LAX FLY QUIETER PROGRAM

2020 Annual Report

Recognizing Airlines and Their Commitment to Being Good Neighbors at LAX.

LAWA
LOS ANGELES WORLD AIRPORTS


Justin Erbacci, CEO

"I want to take this opportunity to thank air carriers for participating in the LAX Fly Quieter Program. It was a difficult year affecting our industry, but we decided to move forward with the LAX Fly Quieter Program to demonstrate our commitment to partner with both the airlines and the community. I would especially like to recognize air carriers who made extra efforts to either engage with the community or take the initiative to reduce noise. We look forward to working with all of you to continue these noise reduction efforts."

Justin Erbacci, Chief Executive Officer, LAWA

LAWA
LOS ANGELES WORLD AIRPORTS

Los Angeles International Airport
One World Way
Los Angeles, CA 90045

To learn more about the Fly Quieter Program at LAX, visit [www.lawa.org/LAXFQP.](www.lawa.org/LAXFQP)

PROGRAM OVERVIEW

The Los Angeles International Airport Fly Quieter Program (FQP) is an education and recognition program designed to encourage commercial air carriers operating at LAX to fly as quietly as possible for the benefit of our neighboring communities. Air carriers receive recognition in the FQP by complying with LAX noise abatement procedures, using quieter aircraft and implementing their own elective strategies to reduce noise. While airports cannot impose mandatory aircraft noise limits, the LAX Fly Quieter Program acknowledges air carriers for taking voluntary noise-reduction measures where feasible and evaluates them using a scoring system.

In addition to evaluating noise-reduction performance, the FQP offers an opportunity for LAX to increase outreach and education with air carriers. FQP can provide important feedback to air carriers, including expanding awareness of LAX Aircraft Noise Abatement Policies and Procedures to reduce noise for area residents. While aircraft noise reduction relies on many factors, including technological innovations and Federal Aviation Administration (FAA) procedures that are not directly under the air carriers' or pilots' control, operators can use this opportunity to demonstrate their commitment to exploring and pursuing feasible efforts to fly quieter, thereby demonstrating their commitment to being a good neighbor at LAX.

Contents

About LAX

In 2019, Los Angeles International Airport (LAX) was the third busiest airport in the world and the second busiest in the United States, serving over 88.1 million passengers. Los Angeles World Airports (LAWA), the City of Los Angeles department that owns and operates LAX and Van Nuys Airport (VNY), is committed to minimizing noise impacts in neighboring communities from aircraft operations. Since 1959, LAWA has developed and implemented noise abatement programs, sought partnership-based solutions and worked with stakeholders in a cooperative and collaborative manner.

FQP AWARDS

AIR CARRIERS SCORING HIGHEST in minimizing aircraft noise and engaging with the community receive an FQP Gold, Silver or Bronze award in each category, as well as public acknowledgement.

SCORES FOR EACH CATEGORY are calculated based on points earned in five scoring elements, plus any bonus points for voluntary efforts.

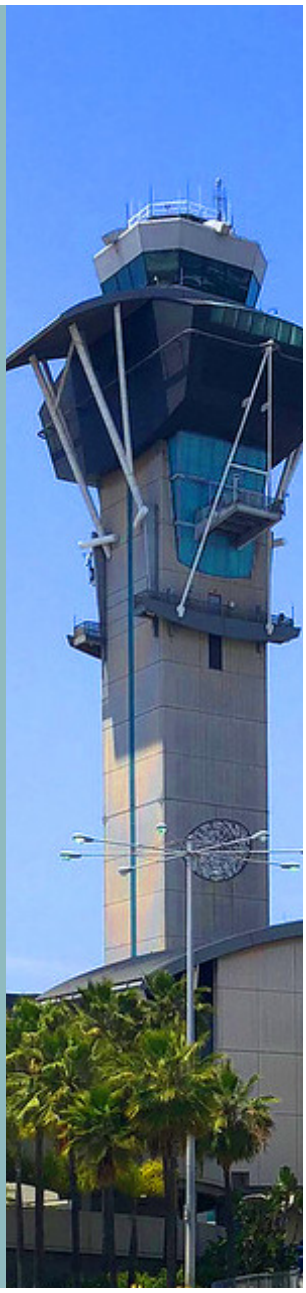
FQP Recognition Categories for 2020:

