SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

AIRPORT NOISE ADVISORY COMMITTEE (ANAC)

MEETING AGENDA
Wednesday, December 18, 2019, 4:00 p.m.

LOCATION: Holiday Inn Bayside
1st Floor, Point Loma Room
4875 N Harbor Drive, San Diego, CA 92106

---

1. Welcome and Introductions
2. Presentation Items
   a. Update on Fly Quiet Program
   b. Airline Panel Discussion
   c. Update on Part 150 Study
3. Action Items
   a. Approval of October 16, 2019 – Meeting Summary
4. Public Comment
5. Next Meeting: February 19, 2020
6. Adjourn

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

Please note: There is a free City Parking lot next to the hotel, we will not reimburse for parking at the hotel.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

MEETING SUMMARY

Airport Noise Advisory Committee

Date | Time 10/16/2019 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		
Anthony Bernal	Downtown Community Planning Council	Yes
Melissa Hernholm-Danzo	Community Resident at Large within 65 dB CNEL	Yes
Judy Holiday	Midway-Pacific Highway Community Planning Group	Yes
John Kroll	Greater Golden Hill Planning Committee	Yes
Chris Cole	Uptown Planners	Yes
Anthony Ciulla	Ocean Beach Planning Board	Yes
Fred Kosmo	Peninsula Community Planning Board	Yes
Community Planning Groups Outside the 65 dB contour		
Matthew Price	La Jolla Community Planning Association	Yes
Susan Nichols	Grossmont-Mt. Helix Improvement Association	Yes
Jim Morrison	Pacific Beach Planning Group	Yes
Deborah Watkins	Mission Beach Precise Planning Board	Yes
Aviation Stakeholders		
Olivier Brackett	San Diego County Airports	No*
Vacant	City of San Diego Airports	N/A
Carl “Rick” Huenefeld	MCRD	No*
Robert Bates	Airline Pilot (Active)	Yes
Ex-Officio Non-Voting Members		
Justin Cook	Acoustical Engineer	Yes
Zach Bunshaft	Congress, 53rd District, for Rep. Susan Davis	Yes
Joshua Coyne	San Diego City Council, District 2, for Jennifer Campbell	Yes
Kiera Galloway	Congress, 52nd District, for Rep. Scott Peters	Yes
Marvin Mayorga	S.D. County Board of Supervisors, District 1, for Sup. Greg Cox	Yes
Keith Lusk	FAA Representatives	Yes
Kallie Glover	Performance Engineer, Delta Airlines	Yes
Speakers		
Craig Mayer	Deputy Program Manager - QHP	Yes
Heidi Gantwerk	Facilitator	Yes

*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. Introductions were made around the table. Ms. Gantwerk briefly shared the agenda.

Fred Kosmo thanked the Airport staff that attended the Peninsula Community Planning Board and made a presentation regarding the Airport Development Program.

2. 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

Quieter Home Program Update

Craig Mayer, Manager of the Quieter Home Program (QHP), explained that the QHP is the Airport Authority's residential sound installation program, which receives federal grants from the FAA to treat homes located within the 65 dB contour, in an effort to reduce the interior aircraft noise impacts. QHP was recently awarded a $14.6 million grant from the FAA, the largest grant received to date. The goal of the program is to reduce the interior noise level in properties by a minimum of five dB. There is a two-step process for eligibility to participate; 1) property must be located within the 65 dB contour; 2) the interior noise level average must be higher than 45 dB. If the home tests below a 45 dB average, the FAA allows a treatment package limited to a ventilation system and ancillary treatments like caulking and weather stripping that allows the homeowner to keep the windows and doors closed especially during the hot summer months.

Using the FAA's money to hire contractors to do work in a private residence results in a number of challenges. Participants are informed up front of all policies and procedures to ensure that they have a realistic expectation throughout the process. It's a voluntary program designed specifically to reduce interior noise level; not a home remodeling program.

QHP staff serve as the participant's advocate throughout the process; hiring the contractor through a public bid process. The lowest responsible and responsive contractor is hired to do the work, and QHP manages that process for the duration. Participants must relinquish their authority and decision making to QHP staff.

Homeowners must sign an avigation easement and homeowner participation agreement in order to proceed with the sound attenuation process. Even though there is no monetary cost to the participant, there is a non-financial cost in providing the Airport Authority the avigation easement to participate.

The other high-level issue that participants need to be aware of is the potential for ancillary costs where the FAA grant money cannot be used. For example, when code deficiencies are discovered, the FAA is specific about where their funds may be used and the property owner would be responsible for those costs. Examples might include on the low end, possibly switching plates; on the high end, a remodel done without obtaining a permit.

The QHP team is comprised of approximately 15-16 people. The job of each team is to make sure that a project goes smoothly, interacting with the contractor, the participants and the design team.

QHP properties are sorted into two categories; historic and non-historic. A historic architect reviews all properties to determine if the property is potentially historic and submits the recommendation to the City Historic Resources Board for a final determination. Non-historic properties are offered vinyl windows and sliding glass doors as part of a retrofit program. For historic properties, the only difference is that

windows and doors installed work toward maintaining the historic integrity of the property. Retrofitting the opening means the operable components from existing windows are removed, the frame and the structure are left intact, and a new window or door is installed. The retrofit window has four operable parts; two of them need to be opened to get to the outside. Doors offered for non-historic properties are wooden or aluminum acoustic doors, with several options to choose from.

In most single-family homes or condominium units, air-conditioning and some sort of ventilation are offered. In multi-family properties, only a ventilation system is offered which draws fresh air in, circulates it, and exhausts stale air, so windows and doors can stay closed. For all properties, QHP is not allowed to provide heat or install any system if an existing air condition system is present.

The QHP effort is an eight-step process, step one being the homeowner meeting, and through to the post-construction meeting. The important thing for property owners to know is that it is about an 18-month process to go through those eight steps. That does not include any time spent on the wait list. Precedence on the wait list is based on location (noisiest first) and length of ownership.

The treatments provided will not increase the assessed value of the home, and will not result in additional property taxes. The work has to be permitted through the City, so the County Assessor's Office will be notified that the work is being done. They'll send the property owner a notice that the property has gone through some renovation and they're reevaluating the assessed value. We provide a form for the property owner to fill out and send back, so that there are no additional taxes assessed.

