9,589 | 1 | 1 | 2 | 8.00 |
| UPS | ups | 490 | 0 | 0 | 0 | 10.00 |
| WJA | WESTJET | 280 | 0 | 0 | 0 | 10.00 |

| Summary Report<br>San Diego International Airport's Fly Quiet Program<br>Pre-COVID 2020 (October 2019 - March 2020) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Airline Code | | Number of Operations | Fleet Quality Score | Noise Exceedance Score | Curfew Violations Score | Total Fly Quiet Score | Category |
| SKW | SkyWest | 7,927 | 5.10 | 8.89 | 10.00 | 23.99 | Small Carrier |
| NKS | spirit | 1,650 | 6.43 | 7.25 | 9.00 | 22.68 | Small Carrier |
| AAY | allegiant air | 25 | 6.50 | 8.00 | 8.00 | 22.50 | Small Carrier |
| HAL | HAWAIIAN AIRLINES | 712 | 6.97 | 5.45 | 10.00 | 22.42 | Small Carrier |
| FFT | FRONTIER | 1,752 | 6.57 | 5.79 | 10.00 | 22.36 | Small Carrier |
| SCX | sun country airlines | 348 | 4.23 | 6.81 | 8.00 | 19.04 | Small Carrier |
| JBU | jetBlue AIRWAYS | 1,930 | 5.10 | 4.96 | 2.00 | 12.06 | Small Carrier |
| SWA | Southwest | 38,830 | 4.73 | 7.46 | 8.00 | 20.20 | Large Carrier |
| ASA | Alaska | 11,652 | 4.20 | 6.74 | 9.00 | 19.94 | Large Carrier |
| UAL | UNITED | 9,589 | 5.00 | 5.63 | 8.00 | 18.63 | Large Carrier |
| DAL | DELTA | 8,440 | 3.87 | 5.89 | 7.00 | 16.76 | Large Carrier |
| AAL | American Airlines | 8,708 | 4.50 | 5.17 | 7.00 | 16.67 | Large Carrier |
| JAL | JAPAN AIRLINES | 351 | 9.23 | 9.94 | 10.00 | 29.18 | International |
| WJA | WESTJET | 280 | 4.70 | 9.86 | 10.00 | 24.56 | International |
| ROU | rouge | 348 | 3.17 | 9.83 | 10.00 | 22.99 | International |
| JZA | Jazz | 926 | 4.60 | 7.67 | 10.00 | 22.27 | International |
| DLH | Lufthansa | 214 | 6.17 | 4.16 | 10.00 | 20.33 | International |
| BAW | BRITISH AIRWAYS | 311 | 5.00 | -2.03 | 9.00 | 11.97 | International |
| EDW | edelweiss | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| ABX | AIRBORNE EXPRESS | 134 | 4.57 | 7.91 | 9.00 | 21.48 | Air Cargo |
| FDX | FedEx | 1,323 | 4.93 | 2.43 | 10.00 | 17.36 | Air Cargo |
| UPS | ups | 490 | 5.30 | 1.88 | 10.00 | 17.18 | Air Cargo |

Note: The winners in each carrier category are highlighted in green.

December 1, 2020

# Fly Quiet Report

## COVID Period - 2020

**Prepared by:**

Jim Payne
Senior Aircraft Noise Specialist
Planning & Environmental Affairs
San Diego County Regional Airport Authority

# 1.0 Summary of the 2020 Report

The Airport Noise Mitigation Office publishes an annual report that outlines the trends on how quietly each operator flies in and out of San Diego International Airport (SDIA). This is a summary of the Fly Quiet Report for 2020. Due to COVID, we have limited the scoring period to account for the loss of service by the end of March.

To better align with ANAC reporting periods, we are adjusting the program evaluation period to the FAA Fiscal Year which runs from October through the following September. This will allow for facilitation of the awards with ANAC approval in December, award coordination and Board presentation to the carriers in February of each year.