Due to the large number of air carriers operating at LAX and the substantial differences in average daily operations*, the FQP awards are divided into three categories:

CATEGORY 1 = 50+ average daily operations
CATEGORY 2 = 5 to 49 average daily operations
CATEGORY 3 = 1 to 4 average daily operations

Also, regional airlines operating smaller, regional jets are recognized separately in the FQP and are not grouped in the award categories for 2020 (please see the FQP Methodology for more information).

***An "operation" is defined as one jet arrival or one jet departure.**



INAUGURAL 2020 WINNERS!

CATEGORY 1 WINNERS
50+ Operations Daily

1. UNITED AIRLINES
2. American Airlines
3. Alaska

CATEGORY 2 WINNERS
5 to 49 Operations Daily

1. volaris
2. spirit
3. jetBlue

CATEGORY 3 WINNERS
1 to 4 Operations Daily

1. Avianca
2. NCA Nippon Cargo Airlines
3. interjet

See end of report for a complete list of FQP scores.

FQP SPECIAL RECOGNITION

The FQP recognizes air carriers that voluntarily make extra efforts to reduce aircraft noise and/or engage with the community. The FQP rewards these aircraft operators with bonus points, a unique feature of the program, as a way to improve their scores. The FQP also recognizes regional airlines operating jet aircraft that are smaller and quieter.

CONGRATULATIONS TO AIRLINES WHO EARNED BONUS POINTS!

NOISE REDUCTION EFFORTS - These air carriers retrofitted A320 aircraft with noise-reducing technology specific to that aircraft model:

- JET BLUE
- UNITED AIRLINES

STAKEHOLDER ENGAGEMENT EFFORTS - These air carriers participated in LAX/ Community Noise Roundtable meetings in 2020:

- ALASKA AIRLINES
- LOT POLISH AIRLINES
- SPIRIT AIRLINES
- UNITED AIRLINES

RECOGNITION OF REGIONAL AIRLINES!

QUIETER AIRCRAFT ARRIVALS – These regional carriers operated smaller jet aircraft that are notably quieter on arrival.

- COMPASS
- HORIZON
- SKYWEST

MEASURING PERFORMANCE

The LAX Fly Quieter Program (FQP) monitors aircraft noise levels and operations at LAX by scoring all air carriers operating a minimum of one jet arrival or departure operation at LAX per day based on five primary elements and two bonus elements.

These bonus elements are unique to LAX FQP and recognize air carriers for implementing elective strategies to further reduce aircraft noise and for directly engaging with the community. Examples of how air carriers earned "bonus points" during the program's first year include participating in ***LAX/Community Noise Roundtable Meetings*** and installing new technologies onto aircraft to further reduce aircraft noise.

FQP Scoring Elements:

1. Quietest Arrivals – Scoring is based on measured noise levels from two monitors in residential communities.

2. Quietest Fleet – Scoring is based on noise levels of aircraft operating at LAX as certified by the FAA.

3. Early Turns – Air carriers having no or very few pilot-initiated early turns flying over communities will score higher on this element.

4. East Departures – Air carriers having no or very few nonconforming east departures between midnight and 6:30 a.m. will score higher on this element.

5. Engine Run Ups – Scoring is based on compliance with maintenance engine run-up restrictions, which are in effect between 11:00 p.m. and 6:00 a.m.

Bonus scoring elements:

Noise Reduction Efforts
Stakeholder Engagement Efforts

1. Quietest Arrivals

Based on measured noise levels at two monitors placed in residential communities neighboring LAX.