At the end of the process, the property owner is asked to provide a survey about their experience from beginning to end. There are some things that owners are typically concerned about or unhappy with that there isn't much opportunity to change. One of the first is tenant coordination; that's a big challenge for the program. All property owners that rent their space out, must include or involve their tenants as much and as often as possible, so that once construction has started, there are no surprises, and it is a seamless process working with those tenants.

Many people find the provided treatments unsightly. It must be stressed that what is being worked towards is reducing the interior noise, not remodeling the home. Modifications may have to be made to the home to accommodate, for instance, a new cooling system, because there is no attic or crawl space. Closet space might need to be used for ductwork for a system.

Another concern is the lack of a daily project schedule. QHP staff provide every property owner a construction schedule that covers starting date and finish date, but nothing in between. This is because contractors are working in multiple homes at any given time, so they need flexibility to go from one to another, with as much flexible access as possible. In most cases, this allows them to finish the work ahead of schedule. Each construction group has a Homeowner Coordinator, who may have three or four projects to juggle at one time. To expect that coordinator to call every single homeowner that they are working with every morning with a schedule is not feasible.

Looking ahead, the goal is to expand the program boundary. Today, the QHP is working on homes in the 66 dB program boundary. A request was recently submitted to the FAA to expand; their verbal agreement and approval was received, but we are waiting for an official response.

Another goal is to expand the program to address non-residential properties, which is in the preliminary planning phase. The subject has been approached on a cursory level with the FAA. Considerable work remains to establish whether there is available additional funding to support this, and to establish the types of facilities that the FAA would allow to treat. (Places of worship, schools, daycares, medical facilities, etc.)

Questions from ANAC:

Anthony Bernal asked if future expansions would include government or municipally-owned buildings?

Mr. Mayer said that is still unknown and part of what still needs to be discussed with the FAA. The current FAA program guidance book has language that allows for a non-residential program, but it's not yet descriptive enough to know what it might look like.

Sjohnna Knack provided some history. In this program, before the residential treatments started, six schools were treated first. If there are new schools within the expanded boundary, then they would be potentially eligible for treatment, but they would follow similar policies that Craig outlined.

Mr. Mayer said that homes built after October 1, 1998 are currently not allowed to be treated, and it would need to be determined if that would apply to those non-residential facilities as well.

Melissa Hernholm-Danzo asked, how many more homes might be included in the boundary expansion? She also asked about the budget increase, and what does each home cost to retrofit, to understand how the budget could accommodate that many new homes.

Mr. Mayer said it's a rough estimate, but approximately another 2,500 to 3,000 units will be in the expanded boundary. There was a new grant of $14.6 million for this year. The current annual operating budget for the QHP is around $14.7 million. A new grant is requested from the FAA every year. The retrofit cost of a single-family, non-historic home averages around $35,000 to treat. The cost for a historic single-family home averages $70,000.

Ms. Gantwerk clarified that the expansion would make 2,500-3,000 homes eligible, but only a percentage of those homes apply.

Justin Cook noted that this is "potentially eligible." You have to also test to meet the interior standards. The number potentially eligible doesn't mean they will meet the noise criteria for eligibility.

Matthew Price asked, as the Airport Authority embarks on airport expansion and the development plan, have they modeled a budget that would be required to retrofit the homes that are expected to be impacted by the expansion of the 65 CNEL? Have they discussed with the FAA any projections before moving forward?

Sjohnna Knack said the Part 150 is not at the stage yet where the mitigation measure has been identified with a quantity of homes. Craig is focusing on those homes in the contour until the Part 150 is approved by the FAA.

Mr. Mayer said the maps in the current presentation address only the current 65 dB contour. It does not take into account the Part 150.

Ms. Knack said when the FAA gives their approval in writing on these expansions, they will be put on the website.

Fred Kosmo asked if the pace will stay at about 300 homes per year. He also asked how the noise measuring works inside the units.

Mr. Mayer said about 400 units are anticipated this year. Units are tested with the windows closed, which is why the treatment package includes ventilation. Only habitable rooms are tested, so no treatment will be done to bathrooms, laundry rooms, closets, etc., all according to FAA policy guidelines.

Mr. Cook said the measurement is done by placing a loudspeaker (through a testing guideline, ASDM standard), outside with white noise that simulates the same level of noise in every frequency. Then the current reduction is measured from outdoor to indoor. That is done for every habitable room. Actual individual aircraft noise is not measured, but instead the noise from the loudspeaker. To qualify you need

to be 45 or above in the interior, and it's an average over all habitable rooms. This is a more consistent approach because an individual aircraft flies over different areas of the home. The loudspeaker subjects the surface of the room to a very loud level, 110 dB, at every frequency. When measuring inside the house, you measure what frequencies are going through the windows, looking at the different weakest points or elements in the room, so those elements can be treated.

Melissa Hernholm-Danzo asked if the entire budget is used every year, and how many homes are under construction currently? Why the increase of 100 over last year?

Mr. Mayer confirmed that the budget is used up every year, and that the number is on the status update provided to the committee, but approximately 90-100 units are currently in construction . The increase is due to more multi-family projects scheduled for this year; they are smaller, and can be completed faster.

Judy Holiday asked for clarification: the outdoor white noise is 110 dB? Would it ever be less than 100? How often are the indoor measurement systems calibrated?

Mr. Cook said it does vary, depending on where the speaker is placed, but they try to find an optimal speaker placement to get the noise level spread over the entire façade, but it will be in that 100-110 range. What you're really looking at is the delta between outside to inside. The systems are calibrated every time the noise crew goes out.

Part 150 Study Update

Sjohnna Knack provided an update on the Part 150 Study.

- Six viable procedures have been identified from the Subcommittee and ANAC recommendations. Four will be reviewed in the Part 150 Study, two of which have been submitted to and are being reviewed by the FAA - a request to move the noise dots (submitted to the FAA TRACON Manager) and a procedure amendment that was submitted on the FAA's website (the IFP Gateway.)
- November 20: the next Citizen Advisory and Technical Advisory meetings will be held; TAC is 10:00-12:00; CAC is from 2:00 to 4:00. SanNoiseStudy.com is where you can find all meeting information.
- Nov. 21st: the public workshop on the Part 150 noise study will be held at the Liberty Station offices, covering a variety of Part 150 topics, including existing conditions, noise contours, forecasting. The consultant team will also be seeking public input on alternatives to consider.

