SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

AIRPORT NOISE ADVISORY COMMITTEE (ANAC)

MEETING AGENDA
Wednesday, February 20, 2019, 4:00 p.m.

LOCATION: Holiday Inn Bayside
4875 N Harbor Drive, San Diego, CA 92106

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1. Welcome and Introductions
2. Presentation Items
   a. Quieter Home Program Update
   b. Missed Approach Statistics
   c. Early Turn & Other Flight Ops Statistics
   d. Curfew Violation Review Panel (CVRP) Statistics
   e. Fly Quiet Program Update
   f. Airport Statistics
   g. Noise Complaint Statistics
   h. Update on ANAC Recommendations
   i. Part 150 TAC Update
3. Public Comment
4. Action Items
   a. Approval of December 19, 2018 Meeting Summary
5. Next Meeting: April 17, 2019
6. Adjourn

2019 Meeting Schedule:
April 17, 2019
June 19, 2019
August 21, 2019
October 16, 2019
December 18, 2019

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
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QUIETER HOME PROGRAM

Airport Noise Advisory Committee

February 20, 2019

PROGRAM STATISTICS	
Applicants / Homes on the Wait List	528/1,605*
Homes Completed in December & January (CY18)	34(270)
Estimated Homes to Complete in CY 2019	300
Total Homes Completed (through January 31, 2019)	3,739

Updates

- Continue to work on eligibility for Commercial Zone parcels
- Forecasted Construction Schedule:

Project	# Units	Estimated Construction Start
9.5	16	Underway
9.6	40	Underway
9.7	19	March 2019
9.8	137	Spring 2019
9.9	125	Spring 2019
9.10	44	Fall 2019
9.11	48	Winter 2019
9.12	32	Winter 2019
10.1	61	Spring 2020
10.2	67	Spring 2020
10.3	14	Summer 2020

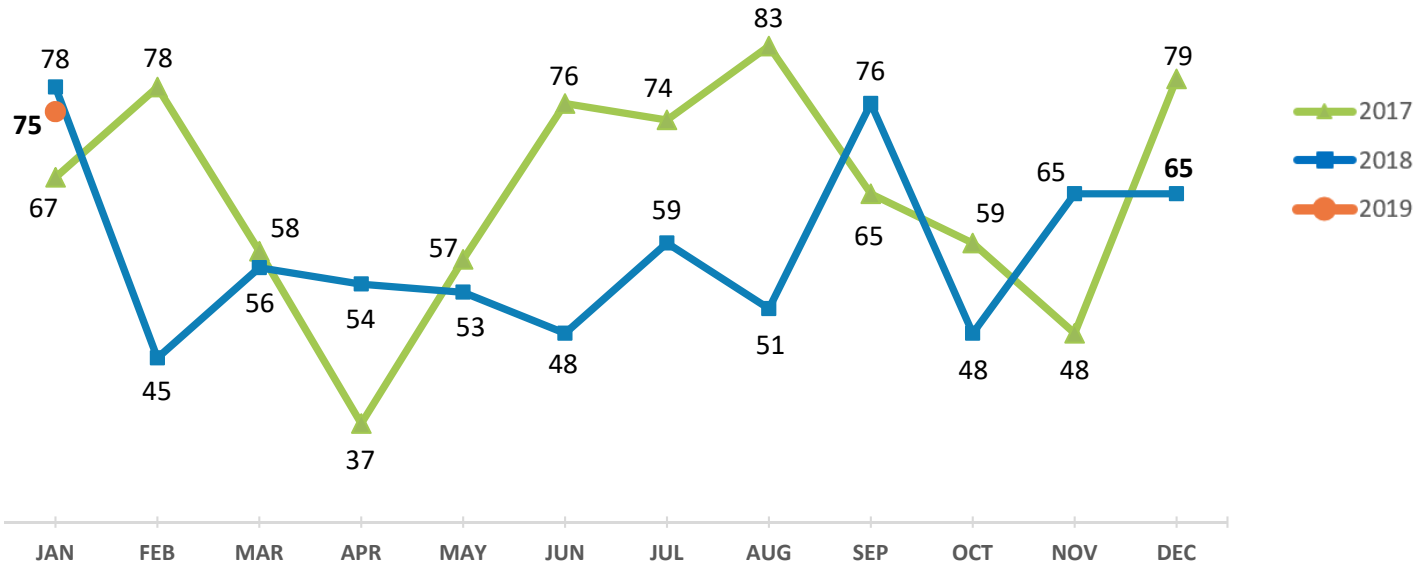
*An applicant may own multiple units (homes) on the wait list

MISSED APPROACH STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Missed Approaches by Month



Missed Approaches by Year

Year	Total Missed Approaches	% Change	Total Arrivals	% Change	% of Total Arrivals that are Missed Approaches
2013	659	--	93,985	--	0.7
2014	637	(3.3%)	95,881	2%	0.7
2015	748	17.4%	96,856	1%	0.8
2016	771	3.1%	98,566	1.8%	0.8
2017	781	1.3%	104,725	6.2%	0.7
2018	698	(10.6%)	112,529	7.5%	0.6
2019	75*	--	9,120	--	0.7

Source: FAA Data

* Through January 31, 2019

MISSED APPROACH STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Missed Approaches by Location

All Missed Approaches are Safety-Related Operations

Date	Between 265 °- 295 ° Headings (Standard)	Left of 265 °	Right of 295 °	East of Airport	Day	Night
December 2018	57	8	0	8	40	25
January 2019	59	15	1	7	72	3

Missed Approaches relative to the FAA Noise Dots

Missed Approaches may fly through more than one location

Date	Between ND #1 - ND #2	Between ND #2 - JETTI	Between JETTI – ND #3	Between ND #3 - ND #4	Between ND #4 - ND #5
December 2018	1	29	27	8	0
January 2019	4	34	22	14	1

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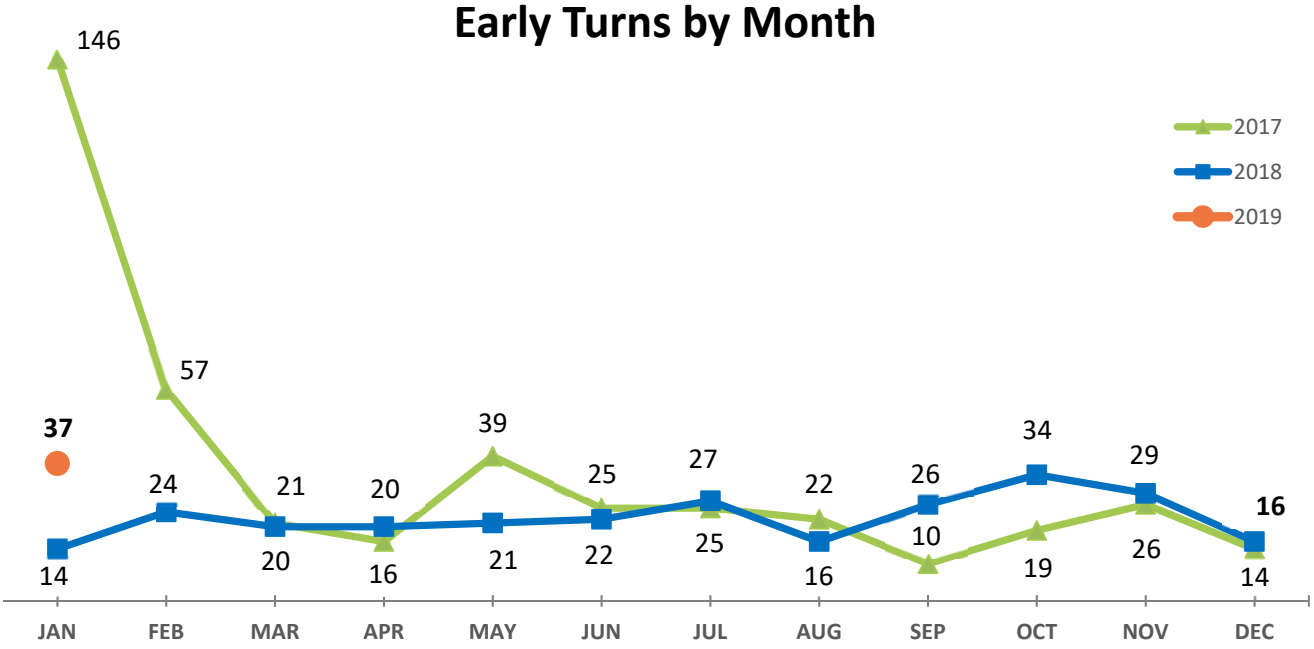
EARLY TURN STATISTICS