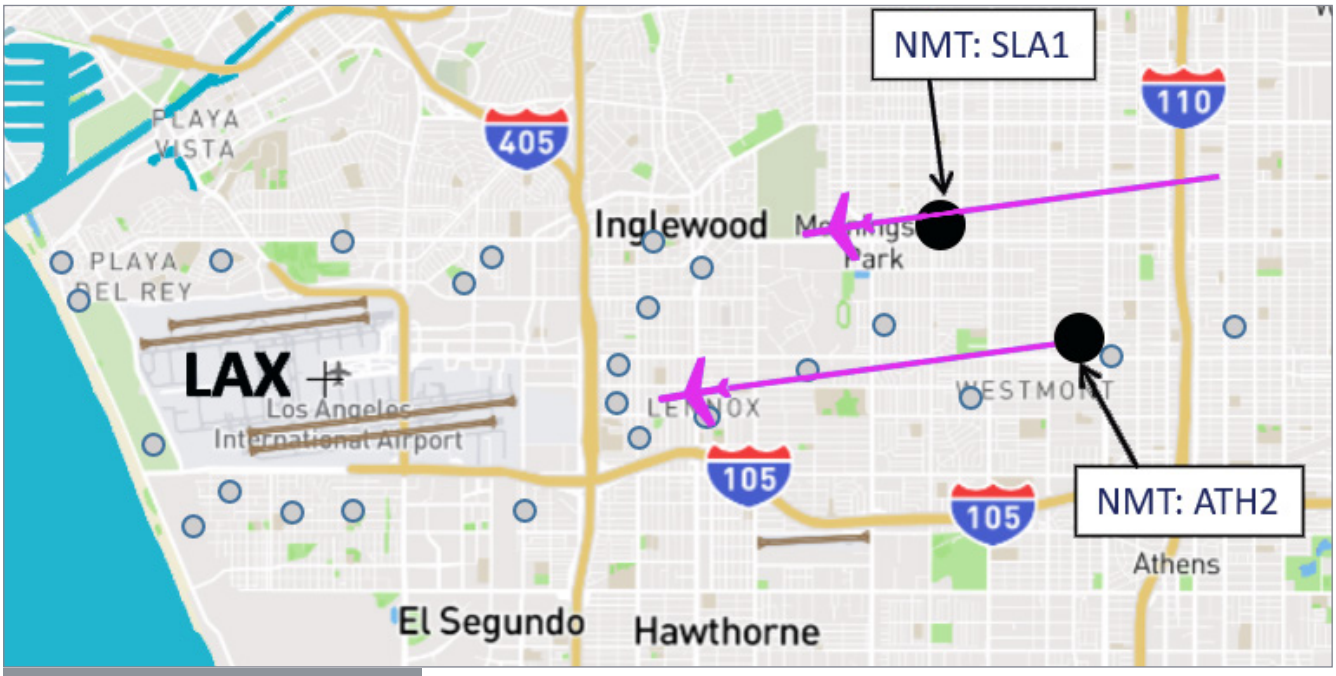


IMAGE: A MAP OF LAX NOISE MONITORING TERMINALS (NMTS), AS DENOTED IN GREY. THE QUIETEST ARRIVALS ELEMENT IS SCORED USING MEASUREMENTS FROM NMTS DENOTED IN BLACK.

The Quietest Arrivals element is scored based on noise levels measured by two noise monitors, twenty-four hours a day, seven days a week, as experienced by communities. They are optimally located to capture actual noise levels of approaching aircraft landing on either LAX's north or south runways during ***Westerly Operations***.

To determine the most appropriate monitors to use for this element, an acoustic consultant assisted with site evaluation. Various factors were considered in selecting the two monitors identified, including capturing aircraft noise while in a stable power configuration and reducing interference from other noise sources. For ease of data analysis, only two monitors were selected under LAX's final approach path at similar distances from the airport's runways to ensure a fair comparison of noise measurements.

2. Quietest Fleet

Based on FAA-certified noise levels of aircraft operating at LAX.


Photo: Los Angeles World Airports/Jacob Brosseau

IMAGE: AIRCRAFT PARKED AT LAX.

The Quietest Fleet element is based on FAA-certified noise levels of aircraft models that comprise a carrier's fleet of aircraft operating at LAX. Air carriers serving LAX that operate using quieter aircraft in their fleet will score better on this element than if they use their noisier planes. Each aircraft model's noise level is certified based on several factors. For more information, see FQP Methodology on the FQP web page.

