



Meeting Packet

Regular Meeting

Meeting No. 319
Wednesday, June 5, 2019 - 7:00 p.m.

David Chetcuti Community Room – Millbrae City Hall
450 Poplar Avenue – Millbrae, CA 94030

Note: To arrange an accommodation under the Americans with Disabilities Act to participate in this public meeting, please call (650) 363-1853 at least 2 days before the meeting date.

AGENDA

1. Call to Order / Roll Call / Declaration of a Quorum Present

ACTION

Elizabeth Lewis, Roundtable Chairperson / Justin Cook, Roundtable Technical Consultant

2. Public Comments on Items NOT on the Agenda

INFORMATION

Speakers are limited to two minutes. Roundtable members cannot discuss or take action on any matter raised under this item.

CONSENT AGENDA

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

3. Airport Director's Reports for January & February 2019 and Fly Quiet Report 4Q 2018

ACTION

- | | |
|---------------------------------|-----------------------|
| 1. March 2019 Director's Report | pg. 39 - ATTACHMENT A |
| 2. April 2019 Director's Report | pg. 39 - ATTACHMENT A |
| 3. Fly Quiet Report 2019 Q1 | pg. 39 - ATTACHMENT A |

REGULAR AGENDA

4. SFO Updates

INFORMATION

Ivar Sartero, Airport Director – San Francisco International Airport

5. SFO Airport Development Plan

INFORMATION

Doug Yakel, Public Information Officer – San Francisco International Airport

- | | |
|------------------------|--------|
| 1. Presentation Slides | pg. 15 |
|------------------------|--------|

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REGULAR AGENDA (continued)

6. PIRAT TWO Update

INFORMATION

Justin Cook, Roundtable Technical Consultant

7. Discussion with FAA Regarding Questions, email to FAA dated May 3, 2019

INFORMATION

FAA Representative(s)

Justin Cook, Roundtable Technical Consultant

1. Letter email dated May 2, 2019

pg. 31

8. Update On NIITE/HUSSH Procedure

INFORMATION

Elizabeth Lewis, Roundtable Chairperson

9. Update Ground-Based Noise Ad-Hoc Subcommittee (Postponed Meeting)

INFORMATION

Ricardo Ortiz, City of Burlingame Representative

10. Noise Monitoring System Hardware/Software RFP Update

INFORMATION

David Ong, Noise Abatement Systems Officer, SFO

Justin Cook, Roundtable Technical Consultant

11. N.O.I.S.E. Update

INFORMATION

Justin Cook, Roundtable Technical Consultant

12. SFO Roundtable Noise 101 Workshop update

INFORMATION

Marty Medina, San Bruno Representative

OTHER MATTERS

13. Aviation Noise News and Updates

INFORMATION

Justin Cook, Roundtable Technical Consultant

14. Member Communications / Announcements

INFORMATION

Roundtable Members and Staff

15. Adjourn

ACTION

Elizabeth Lewis, Roundtable Chairperson

Correspondences / Additional Reports

1. FAA Instrument Flight Procedures (IFP) Information Gateway Review Updates pg. 35



Welcome

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

- You must fill out a Speaker Slip and give it to the Roundtable Coordinator at the front of the room, as soon as possible, if you wish to speak on any Roundtable Agenda item at this meeting.
- To speak on more than one Agenda item, you must fill out a Speaker Slip for each item.
- The Roundtable Chairperson will call your name; please come forward to present your comments.

The Roundtable may receive several speaker requests on more than one Agenda item; therefore, each speaker is limited to two (2) minutes to present his/her comments on any Agenda item unless given more time by the Roundtable Chairperson. The Roundtable meetings are recorded. Copies of the audio file can be made available to the public upon request. Please contact the Roundtable Coordinator for any request.

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

AIRPORT/COMMUNITY ROUNDTABLE OFFICERS & STAFF

Chairperson:

ELIZABETH LEWIS
Representative, Town of Atherton
elewis@ci.atherton.ca.us

Vice-Chairperson:

RICARDO ORTIZ
Representative, City of BURLINGAME
rortiz@burlingame.org

Roundtable Coordinator:

JAMES A. CASTAÑEDA, AICP
County of San Mateo
Planning & Building Department
jcastaneda@sforoundtable.org



About the Roundtable

The Airport/Community Roundtable was established in May 1981, by a Memorandum of Understanding (MOU), to address noise impacts related to aircraft operations at San Francisco International Airport (SFO). The Airport is owned and operated by the City and County of San Francisco, but it is located entirely within San Mateo County. This voluntary committee consists of 22 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and several cities in San Mateo County (see attached Membership Roster). It provides a forum for the public to address local elected officials, Airport management, FAA staff, and airline representatives, regarding aircraft noise issues. The committee monitors a performance-based aircraft noise mitigation program, as implemented by Airport staff, interprets community concerns, and attempts to achieve additional noise mitigation through a cooperative sharing of authority brought forth by the airline industry, the FAA, Airport management, and local government officials. The Roundtable adopts an annual Work Program to address key issues. In 2019, the Roundtable is scheduled to meet on the first Wednesday of the following months: February, April, June, August, October and December. Regular Meetings are held on the first Wednesday of the designated month at 7:00 p.m. at the **David Chetcuti Community Room at Millbrae City Hall, 450 Poplar Avenue, Millbrae, California** unless noted. Special Meetings and workshops are held as needed. The members of the public are encouraged to attend the meetings and workshops to express their concerns and learn about airport/aircraft noise and operations. For more information about the Roundtable, please contact Roundtable staff at (650) 363-1853.

POLICY STATEMENT

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

“The Airport/Community Roundtable members, as a group, when considering and taking actions to mitigate noise, will not knowingly or deliberately support, encourage, or adopt actions, rules, regulations or policies, that result in the “shifting” of aircraft noise from one community to another, when related to aircraft operations at San Francisco International Airport.”

(Source: Roundtable Resolution No. 93-01)

FEDERAL PREEMPTION, RE: AIRCRAFT FLIGHT PATTERNS

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

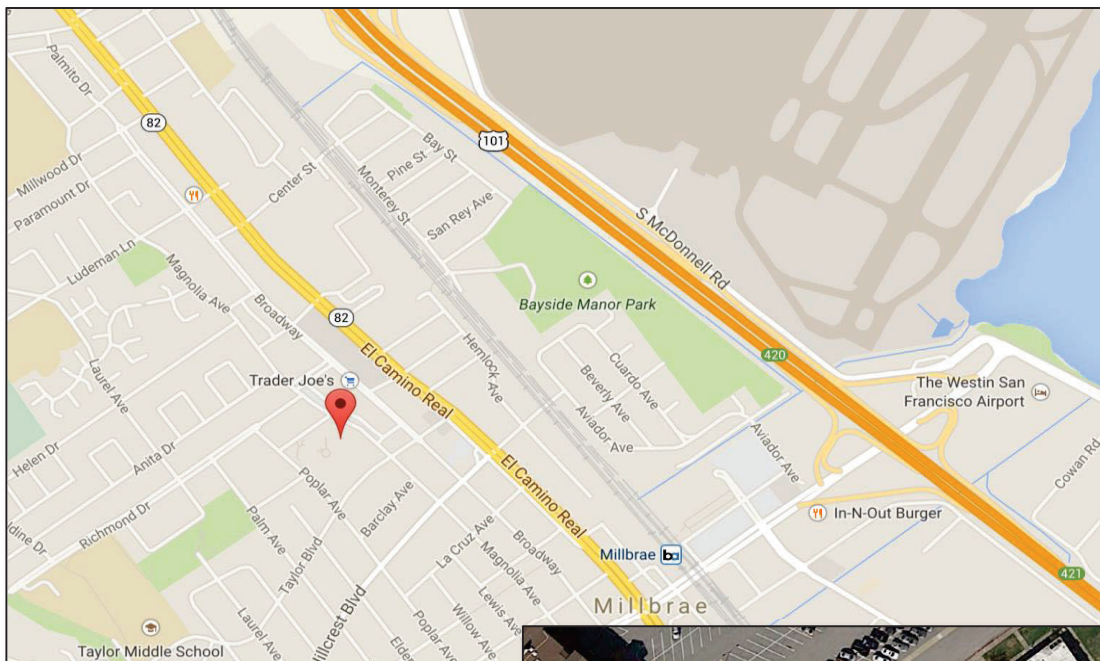
“No state or political subdivision thereof and no interstate agency or other political agency of two or more states shall enact or enforce any law, rule, regulation, standard, or other provision having the force and effect of law, relating to rates, routes, or services of any air carrier having authority under subchapter IV of this chapter to provide air transportation.”

(Source: 49 U.S.C. A. Section 1302(a)(1)).