Airport Noise Advisory Committee

February 20, 2019

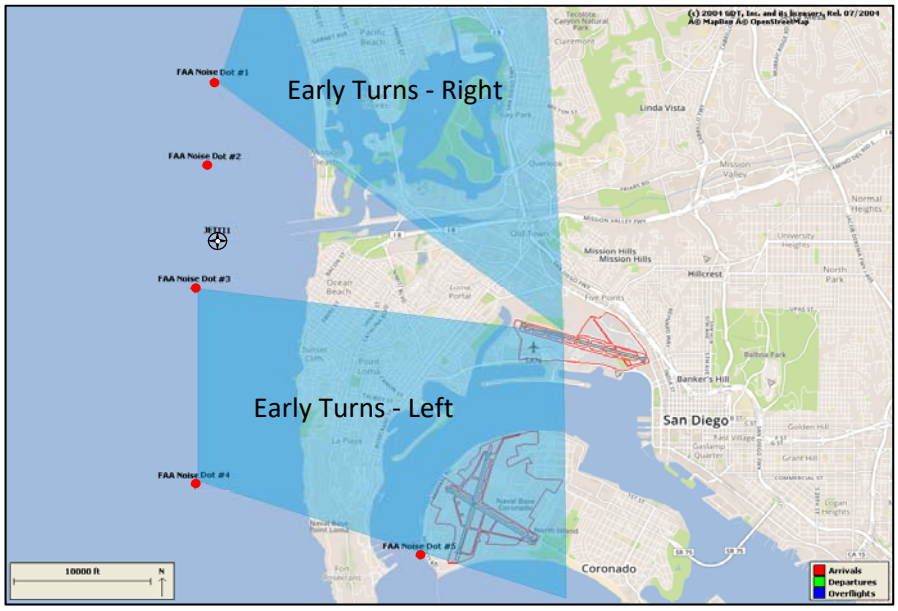
Early Turns by Month



Early Turns by Year

YEAR	Early Turns	% Change
2013	829	--
2014	1,105	33
2015	1,293	17
2016	776	(40)
2017	420	(46)
2018	269	(36)
2019	37*	--

* Through January 31, 2019



Top Causes for Early Turns Increase

(1) FAA Clearing Aircraft Direct to Fix (multiple days)
(2) Reverse Traffic Flow Due to Inclement Weather (17 Jan 2019)

Note: Departures that turn before reaching the FAA Noise Dots or turn back over the peninsula are considered Early Turns.

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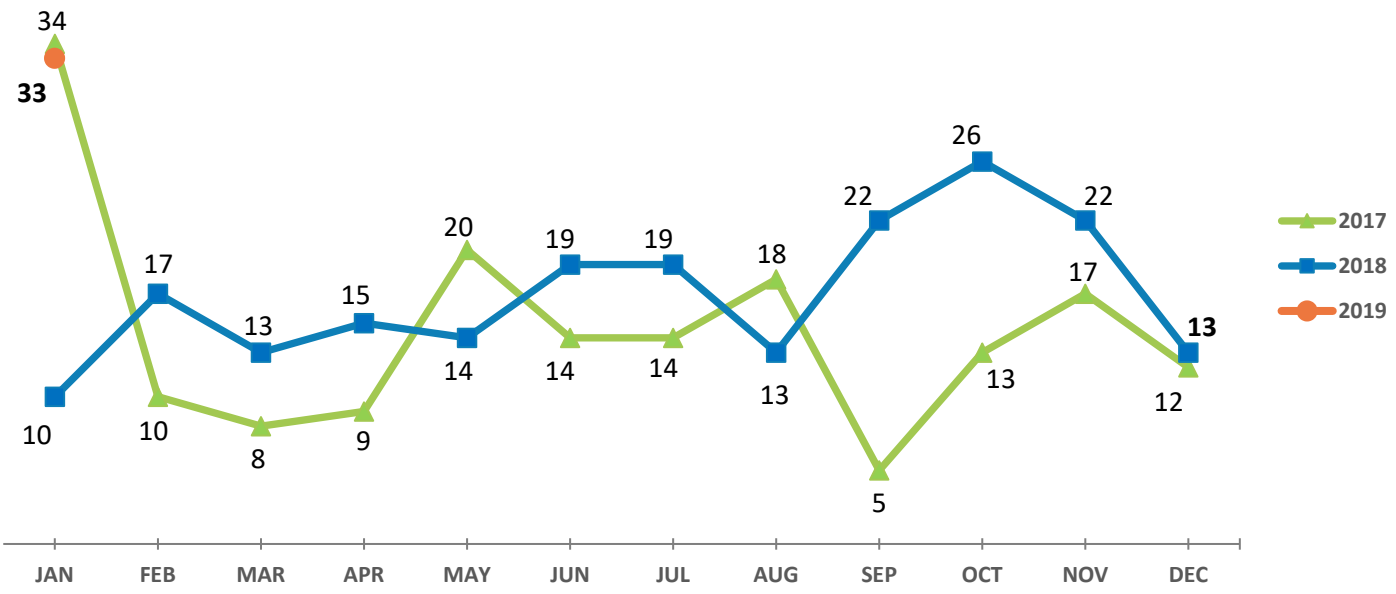
EARLY TURN STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Over Point Loma



Early Turns by Operator (Dec 2018 – Jan 2019)

Count	Airline	Aircraft	Total Operator Departures	% Departures
13	Southwest Airlines	B737, B738, B38M	**6,538** ~~41,771~~	0.19
8	Delta Air Lines	A321, B738, A739	1,404	0.57
8	General Aviation	(multiple aircraft)	1,150	0.69
4	SkyWest Airlines	E75L	1,834	0.22
4	United Airlines	B738, A739	1,596	0.25
3	Alaska Airlines	A320, B739	1,454	0.21
2	American Airlines	B738	1,390	0.14
2	Frontier Airlines	A321	275	0.73
1	Air Canada Rouge	A319	55	1.82
1	JetBlue Airways	A321	272	0.37