"United is proud of the role it plays in the Los Angeles community, including taking meaningful steps to reduce noise and emissions as a partner of LAWA's Fly Quieter program. Over the last several years, we've made huge strides toward running the most environmentally conscious and sustainable airline in the world, including investing in eco-friendly, modern aircraft, sustainable aviation fuels and electric ground services equipment."

Alberto Diaz, Managing Director, United Airlines at LAX

3. Early Turns

Air carriers having no or very few pilot-initiated early turns flying over communities will score higher on this element.

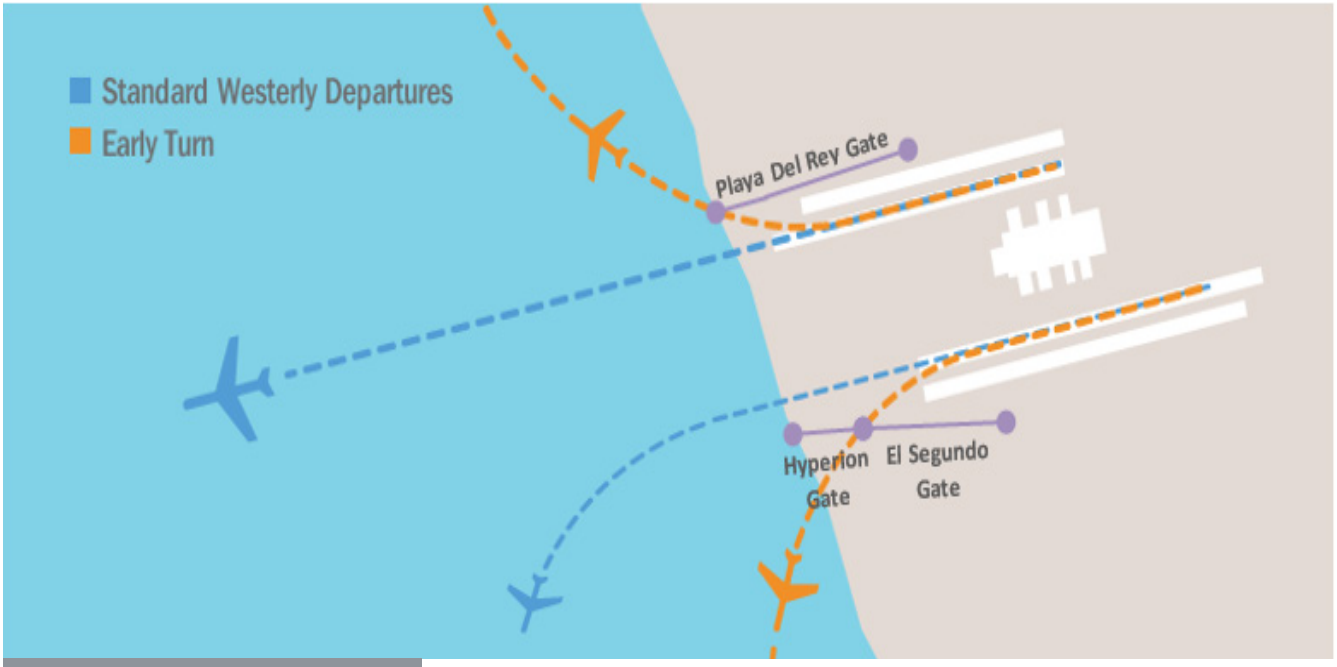


IMAGE: EARLY TURNS ARE MONITORED USING FAA RADAR FLIGHT TRACK DATA WHEN THEY CROSS THE VIRTUAL GATES (PURPLE LINES).

The Early Turns element is based on the number of pilot-initiated early turns flying over communities. Early Turns affect communities north and south of LAX when departing airplanes turn early before reaching the shoreline, thereby flying over communities instead of over the ocean.

Some early turns are unavoidable, like those instructed by the FAA Air Traffic Control Tower to ensure airspace safety. But other early turns can be avoided, and LAWA brings those to the attention of air carriers as part of its efforts to reduce noise disturbances in neighboring communities.

Airlines with zero or very few avoidable early turns score highest on this FQP element (see the ***Early Turn Notification Program*** for more information and monthly reports).