Meeting Location

**David Chetcuti Community Room
450 Poplar Avenue - Millbrae, CA 94030**

Access through Millbrae Library parking lot on Poplar Avenue





Member Roster

June 2019

CITY AND COUNTY OF SAN FRANCISCO BOARD OF SUPERVISORS

Ahsha Safai, Supervisor

CITY AND COUNTY OF SAN FRANCISCO MAYOR'S OFFICE

David Takashima, (Appointed)

CITY AND COUNTY OF SAN FRANCISCO AIRPORT COMMISSION REPRESENTATIVE

Ivar Satero, Airport Director (Appointed)

Alternate: Doug Yakel, Public Information Officer

COUNTY OF SAN MATEO BOARD OF SUPERVISORS

Dave Pine, Supervisor

Alternate: Don Horsley, Supervisor

CITY/COUNTY ASSOCIATION OF GOVERNMENTS AIRPORT LAND USE COMMITTEE (ALUC)

Carol Ford, ALUC Chairperson (Appointed)

TOWN OF ATHERTON

Elizabeth Lewis, Mayor

Alternate: Bill Widmer, Council Member

CITY OF BELMONT

Julia Mates Council Member

Alternate: Douglas Kim, Council Member

CITY OF BRISBANE

Terry O'Connell, Council Member

Alternate: Madison Davis, Council Member

CITY OF BURLINGAME

Ricardo Ortiz, Council Member

CITY OF DALY CITY

Pamela DiGiovanni, Council Member

CITY OF FOSTER CITY

Sanjay Gehani, Council Member

Alternate: Sam Hindi, Mayor

CITY OF HALF MOON BAY

Adam Eisen, Council Member

Alternate: Harvey Rarback, Council Member

TOWN OF HILLSBOROUGH

Alvin Royse, Council Member

Alternate: Shawn Christianson, Council Member

CITY OF MENLO PARK

Catherine Carlton, Council Member

CITY OF MILLBRAE

Ann Schneider, Council Member

Alternate: Wayne Lee, Mayor

CITY OF PACIFICA

Mike O'Neill, Council Member

Alternate: Deirdre Martin, Council Member

TOWN OF PORTOLA VALLEY

Ann Wengert, Council Member

Alternate: Maryann Derwin, Council Member

CITY OF REDWOOD CITY

Giselle Hale, Council Member

CITY OF SAN BRUNO

Marty Medina, Council Member

Alternate: Rico Medina, Council Member

CITY OF SAN CARLOS

Adam Rak, Council Member

Alternate: Mark Olbert, Council Member

CITY OF SAN MATEO

Joe Goethals, Council Members

Alternate: Diane Papan, Council Member

CITY OF SOUTH SAN FRANCISCO

Mark Addiego, Council Member

Alternate: Mark Nagales, Council Member

TOWN OF WOODSIDE

Thomas Livermore, Council Member

ROUNDTABLE ADVISORY MEMBERS

AIRLINES/FLIGHT OPERATIONS

Captain James Abell, United Airlines

Glenn Morse, United Airlines

FEDERAL AVIATION ADMINISTRATION

Thann McLeod, NORCAL TRACON

Tony DiBernardo, FAA Sierra-Pacific District

ROUNDTABLE STAFF

James A. Castañeda, AICP, Roundtable Coordinator

Gene Reindel, Technical Consultant (HMMH)

Justin Cook, Technical Consultant (HMMH)

Adam Scholten, Technical Consultant (HMMH)

SAN FRANCISCO INTERNATIONAL AIRPORT NOISE ABATEMENT STAFF

Bert Ganoung, Noise Abatement Manager

David Ong, Noise Systems Manager

Nastasja von Conta, Senior Noise Abatement Specialist

Anthony Carpeneti, Noise Abatement Specialist

Anneliese Taing, Noise Abatement Specialist

Aircraft Noise Abatement Office

Glossary of common Acoustic and Air Traffic Control terms

A

ADS-B - Automatic Dependent Surveillance – Broadcast – ADS-B uses ground based antennas and in-aircraft displays to alert pilots to the position of other aircraft relative to their flight path. ADS-B is a key element of NextGen.

AGL – Above Ground Level, is a height measured with respect to the ground.

Air Carrier - A commercial airline with published schedules operating at least five round trips per week.

Air Taxi – An aircraft certificated for commercial service available for hire on demand.

ALP - Airport Layout Plan – The official, FAA approved map of an airport's facilities.

ALS – Approach Lighting System - Radiating light beams guiding pilots to the extended centerline of the runway on final approach and landing.

Ambient Noise Level – The existing background noise level characteristic of an environment.

Approach Lights – High intensity lights located along the approach path at the end of an instrument runway. Approach lights aid the pilot as he transitions from instrument flight conditions to visual conditions at the end of an instrument approach.

APU - Auxiliary Power Unit – A self-contained generator in an aircraft that produces power for ground operations of the electrical and ventilation systems and for starting the engines.

Arrival – The act of landing at an airport.

Arrival Procedure - A series of directions on a published approach plate or from air traffic control personnel, using fixes and procedures, to guide an aircraft from the en route environment to an airport for landing.

Arrival Stream – A flow of aircraft that are following similar arrival procedures.

ARTCC – Air Route Traffic Control Center - A facility providing air traffic control to aircraft on an IFR flight plan within controlled airspace and principally during the enroute phase of flight.

ATC - Air Traffic Control - The control of aircraft traffic, in the vicinity of airports from control towers, and in the airways between airports from control centers.

ATCT – Air Traffic Control Tower - A central operations tower in the terminal air traffic control system with an associated IFR room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices to provide safe, expeditious movement of air traffic.

Avionics – Airborne navigation, communications, and data display equipment required for operation under specific air traffic control procedures.

Altitude MSL – Aircraft altitude measured in feet above mean sea level.

B

Backblast - Low frequency noise and high velocity air generated by jet engines on takeoff.

Base Leg – A flight path at right angles to the landing runway. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

C

CDA - Continuous Descent Approach, see also OPD.

Center – See ARTCC.

Cloud Ceiling – The height above the earth’s surface of the lowest layer of clouds that is reported as “broken” or “overcast.” Is reported in feet AGL.

CNEL – Community Noise Equivalent Level - A noise metric required by the California Airport Noise Standards for use by airport proprietors to measure aircraft noise levels. CNEL includes an additional weighting for each event occurring during the evening (7:00pm – 9:59pm) and nighttime (10:00pm – 6:59am) periods to account for increased sensitivity to noise during these periods. Evening events are treated as though there were three and nighttime events are treated as though there were ten. This results in a 4.77 and 10 decibel penalty for operations occurring in the evening and nighttime periods, respectively.

CNEL Contour - The "map" of noise exposure around an airport as expressed using the CNEL metric. A CNEL contour is computed using the FAA-approved Integrated Noise Model (INM), which calculates the aircraft noise exposure near an airport.

Commuter Airline – Operator of small aircraft (maximum size of 30 seats) performing scheduled (maximum size of 30 seats) performing service between two or more points.

D

Decibel (dB) - In sound, decibels measure a scale from the threshold of human hearing, 0 dB, upward towards the threshold of pain, about 120-140 dB. Because decibels are such a small measure, they are computed logarithmically and cannot be added arithmetically. An increase of ten dB is perceived by human ears as a doubling of noise.

Delay Vectors - When ATC assigns an aircraft a heading that takes it off course, before bringing it back on course. Delay vectors may be used for many reasons such as for aircraft traffic or to create spacing between aircraft.

dBA - A-weighted decibels adjust sound pressure towards the frequency range of human hearing.

dBC - C-weighted decibels adjust sound pressure towards the low frequency end of the spectrum. Although less consistent with human hearing than A- weighting, dBC can be used to consider the impacts of certain low frequency operations.

Decision Height – The height at which a decision must be made during an instrument approach either to continue the approach or to execute a missed approach.

Departure – The act of an aircraft taking off from an airport.

Departure Procedure – A published IFR departure procedure describing specific criteria for climb, routing, and communications for a specific runway at an airport.

Displaced Threshold - A threshold that is located at a point on the runway other than the physical beginning.

Aircraft can begin departure roll before the threshold, but cannot land before it.

DME - Distance Measuring Equipment - Equipment (airborne and ground) used to measure, in nautical miles, a slant range distance of an aircraft from the DME navigational aid.

DNL - Day/Night Average Sound Level - The daily average noise metric in which that noise occurring between 10:00 p.m. and 7:00 a.m. is penalized by 10 dB. DNL is often expressed as the annual-average noise level.

DNL Contour - The "map" of noise exposure around an airport as expressed using the DNL metric. A DNL contour is computed using the FAA-approved Integrated Noise Model (INM), which calculates the aircraft noise exposure near an airport.

Downwind Leg – A flight path parallel to the landing runway in the direction opposite the landing direction.

Duration - The length of time in seconds that a noise event lasts. Duration is usually measured in time above a specific noise threshold.

E

En route – The portion of a flight between departure and arrival terminal areas.

Exceedance— Whenever an aircraft overflight produces a noise level higher than the maximum decibel value established for a particular monitoring site, the noise threshold is surpassed and a noise exceedance occurs. An exceedance may take place during approach, takeoff, or possibly during departure ground roll before lifting off.

F

FAA - The Federal Aviation Administration is the agency responsible for aircraft safety, movement and controls. FAA also administers grants for noise mitigation projects and approves certain aviation studies including FAR Part 150 studies, Environmental Assessments, Environmental studies, Environmental Assessments, Environmental Impact Statements, and Airport Layout Plans.