**Changes Observed during COVID Period compared to Pre-COVID**

- The number of total operations for the past six (6) months is roughly half that of the pre-COVID period.
- The overall Fleet Quality improved by 8.2% due to the accelerated retirement of older aircraft.
- The Noise Exceedance component improved by 38% due to the use of newer aircraft and lighter passenger enplanements. A reflection of the greater climb rates vs. normal operating conditions.
- Fleet changes are substantial.
    - Carriers have announced the retirement of most Boeing 757 and 767 aircraft and all MD-80s have now been retired from scheduled service.
    - The 737MAX is now recertified for service entry allowing for fleet integration and in some cases the retirement of older Stage 3 narrowbody aircraft.
    - British Airways will no longer be operating the 747 at SDIA as the fleet has been retired. British Airways will return initially with a Stage 4 787-9, with forward schedules showing a 777-200ER from March through October of 2021 where the 777 will be replaced with a Stage 5 A350-1000 in the fall.
    - Lufthansa is currently reviewing its fleet plans to streamline their fleet which could shorten their projected A340 retirement timeline of 2025. Early adoption of the A350 at SDIA may be beneficial to them from an airfield performance perspective coupled with the competitive environment, driven by BA's use of the newer A350 (matching passenger experience product in the European market).

## 2.0 Fly Quiet Program Description

The purpose of the SDIA Fly Quiet Program is to encourage individual Air Carriers to fly as quietly as possible in the San Diego area by acknowledging those Carriers that operate the quietest fleets and adhere to Authority Use Regulations (Curfew). By grading an Air Carrier's performance and making the scores available to the public, the program creates a participatory atmosphere for Carriers to actively reduce noise impacts.

The Fly Quiet Program offers a dynamic venue for reviewing noise abatement initiatives by praising and publicizing active participation rather than a system that admonishes violations from essentially voluntary procedures.

### 2.1 Reports

Fly Quiet reports communicate individual category results on a quarterly basis on a scale of 0-10 per element. These quantitative scores allow air carrier management and flight personnel to measure exactly how they stand compared to other carriers and how their proactive involvement can positively reduce noise in the San Diego area. Each year has a maximum value of 30 points.

### 2.2 Awards

At the end of the year, awards will be presented to the carriers in the following categories:

- Small Domestic Carrier (Less than 10% of passengers)
- Large Domestic Carrier (10% of passengers or more)
- International Carrier
- Air Cargo Carrier (All Cargo Carriers)

### 2.3 Elements

Currently the Fly Quiet Program scores Air Carriers on the following three elements that will be described in detail in the next section. Over time, changes can be made to adjust to new or modified metrics. The elements are:

- Fleet Quality
- Noise Exceedances
- Curfew Compliance

### 2.3.1 Fleet Quality

The Fleet Quality score evaluates the noise contribution of each operator's fleet mix as it actually operates at SDIA. Carriers generally own a variety of aircraft types and schedule them according to operational needs, passenger/cargo demand and other marketing considerations. The Fly Quiet Program assigns a higher rating to carriers flying quieter, newer aircraft and to those that adhere to the curfew.

Historically airports have rated Fleet Quality by the relative percentage of Stage 2 vs. Stage 3 operations[1]. Since the completion of the phase out of Stage 2 aircraft mandated by the Airport Noise and Capacity Act (ANCA) of 1990, all aircraft in the U.S. over 75,000 pounds meet the more stringent Stage 3 noise standards. However, within the allowable Stage 3 criteria, there is a wide range of noise levels, and the Federal Aviation Administration (FAA) does not distinguish between these aircraft types.

There are now Stage 4 and Stage 5 aircraft types entering service. All *new design aircraft* over 12,500 pounds issued a type certificate after January 1, 2006 were required to meet Stage 4 standards. The new Stage 5 noise standard applies to any application for a new airplane type design that has a Maximum Certificated Takeoff Weight (MTOW) of 121,254 pounds or more on or after December 31, 2017; or that has a MTOW of less than 121,254 pounds on or after December 31, 2020.