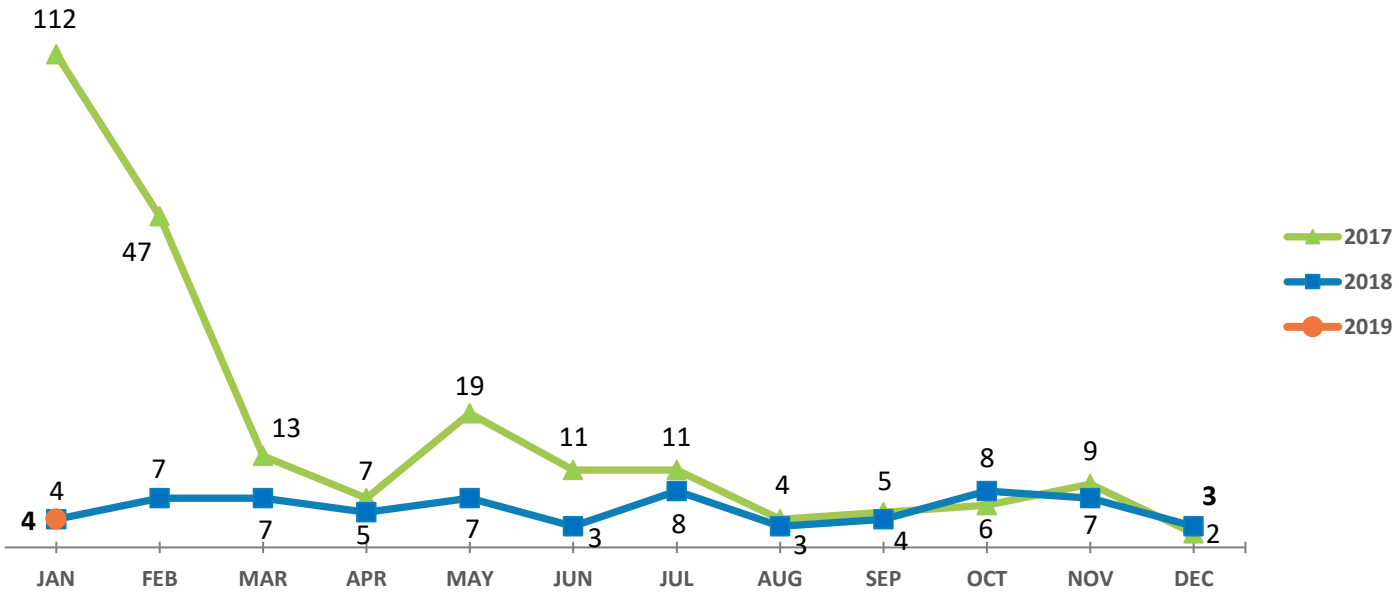
Source: ANOMS

EARLY TURN STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Over Mission Beach



Early Turns by Operator (Dec 2018 – Jan 2019)

Count	Airline	Aircraft	Total Operator Departures	% Departures
4	General Aviation	(multiple aircraft)	1,150	0.35
2	Southwest Airlines	B737	**6,538** ~~41,771~~	0.03
1	SkyWest Airlines	E75L	1,834	0.05

Source: ANOMS

SAN DIEGO INTERNATIONAL AIRPORT
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FLIGHT INFO
PT. LOMA

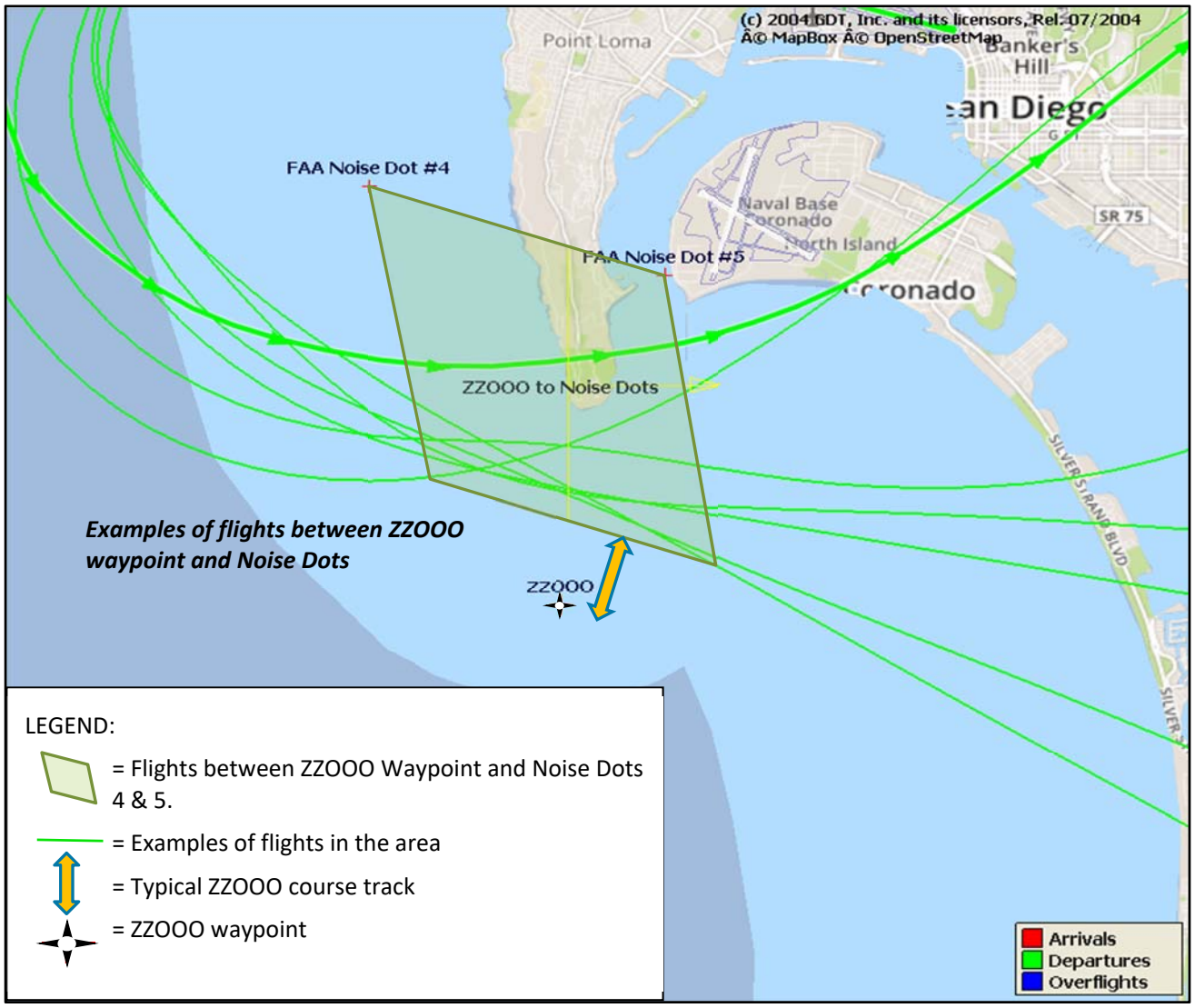
Airport Noise Advisory Committee

February 20, 2019

Flights Between ZZOOO Waypoint and Noise Dots

Note: These flights are all following published flight routes and are not off course

Date	Jets Turning Left	Between ZZOOO & Noise Dots	%
December 2018	4,506	1,110	24
January 2019	4,129	811	20