FAR – Federal Aviation Regulations are the rules and regulations, which govern the operation of aircraft, airways, and airmen.

FAR Part 36 – A Federal Aviation Regulation defining maximum noise emissions for aircraft.

FAR Part 91 – A Federal Aviation Regulation governing the phase out of Stage 1 and 2 aircraft as defined under FAR Part 36.

FAR Part 150 – A Federal Aviation Regulation governing noise and land use compatibility studies and programs.

FAR Part 161 – A Federal Aviation Regulation governing aircraft noise and access restrictions.

Final Approach – The last leg in an aircraft's approach to landing, when the aircraft is lined up with the runway and is descending for landing.

Fix – A geographical position determined by visual references to the surface, by reference to one or more NavAids, or by other navigational methods.

Fleet Mix – The mix or differing aircraft types operated at a particular airport or by an airline.

Flight Plan – Specific information related to the intended flight of an aircraft. A flight plan is filed with a Flight Service Station or Air Traffic Control facility.

FMS – Flight Management System - a specialized computer system in an aircraft that automates a number of in-flight tasks, which reduces flight crew workload and improves the precision of the procedures being flown.

G

GA - General Aviation – Civil aviation excluding air carriers, commercial operators and military aircraft.

GAP Departure – An aircraft departure via Runways 28 at San Francisco International Airport to the west over San Bruno, South San Francisco, Daly City, and Pacifica.

Glide Slope – Generally a 3-degree angle of approach to a runway established by means of airborne instruments during instrument approaches, or visual ground aids for the visual portion of an instrument approach and landing.

Go-Around - an aborted landing of an aircraft that is on final approach.

GPS - Global Positioning System – A satellite based radio positioning, navigation, and time-transfer system.

GPU - Ground Power Unit – A source of power, generally from the terminals, for aircraft to use while their engines are off to power the electrical and ventilation systems on the aircraft.

Ground Effect – The excess attenuation attributed to absorption or reflection of noise by manmade or natural features on the ground surface.

Ground Track – is the path an aircraft would follow on the ground if its airborne flight path were plotted on the ground the terrain.

H

High Speed Exit Taxiway – A taxiway designed and

provided with lighting or marking to define the path of aircraft traveling at high speed from the runway center to a point on the center of the taxiway.

I

IDP - Instrument Departure Procedure - An aeronautical chart designed to expedite clearance delivery and to facilitate transition between takeoff and en route operations. IDPs were formerly known as SIDs or Standard Instrument Departure Procedures.

IFR - Instrument Flight Rules - Rules and regulations established by the FAA to govern flight under conditions in which flight by visual reference is not safe.

ILS - Instrument Landing System – A precision instrument approach system which normally consists of a localizer, glide slope, outer marker, middle marker, and approach lights.

IMC – Instrument Meteorological Conditions - Weather conditions expressed in terms of visibility, distance from clouds, and cloud ceilings during which all aircraft are required to operate using instrument flight rules.

Instrument Approach – A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

J

K

Knots – A measure of speed used in aerial navigation. One knot is equal to one nautical mile per hour (100 knots = 115 miles per hour).

L

Load Factor – The percentage of seats occupied in an aircraft.

Lmax – The peak noise level reached by a single aircraft event.

Localizer – A navigational aid that consists of a directional pattern of radio waves modulated by two signals which, when receding with equal intensity, are displayed by compatible airborne equipment as an "on-course" indication, and when received in unequal intensity are displayed as an "off-course" indication.

LDA – Localizer Type Directional Aid – A facility of comparable utility and accuracy to a localizer, but not part of a complete ILS and not aligned with the runway.

M

Middle Marker - A beacon that defines a point along the glide slope of an ILS, normally located at or near the point of decision height.

Missed Approach Procedure – A procedure used to redirect a landing aircraft back around to attempt another landing. This may be due to visual contact not established at authorized minimums or instructions from air traffic control, or for other reasons.

N

NAS – National Airspace System - The common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information, manpower and material.

Nautical Mile – A measure of distance used in air and sea navigation. One nautical mile is equal to the length of one minute of latitude along the earth's equator. The nautical mile was officially set as 6076.115 feet. (100 nautical miles = 115 statute miles)

Navaid – Navigational Aid.

NCT – Northern California TRACON – The air traffic control facility that guides aircraft into and out of San Francisco Bay Area airspace.

NDB – Non-Directional Beacon - Signal that can be read by pilots of aircraft with direction finding equipment. Used to determine bearing and can “home” in or track to or from the desired point.

NEM – Noise Exposure Map – A FAR Part 150 requirement prepared by airports to depict noise contours. NEMs also take into account potential land use changes around airports.

NextGen – The Next Generation of the national air transportation system. NextGen represents the movement from ground-based navigation aids to satellite-based navigation.

NMS – See RMS

Noise Contour – See CNEL and DNL Contour.

Non-Precision Approach Procedure – A standard instrument approach procedure in which no electronic glide slope is provided.

O

OAPM - Optimization of Airspace and Procedures in the Metroplex – This is a part of the FAA's Next Generation of air traffic control plans for 21 areas with multiple airports in the United States.

Offset ILS – Offset Parallel Runways – Staggered runways having centerlines that are parallel.

Operation – A take-off, departure or overflight of an aircraft. Every flight requires at least two operations, a take-off and landing.

Outer Marker – An ILS navigation facility in the terminal area navigation system located four to seven miles from the runways edge on the extended centerline indicating the beginning of final approach.

Overflight – Aircraft whose flights originate or terminate outside the metropolitan area that transit the airspace without landing.

OPD – Optimized Profile Descent – An efficient, reduced power method by which aircraft approach airports for landing. It is designed to reduce level off segments during descent, reducing fuel consumption and noise.

P

PASSUR System – Passive Surveillance Receiver - A system capable of collecting and plotting radar tracks of individual aircraft in flight by passively receiving transponder signals.

PAPI – Precision Approach Path Indicator - An airport lighting facility in the terminal area used under VFR conditions. It is a single row of two to four lights, radiating high intensity red or white beams to indicate whether the pilot is above or below the required runway approach path.

PBN –Performance Based Navigation - Area navigation based on performance requirements for aircraft operating along an IFR route, on an instrument approach procedure or in a designated airspace.

Preferential Runways - The most desirable runways from a noise abatement perspective to be assigned whenever safety, weather, and operational efficiency permits.

Precision Approach Procedure – A standard instrument approach procedure in which an electronic glide slope is provided, such as an ILS. GPS precision approaches may be provided in the future.

PRM – Precision Runway Monitoring – A system of high-resolution monitors for air traffic controllers to use in landing aircraft on parallel runways separated by less than 4,300'.

Q

R

Radar Vectoring – Navigational guidance where air traffic controller issues a compass heading to a pilot.

Reliever Airport – An airport for general aviation and other aircraft that would otherwise use a larger and busier air carrier airport.

RMS – Remote Monitoring Site - A microphone placed in a community and recorded at San Francisco International Airport's Noise Monitoring Center. A network of 29 RMS's generate data used in preparation of the airport's Noise Exposure Map.

RNAV – Area Navigation - A method of IFR navigation that allows an aircraft to choose any course within a network of navigation beacons, rather than navigating directly to and from the beacons. This can conserve flight distance, reduce congestion, and allow flights into airports without beacons.

RNP – Required Navigation Performance - A type of performance-based navigation (PBN) that allows an aircraft to fly a specific path between two 3- dimensionally defined points in space. RNAV and RNP systems are fundamentally similar. The key difference between them is the requirement for on-board performance monitoring and alerting. A navigation specification that includes a requirement for on-board navigation performance monitoring and alerting is referred to as an RNP specification. One not having such a requirement is referred to as an RNAV specification.

Run-up – A procedure used to test aircraft engines after maintenance to ensure safe operation prior to returning the aircraft to service. The power settings tested range from idle to full power and may vary in duration.

Run-up Locations - Specified areas on the airfield where scheduled run-ups may occur. These locations are sited, so as to produce minimum noise impact in surrounding neighborhoods.

Runway – A long strip of land or water used by aircraft to land on or to take off from.

S

Sequencing Process – Procedure in which air traffic is merged into a single flow, and/or in which adequate separation is maintained between aircraft.

Shoreline Departure – Departure via Runways 28 that utilizes a right turn toward San Francisco Bay as soon as feasible. The Shoreline Departure is considered a noise abatement departure procedure.

SID - Standard Instrument Departure - An aeronautical chart designed to expedite clearance delivery and to facilitate transition between takeoff and enroute operations.

SENEL – Single Event Noise Exposure Level - The noise exposure level of a single aircraft event measured over the time between the initial and final points when the noise level exceeds a predetermined threshold. It is important to distinguish single event noise levels from cumulative noise levels

such as CNEL. Single event noise level numbers are generally higher than CNEL numbers, because CNEL represents an average noise level over a period of time, usually a year.

Single Event – Noise generated by a single aircraft overflight.

SOIA – Simultaneous Offset Instrument Approach Is an approach system permitting simultaneous Instrument Landing System approaches to airports having staggered but parallel runways. SOIA combines Offset ILS and regular ILS definitions.