The method used here bases an operator's Fleet Quality Rating on aircraft manufacturer noise certification data. For each aircraft type, 14 CFR Part 36 specifies allowable noise levels at three measurement locations: approach, departure, and sideline[2]. Per 14 CFR Part 36 allowable noise limits increase with weight, so that larger aircraft, serving more passengers, are not penalized as compared to smaller types.

The rating method for the Fleet Quality totals the difference between each aircraft's certified noise levels at all three measuring points (takeoff, approach and sideline) and the Stage 3 standard for that aircraft type, weight and engine type.

Similar to and consistent with 14 CFR Part 36, the Fleet Quality Rating allows for higher noise levels for larger aircraft. It is important to credit larger aircraft serving more passengers, because they offer more air service in fewer flights and less total noise than multiple operations in smaller aircraft types.

Calculation of Rating:

The Fleet Quality rating calculation takes the takeoff, approach and sideline noise sum of the allowable Part 36 Stage 3 limit from the Part 36 certification level and then produces a total. Table 1 demonstrates this methodology for a B737-700 aircraft where the difference between the Stage 3 limit and certificated value is 4.1dB on takeoff, 3.8 dB on approach and 6.8 dB for sideline noise; for a cumulative sum of 14.7dB.

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| Part 36 Certification Level | 87.1 | 95.9 | 89.8 | - |
| **Difference** | **4.1** | **3.8** | **6.8** | **14.7** |

The Part 36 certification database for commercial aircraft is very extensive in listing many different noise values for variations on the same aircraft type depending on weight, flap settings, engine types, and other specifications. The Fleet Quality rating methodology looks at each operator at SDIA and their specific aircraft fleet. Certifications values for each aircraft type are averaged together per operator.

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| Aircraft Types | Cumulative Noise Level | Operations | Sum of Cumulatives Noise |
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| B737 | 14.3 | 80.0 | 1144.0 |
| B737MAX | 25.2 | 10.0 | 252.0 |
| B738 | 13.1 | 50.0 | 655.0 |
| B738MAX | 25.3 | 10.0 | 253.0 |
| **Fleet Avg (sum of CNEL divided by Total Operations):** | | | **15.4** |

Table 3 demonstrates the impact to a particular Fleet Quality score as they incorporate quieter aircraft, like the 737Max or A320neo into their operation at the airport.

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| Aircraft Types | Cumulative Noise Level | Operations | Sum of Cumulatives Noise |
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| B738 | 13.1 | 40.0 | 524.0 |
| B738MAX | 25.3 | 20.0 | 506.0 |
| **Fleet Avg (sum of CNEL divided by Total Operations):** | | | **16.9** |

The Fleet Quality Score for each operator is determined based upon the sub score with a target cumulative noise level of 30dB. The sub score is divided by 30 then grossed up to 10-points to determine the Fleet Quality Score. As Stage 5 aircraft become significant enough to be measurable, the cumulative noise level target of 40 dB will be used.

In the example of Table 2, the sub score is 15.4 and therefore the operator's final Fleet Quality score would be 5.13 (15.4/30*10). In Table 3, that score increases to 5.63 through the utilization of newer aircraft (16.9/30*10).

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    - RMT #2 – Approximately 3.5-nautical miles (6.5km) along the departure path to the east of the airport.
    - RMT #14 – Approximately 3.5-nautical miles (6.5km) along the departure path to the west of the airport for straight out departures.
    - RMT #24 – Approximately 3.5-nautical miles (6.5km) along the departure corridor to the northwest of the airport for right turn departures.

Calculation of Rating:

The Noise Exceedance Score for each operator is determined by adding the different categories of noise exceedances together and adjusting them to the number of operations to generate a score of up to ten (10) points. The current threshold settings are 90 dB for daytime departures (7:00 am to 7:00 pm), 85 dB in the shoulder hours (7:00 pm to 10:00 pm), and 80 dB during nighttime hours (10:00 pm to 7:00 am). Multiple exceedances for a single departure may be captured if they exceed the thresholds at both RMTs 14 and 24. As Stage 4 and 5 use increases, these threshold levels can be adjusted downward to reflect the noise improvements of the fleet and maintain measurement validity in fleet comparisons.