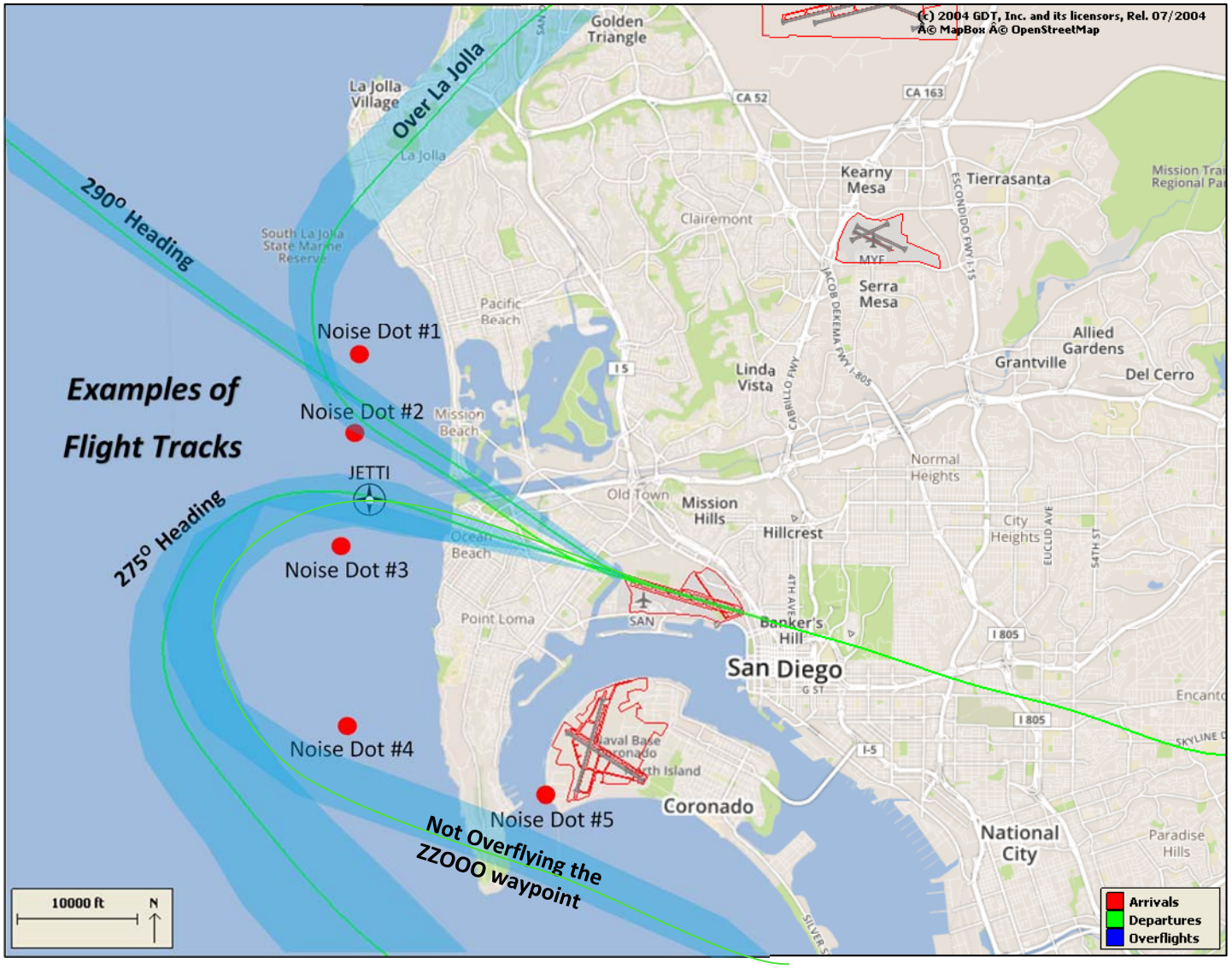
NIGHTTIME DEPARTURE STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Nighttime Departures

Date	Runway Heading (275°)	Runway 09	Early Turns	Adhered to Nighttime Dep. (290°)	Total (Jet)	Over La Jolla
December 2018	7	38	2	328	375	23
January 2019	9	26	0	221	256	9



SAN DIEGO INTERNATIONAL AIRPORT
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CURFEW VIOLATION REVIEW PANEL

Airport Noise Advisory Committee

February 20, 2019

Curfew Violations for December 2018 - January 2019

Date	Time	Flight ID	Aircraft	Penalty Status
12/21/18	23:37	American Airlines 1606	B738	Not Penalized – Local Maintenance
12/24/18	00:03	American Airlines 1209	B738	Not Penalized – Local Maintenance
12/30/18	23:54	Delta Air Lines 1099	A321	Not Penalized – Local Weather
1/20/19	23:30	SkyWest 3472	E175	April CVRP
1/21/19	00:19	ECOH LLC	C441	April CVRP

Annual Curfew Violations

Year	Total Curfew Violations
2015	55
2016	84
2017	72
2018	59
2019*	2

*Through January 31, 2019

Annual Fines Assessed

Year	Fines Assessed
2015	$ 152,165
2016	$ 564,000
2017	$ 376,000
2018	$ 254,000
2019*	$ 0

*Through January 31, 2019

2018 AIR TRAFFIC STATISTICS

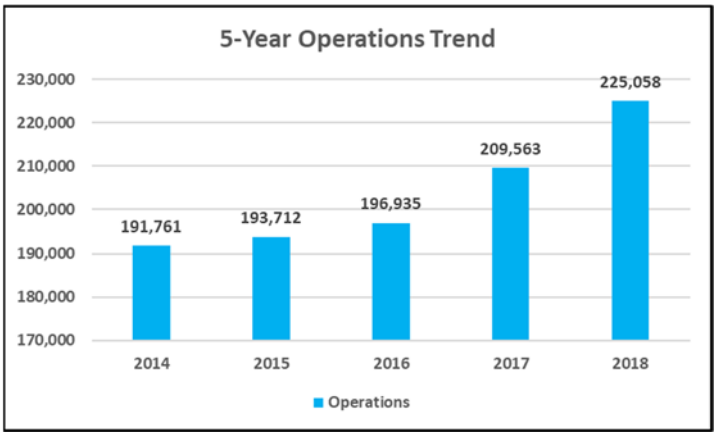
Airport Noise Advisory Committee

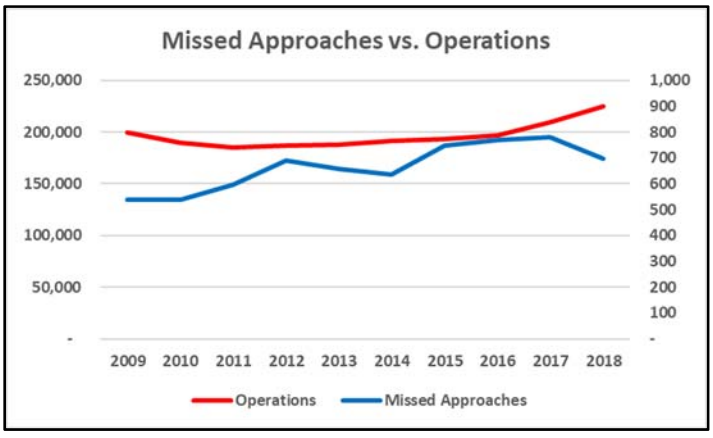
February 20, 2019

2018 Statistics by Operation Category

Category	CY 2017	CY 2018	Net Change	% Change
Air Carrier Operations	188,581	201,466	12,885	6.8%
Air Taxi Operations	10,662	12,497	1,835	17.2%
General Aviation Operations	9,613	10,337	724	7.5%
Military Operations	707	758	51	7.2%
Total Operations	209,563	225,058	15,495	7.4%