STAR – Standard Terminal Arrival Route is a published IFR arrival procedure describing specific criteria for descent, routing, and communications for a specific runway at an airport.

T

Taxiway – A paved strip that connects runways and terminals providing the ability to move aircraft so they will not interfere with takeoffs or landings.

Terminal Airspace - The air space that is controlled by a TRACON.

Terminal Area – A general term used to describe airspace in which approach control service or airport traffic control service is provided.

Threshold – Specified boundary.

TRACON -Terminal Radar Approach Control – is an FAA air traffic control service to aircraft arriving and departing or transiting airspace controlled by the facility. TRACONs control IFR and participating VFR flights. TRACONs control the airspace from Center down to the ATCT.

U

V

Vector – A heading issued to a pilot to provide navigational guidance by radar. Vectors are assigned verbally by FAA air traffic controllers.

VFR – Visual Flight Rules are rules governing procedures for conducting flight under visual meteorological conditions, or weather conditions with a ceiling of 1,000 feet above ground level and visibility of three miles or greater. It is the pilot's responsibility to maintain visual separation, not the air traffic controller's, under VFR.

Visual Approach – Wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic facility and having an air traffic control authorization, may proceed to destination airport under VFR.

VASI – Visual Approach Slope Indicator - An airport lighting facility in the terminal area navigation system used primarily under VFR conditions. It provides vertical visual guidance to aircraft during approach and landing, by radiating a pattern of high intensity red and white focused light beams, which indicate to the pilot that he/she is above, on, or below the glide path.

VMC – Visual Meteorological Conditions - weather conditions equal to or greater than those specified for aircraft operations under Visual Flight Rules (VFR).

VOR - Very High Frequency Omni-directional Range – A ground based electronic navigation aid transmitting navigation signals for 360 degrees oriented from magnetic north. VOR is the historic basis for navigation in the national airspace system.

W

X

Y

Z

how to reach us

**SFO Aircraft Noise Abatement Office mailing address is:
P.O. Box 8097, San Francisco, CA 94128**

Phone:	650.821.5100
Fax:	650.821.6777
Noise Complaints:	650.821.4736
Toll Free Noise Complaints:	877.206.8290
Noise Complaint E-mail:	sfo.noise@flysfo.com
Airport Web Page:	www.flysfo.com
Noise Abatement Web Page:	www.flyquietsfo.com
Roundtable Web Page:	www.sforoundtable.org

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SFO

Airport Development Plan

SFO Airport/Community Roundtable
Wednesday, June 5, 2019

Doug Yakel, SFO Spokesperson



Overview

SFO is the busiest airport in the Bay Area



busiest in the U.S.



busiest in the world

Notes:
1/ Airports Council International – 2016 North American Airport Traffic Summary

57.8 million Passengers accommodated in 2018

43,000 on-airport jobs
Largest job center in San Mateo County

\$8.4B business revenue

Future forecast to accommodate 71.1 million annual passengers based on existing runway layout



 = 1 million passengers

What is the ADP?

- Long-range planning study
- Guides future development at SFO
- Update to 1989 Master Plan

Ongoing Projects

Airport Hotel



Ongoing Projects

Terminal 1 Redevelopment



Ongoing Projects

Long-Term Parking Garage 2



What's in the ADP

- Forms basis for environmental review
- Includes proposed terminal, roadway, support facilities
- No plans for runway expansion

Goal of the ADP

- Continue to modernize SFO
- Enhance passenger experience
- Match terminal, parking, support facilities to existing runway capacity

What the ADP won't do

- Won't change runway configurations or flight paths
- Won't expand airport property footprint
- Won't increase runway capacity

Recommended ADP projects





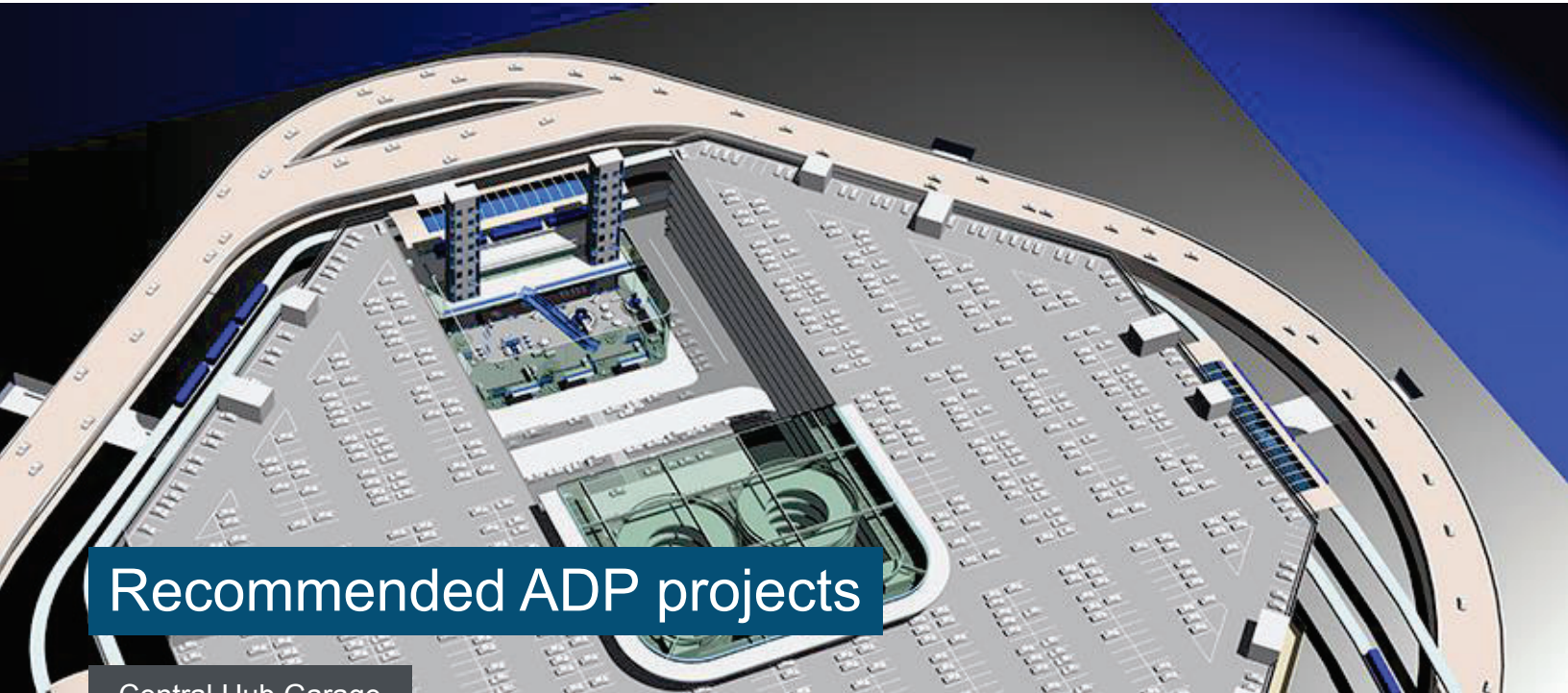
Recommended ADP projects

International Terminal Building Redevelopment



Recommended ADP projects

Boarding Area H



Recommended ADP projects

Central Hub Garage



EARLY 2019

- Notice of Preparation (NOP)
- Public Scoping Meeting(s)

LATE 2019

- Notice of Public Hearing and Availability of Draft EIR
- Public Review Period and Public Hearing (45 days)

MID 2020

- Final EIR / Notice of Availability (NOA)
- Certification and Adoption

IMPLEMENTATION

2020-2035

- Projects Constructed (when triggered by demand)

Thank you



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May 3, 2019

TO: Roundtable Members and Interested Parties

FROM: Justin W. Cook – INCE, LEED GA
Roundtable Technical Consultant - HMMH

SUBJECT: Questions for the FAA at the June 5, 2019 SFO Airport/Community Roundtable Regular Meeting

The following are two (2) items for the Federal Aviation Administration (FAA) to answer at the June 5, 2019 SFO Airport/Community Roundtable Regular Meeting. While these are specific items that we would like the FAA to answer, we are also hoping that the FAA will come prepared to discuss possible alternate solutions should they deem any of these not feasible.

Item 1 - OFFSHORE:

New Problem Statement: At the April 3, 2019 SFO Airport/Community Roundtable Regular Meeting, the FAA provided graphics and an explanation for the following item as previously requested. The FAA stated that they are not in favor of publishing an OFFSHORE RNAV departure procedure because the overlay would not change how aircraft are currently flown. This is because the traffic volume is too great with mixing in OAK departures. The FAA mentioned confliction points that would create an unsafe situation based on the traffic volume. The FAA's graphics for the OFFSHORE were based on an entire one month of flight tracks.

New Questions: Can the FAA show the confliction points by video and/or additional graphics? Can the FAA show graphics of recent flight tracks for the OFFSHORE that are for a single day (in lieu of an entire one month)? Can the FAA further show graphics that are hourly for that same day?