4. East Departures

Air carriers having no or very few non-conforming east departures between midnight and 6:30 a.m. will score higher on this element.

IMAGE: NONCONFORMING EAST DEPARTURES AT LAX ARE DENOTED IN PINK. THIS IS IN CONTRAST TO THE BLUE DEPARTURES, WHICH ARE IN A STANDARD WESTERLY DIRECTION.

The East Departures element is based on the number of nonconforming east departures occurring between midnight and 6:30 a.m. These are called nonconforming departures because these aircraft depart in an easterly direction when all other departures are taking off to the west over the ocean. Nonconforming east departures are usually conducted by very large, heavy aircraft that may need to depart east during mild easterly wind conditions. In this case, pilots of large, heavy aircraft will request permission from the FAA to make a nonconforming east departure for safety.

Nonconforming east departures are a relatively rare occurrence. Air carriers have an opportunity to avoid these operations by reducing weight, scheduling at a different time or using different aircraft. These operations are included in the FQP due to the noticeable nighttime disturbance they cause. East Departures reports can be ***viewed here***.

5. Engine Run-Ups

Based on compliance with LAX's maintenance engine run-up restrictions, which prohibit running engines for maintenance purposes from 11:00 p.m. to 6:00 a.m.

IMAGE: AIRPLANE DURING AN ENGINE RUN-UP AT LAX WITHIN THE ALLOWABLE TIME FRAME.

The Engine Run-Ups element is based on compliance with maintenance engine run-up restrictions, which have been in place for many years. An engine run-up occurs when an aircraft operator turns on an engine while keeping the aircraft parked, which is necessary after performing certain types of aircraft maintenance. The compliance rate is generally very high; however, as part of its efforts to further reduce night-time noise affecting adjacent communities, LAWA, which has control over these ground operations, recently implemented fines for maintenance run-up activities at LAX between 11:00 p.m. and 6:00 a.m. Airlines that comply with this noise abatement policy score highest on this element.

Bonus Elements

Bonus elements, unique to LAX's FQP, are intended to provide air carriers with opportunities to engage with stakeholders and take proactive measures to reduce aircraft noise.

IMAGE: LAX/COMMUNITY NOISE ROUNDTABLE MEETING.

Noise Reduction Efforts – implementing any equipment, technology, or procedural type effort to reduce aircraft noise; (e.g. retrofitting older A320 aircraft with vortex generators).

Stakeholder Engagement Efforts – implementing outreach and educational efforts with stakeholders; (e.g. establishing a noise abatement education program for pilots, attending LAX/Community Noise Roundtable meetings, or engaging with other stakeholders, including FAA).

"The Fly Quieter Program demonstrates LAWA's commitment to, and concern for, the communities that surround LAX."