Online Noise Statistics: Ms. Knack showed where to find the monthly noise statistics online. The intention is to update the statistics monthly, on the 2nd Friday of the following month, i.e., on November 8, the stats will be up for all of October. Historic stats are posted on the site in a .PDF file.

She explained the new statistics program. For the Quieter Home dashboard, she demonstrated how use the hover feature to see stats, and how to download PDFs. The remaining four dashboards come directly from the Airport Noise and Operations Monitoring System (ANOMS). This replaces the previous method which required having to extract data, put it into an Excel file and create a Word doc. and a PDF. The updated methodology is refreshed monthly and reduces human error, allowing for more timely updates.

Noise staff added some data trends and pulled out specific percentages for Missed Approaches. On Early Turns, it is possible to scroll down to find total departures as well as percentage of departures that have early turns, plus some statistics requested by ANAC members. Reasons for early turns have been broken into three categories. There's a breakdown of Point Loma versus Mission Beach, as well as all early turns by operator.

The most interactive dashboard is Noise Complaints, showing total complaints and number of households in the blue line. In the mapping feature, you can click on a specific neighborhood and highlight those complaints from that neighborhood. They're working to get some more detail on the map, but it will never be very detailed because they want to give anonymity to the people filing complaints.

Questions from ANAC:

Deborah Watkins asked how to see other neighborhoods, and if each dot represents one household.

Ms. Knack said you have to make sure you clear the neighborhood from the search before going on to another, and that the dots do each represent one household.

Chris Cole said he found the underlying map practically useless, and has a feeling that a lot of the complaints are about arrivals, but there have never been statistics on arrivals. He asked if there is a percentage of complaints associated with specific flights?

Ms. Knack said not at this time.

Fred Kosmo suggested that year-over-year stats be provided to identify increases or decreases.

Ms. Knack noted that as part of the subcommittee recommendations, they asked that the definition of missed approaches be modified, so the number will be a little bigger because if a single arrival made multiple misses, they are all being counted, rather than just counting it as one arrival. She showed how to find the comparison stats that are available.

Matthew Price asked about documenting northbound departures over La Jolla at night, and requested year-over-year stats. Stylistically, he suggested more consistency for the breakdowns shown for La Jolla. Also, throughout the various sheets, there are interpretations of the statistics in boxes, which he thinks range from debatable interpretations to some that people may think are not the correct interpretation. He asked that the data be presented without interpretation.

Ms. Knack asked for an example.

Mr. Price pointed out that the number of missed approaches have not increased year over year, while the overall operations have gone up, so the number of early turns has gone up. There are ways with statistics you can describe things in ways that are favorable toward one way or another. For example, month to month, you can't say one is more or less than the last month because it's all about sample size and trends. With large amounts of data, you really can't comment on it.

Ms. Knack mentioned that for locations, they used to do neighborhoods, but the way the database is set up, it's working entirely off of zip codes. That will be consistent going forward.

Robert Bates asked for clarification that the definition of missed approaches recently changed, is that reflected and can you go back and check prior months/years of data?

Ms. Knack said yes, they went backwards, too, and all data is accurate.

Ms. Gantwerk said numbers may look different than data presented before on missed approaches because those have now been counted and earlier reports updated.

Melissa Hernholm-Danzo seconded Mr. Price's suggestion to leave off the blue boxes of interpretation. She asked runway closure dates could be noted for curfew violations.

Ms. Knack said the runway is closed every night, with some exceptions for seasonal operations.

Judy Holiday pointed out that on the pie charts for violations, two of the colors are very similar; she suggested more contrast.

Deborah Watkins asked if this is all active for public use.

Ms. Gantwerk confirmed that it is.

Judy Holiday agreed with Ms. Hernolm-Danzo and Mr. Price regarding the interpretations being misleading.

3. Approval of Meeting Summary

Anthony Ciulla moved to approve the meeting summary. Deborah Watkins seconded, and motion passed.

4. Public Comment

Kelly Powell, South Ocean Beach, said she looked over the draft Environmental Impact Report and saw from the draft guidelines that the World Health Organization does call out that aircraft noise above levels of 40 to 45 dB are associated with adverse health effects. That stood out knowing that most of the peninsula already experiences noise well above that level. She thinks if we're going to continue to see increased air traffic, she'd like the see the airport be a good neighbor and try to help mitigate some of the impacts of that noise. Perhaps there are ways that San Diego could require aircraft to use state-of-the-art technology to reduce noise in the aircraft, and also commit to fund development of improved technology as time goes on, so that we can continue to make quieter aircraft. As long as there's only one runway, she'd like to request that they stop expanding the fight path perimeter and really try to stick to the more narrow originally used flight path. Perhaps there are ways that aircrafts can reach higher elevation sooner, which may also mitigate some of the noise. It seems that in a nutshell, there are a number of things that probably could be done, so the question is really is San Diego willing to do those things even though it's going to take time, money, resources, political clout, or are we just unwilling to do something about it? She'd like to see the airport be a good neighbor, and in return for that, she thinks you get a lot better support from your neighbors in the community if there is an obvious effort from the airport to try to mitigate noise.

Cathy Ives, South Mission Beach played a recording of airplane noise, reporting that that was what it sounds like over her house, and that it is definitely over the 65 dB. She said that at busy times of day flights come every 90 seconds, and there is no quiet time. After 10:00 pm, in South Mission Beach, it is similarly loud. You don't want to go to bed before 11:00 because you don't want to get that 11:23 flight that zooms right over your house. She requests that flights after 9:00 go right back over the channel instead of directly over South Mission Beach. She knows that she "will be dead" before they could ever be part of the Quiet Neighborhood Program, or Mission Beach will be under water. Mission Beach doesn't seem to be in any of these contours, even though it is over the 65 dB limit, and the 45 is definitely inside many, many houses, especially some of the old cottages in Mission Beach, like her home built in 1925 without insulation. Please consider sending flights over that channel as much as possible instead of directly over South Mission Beach.