Previously Submitted Problem Statement: The SFO SSTIK DP brings an extremely large volume of flights over the densely populated middle and Northern San Francisco Peninsula. Previously, the PORTE and OFFSHORE DPs split the volume based on destination with a substantial amount crossing directly across the peninsula with the OFFSHORE DP, south over the Pacific Ocean. The concentration of these two previous procedures under the SSTIK DP has proved problematic.

Previously Submitted Questions: What would be required to achieve converting the OFFSHORE DP into an RNAV DP and 1) change the angle to stay over the Pacific Ocean and not over or near the Peninsula, 2) repeat to the extent possible the geographical path of the OFFSHORE from takeoff to the Pacific Ocean and 3) connect at FFOIL or another similar offshore waypoint while remaining clear of Special Use Airspace (SUA)? If the OFFSHORE DP cannot be turned into a RNAV with the above considerations, can a DP be constructed that achieves the same basic ground track as the existing OFFSHORE DP with the above considerations?

For discussion purposes the Technical Working Group would appreciate the FAA providing Google Earth or similar graphics including waypoints, the SSTIK, EUGEN, PORTE, OFFSHORE DPs with transitions, SUAs (floor, ceiling and hours of operation) and any other procedures that may impact an OFFSHORE RNAV overlay or similar procedure creation. (Added Note: Graphics have been provided by the FAA)

Additional Clarification: As charted, the OFFSHORE departure directs aircraft from Runways 1L/R to SEPDY, WAMMY, SEGUL. As charted, the OFFSHORE departure directs aircraft from Runways 28L/R to SENZY, WAMMY, SEGUL.

If aircraft flew over WAMMY and SEGUL – they would remain over ocean and not over the Peninsula. In our question, we discuss creating an RNAV departure procedure that takes a path from takeoff to the ocean (WAMMY) and then connect at FFOIL (close to SEGUL) while remaining clear of the Special Use Airspace).

In looking at actual flights utilizing the OFFSHORE departure procedure, they turn and cut across the Peninsula instead of staying over the ocean. Our question applies to both sets of runways utilized. The goal is for aircraft to remain over the ocean and not cross over the Peninsula.

Item 2 - SSTIK:

New Problem Statement: At the April 3, 2019 SFO Airport/Community Roundtable Regular Meeting, the FAA provided graphics and an explanation for the following item as previously requested. Specifically, they showed simulation modeled tracks of the current SSTIK and potential SSTIK from moving the SSTIK waypoint 0.44 NM to the East-Southeast of its present position.

New Questions: Can the FAA provide altitude data (both of the current and potential SSTIK) across multiple points along the flight paths to support the visuals that they showed at the April 3, 2019 SFO Airport/Community Roundtable Regular Meeting? What is the altitude at which both would cross over land?

Previously Submitted Problem Statement: Continuing with the SSTIK DP though focusing on the waypoint SSTIK - The November 2017 Phase II Final document included the Airport/Community Roundtable's ask stating in Appendix D, 2.38 "Move SSTIK N + E as much as feasible to allow maximum altitude gain before turning to fly over land using the historic SEPDY waypoint as a guide." The FAA responded somewhat cryptically, "Due to a change in criteria, the SSTIK waypoint is in the process of being moved 0.44 NM to the East-Southeast of its present position. The FAA does not support moving SSTIK north due to the close proximity to OAK procedures." When requesting more information, we received the following: "AFS 8260.58 criteria has changed since this SID (Standard Instrument Departure) was originally implemented. RNAV SID criteria now requires that when successive Direct to a Fix (DF) is used, it must be within 15 degrees of the runway centerline. The current location of SSTIK is 22.95 degrees from the departure end of Runway 01R." On September 13, 2018 the charting release date we had been informed by the FAA to expect the SSTIK waypoint move, it did not. We were informed that only the YYUNG transition changed adding and dropping waypoints. This revision did not include the SSTIK move.

Previously Submitted Questions: Can the FAA overlay the proposed new SSTIK waypoint with the current SSTIK waypoint in the same image and provide both current and proposed SSTIK

Questions for the FAA at the June 5, 2019 SFO Airport/Community Roundtable Regular Meeting

May 3, 2019

Page 3 of 3

DPs in Google Earth KML files? This will include the ground track for the procedure as it is today as well as the procedure as it would look with the new SSTIK waypoint. We request modeled flight track information for these two waypoints on the SSTIK procedure as well as the new charting date. Please provide the design notes for the change in the SSTIK waypoint location.

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May 13, 2019

TO: Roundtable Members and Interested Parties

FROM: Bryan Lynch, Consultant
Justin W. Cook – INCE, LEED GA, Principal Consultant
Roundtable Technical Consultant - HMMH

SUBJECT: Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP) Information Gateway Review

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

After analyzing the documents posted, HMMH determines proposed changes and the reason for the changes. The FAA IFP Information Gateway published updates on April 16th, 17th, 22nd and 25th of 2019. Seven (7) changes are of low importance and no changes are of high importance. The next publication is expected on May 23, 2019.

Important Terms and Items:

- FAA Stage Definitions
 1. FPT: Procedures are coordinated with Air Traffic, Tech Ops and Airports for feasibility, preparation and priority (FPO)
 2. DEV: Development of the procedures
 3. FC: FAA Flight Inspection of the developed procedures
 4. PIT: Production Integration Team (TS)
 5. CHARTING: Procedures at AeroNav Products Charting for publication (NACO)
- FAA Status Definitions
 1. At Flight Check: At Flight Inspection for procedure validation
 2. Awaiting Publication: At AeroNav Products Charting for publication
 3. Complete: Procedure development action finished
 4. On Hold: Procedure waiting data/information to allow it to proceed/continue to next stage
 5. Pending: Procedure development work on-going
 6. Published: Procedure charted and published
 7. Under Development: Procedure is being worked on by the FAA
 8. Terminated: Procedure/project terminated
- Glossary

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

Low Importance:

- April 16, 2019
 - SID SAN JOSE THREE at SJC stage change to Charting with a scheduled publish date of August 15, 2019
 - Status is “Awaiting Publication (NFDC)”
 - The takeoff minima for RWY 30L/R have increased slightly, from 460 fpm (feet-per-minute) to 4,000 feet MSL (Mean Sea Level) to 480 fpm to 4,000 feet MSL.
 - The Minimum Obstacle Clearing Altitude between waypoint MOONY and PANOCHE VORTAC has increased slightly from 5,900 to 6,100 feet MSL.
 - The Minimum Obstacle Clearing Altitude between waypoint MOONY and AVENAL VOR/DME has increased slightly from 7,400 to 7,500 feet MSL.
 - SID SUNOL ONE at SJC stage change to Charting with a scheduled publish date of August 15, 2019
 - Status is “Awaiting Publication (NFDC)”
 - The takeoff minima for RWY 12L/R have increased slightly, from 290 fpm (feet-per-minute) to 4,000 feet MSL (Mean Sea Level) to 330 fpm to 4,500 feet
- April 17, 2019
 - ILS OR LOC RWY 19L AMDT 22A at SFO stage change to Charting with a scheduled publish date of June 20, 2019
 - Status is “Charting”
- April 22, 2019
 - SID AFIVA (RNAV) ONE at SFO stage change to Charting with a scheduled cancellation date of June 20, 2019
 - Status is “Awaiting Cancellation (NFDC)”
- April 25, 2019
 - SID OFFSHORE TWO at SFO stage change to Published
 - Status is “Published”
 - STAR PIRAT (RNAV) TWO at SFO stage change to Published
 - Status is “Published”
 - SID LOUPE FIVE at SJC stage change to Published
 - Status is “Published”
 - Previously identified as a change of “High Importance” in HMMH FAA IFP Information Gateway Review memorandum dated December 7, 2018

High Importance:

- None

Open Comment Periods:

- ILS OR LOC RWY 19L AMDT 22A at SFO comment period ends: May 16, 2019
 - Email concerns can be sent here:
https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/application/?event=procedure.results&tab=coordination&nasId=SJC#searchResultsTop
- SID AFIVA ONE CAN at SFO comment period ends: May 21, 2019
 - Email concerns can be sent here:
https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/application/?event=procedure.results&tab=coordination&nasId=SJC#searchResultsTop

Next Publication:

We expect to see updates for the following on the May 23, 2019 publication:

- SFO
 - ILS OR LOC RWY 19L AMDT 22A
 - Currently “Awaiting Publication (NFDC)”
 - SID AFIVA ONE
 - Currently “Awaiting Cancellation”

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ATTACHMENT A

Regular Meeting # 319
June 5, 2019

SFO Reports:

1. March 2019 Director's Report
2. April 2019 Director's Report
3. Fly Quiet Report 2019 Q1
4. Brisbane 2Q 2019 Noise Monitoring Report
5. Palo Alto Noise Monitoring Report