Source: FAA Air Traffic Activity Data System (ATADS) – 02/11/2019





SAN DIEGO INTERNATIONAL AIRPORT
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February 13, 2019

Fly Quiet Report

4th Quarter 2018

Prepared by:

Sjohnna Knack
Program Manager, Airport Noise Mitigation
Planning & Environmental Affairs
San Diego County Regional Airport Authority

1.0 Summary of 4th Quarter 2018 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 4th Quarter 2018.

In the 1st Quarter, the Fly Quiet Report was modified to remove the Early Turn element and replace it with a new Noise Exceedance element (technical information on this element can be found in Section 2.0). Early Turns are directed by FAA Air Traffic Control and are rarely done at the discretion of the pilot, therefore making it unreasonable to score. It is however within the operator's control to select the type of aircraft flying at SDIA. While the Fleet Noise Quality element scores operators on the FAA certified noise levels, the Noise Exceedance element will score based on actual noise levels at SDIA.

Given the introduction of the new Noise Exceedance element, the 2018 reports continue to be revised to serve as a new baseline for the 2019 reports.

Primary changes to the 2018 report are as follows:

- With the introduction of the Noise Exceedance metric, scores for airlines operating larger/heavier aircraft are lower, reflecting heavier loads, slower climb rates and greater overall noise exposure to the community.

- The Fleet Noise Quality element score was improved to reflect the type of aircraft used by the carriers at the airport, and includes the aircraft engine type in the analysis. We expect fleet quality scores to improve over time as airlines take delivery of an increasing number of quieter aircraft such as the Airbus A350, Boeing 787, Boeing 737MAX, Airbus A220, and A320neo aircraft and integrate them into SDIA operations.

Notable Noise Reduction Efforts:

- Carriers continue to introduce next generation aircraft to the market. There are now seven (8) carriers at the airport operating the 737MAX and/or the A320neo (Air Canada, Alaska, Frontier, Hawaiian, Southwest, Spirit, United, and WestJet).

- The Airbus A220 (Bombardier C-Series) has seen its first US delivery to Delta Air Lines. jetBlue has also placed a large order (60 units) as a replacement aircraft for their aging Embraer 190's. Significant improvements in both noise and emissions.

- Allegiant Airlines retired their last MD-80 aircraft.

- 23% of Frontier's operations are in A320Neo family aircraft, however, this is countered by the fact that 50% of their operation utilizes the current generation A321 which has the worst noise impact of any narrowbody aircraft in operation at the airport with the removal of the MD-80's.

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.

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

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 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 Type	Cumulative Noise Level	Operations of Type	Sum of Cumulative Noise
B733	14.30	70.00	1,001.0
B737MAX	25.20	20.00	504.0
B738	13.10	40.00	524.0
B738MAX	25.30	20.00	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 2018. 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
4th Quarter 2018 (October, 2018 - December, 2018)

Higher Number = Better Score

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
SKW	SkyWest	5,264	10.4%	0	0	0	10.0
NKS	Spirit	900	1.8%	0	0	0	10.0
FFT	Frontier	896	1.8%	0	0	0	10.0
FDX	FedEx	658	1.3%	0	0	0	10.0
JZA	Jazz	445	0.9%	0	0	0	10.0
HAL	Hawaiian	367	0.7%	0	0	0	10.0
UPS	UPS	248	0.5%	0	0	0	10.0
SCX	Sun Country	190	0.4%	0	0	0	10.0
JAL	Japan Airlines	184	0.4%	0	0	0	10.0
ROU	Rouge	184	0.4%	0	0	0	10.0
BAW	British Airways	176	0.3%	0	0	0	10.0
WJA	WestJet	143	0.3%	0	0	0	10.0
GTI	Atlas Air	130	0.3%	0	0	0	10.0
DLH	Lufthansa	118	0.2%	0	0	0	10.0
AAY	Allegiant	91	0.2%	0	0	0	10.0
EDW	Edelweiss	12	0.0%	0	0	0	10.0
SWA	Southwest	19,302	38.0%	0	1	0	9.0
ASA	Alaska	4,974	9.8%	0	1	0	9.0
CPZ	Compass	1,984	3.9%	0	1	0	9.0
JBU	JetBlue	824	1.6%	0	1	0	9.0
DAL	Delta	4,079	8.0%	0	3	1	8.0
UAL	United	5,299	10.4%	0	3	0	7.0
AAL	American Airlines	4,317	8.5%	0	6	1	5.0
Total		50,785	100%	0	16	2	
Average							9.4

Noise Exceedances Report

San Diego International Airport's Fly Quiet Program

4th Quarter 2018 (October, 2018 - December, 2018)

Higher Number = Better Score

Airline Code		Number of Operations	Percent of Total Operations	Total Noise Exceedances	Sub Score	Noise Exceedances Score
JZA	Jazz	445	0.9%	0	1.00	10
SKW	SkyWest	5,264	10.4%	8	1.00	10
CPZ	Compass Airlines	1,984	3.9%	4	1.00	10
SWA	Southwest	19,302	38.0%	203	0.99	10
SCX	sun country airlines	190	0.4%	2	0.99	10
AAY	allegiant air	91	0.2%	1	0.99	10
NKS	spirit	900	1.8%	14	0.98	10
WJA	WestJet	143	0.3%	3	0.98	10
JAL	Japan Airlines	184	0.4%	6	0.97	10
FFT	Frontier	896	1.8%	80	0.91	9
ASA	Alaska	4,974	9.8%	471	0.91	9
UAL	United	5,299	10.4%	567	0.89	9
JBU	jetBlue Airways	824	1.6%	130	0.84	8
AAL	American Airlines	4,317	8.5%	734	0.83	8
DAL	Delta	4,079	8.0%	817	0.80	8
ROU	rouge	184	0.4%	45	0.76	8
GTI	Atlas Air	130	0.3%	39	0.70	7
HAL	Hawaiian Airlines	367	0.7%	118	0.68	7
UPS	ups	248	0.5%	86	0.65	7
FDX	FedEx	658	1.3%	233	0.65	6
EDW	edelweiss	12	0.0%	6	0.50	5
DLH	Lufthansa	118	0.2%	77	0.35	3
BAW	British Airways	176	0.3%	169	0.04	0
Total		50,785	100%	3,813		
Average					0.8	8.0