Carol Knott, South Mission Beach said the noise is horrible and has gotten much worse since she purchased her home. She expressed concern that noise is measured over the channel in spite of the fact that airplanes don't fly over the channel very often anymore because they're over her house. She thinks the decibels should be measured closer to her house. The other problem is how the noise is starting to affect relationships, including her relationship with a man who does not wear his hearing aids due to noise, impacting their ability to communicate.

Question from ANAC

Matthew Price said at the last meeting there was a gentleman who gave a wonderful presentation on the Part 150 and how they'll look at ways to mitigate noise. For the record, how can they contact that person?

Ms. Gantwerk said that the November 21st meeting is one way, but also at SanNoiseStudy.com. You can send ideas and thoughts directly to the consultant team working on the Part 150 Study. They don't have to respond and engage in dialogue, but they are reading every single comment that comes in. She recommends looking back at ANAC Subcommittee minutes, where there are a lot of ideas discussed. There will be notes from ANAC Subcommittee meetings with their ideas as well.

5. Next Meeting/Adjourn

Next meeting is December 18, 2019. Plan for that meeting is to put together a panel that brings both an airline perspective and a pilot perspective, from those that regularly fly through San Diego.

Melissa Hernholm-Danzo asked what happened to the idea of having a Southwest representative come to give their perspective. Ms. Knack said she would reach out to Southwest to participate in the panel.

Meeting was adjourned.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

December 10, 2019

Fly Quiet Report

3rd Quarter 2019

Prepared by:

Jim Payne
Sr. Aircraft Noise Specialist, Airport Noise Mitigation
Planning & Environmental Affairs
San Diego County Regional Airport Authority

1.0 Summary of 3rd Quarter 2019 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 3rd Quarter 2019.

Last year, the Fly Quiet Report was modified to remove the Early Turn element and replace it with a new Noise Exceedance element establishing a new baseline for the 2019 reports. In addition, a section discussing changes in the operating environment having an impact on noise.

Air Carrier Fleet Updates:

- Hawaiian Airlines has removed the A330 widebody from the Honolulu route on a seasonal basis beginning January 8, 2020. This is being replaced by the significantly quieter A321Neo already in service on the Maui route until the Spring Break period.

- Boeing delivered its last 737NG passenger narrowbody in June with a handful of military variants remaining in production. All future 737 deliveries to the airlines will be the 737MAX with new, significantly quieter engines. The current US carrier backlog is 483 units with a total of 77 units delivered. Boeing 737MAX aircraft remain grounded at this time.

- Airbus is winding down its current engine narrowbody production line in early 2021 with 30 current engine aircraft in the backlog for US carriers. They have delivered 83 Neo variants with a US Carrier backlog log of 549 units.

Notable results in the report for the 3rd Quarter vs. the 3rd Quarter of 2018:

- Curfew Violation compliance was generally good with an average score of 9.6 points.

- Hawaiian Airlines improved by 2-points in the Noise Exceedance component.

- Frontier Airlines improved by 4-points in the Noise Exceedance component.

- The most improved carrier is United Airlines increasing their overall score by 5-points.

- The number one overall carrier remains Japan Airlines.

2.0 Fly Quiet Program Description

The purpose of the SDIA Fly Quiet Program is to encourage individual commercial operators to fly as quietly as possible in the San Diego area by acknowledging those operators that fly the quietest. By grading an operator's performance and making the scores available to the public, the program creates a participatory atmosphere for operators to actively reduce noise.

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 Goals

The overall goal of the Fly Quiet Program is to influence commercial operators to fly as quietly as possible in the San Diego area by acknowledging those operators that make the greatest effort. Monitoring, collecting, and analyzing comprehensive amounts of operational and noise data highlights both airport trends and individual operator performance on specific noise abatement programs. Fly Quiet Program data is quantified and translated into quarterly reports for each operator rated in the Fly Quiet Program at SDIA.

2.2 Reports

Fly Quiet reports communicate results in a clear, understandable format on a scale of 0-10, zero being poor and ten being the best. (*Note: an operator can have a score higher than 10 in the Curfew Violations element only, if they had no violations and also cancelled flights to avoid a Curfew Violation*). This allows for an easy comparison between operators over time. Individual operator scores are computed and reports are generated each quarter. These quantitative scores allow operator management and flight personnel to measure exactly how they stand compared to other operators and how their proactive involvement can positively reduce noise in the San Diego area. The overall airport score is tracked to measure the overall improvement over time.

2.3 Elements

Currently the Fly Quiet Program scores commercial operators on the following three elements that will be described in detail in the next section.

- Curfew Violations
- Noise Exceedances
- Fleet Noise Quality

2.3.1 Curfew Violations

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 lifeguard and emergency flights; compliance is at the discretion of the pilot or operator. Penalties may be waived if there are local issues impacting safety, such as weather or maintenance of the aircraft.

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. Each compliance period is six (6) calendar months, starting January 1 and July 1. The Fly Quiet Program formalizes the effort of working with the operators

to reduce the number of curfew violations of departing aircraft to include encouraging the carriers to cancel potential violating operations. The airport's noise monitoring system documents which operator and aircraft type depart between the curfew times, this information is used to accurately assign the point value for each operation.

Calculation of Rating:

An operator that does not log any curfew violations during the time period is automatically assigned a score of 10 points. Every operator starts with a score of 10 points. Scores are then adjusted based upon the following:

1. Number of Curfew Violations that are Penalized (Fined):

   If the Airport's Curfew Violation Review Panel (CVRP) determines that a flight violated curfew and will be penalized, the score will be adjusted by subtracting 2 points.

2. Number of Curfew Violations that are Not Penalized (Not Fined):

   If the Airport's Curfew Violation Review Panel (CVRP) determines that a flight violated curfew and will not be penalized, the score will be adjusted by subtracting 1 point.

To encourage cancelling potential violations, one (1) point will be added to any operator's score that cancelled a flight in order to avoid violating curfew.

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 10% of aircraft arriving and departing at SDIA, as measured at Remote Monitoring Terminals (RMT's) #1 and #7[1], respectively. RMT #1 is located approximately one (1.0) mile from the arrival end of Runway 27 and RMT #7 is located approximately one-half (0.5) mile from the departure end of Runway 27.