Denny Schneider, Noise Roundtable Chairman

2020 Air Carrier FQP Scores

A – L

AIR CARRIER	CATEGORY	ELEMENT 1 Arrivals	ELEMENT 2 Fleet	ELEMENT 3 Early Turns	ELEMENT 4 East Departures	ELEMENT 5 Engine Run Ups	Bonus	Total
AeroLogic	3	2.7	18.3	10.0	10.0	10.0		51.0
Aeromexico	3	8.5	16.7	10.0	10.0	10.0		55.3
Aerotransporte De Carga Union	3	1.0	11.9	10.0	10.0	10.0		42.8
Air Canada	2	7.6	21.0	10.0	10.0	10.0		58.6
Air China	3	0.0	20.1	10.0	10.0	10.0		50.1
Air China Cargo Company	3	16.5	18.3	10.0	10.0	10.0		64.8
Air France	3	2.4	20.3	10.0	10.0	10.0		52.7
Air New Zealand	3	2.5	25.3	10.0	10.0	10.0		57.8
Air Tahiti Nui	3	0.0	30.6	10.0	10.0	10.0		60.6
Air Transport International	3	10.4	15.6	10.0	10.0	10.0		56.0
Alaska Airlines	1	11.6	17.3	8.8	10.0	10.0	1	58.7
All Nippon Airways	2	0.0	18.0	10.0	10.0	10.0		48.0
Allegiant Air	2	16.4	19.2	10.0	10.0	10.0		65.6
American Airlines	1	14.8	17.3	9.0	10.0	10.0		61.0
Asiana Airlines	2	2.7	25.1	9.8	10.0	10.0		57.5
Atlas Air	3	0.9	15.1	10.0	10.0	10.0		45.9
Avianca	3	34.3	17.6	10.0	10.0	10.0		81.9
British Airways	3	2.4	26.6	10.0	10.0	10.0		59.0
Cargolux Airlines International	3	2.7	23.7	10.0	10.0	10.0		56.4
Cathay Pacific Airways	2	0.5	27.2	10.0	10.0	10.0		57.7
China Airlines	2	1.7	20.5	10.0	10.0	10.0		52.1
China Cargo Airlines	3	1.5	18.3	10.0	10.0	10.0		49.7
China Eastern Airlines	3	2.2	15.9	10.0	10.0	10.0		48.0
China Southern Airlines	2	3.1	20.7	10.0	9.5	10.0		53.3
Copa Airlines	3	8.8	13.1	10.0	10.0	10.0		51.8
Delta Airlines	1	5.6	15.4	8.5	10.0	10.0		49.5
Emirates	3	0.0	22.0	10.0	10.0	10.0		52.0
EVA Airways	2	0.6	18.1	10.0	10.0	10.0		48.7
Federal Express Corporation	2	2.1	14.0	9.5	10.0	10.0		45.5
Frontier Airlines	2	7.7	26.7	9.5	10.0	10.0		63.8
Hainan Airlines	3	0.0	26.0	10.0	10.0	10.0		56.0
Hawaiian Airlines	2	4.1	15.5	10.0	10.0	10.0		49.6
iAero Airways	3	1.5	13.4	9.8	10.0	10.0		44.7
Interjet	3	17.7	17.9	10.0	10.0	10.0		65.6
Japan Airlines	3	0.0	23.2	10.0	10.0	10.0		53.2
Jetblue Airways	2	20.4	13.5	9.3	10.0	10.0	2.5	65.7
Kalitta Air	2	1.3	13.8	9.5	10.0	10.0		44.7
KLM Royal Dutch Airlines	3	3.8	18.4	10.0	10.0	10.0		52.2
Korean Airlines	2	3.1	22.9	10.0	10.0	10.0		56.0
Lan Chile Airlines	3	3.5	30.6	10.0	10.0	10.0		64.2
Lufthansa German Airlines	3	0.0	31.5	10.0	10.0	10.0		61.5

Note: **LOT Polish Airlines** received special recognition for attending LAX/Community Noise Roundtable meetings but did not have the minimum number of operations to be considered for the 2020 FQP awards.