### 2.3.3 Curfew Compliance

SDIA has had a curfew in place since 1976. SDIA's curfew is governed as part of the Airport Use Regulations and may result in a monetary fine if an operator violates the curfew. All departures are restricted from 11:30 p.m. to 6:30 a.m. Aircraft may arrive at SDIA 24 hours a day.

The departure curfew is mandatory; however, there are exemptions for Emergency/Mercy flights. Compliance is at the discretion of the pilot or operator. Penalties may be waived in certain circumstances. Typical circumstances include local maintenance issues discovered near departure time, weather that significantly disrupts the SAN operation, or other operational issues such as FAA system outages that preclude an aircraft from an on time departure due to FAA implementation of ground delay programs. This component is designed to encourage a cancellation, even under these circumstances, rather than depart during the curfew window. Fee waivers are done through a review of the individual circumstances.

The curfew violations system includes administrative fines if $2,000 for the first violation by a particular operator in a compliance period; $6,000 for the second violation in a compliance period, and, $10,000 for the third violation in a compliance period. Additionally, a multiplier is added to reflect the number of violations from the previous compliance period. The Fly Quiet Program formalizes the effort of working with the carriers to reduce the number of curfew violations.

Calculation of Rating:

An operator that does not log any curfew violations in a quarter will receive a score of ten (10) points. The ten (10) point score is adjusted based upon the following:

1. Curfew Violations:

   *If a carrier violates the curfew, they will be assessed a penalty of one (1) point.*

2. Curfew Violations that are fined:

   *If the Airport's Curfew Violation Review Panel (CVRP) determines that a fine should be imposed on a curfew violation, they will be assessed an additional penalty of one (1) point.*

It is possible that a carrier will receive a negative score in this category. If a carrier continues to violate the curfew, an excessive number of violations will become more punitive to the final overall score.

## 3.0 Score Sheets

The following pages show the scores for the carriers in each element for the evaluation period.

- The first three charts show the scoring in each element for a given carrier, there is no ranking associated with the individual elements. There is no preference to a given operator.

- The summary page shows the total points in each element and rankings by carrier group utilized for the awards to the best carrier in each operating category.

- The operating categories are:

    - Small Carrier
    - Large Carrier
    - International Carrier
    - Air Cargo Carrier

| Fleet Quality Report |
|---|
| San Diego International Airport's Fly Quiet Program |
| COVID Period (April 2020 through September 2020) |

| Airline | | Operations | Percent of Operations | Sub Score | Fleet Quality Score |
|---|---|---|---|---|---|
| AAL | American Airlines | 4,073 | 10.0% | 13.50 | 4.50 |
| AAY | allegiant air | 409 | 1.0% | 19.40 | 6.47 |
| ABX | AIRBORNE EXPRESS | 264 | 0.6% | 13.70 | 4.57 |
| ASA | Alaska | 2,837 | 6.9% | 16.00 | 5.33 |
| BAW | BRITISH AIRWAYS | 0 | 0.0% | 0.00 | 0.00 |
| DAL | DELTA | 3,989 | 9.8% | 12.00 | 4.00 |
| DLH | Lufthansa | 0 | 0.0% | 0.00 | 0.00 |
| EDW | edelweiss | 0 | 0.0% | 0.00 | 0.00 |
| FDX | FedEx | 1,516 | 3.7% | 16.30 | 5.43 |
| FFT | FRONTIER | 731 | 1.8% | 23.00 | 7.67 |
| HAL | HAWAIIAN AIRLINES | 153 | 0.4% | 23.40 | 7.80 |
| JAL | JAPAN AIRLINES | 14 | 0.0% | 27.70 | 9.23 |
| JBU | jetBlue AIRWAYS | 633 | 1.5% | 14.40 | 4.80 |
| JZA | Jazz | 0 | 0.0% | 0.00 | 0.00 |
| NKS | spirit | 990 | 2.4% | 19.70 | 6.57 |
| ROU | rouge | 0 | 0.0% | 0.00 | 0.00 |
| SCX | sun country airlines | 150 | 0.4% | 12.70 | 4.23 |
| SKW | SkyWest | 5,541 | 13.6% | 15.10 | 5.03 |
| SWA | Southwest | 16,682 | 40.8% | 14.00 | 4.67 |
| UAL | UNITED | 2,454 | 6.0% | 17.20 | 5.73 |
| UPS | ups | 413 | 1.0% | 16.00 | 5.33 |
| WJA | WESTJET | 0 | 0.0% | 0.00 | 0.00 |