Fleet Noise Fleet Quality Report San Diego International Airport's Fly Quiet Program 4th Quarter 2018 (October, 2018 - December, 2018)					
Airline Code		**Number of Operations**	**Percent of Total Operations**	**Sub Score**	**Fleet Noise Quality Score**
JAL	JAPAN AIRLINES	184	0.4%	27.7	10.0
EDW	edelweiss	12	0.0%	21.7	10.0
DLH	Lufthansa	118	0.2%	21.4	10.0
HAL	HAWAIIAN AIRLINES	367	0.7%	20.5	10.0
NKS	spirit	900	1.8%	18.4	10.0
AAY	allegiant air	91	0.2%	16.2	8.0
UPS	ups	248	0.5%	15.9	7.0
UAL	UNITED	5,299	10.4%	15.7	7.0
BAW	BRITISH AIRWAYS	176	0.3%	15.4	7.0
FDX	FedEx	658	1.3%	15.0	7.0
JBU	jetBlue AIRWAYS	824	1.6%	14.6	6.0
SWA	Southwest	19,302	38.0%	14.5	6.0
ASA	Alaska	4,974	9.8%	14.4	6.0
WJA	WESTJET	143	0.3%	14.4	6.0
JZA	Jazz	445	0.9%	13.8	5.0
FFT	FRONTIER	896	1.8%	13.7	5.0
AAL	American Airlines	4,317	8.5%	13.4	5.0
SCX	sun country airlines	190	0.4%	13.1	5.0
DAL	DELTA	4,079	8.0%	12.8	4.0
SKW	SkyWest	5,264	10.4%	12.8	4.0
CPZ	Compass Airlines	1,984	3.9%	12.1	4.0
ROU	rouge	184	0.4%	9.9	1.0
GTI	ATLAS AIR	130	0.3%	9.2	1.0
Total		50,785	100%		
Average				15.5	6.3

Higher Number = Better Score

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

Summary Report
San Diego International Airport's Fly Quiet Program
4th Quarter 2018 (October, 2018 - December, 2018)

Airline 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	900	1.8%	10	10	10	30	1
JAL	JAPAN AIRLINES	184	0.4%	10	10	10	30	1
AAY	allegiant air	91	0.2%	10	10	8	28	3
HAL	HAWAIIAN AIRLINES	367	0.7%	10	7	10	27	4
WJA	WESTJET	143	0.3%	10	10	6	26	5
SWA	Southwest	19,302	38.0%	9	10	6	25	6
JZA	Jazz	445	0.9%	10	10	5	25	6
SCX	sun country airlines	190	0.4%	10	10	5	25	6
EDW	edelweiss	12	0.0%	10	5	10	25	6
SKW	SkyWest	5,264	10.4%	10	10	4	24	10
ASA	Alaska	4,974	9.8%	9	9	6	24	10
FFT	FRONTIER	896	1.8%	10	9	5	24	10
UPS	ups	248	0.5%	10	7	7	24	10
UAL	UNITED	5,299	10.4%	7	9	7	23	14
CPZ	Compass Airlines	1,984	3.9%	9	10	4	23	14
JBU	jetBlue AIRWAYS	824	1.6%	9	8	6	23	14
FDX	FedEx	658	1.3%	10	6	7	23	14
DLH	Lufthansa	118	0.2%	10	3	10	23	14
DAL	DELTA	4,079	8.0%	8	8	4	20	19
ROU	rouge	184	0.4%	10	8	1	19	20
AAL	American Airlines	4,317	8.5%	5	8	5	18	21
GTI	ATLAS AIR	130	0.3%	10	7	1	18	21
BAW	BRITISH AIRWAYS	176	0.3%	10	0	7	17	23
Total		50,785	100%					
Average				9	8	6	24	

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

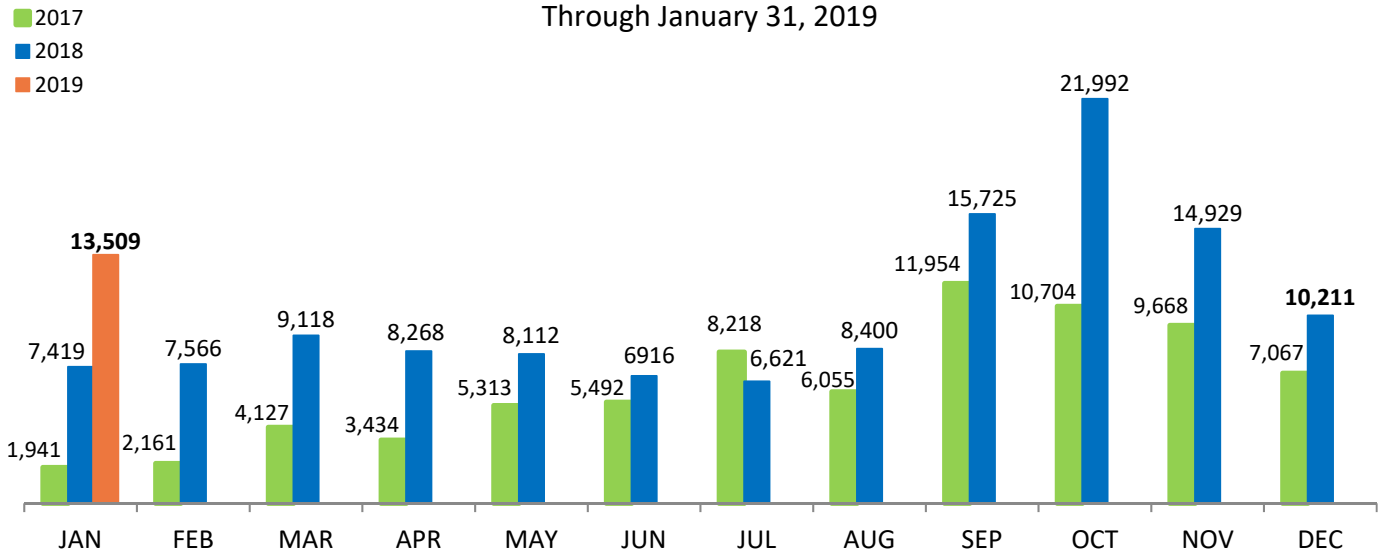
NOISE COMPLAINT STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Total Complaints

Through January 31, 2019



*New noise complaint system started in April 2017.

Disturbance Type

December 2018 & January 2019

Reason	Number of Complaints	%
Too Loud	23,437	98.8%
Too Low	144	0.6%
Overflight	69	0.3%
Suspected Off-Course	49	0.2%
Curfew Violation	14	0.05%
Other	5	0.02%
Pollution	1	0.004%
Increased Flight Volume	1	0.004%

Contact Method

December 2018 & January 2019

Contact Method	Number of Complaints
Third Party	22,694
WebTrak	542
App	469
Phone	14
Clicker	1

SAN DIEGO INTERNATIONAL AIRPORT
LET'S GO.