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Airport Director's Report

Presented at the June 5, 2019
Airport Community Roundtable Meeting

Aircraft Noise Abatement Office
March 2019



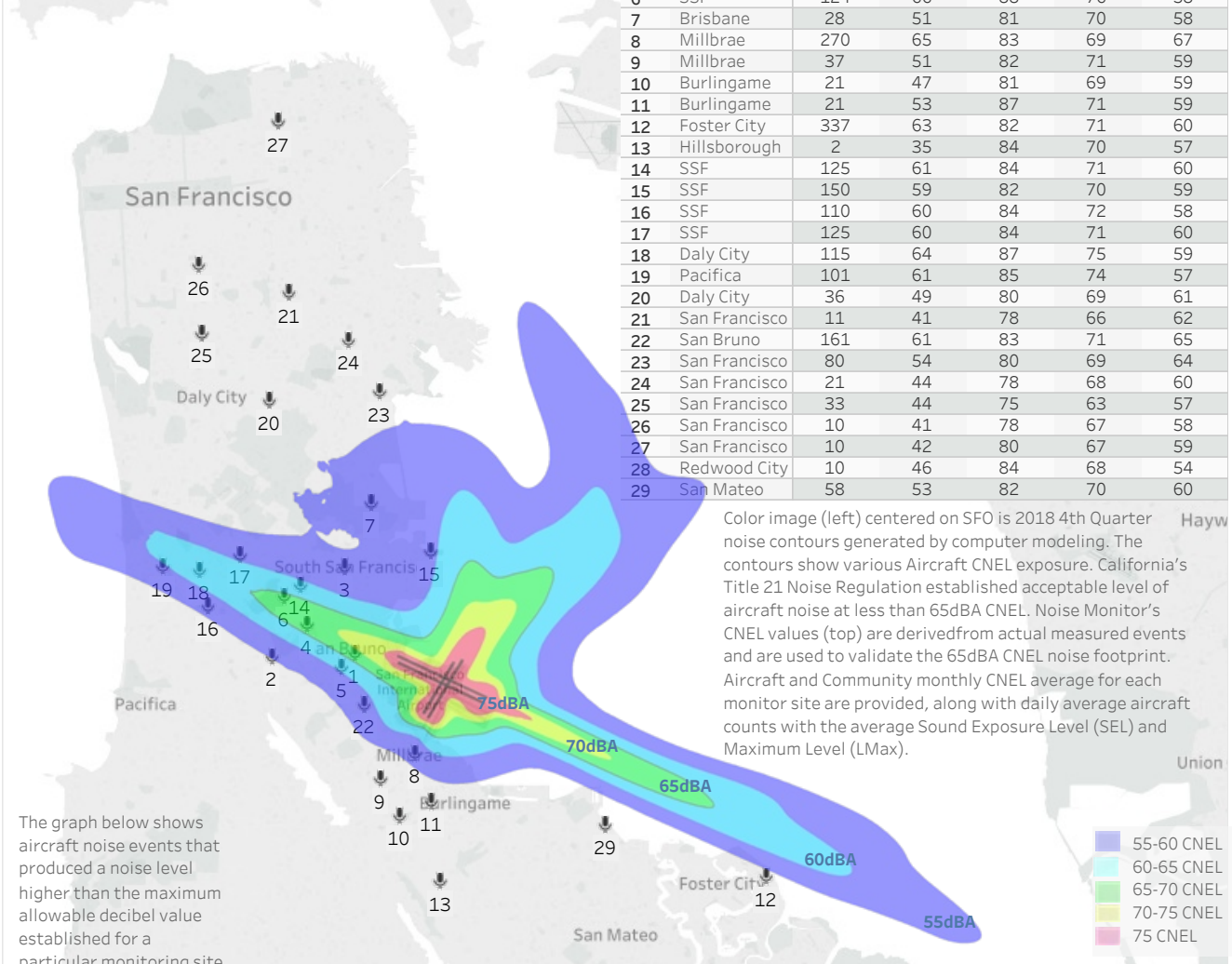
San Francisco
International
Airport

Aircraft Noise Levels

March 2019

The map shows 29 aircraft noise monitoring locations that keep track of noise levels in the communities around the airport. Image centered on SFO airport shows quarterly aircraft noise levels (dBA) exposure. The green zone marks 65dBA Community Noise Exposure Level (CNEL). The CNEL metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport.

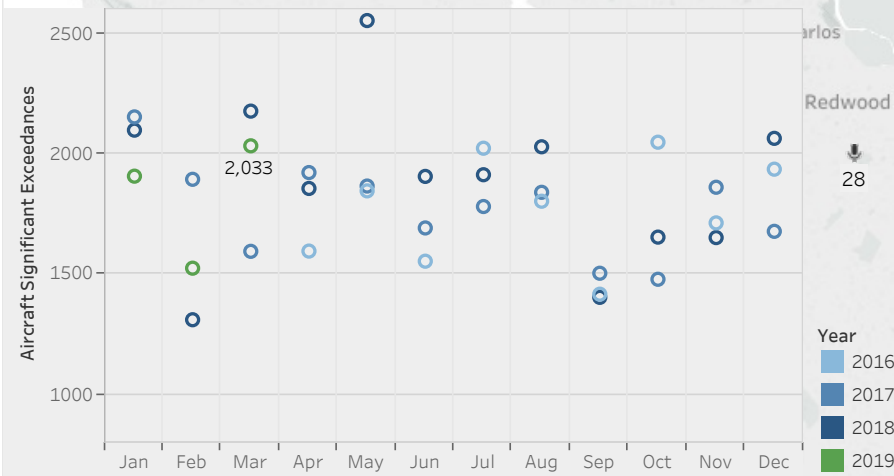
Site	City	Noise Events (AVG Day)	Aircraft			Community
			CNEL (dBA)	SEL (dBA)	LMax (dBA)	CNEL (dBA)
1	San Bruno	200	73	93	78	68
3	SSF	72	54	80	68	63
4	SSF	135	68	91	78	61
5	San Bruno	144	67	88	76	64
6	SSF	124	66	88	76	58
7	Brisbane	28	51	81	70	58
8	Millbrae	270	65	83	69	67
9	Millbrae	37	51	82	71	59
10	Burlingame	21	47	81	69	59
11	Burlingame	21	53	87	71	59
12	Foster City	337	63	82	71	60
13	Hillsborough	2	35	84	70	57
14	SSF	125	61	84	71	60
15	SSF	150	59	82	70	59
16	SSF	110	60	84	72	58
17	SSF	125	60	84	71	60
18	Daly City	115	64	87	75	59
19	Pacifica	101	61	85	74	57
20	Daly City	36	49	80	69	61
21	San Francisco	11	41	78	66	62
22	San Bruno	161	61	83	71	65
23	San Francisco	80	54	80	69	64
24	San Francisco	21	44	78	68	60
25	San Francisco	33	44	75	63	57
26	San Francisco	10	41	78	67	58
27	San Francisco	10	42	80	67	59
28	Redwood City	10	46	84	68	54
29	San Mateo	58	53	82	70	60



Color image (left) centered on SFO is 2018 4th Quarter noise contours generated by computer modeling. The contours show various Aircraft CNEL exposure. California's Title 21 Noise Regulation established acceptable level of aircraft noise at less than 65dBA CNEL. Noise Monitor's CNEL values (top) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft and Community monthly CNEL average for each monitor site are provided, along with daily average aircraft counts with the average Sound Exposure Level (SEL) and Maximum Level (LMax).

The graph below shows aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

Significant Exceedances



Note: Site 2 is currently not operational

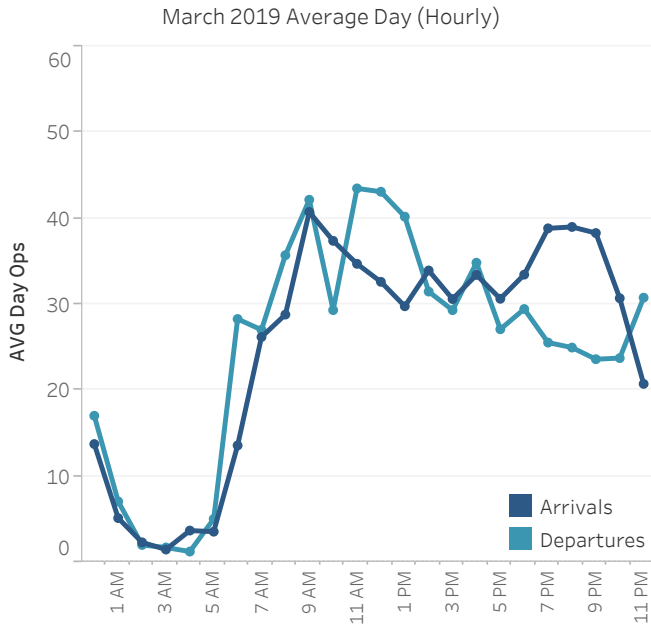
Operations

March 2019

Monthly Ops AVG Daily Ops 12 Month AVG YOY Growth

37,357	1,205	37,864	-1.4%
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Major Arrival and Departure Routes (West Flow)



West Flow is depicted in the above image and is a predominate flow at SFO. West Flow 89%