| Noise Exceedance Report<br>San Diego International Airport's Fly Quiet Program<br>COVID Period (April 2020 through September 2020) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Airline | | Operations | Daytime Exceedances (90+ dB) | Evening Exceedances (85+ dB) | Nighttime Exceedances (80+ dB) | Total Exceedances | Noise Exceedance Score |
| AAL | American Airlines | 4,073 | 46 | 428 | 807 | 1,281 | 6.85 |
| AAY | allegiant air | 409 | 0 | 20 | 26 | 46 | 8.88 |
| ABX | AIRBORNE EXPRESS | 264 | 29 | 3 | 22 | 54 | 7.95 |
| ASA | Alaska | 2,837 | 21 | 336 | 180 | 537 | 8.11 |
| BAW | BRITISH AIRWAYS | 0 | 0 | 0 | 0 | 0 | 0.00 |
| DAL | DELTA | 3,989 | 25 | 501 | 679 | 1,205 | 6.98 |
| DLH | Lufthansa | 0 | 0 | 0 | 0 | 0 | 0.00 |
| EDW | edelweiss | 0 | 0 | 0 | 0 | 0 | 0.00 |
| FDX | FedEx | 1,516 | 160 | 271 | 617 | 1,048 | 3.09 |
| FFT | FRONTIER | 731 | 0 | 46 | 165 | 211 | 7.11 |
| HAL | HAWAIIAN | 153 | 0 | 24 | 11 | 35 | 7.71 |
| JAL | JAL JAPAN AIRLINES | 14 | 0 | 0 | 0 | 0 | 10.00 |
| JBU | jetBlue AIRWAYS | 633 | 1 | 55 | 11 | 67 | 8.94 |
| JZA | Jazz | 0 | 0 | 0 | 0 | 0 | 0.00 |
| NKS | spirit | 990 | 3 | 56 | 111 | 170 | 8.28 |
| ROU | rouge | 0 | 0 | 0 | 0 | 0 | 0.00 |
| SCX | sun country airlines | 150 | 7 | 1 | 0 | 8 | 9.47 |
| SKW | SkyWest | 5,541 | 16 | 32 | 106 | 154 | 9.72 |
| SWA | Southwest | 16,682 | 57 | 1,312 | 1,008 | 2,377 | 8.58 |
| UAL | UNITED | 2,454 | 78 | 353 | 182 | 613 | 7.50 |
| UPS | ups | 413 | 30 | 123 | 228 | 381 | 0.77 |
| WJA | WESTJET | 0 | 0 | 0 | 0 | 0 | 0.00 |