Each RMT has established thresholds to identify aircraft. Whenever an aircraft produces a noise level higher than the threshold, a noise exceedance occurs. A noise exceedance may take place during arrival or departure and are logged by the exact operation along with the aircraft type and airline name.

Calculation of Rating:

The Noise Exceedances Score for each operator is determined based upon the total number of noise exceedances for the quarter compared with their total number of operations at the airport. Arrivals and

[1] For a map of the Remote Monitoring Terminals, go to the Airport's online flight tracking site: http://webtrak.bkems.net/san

departures are sorted separately, and then combined into the overall score. This is reflected as a "percentage of operations". The percentage of exceedances (exceedances divided by total operations for the period) is then multiplied by a factor of 10 to develop a score between 0 and 10 points.

2.3.3 Fleet Noise Quality

The Fleet Noise Quality score evaluates the noise contribution of each operator's fleet as it actually operates at SDIA. Operators generally own a variety of aircraft types and schedule them according to both operational and marketing considerations. The Fly Quiet Program assigns a higher rating or grade to operators flying quieter, new generation aircraft, while operators flying older, louder technology aircraft would rate lower. The goal of this measurement is to fairly compare operators – not just by the fleet they own, but by the frequency that they schedule and fly particular aircraft into SDIA.

Historically airports have rated fleet noise quality by the relative percentage of Stage 2 vs. Stage 3 operations[2]. 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 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 is a Stage 4 aircraft type, applicable to aircraft with a type certification issued after January 1, 2006; all aircraft manufactured today that are over 12,500 pounds meet these Stage 4 standards.

The method used here bases an operator's Fleet Noise 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[3]. 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 Noise 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. Aircraft with the greatest number of decibels below Stage 3 threshold are rated the best.

Similar to and consistent with 14 CFR Part 36, the Fleet Noise 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.

[2] 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.

[3] 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.

Calculation of Rating:

The Fleet Noise Quality rating calculation takes the takeoff, approach and sideline noise difference 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 4.1 dB on takeoff, 3.8 dB on approach and 6.8 dB for sideline noise; for a total difference of 14.7 dB.

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 Noise 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 Noise 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 generative a product of cumulative noise. The product of cumulative noise 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 Noise 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 Noise 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 Noise Quality Score for each operator is determined based upon what range the sub score falls under. The following is a list of the Fleet Noise Quality Scores and corresponding sub score ranges.

- 0 Points; Sub Score between 0 and 5
- 1 Point; Sub Score between 5 and 10
- 2 Points; Sub Score between 10 and 11
- 3 Points; Sub Score between 11 and 12
- 4 Points; Sub Score between 12 and 13
- 5 Points; Sub Score between 13 and 14
- 6 Points; Sub Score between 14 and 15
- 7 Points; Sub Score between 15 and 16
- 8 Points; Sub Score between 16 and 17
- 9 Points; Sub Score between 17 and 18
- 10 Points; Sub Score 18 or Greater

In the example of Table 2, the sub score is 15.4 and therefore the operator's final Fleet Noise Quality score would be 7.0. In Table 3, that same score increases to 8.0 through the utilization of newer aircraft.

3.0 Reports

The following pages contain the individual element reports and summary report for the 3rd Quarter of 2019. The Fly Quiet Summary Report contains the total Fly Quiet score and ranking of the commercial operators.

Curfew Violations Report San Diego International Airport's Fly Quiet Program 3rd Quarter 2019 (July 2019 - September 2019)							
Airline Code		**Number of Operations**	**Percent of Total Operations**	**Number of Curfew Violations Penalized**	**Number of Curfew Violations Not Penalized**	**Number of Cancellations**	**Curfew Violations Score**
AAL	American Airlines	4,605	8.3%	0	1	4	13.0
UAL	UNITED	5,299	9.6%	0	0	1	11.0
SWA	Southwest	21,197	38.3%	0	0	0	10.0
SKW	SkyWest	3,599	6.5%	0	0	0	10.0
CPZ	Compass Airlines	2,149	3.9%	0	0	0	10.0
NKS	spirit	1,310	2.4%	0	0	0	10.0
FDX	FedEx	615	1.1%	0	0	0	10.0
JZA	Jazz	552	1.0%	0	0	0	10.0
HAL	HAWAIIAN AIRLINES	368	0.7%	0	0	0	10.0
UPS	ups	212	0.4%	0	0	0	10.0
SCX	sun country airlines	205	0.4%	0	0	0	10.0
JAL	JAPAN AIRLINES	184	0.3%	0	0	0	10.0
ROU	rouge	184	0.3%	0	0	0	10.0
BAW	BRITISH AIRWAYS	180	0.3%	0	0	0	10.0
WJA	WESTJET	148	0.3%	0	0	0	10.0
DLH	Lufthansa	132	0.2%	0	0	0	10.0
GTI	ATLAS AIR	132	0.2%	0	0	0	10.0
EDW	edelweiss	26	0.0%	0	0	0	10.0
ASA	Alaska	7,034	12.7%	0	1	0	9.0
AAY	allegiant air	130	0.2%	0	1	0	9.0
JBU	jetBlue AIRWAYS	1,092	2.0%	1	1	0	7.0
FFT	FRONTIER	969	1.7%	2	0	0	6.0
DAL	DELTA	5,071	9.2%	4	0	4	6.0
Total		55,393	100%	7	4	9	
Average							9.6

Higher Number = Better Score

Noise Exceedances Report

San Diego International Airport's Fly Quiet Program

3rd Quarter 2019 (July 2019 - September 2019)