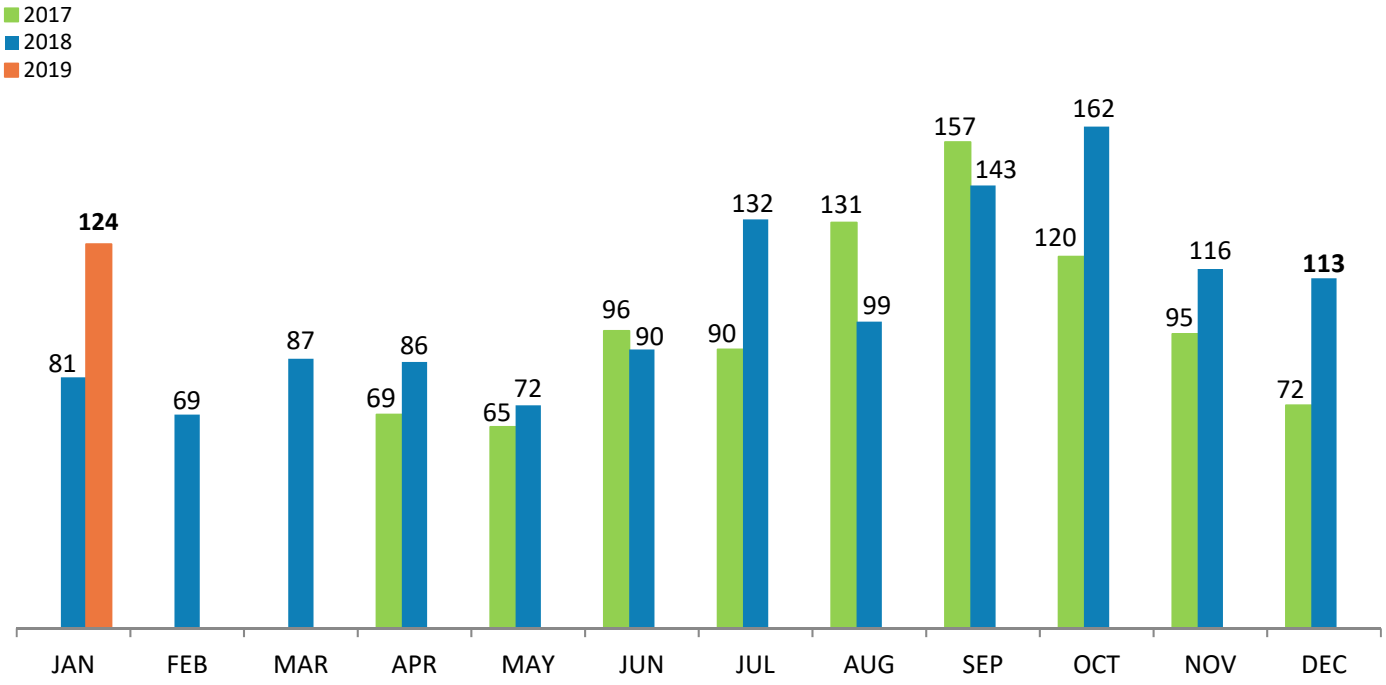
NOISE COMPLAINT STATISTICS

Airport Noise Advisory Committee

February 20, 2019

Number of Households

Through January 31, 2019



Neighborhood by Zip Code	Number of Households*
La Jolla – 92037	48
OB/Sunset Cliffs – 92107	29
Mission Beach/PB – 92109	20
Pt. Loma 92106	18
La Mesa/Mt. Helix - 91941	4
Del Mar - 92014	3
Bankers Hill - 92101	3
Other (less than 2 Households)	24
Total	**149**

*Combined total for December 2018 & January 2019

MEETING SUMMARY

Airport Noise Advisory Committee

Date|Time 12/19/2018 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
Dawn Reilly	Midway-Pacific Highway Community Planning Group	No
Kathy Vandenheuvel	Greater Golden Hill Planning Committee (Alternate)	Yes
Chris Cole	Uptown Planners	Yes
Tom Gawronski	Ocean Beach Planning Board	No*
Fred Kosmo	Peninsula Community Planning Board	Yes
Community Planning Groups Outside the 65 dB contour		
Cindy Greatrex	La Jolla Community Planning Association	Yes
Susan Nichols	Grossmont-Mt. Helix Improvement Association	Yes
Jason Legros	Pacific Beach Planning Group	No*
Deborah Watkins	Mission Beach Precise Planning Board	Yes
Aviation Stakeholders		
Vacant	San Diego County Airports	No
Wayne Reiter	City of San Diego Airports	No*
Carl “Rick” Huenefeld	MCRD	Yes
Robert Bates	Airline Pilot (Active)	Yes
Kallie Glover	Airline Flight Operations	Yes
Phil Derner	NBAA	No
Ex-Officio Non-Voting Members		
Justin Cook	Acoustical Engineer	Yes
Jessica Meir	Congress, 53rd District, for Rep. Susan Davis	No*
Conrad Wear	San Diego City Council, District 2, for Lorie Zapf	No*
Kiera Galloway	Congress, 52nd District, for Rep. Scott Peters	No*
Marshall Anderson	S.D. County Board of Supervisors, District 1, for Sup. Greg Cox	Yes
Keith Lusk & Dave Foyle	FAA Representatives	Yes
Staff		
Sjohnna Knack, Craig Mayer, Roman Lanyak, Jim Payne & McKinna Dartez	Authority Staff	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.

Presentation Items

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, Deputy Program Manager, Quieter Home Program (Program), provided an update on the Program's status. Over the last two months, 24 units were completed and the Program spent around $2.7 million. Staff met with over 600 homeowners at various stages in the process. There are a little over 1,000 units on wait list at this time. At the end of 2018, we will have completed 270 homes, which is slightly low compared to average of about 300 a year.

Looking forward, there are eight new construction projects that will start by summer of 2019, which is roughly 460 new units in construction, well above the yearly average of units in construction. We are on track to create a new project group every other month, based on the assumption that funding will remain as it currently is. Feedback from participants around whether Program could be improved is about 50/50 yes and no. The suggestions for improvement were mostly based around timing, schedule, how long it takes to get through Program, and whether there are opportunities to allow for upgrades.

Question from ANAC: Kathy Vandenheuvel asked what the difference is between 525 applicants versus 1,000 on wait list.

Mr. Mayer stated that an applicant could have multiple units within an application. Any multi-family property each unit is counted per one application.

Anthony Bernal asked what the size was for the survey regarding improvements

Mr. Mayer said over 400 have been surveyed.

Missed Approach Statistics

Roman Lanyak, Noise Specialist, presented on missed approaches. There were quite a few poor weather days in October and November, causing more missed approaches and early turns. As an example, on 10/12/18, the weather was very bad and at one point during the storm, there were eight aircraft sitting on runway waiting to depart. There were 113 missed approaches in October and November, which is 6% higher than the same period last year. As an annual total, missed approaches are 10% lower in 2018 compared to 2017. The percentage of aircraft that fly missed approaches remains steady at less than 1%, which is fairly stable, taking into account that operations have increased by about 8% year-to-date. Nearly 80% of missed approaches take standard path, flying straight out on runway heading, turning beyond noise dots.

Early Turns

Mr. Lanyak presented on early turns. There were 63 early turns for October and November, which is 40% higher than this two month period last year. As mentioned before, this increase is related to the weather, on 10/12/18, 10 aircraft turned early to avoid a thunderstorm cell near the Ocean Beach pier. There were 253 total early turns for the year, which is about 38% lower than this time last year (year to date). He

showed breakdown of left turns over Point Loma versus right turns over Mission Beach, and compared some airlines' early turns as a fraction of their total departures. Edelweiss had 1 early turn, 6 departures, which is 17%. Southwest had 18 early turns, but 6,500 departures, so their early turns are a very small percentage compared to their total operations. For ZZOOO departures, early turns were about 15% on average of all left-turning departures. Nighttime departures, there were 18 aircraft that took the runway heading instead of taking 290 prescribed nighttime departure. Four aircraft turned left in October and November; 17 out of 647 aircraft turned to the right over La Jolla and Del Mar area.

Question from ANAC: Melissa Hernholm-Danzo asked why the increase in November between ZZOOO and the noise dots but a decrease in jets turning left.