| Curfew Violation Report<br>San Diego International Airport's Fly Quiet Program<br>COVID Period (April 2020 through September 2020) | | | | | | |
|---|---|---|---|---|---|---|
| **Airline** | | **Operations** | **Violations** | **Penalized Violations** | **Curfew Penalty Points** | **Curfew Violation Score** |
| AAL | American Airlines | 4,073 | 0 | 0 | 0 | 10.00 |
| AAY | allegiant air | 409 | 0 | 0 | 0 | 10.00 |
| ABX | AIRBORNE EXPRESS | 264 | 0 | 0 | 0 | 10.00 |
| ASA | Alaska | 2,837 | 0 | 0 | 0 | 10.00 |
| BAW | BRITISH AIRWAYS | 0 | 0 | 0 | 0 | 0.00 |
| DAL | DELTA | 3,989 | 1 | 1 | 2 | 8.00 |
| DLH | Lufthansa | 0 | 0 | 0 | 0 | 0.00 |
| EDW | edelweiss | 0 | 0 | 0 | 0 | 0.00 |
| FDX | FedEx | 1,516 | 0 | 0 | 0 | 10.00 |
| FFT | FRONTIER | 731 | 0 | 0 | 0 | 10.00 |
| HAL | HAWAIIAN AIRLINES | 153 | 0 | 0 | 0 | 10.00 |
| JAL | JAL JAPAN AIRLINES | 14 | 0 | 0 | 0 | 10.00 |
| JBU | jetBlue AIRWAYS | 633 | 0 | 0 | 0 | 10.00 |
| JZA | Jazz | 0 | 0 | 0 | 0 | 0.00 |
| NKS | spirit | 990 | 0 | 0 | 0 | 10.00 |
| ROU | rouge | 0 | 0 | 0 | 0 | 0.00 |
| SCX | sun country airlines | 150 | 0 | 0 | 0 | 10.00 |
| SKW | SkyWest | 5,541 | 0 | 0 | 0 | 10.00 |
| SWA | Southwest | 16,682 | 0 | 0 | 0 | 10.00 |
| UAL | UNITED | 2,454 | 0 | 0 | 0 | 10.00 |
| UPS | ups | 413 | 0 | 0 | 0 | 10.00 |
| WJA | WESTJET | 0 | 0 | 0 | 0 | 0.00 |

| Summary Report<br>San Diego International Airport's Fly Quiet Program<br>COVID Period (April 2020 through September 2020) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Airline Code | | Number of Operations | Fleet Quality Score | Noise Exceedance Score | Curfew Violation Score | Total Fly Quiet Score | Category |
| HAL | Hawaiian Airlines | 153 | 7.80 | 7.71 | 10.00 | 25.51 | Small Carrier |
| AAY | Allegiant Air | 409 | 6.47 | 8.88 | 10.00 | 25.34 | Small Carrier |
| NKS | Spirit | 990 | 6.57 | 8.28 | 10.00 | 24.85 | Small Carrier |
| FFT | Frontier | 731 | 7.67 | 7.11 | 10.00 | 24.78 | Small Carrier |
| SKW | SkyWest | 5,541 | 5.03 | 9.72 | 10.00 | 24.76 | Small Carrier |
| JBU | JetBlue Airways | 633 | 4.80 | 8.94 | 10.00 | 23.74 | Small Carrier |
| SCX | Sun Country Airlines | 150 | 4.23 | 9.47 | 10.00 | 23.70 | Small Carrier |
| ASA | Alaska | 2,837 | 5.33 | 8.11 | 10.00 | 23.44 | Large Carrier |
| SWA | Southwest | 16,682 | 4.67 | 8.58 | 10.00 | 23.24 | Large Carrier |
| UAL | United | 2,454 | 5.73 | 7.50 | 10.00 | 23.24 | Large Carrier |
| AAL | American Airlines | 4,073 | 4.50 | 6.85 | 10.00 | 21.35 | Large Carrier |
| DAL | Delta | 3,989 | 4.00 | 6.98 | 8.00 | 18.98 | Large Carrier |
| JAL | Japan Airlines | 14 | 9.23 | 10.00 | 10.00 | 29.23 | International |
| BAW | British Airways | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| DLH | Lufthansa | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| EDW | edelweiss | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| JZA | Jazz | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| ROU | rouge | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| WJA | WestJet | 0 | 0.00 | 0.00 | 0.00 | 0.00 | International |
| ABX | Airborne Express | 264 | 4.57 | 7.95 | 10.00 | 22.52 | Air Cargo |
| FDX | FedEx | 1,516 | 5.43 | 3.09 | 10.00 | 18.52 | Air Cargo |
| UPS | UPS | 413 | 5.33 | 0.77 | 10.00 | 16.11 | Air Cargo |

Note: The winners in each carrier category are highlighted in green.