Higher Number = Better Score

Airline Code		Number of Operations	Percent of Total Operations	Total Noise Exceedances	Sub Score	Noise Exceedances Score
JAL	JAPAN AIRLINES	184	0.3%	0	1.00	10
WJA	WESTJET	148	0.3%	0	1.00	10
JZA	JAZZ	552	1.0%	4	0.99	10
CPZ	Compass Airlines	2,149	3.9%	18	0.99	10
SKW	SkyWest Airlines	3,599	6.5%	39	0.99	10
FFT	FRONTIER	969	1.7%	12	0.99	10
SWA	Southwest	21,197	38.3%	382	0.98	10
SCX	sun country airlines	205	0.4%	4	0.98	10
AAY	allegiant air	130	0.2%	3	0.98	10
NKS	spirit	1,310	2.4%	51	0.96	10
ASA	Alaska	7,034	12.7%	439	0.94	9
UAL	UNITED	5,299	9.6%	668	0.87	9
JBU	jetBlue AIRWAYS	1,092	2.0%	163	0.85	9
DAL	DELTA	5,071	9.2%	803	0.84	8
AAL	American Airlines	4,605	8.3%	880	0.81	8
HAL	HAWAIIAN AIRLINES	368	0.7%	91	0.75	8
GTI	ATLAS AIR	132	0.2%	35	0.73	7
FDX	FedEx	615	1.1%	184	0.70	7
ROU	AIR CANADA rouge	184	0.3%	61	0.67	7
UPS	ups	212	0.4%	76	0.64	6
DLH	Lufthansa	132	0.2%	77	0.42	4
EDW	edelweiss	26	0.0%	20	0.23	2
BAW	BRITISH AIRWAYS	180	0.3%	177	0.02	0
Total		55,393	100%	4,187		
Average					0.8	8.0

Fleet Noise Quality Report San Diego International Airport's Fly Quiet Program 3rd Quarter 2019 (July 2019 - September 2019)					
Airline Code		**Number of Operations**	**Percent of Total Operations**	**Sub Score**	**Fleet Noise Quality Score**
JAL	JAPAN AIRLINES	184	0.3%	27.7	10.0
EDW	edelweiss	26	0.0%	21.7	10.0
FFT	FRONTIER	969	1.7%	21.6	10.0
DLH	Lufthansa	132	0.2%	21.4	10.0
HAL	HAWAIIAN AIRLINES	368	0.7%	20.7	10.0
AAY	allegiant air	130	0.2%	19.2	10.0
BAW	BRITISH AIRWAYS	180	0.3%	17.2	9.0
NKS	spirit	1,310	2.4%	16.8	8.0
FDX	FedEx	615	1.1%	16.1	8.0
UPS	ups	212	0.4%	16.0	8.0
JBU	jetBlue AIRWAYS	1,092	2.0%	15.0	7.0
UAL	UNITED	5,299	9.6%	14.7	6.0
SWA	Southwest	21,197	38.3%	14.4	6.0
ASA	Alaska	7,034	12.7%	14.4	6.0
SKW	SkyWest AIRLINES	3,599	6.5%	13.8	5.0
JZA	Jazz	552	1.0%	13.8	5.0
AAL	American Airlines	4,605	8.3%	13.5	5.0
WJA	WESTJET	148	0.3%	13.4	5.0
SCX	sun country airlines	205	0.4%	12.9	4.0
CPZ	Compass Airlines	2,149	3.9%	12.7	4.0
DAL	DELTA	5,071	9.2%	11.2	3.0
ROU	AIR CANADA rouge	184	0.3%	9.2	1.0
GTI	ATLAS AIR	132	0.2%	9.2	1.0
Total		55,393	100%		
Average				15.9	6.6

Higher Number = Better Score

Higher Number = Better Score
Summary Report Ranks by "Quietest" to "Loudest" Operator
Tie Breaker is the "Number of Operations"

Summary Report
San Diego International Airport's Fly Quiet Program
3rd Quarter 2019 (July 2019 - September 2019)

Airline Code		Number of Operations	Percent of Total Operations	Curfew Violations Score	Noise Exceedances Score	Fleet Noise Quality Score	Total Fly Quiet Score	Ranking
JAL	JAPAN AIRLINES	184	0.3%	10	10	10	30	1
AAY	allegiant air	130	0.2%	9	10	10	29	2
HAL	HAWAIIAN AIRLINES	368	0.7%	10	8	10	28	3
NKS	spirit	1,310	2.4%	10	10	8	28	3
FFT	FRONTIER	969	1.7%	6	10	10	26	5
SWA	Southwest	21,197	38.3%	10	10	6	26	5
UAL	UNITED	5,299	9.6%	11	9	6	26	5
AAL	American Airlines	4,605	8.3%	13	8	5	26	5
FDX	FedEx	615	1.1%	10	7	8	25	9
SKW	SkyWest	3,599	6.5%	10	10	5	25	9
JZA	Jazz	552	1.0%	10	10	5	25	9
WJA	WESTJET	148	0.3%	10	10	5	25	9
DLH	Lufthansa	132	0.2%	10	4	10	24	13
UPS	ups	212	0.4%	10	6	8	24	13
ASA	Alaska	7,034	12.7%	9	9	6	24	13
CPZ	Compass Airlines	2,149	3.9%	10	10	4	24	13
SCX	sun country airlines	205	0.4%	10	10	4	24	13
JBU	jetBlue AIRWAYS	1,092	2.0%	7	9	7	23	18
EDW	edelweiss	26	0.0%	10	2	10	22	19
BAW	BRITISH AIRWAYS	180	0.3%	10	0	9	19	20
ROU	rouge	184	0.3%	10	7	1	18	21
GTI	ATLAS AIR	132	0.2%	10	7	1	18	21
DAL	DELTA	5,071	9.2%	6	8	3	17	23
Total		55,393	100%					
Average				10	8	7	24	

SAN DIEGO INTERNATIONAL AIRPORT

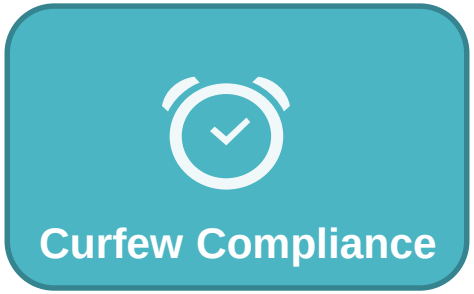
LET'S GO.