Dave Foyle, representing Air Traffic Control (ATC), stated they are directed by the FAA ATC.

Curfew Violations

Jim Payne, Sr. Noise Specialist, reported that in October and November, there have been 19 curfew violations. Year-over-year, curfew violations are down 5%. Of the 56 violations reviewed this year, 32 have been penalized. At the last meeting, 18 violations were reviewed, 12 of which occurred in one night due to thunderstorms off the coast. Those were waived. Two others were waived for maintenance items. Four were penalized for other reasons. So far this year, $254,000 in penalties has been collected.

Question from ANAC: Kathy Vandenheuvel asked where the money collected goes.

Ms. Knack said traditionally it goes to the General Fund, which pays for many things including noise staff salaries, noise monitoring equipment, maintenance, etc. However, as part of an ANAC Subcommittee recommendation that was adopted by ANAC in October 2017 we're looking to have that spent specifically on the Quieter Home Program. We have met with half of the accounting team, and now need to meet with finance team to figure out how to run the accounting. We are working towards having the amount of money devoted directly to the Program.

Fly Quiet Program

Mr. Payne said there are three quarters' worth of data in the packet. Staff has been working on a new metric, noise exceedance, which reviews the actual noise levels of aircraft at one of our noise monitoring sites.

Early turn criteria was removed because they're either done for safety or directed by ATC.

Fleet quality criteria includes specific engines types by aircraft. Different carriers can operate the same aircraft and have different engines, which create a different noise signature. One impact this year is the reduction of scheduled MD-80s into the airport, and should be eliminated from schedule operations by December 2018. That doesn't mean they won't be used as a substitute aircraft. We've seen an increased utilization of the 737 MAX and the A32neo replacing older aircraft.

Overall, there have been fewer curfew violations by the carriers that scored poorly in 2017.

Because of refinement of fleet quality data, we're getting a much better reflection of the aircraft making the most amount of noise at our airport. We're also comparing two different methods against each other, so this year will be a baseline for going forward.

In the first three quarters, the best carrier overall was Spirit twice and United once. United because of the flights they canceled in lieu of leaving after the curfew. Most improved was Southwest in the first quarter, SkyWest in the second quarter, and because of canceled flights, United in the third quarter. Southwest showed fleet quality index improvement and no curfew violations; same with SkyWest, with an engine refinement. Quietest fleet remains Japan Airlines. Lowest scores were JetBlue because of curfew violations. Atlas was the worst in the second quarter, because of the noise exceedance. Delta was the

worst in the third quarter because of curfew violations. Noise exceedance score is compared to the carrier's number of operations, and a percentage score is created.

Question from ANAC: Robert Bates asked for clarification of fleet quality pertains to engines on the jet or the whole airframe?

Mr. Payne said yes, engines are taken into account, as well as weight and size, which is where the noise exceedance comes into play.

Justin Cook, ANAC Acoustician, said for noise certification, it's based on three different points, with each point having a certain level that you have to be under, and that's based off of engine and weight. Aircraft that weigh more aren't going to meet certain levels, so they factor weight into that equation. All those differences determine how well a fleet is scored.

Melissa Hernholm-Danzo asked if early turns were always done for safety, or is that just some of the time? She said she's been on flights where she's been told by pilots that they can request to turn early and that can be granted.

Dave Foyle confirmed that is true. They can request to turn early and ATC could approve it. Our guidance to the controllers is safety first, and if there is a safety need to turn the aircraft early, we will do that. Outside of that, it's our expectation that we're going to comply with noise procedures that are in the SOP for Southern California TRACON.

Ms. Hernholm-Danzo said she wouldn't totally dismiss based on safety, but more airline efficiency, as was implied by the pilots she's spoken with.

Noise Complaints

Ms. Knack stated she had received feedback from people in the community indicating that she had made statements that the Airport Authority will not be accepting third-party application complaints. As she clarified at the last ANAC meeting, that is not the case. All third-party complaints are, and will continue, to be accepted

McKinna Dartez, Noise Specialist, presented on noise complaints. There was a rise in the total number of complaints for October and November. Possible contributors to the increase were related to the weather events discussed previously. There were 106 new households filing complaints, compared to September and August. The majority of complaints are coming from the third-party application, compared to 7% coming from the Airport Authority tools, which are our App, WebTrak, and the hotline. "Too loud" continues to be the top disturbance type; 90% of those are from the third-party application. There was also an increase in suspected off-course, due to the significant weather events. She showed a density location map, where red indicates 1,000 or more noise complaints. The majority of complaints continue to come from La Jolla, Mission Beach, Ocean Beach, and Point Loma; 73% of those complaints are coming from 19 households. There are nine households that are filing 1,000 or more complaints each.

Question from ANAC: Chris Cole asked if the 106 new households are from a new area.

Ms. Dartez said they are the same. There were no complaints coming from new zip codes.

Deborah Watkins represents Mission Beach, and she said when you divide the statistics out, Mission Beach and Pacific Beach included in the same count of 21. Can those be specified exactly where they're from?

Ms. Knack said that with quantities being received, it's extremely difficult to do analysis down to a finite level, so they're culled based on zip code. Unfortunately, Mission Beach and Pacific Beach are the same zip code.

Ms. Watkins said her concern is that each representation on this committee are based on noise complaints; Pacific Beach has a rep, Mission Beach has a rep. She requested for her constituency to get an actual count of how many are coming from Mission Beach.

Ms. Knack said she would look into that and follow up with Ms. Watkins.

Update on ANAC Recommendations

Sjohnna Knack presented the status update for ANAC recommendations. She already mentioned the curfew penalties. With regards to the Part 150 update, they met on October 25, to kick off the Part 150 study. The Flight Procedure analysis is towards the end of the analysis. The Flight Procedure Analysis was done to address noise concerns and any potential feasible flight procedure changes outside the 65 dB contour. A Part 150 study is very regulatory and only allows the analysis of procedures within the 65 dB contour. All of the ANAC Subcommittee recommendations have been reviewed for operational consideration, safety considerations, and noise impacts. They were deemed either not feasible, or to possible impact the 65, so they will be reviewed in the Part 150; or they're continuing forward to have noise analysis conducted on them. They're hoping the next meeting will be in February. She's requested that Part 150 consultant come and brief ANAC at the February meeting.

2. Public Comment

Marilyn Jasnik has a condo right at the JETTY waypoint and Mission Boulevard. When they bought the condo a year and a half ago, she was there during regular hours and didn't notice all of the planes that do fly between 6:30 – 8:30 a.m. They're very loud and bothersome because they're trying to sleep. There are a lot of very noisy planes that are coming over between 10:00 and 11:30 p.m. Planes are low, constant and have changed in their flight patterns. She asked if someone could explain these issues to her in layman's terms so she could understand and determine if she is eligible for the Program.

Ms. Gantwerk said there is a promise that someone is going to talk her through it and help her understand it.

Chris Cole said there seems to be a high degree of interest in the EIR on Terminal 1, what's going on. He would like someone to come and keep the committee up on that.

Ms. Knack said February will probably be a really long meeting, so she'll look at it for the next meeting.

3. Action items

Ms. Gantwerk asked for approval of meeting summary from October meeting. There was a motion, a second and no discussion. Meeting summary was approved unanimously.

4. Next Meeting/Adjourn

Next meeting is February 20, 2019.

Meeting was adjourned.