Top Destinations

Los Angeles	Seattle
8%	5%

Down the Bay vs Peninsula

1.1 BDEGA East	31%
1.2 BDEGA West	69%

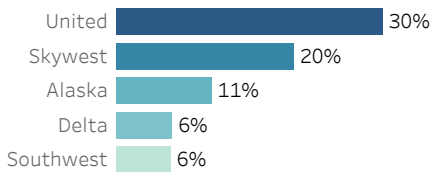
Arrival Route

1. BDEGA	28%
2. DYAMD	38%
3. SERFR	28%
4. OCEANIC	6%

Departure Route

A. GAP	23%
B. SSTIK	31%
C. NIITE	8%
D. TRUKN RWY 01	36%
D. TRUKN RWY 28	2%

Airlines with the Most Operations



Non Airline



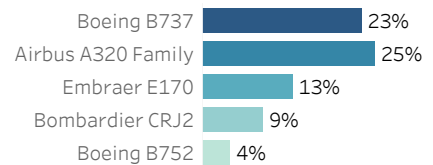
Narrow Body



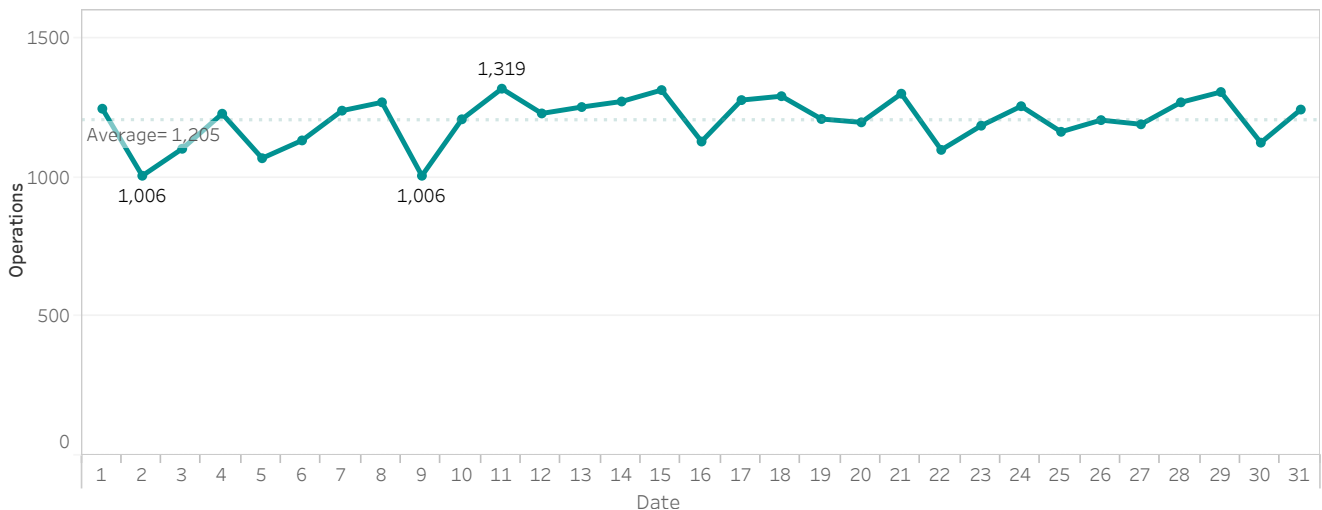
Wide Body



Most Utilized Aircraft Types



Daily Aircraft Operations



Runway Usage and Nighttime Operations

Monthly Runway usage is shown for arrivals and departures, further categorized by all hours and nighttime hours. Graph at the bottom of the page shows hourly nighttime operations for each day. Power Runup locations are depicted on the airport map with airlines nighttime power runup counts shown below. Percent [%] is rounded to the nearest whole number.

Runway Utilization

	Arrivals	Departures
01 L/R		68% 12,115
10 L/R		11% 2,024
19 L/R	11% 1,952	0% 1
28 L/R	89% 15,704	20% 3,576

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

	Departures
10 L/R	19% 87
01 L/R	43% 201
28 L/R	39% 181

Runway Utilization

Arrivals	
28L	28R
46%	54%
Night (10pm-7am)	
29%	71%

Nighttime Power Run-Ups

10pm-7am

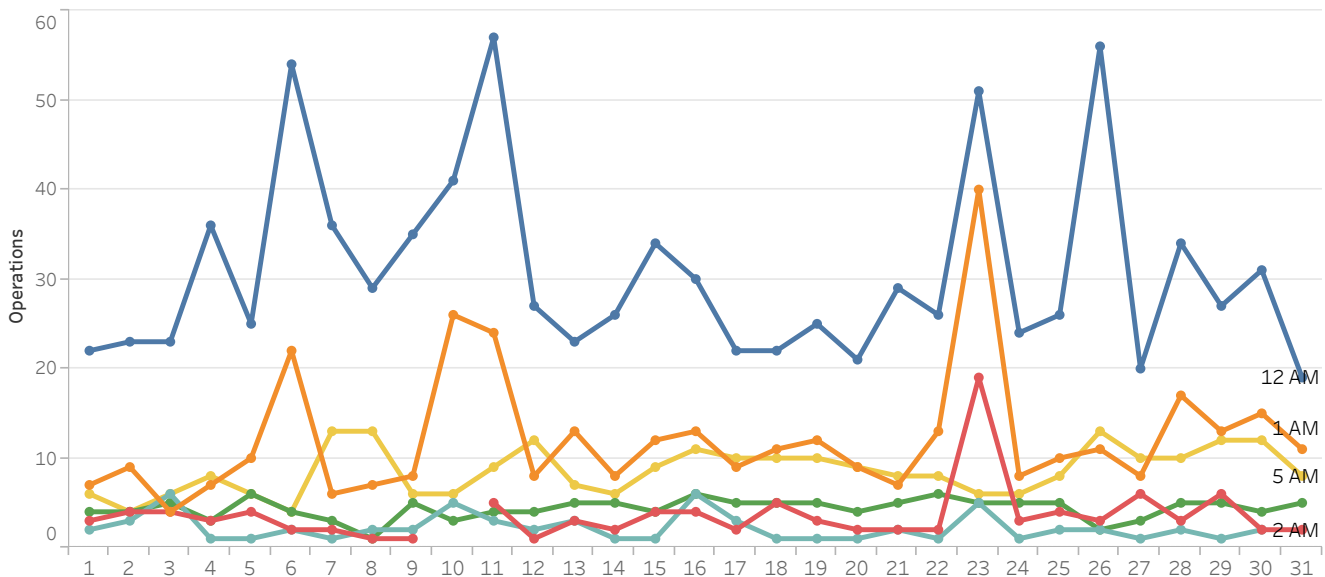
- Alaska Airlines 2
- American Airlines 7
- United Airlines 5

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



Hourly Nighttime Operations

Hour 12 AM 1 AM 2 AM 3 AM 4 AM 5 AM



Noise Reports

March 2019

Noise Reporters / Noise Reports

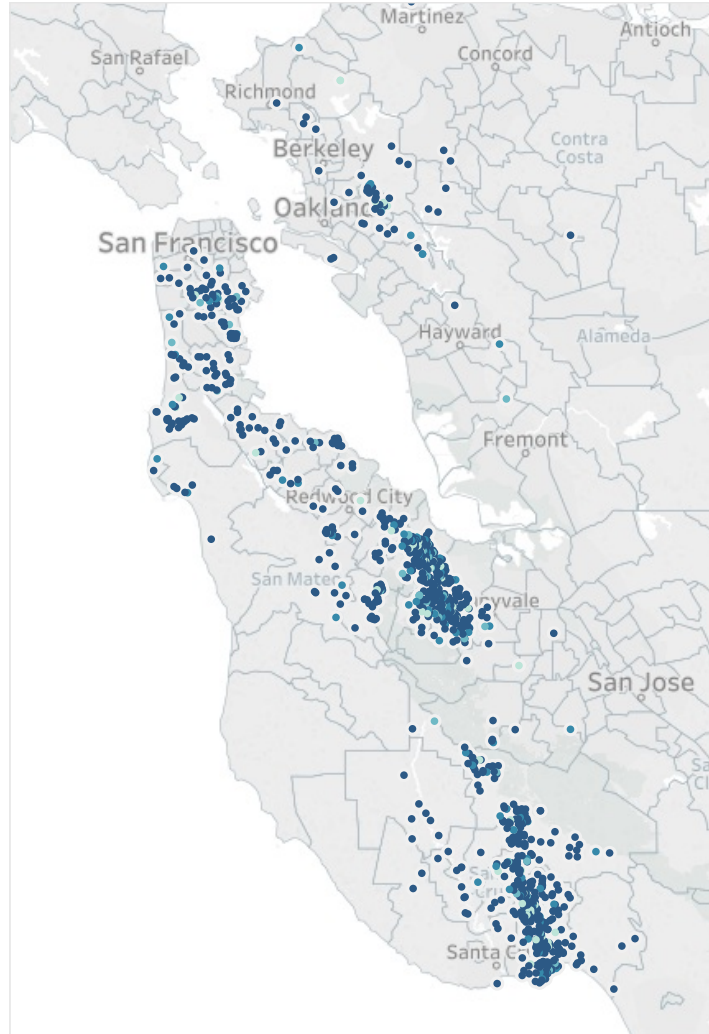
Community	Reporters	Noise Reports
Atherton	6	1,801
Belmont	3	532
Brisbane	21	1,627
Burlingame	9	86
Daly City	7	1,236
El Granada	2	460
Foster City	12	283
Half Moon Bay	6	308
Hillsborough	4	1,617
Menlo Park	23	2,040
Millbrae	3	10
Pacifica	32	3,806
Portola Valley	31	6,287
Redwood City	21	2,606
San Bruno	11	839
San Carlos	5	140
San Francisco	50	9,160
San Mateo	12	1,452
South San Francisco	11	42
Woodside	10	1,128
Alameda	2	30
Aptos	10	298
Ben Lomond	5	109
Berkeley	2	81
Bonny Doon	2	53
Boulder Creek	6	89
Brookdale	1	4
Capitola	19	2,432
Carmel	3	105
Castro Valley	1	1
Cupertino	2	1,401
Danville	1	2
East Palo Alto	2	80
El Cerrito	2	99
Felton	11	731
Hayward	1	442
Kensington	1	11
Lafayette	2	44
Los Altos	132	18,527
Los Altos Hills	26	8,530
Los Gatos	110	13,000
Moraga	3	207
Morgan Hill	2	65
Mountain View	37	4,774
Oakland	33	8,772
Orinda	3	125
Palo Alto	193	47,786
Piedmont	1	30
Pinole	1	296
Richmond	3	1,982
Santa Clara	1	1
Santa Cruz	117	17,755
Saratoga	5	528
Scotts Valley	64	10,105
Soquel	74	10,036
Sunnyvale	7	1,002
Union City	1	602
Watsonville	1	57
Total	1,166	185,652