Fly Quiet Program Update

Jim Payne, Sr. Noise Specialist

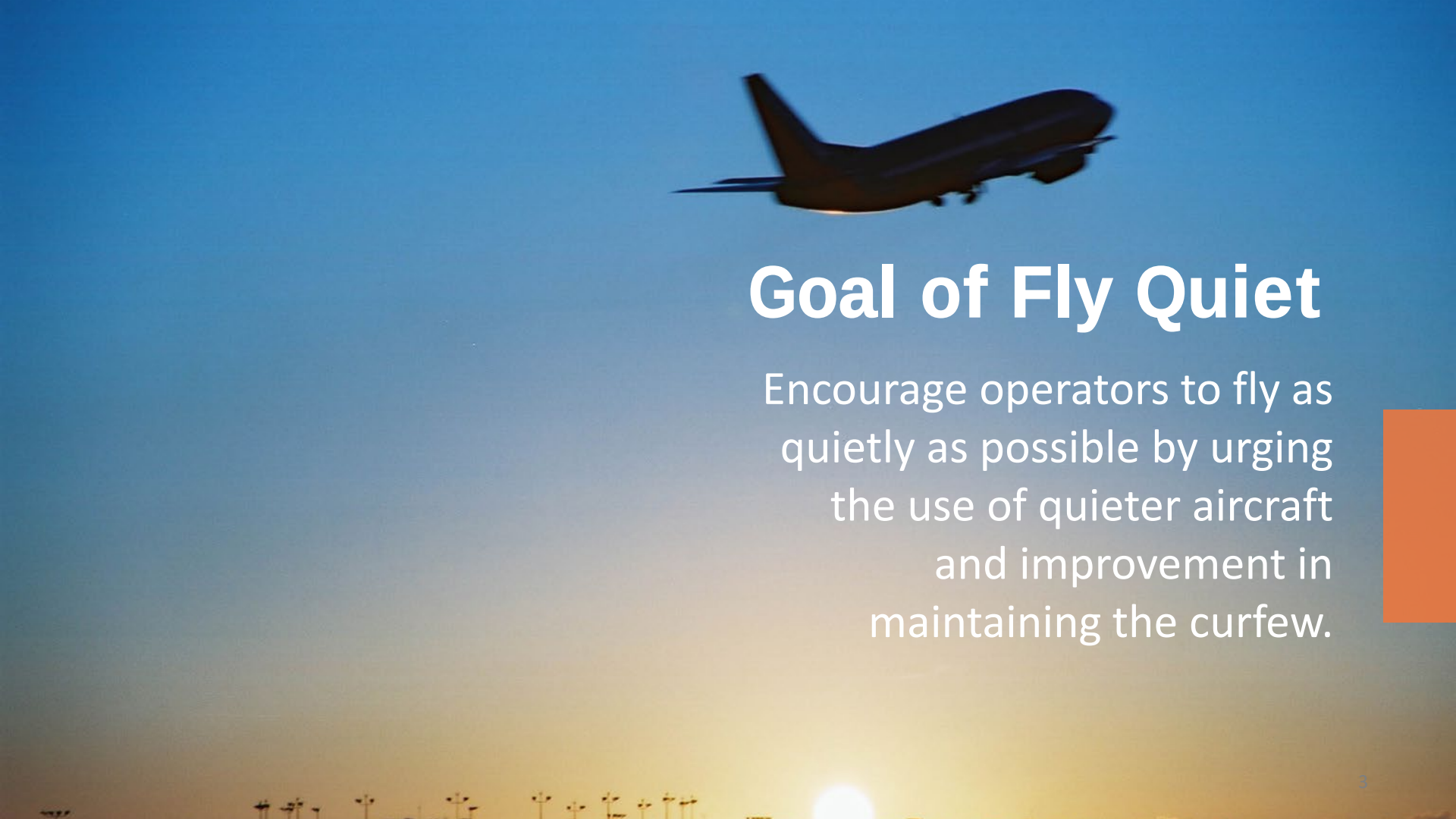
December 18, 2019

What is the Fly Quiet Program?



The Fly Quiet Program was introduced in 2017 as a scoring system based on specific metrics to encourage operators at San Diego International Airport to fly as quietly as possible.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.



Goal of Fly Quiet

Encourage operators to fly as quietly as possible by urging the use of quieter aircraft and improvement in maintaining the curfew.

Things to Consider in Scoring Metrics

Scoring metrics are based on factors that the community has expressed concerns over and that are in the control of the operator.

Safety

Safety paramount, elements can not limit procedures to maintain safety, such as Missed Approaches.

Performance

Aircraft must be able to achieve the element. For example, setting altitude requirements may not be feasible for certain aircraft types.

FAA Rules

Operators must follow FAA Air Traffic rules. Asking an operator to make an early turn or conduct a go-around are often necessary for safety.

Noise Concerns

Elements should focus on those areas of aircraft noise that the public has concerns with.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

Element #1: Curfew Violations

Goal of this element is to encourage carriers to reduce their curfew violations by encouraging them to cancel their flight rather than avoid the curfew.

10

No Curfew Violations

All operators start with a score of a 10. If they have no violations, they maintain the score of 10.

-1

Curfew Violation No Fine

If an operator has a curfew violation but is not fined (i.e., local weather or local mechanical issue) minus one.

-2

Curfew Violation With Fine

If an operator has a curfew violation and is fined, minus two.

+1

Cancel Flight

If an operator cancels a flight to avoid a curfew violation, plus one.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

Element #2: Noise Exceedances

Goal of this element is to encourage operators to reduce the noise of their aircraft by taking actual noise measurements from both ends of the runway and penalizing the loudest measurements.

Noise Events from Ends of Runway

Thresholds are set at Site #1 and Site #7, counts by operator are taken of the number of exceedances (both arrivals and departures).