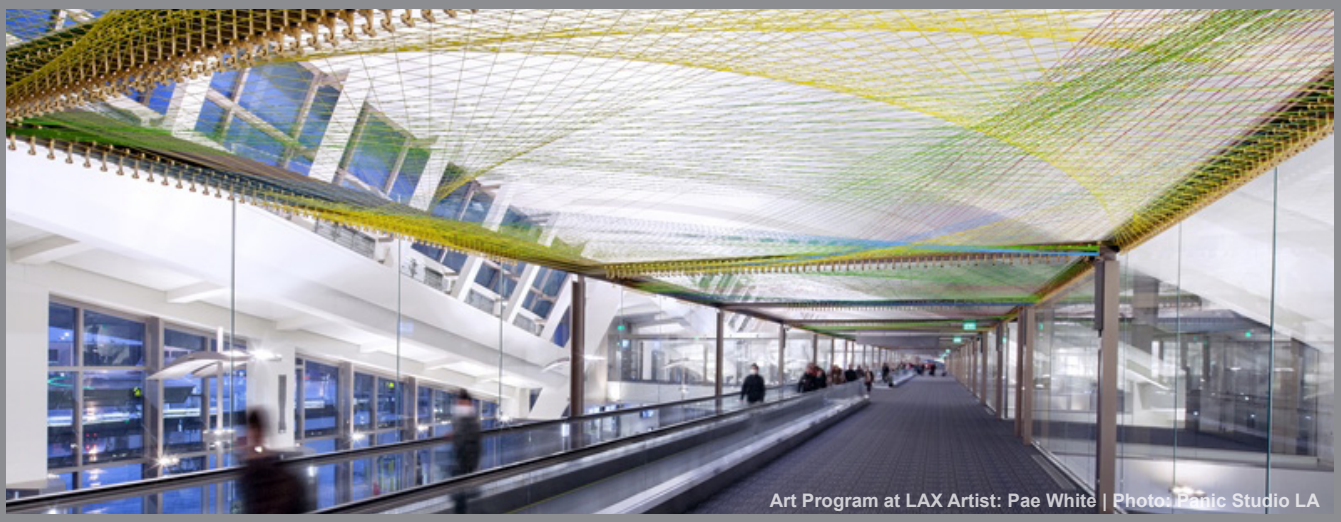
2020 Air Carrier FQP Scores

M – Z

AIR CARRIER	CATEGORY	ELEMENT 1 Arrivals	ELEMENT 2 Fleet	ELEMENT 3 Early Turns	ELEMENT 4 East Departures	ELEMENT 5 Engine Run Ups	Bonus	Total
Mas Air Cargo	3	0.0	15.3	10.0	10.0	10.0		45.3
Nippon Cargo Airlines	3	7.2	30.0	10.0	10.0	10.0		67.2
Philippine Airlines	3	1.6	21.2	10.0	10.0	10.0		52.8
Polar Air Cargo	3	0.0	21.3	10.0	10.0	10.0		51.3
Qantas Airways	3	2.1	28.2	10.0	10.0	10.0		60.3
Qatar Airways	3	2.6	21.8	10.0	10.0	10.0		54.4
Singapore Airlines	3	1.8	25.3	10.0	10.0	10.0		57.1
Southern Air	3	4.1	18.3	10.0	10.0	10.0		52.4
Southwest Airlines	1	9.7	14.5	8.5	10.0	10.0		52.7
Spirit Airlines	2	15.2	18.8	9.5	10.0	10.0	3	66.5
Sun Country Airlines	3	4.2	13.7	10.0	10.0	10.0		48.0
Turkish Airlines	3	0.0	20.5	10.0	10.0	10.0		50.5
United Airlines	1	7.5	17.2	9.0	10.0	10.0	9	62.7
United Parcel Service	3	10.0	15.4	9.8	10.0	10.0	1	56.2
Virgin Atlantic Airways	3	2.2	31.8	10.0	10.0	10.0		64.0
Virgin Australia	3	0.0	18.0	10.0	10.0	10.0		48.0
VivaAerobus	3	12.0	19.5	9.8	10.0	10.0		61.2
Volaris Airlines	2	23.3	21.2	10.0	10.0	10.0		74.5
Western Global Arilines	3	0.0	13.4	10.0	10.0	10.0		43.4
WestJet	3	7.9	14.6	10.0	10.0	10.0		52.6
Xiamen Airlines	3	2.5	30.7	10.0	10.0	10.0		63.2

Regional Airlines Performance

AIR CARRIER	ELEMENT 1 Arrivals	ELEMENT 2 Fleet	ELEMENT 3 Early Turns	ELEMENT 4 East Departures	ELEMENT 5 Engine Run Ups	Total
Compass	35.0	18.0	9.5	10.0	10.0	82.5
Horizon Air	35.0	18.0	10.0	10.0	10.0	83.0
SkyWest	35.0	14.0	8.8	10.0	10.0	77.8



Art Program at LAX Artist: Pae White | Photo: Panic Studio LA

LAX FLY QUIETER PROGRAM

2020 Annual Report

LAWA thanks all aircraft operators at LAX who have worked to reduce noise and/or engage with stakeholders on noise issues.

Your efforts to Fly Quieter are appreciated.

To learn more about aircraft activity in your neighborhood, visit: noiseportal.lawa.org/lax

LAWA
LOS ANGELES WORLD AIRPORTS

Los Angeles International Airport
One World Way
Los Angeles, CA 90045