Top 10%

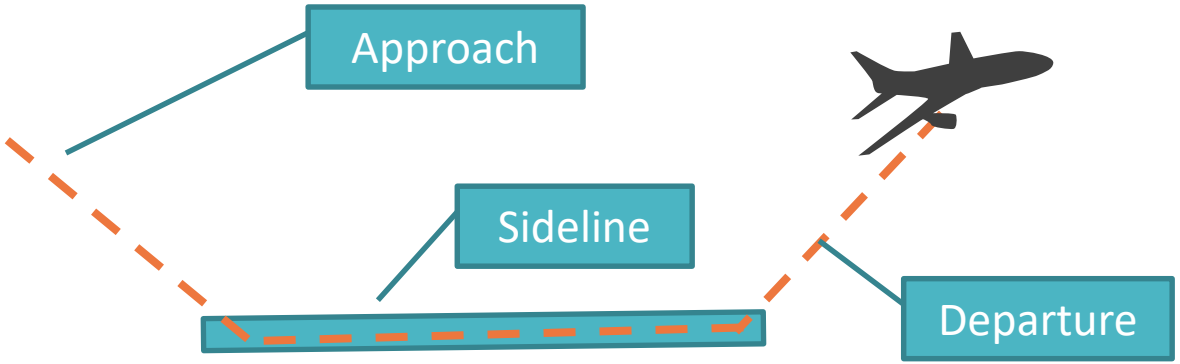
The top 10% of all noise events at each site are calibrated to the number of operations for that operator.

Element #3: Fleet Noise Quality

Goal of this element is similar to Element #2, to encourage operators to reduce the noise of their aircraft but uses FAA published certified aircraft noise levels (CFR Part 36) rather than onsite measurements.

Evaluates Noise Contribution

The FAA uses sideline, approach and take off noise to determine the certified noise level of the aircraft.



Operators receive a higher rating if they fly new generation aircraft.

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

Higher Number = Better Score
Summary Report Ranks by "Quietest" to "Loudest" Operator
Tie Breaker is the "Number of Operations"

Summary Report
San Diego International Airport's Fly Quiet Program
1st Quarter 2018 (January 1, 2018 - March 31, 2018)

Operator Code		Number of Operations	Percent of Total Operations	Curfew Violations Score	Noise Exceedances Score	Fleet Noise Quality Score	Total Fly Quiet Score	Ranking
NKS	spirit	890	1.9%	10	10	10	30	1
JAL	JAPAN AIRLINES	180	0.4%	10	10	10	30	1
AAY	allegiant air	74	0.2%	10	9	10	29	3
VRD	virgin america	100	0.2%	10	10	8	28	4
ASA	Alaska	5,210	11.2%	10	9	8	27	5
SWA	Southwest	17,942	38.5%	10	10	6	26	6
SKW	SkyWest	5,306	11.4%	10	10	5	25	7
UAL	UNITED	4,490	9.6%	9	9	7	25	7
FFT	FRONTIER	618	1.3%	10	10	5	25	7
JZA	JAZZ	346	0.7%	10	10	5	25	7
SCX	suncountry	178	0.4%	10	10	5	25	7
WJA	WESTJET	128	0.3%	10	9	6	25	7
CPZ	Compass Airlines	1,310	2.8%	10	10	4	24	13
UPS	UPS	204	0.4%	10	6	8	24	13
HAL	HAWAIIAN	180	0.4%	10	4	9	23	15
DAL	DELTA	3,254	7.0%	10	8	4	22	16

Quarterly Reports

https://www.san.org/Airport-Noise/Initiatives#6452230-the-fly-quiet-program

Recommended Awards

Quietest Domestic Carrier

20 Daily Departures or Fewer

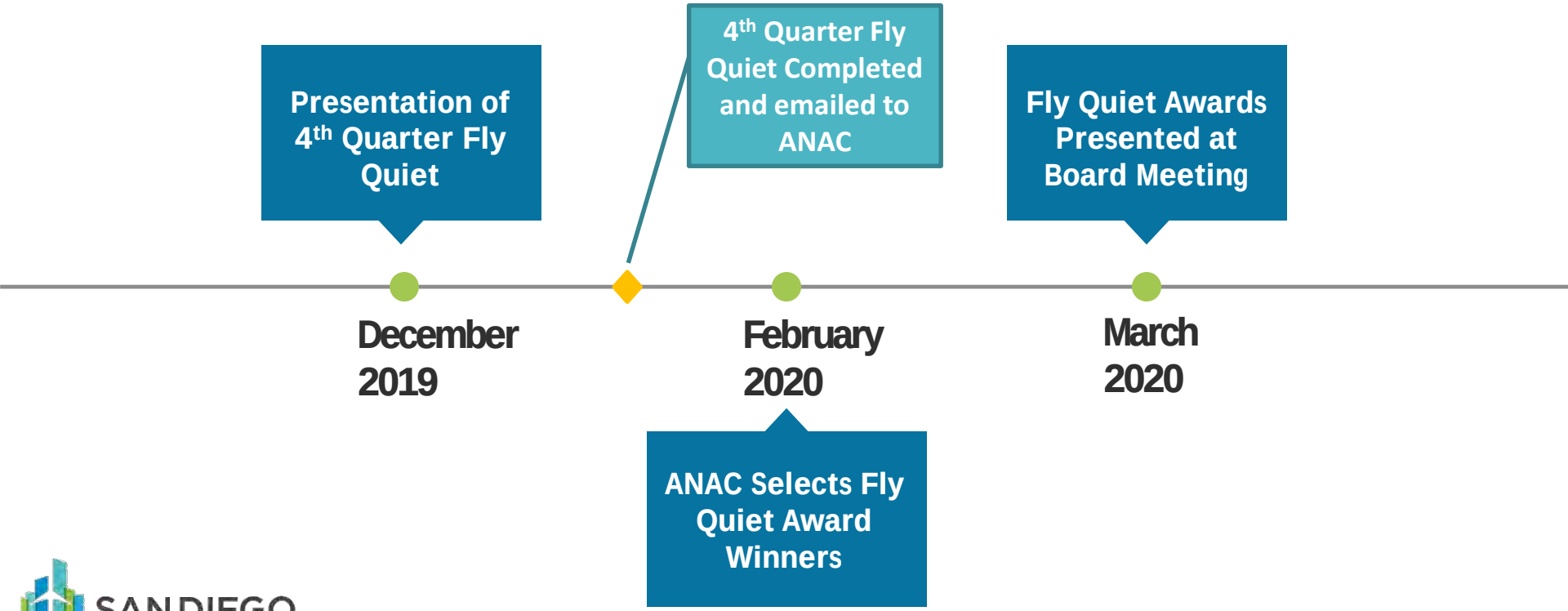
Quietest Domestic Carrier

20 Daily Departures or More

Quietest International Carrier

Most Improved Operator

Timeline



SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

Questions ?