Roundtable Communities

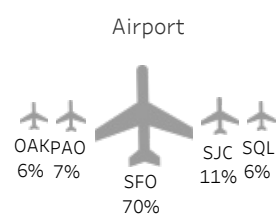
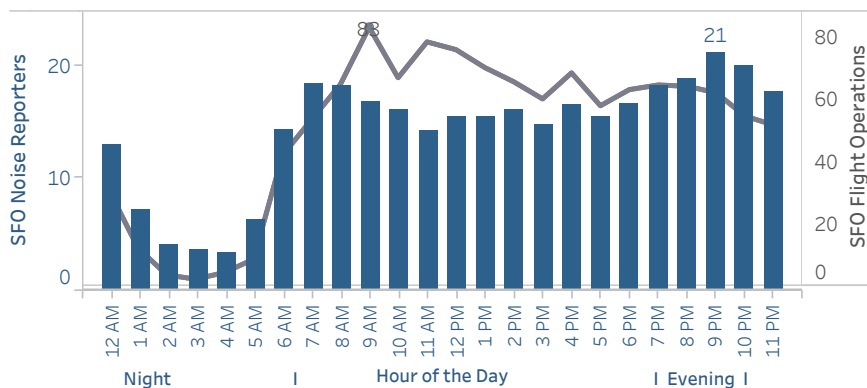
Other Communities

Reporters Annual AVG	1,336
Reports Annual AVG	200,825
New Reporters	36
New Reporters Top City	Menlo Park
Furthest Report	86 Miles
Reports per SFO Operation	5
Top Aircraft Type	B737 A320 A319
Top Flight Number	AAL2764 ASA1963 UAL1143

Noise Reporters Location Map



Hourly Noise Reports (Average Day in a Month) ■ Noise Reporters ■ Operations



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

Source: SFO Intl Airport Noise Monitoring System

Notes: Our software vendor's address validation relies on USPS-provided ZIP Code look up table and USPS-specified default city values.



Airport Director's Report

Presented at the June 5, 2019
Airport Community Roundtable Meeting

Aircraft Noise Abatement Office
April 2019



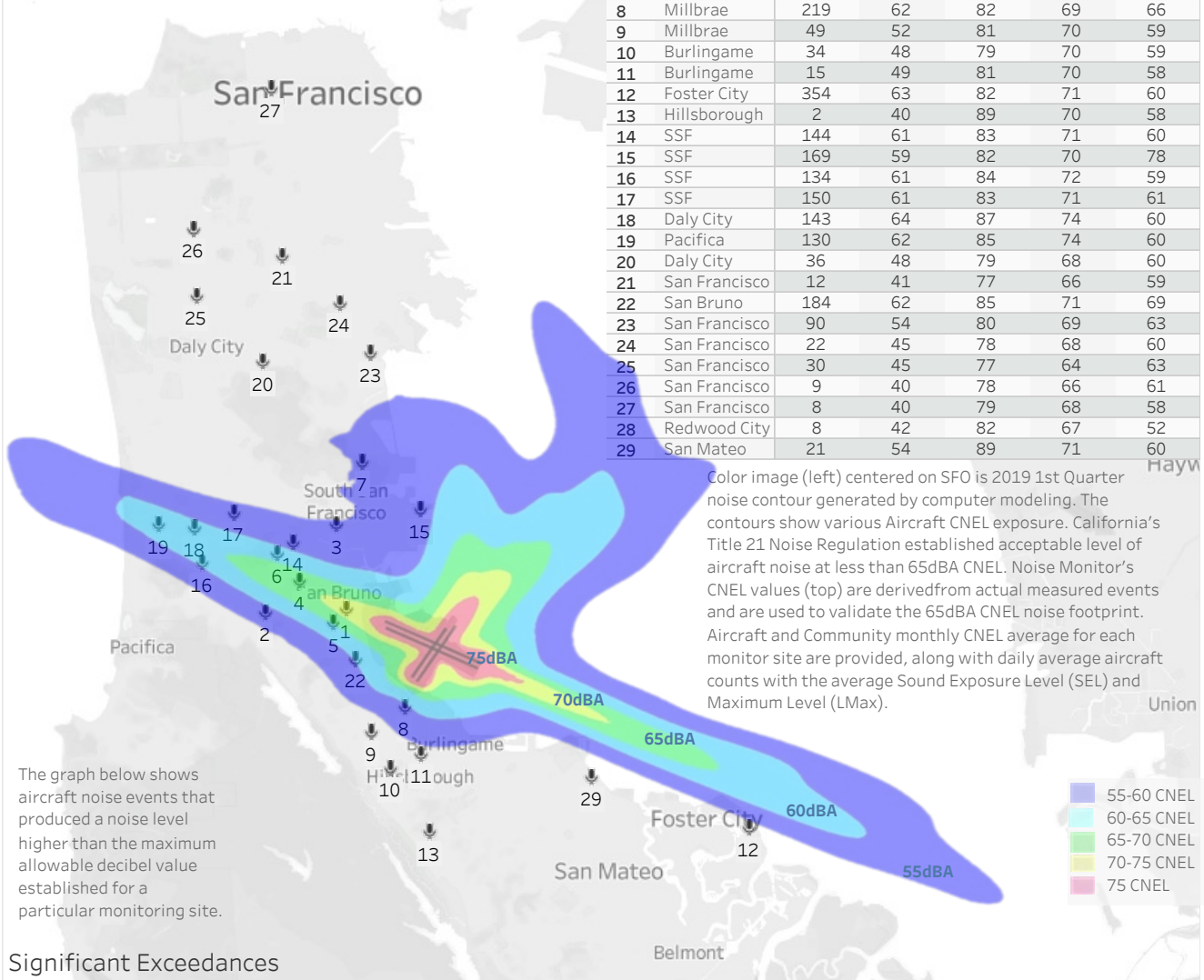
San Francisco
International
Airport

Aircraft Noise Levels

April 2019

The map shows 29 aircraft noise monitoring locations that keep track of noise levels in the communities around the airport. Image centered on SFO airport shows quarterly aircraft noise levels (dBA) exposure. The green zone marks 65dBA Community Noise Exposure Level (CNEL). The CNEL metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport.

Site	City	Noise Events (AVG Day)	Aircraft			Community
			CNEL (dBA)	SEL (dBA)	LMax (dBA)	CNEL (dBA)
1	San Bruno	243	74	93	78	68
3	SSF	89	55	80	69	62
4	SSF	164	69	90	78	61
5	San Bruno	177	67	88	76	62
6	SSF	151	66	88	76	59
7	Brisbane	29	51	81	70	65
8	Millbrae	219	62	82	69	66
9	Millbrae	49	52	81	70	59
10	Burlingame	34	48	79	70	59
11	Burlingame	15	49	81	70	58
12	Foster City	354	63	82	71	60
13	Hillsborough	2	40	89	70	58
14	SSF	144	61	83	71	60
15	SSF	169	59	82	70	78
16	SSF	134	61	84	72	59
17	SSF	150	61	83	71	61
18	Daly City	143	64	87	74	60
19	Pacifica	130	62	85	74	60
20	Daly City	36	48	79	68	60
21	San Francisco	12	41	77	66	59
22	San Bruno	184	62	85	71	69
23	San Francisco	90	54	80	69	63
24	San Francisco	22	45	78	68	60
25	San Francisco	30	45	77	64	63
26	San Francisco	9	40	78	66	61
27	San Francisco	8	40	79	68	58
28	Redwood City	8	42	82	67	52
29	San Mateo	21	54	89	71	60

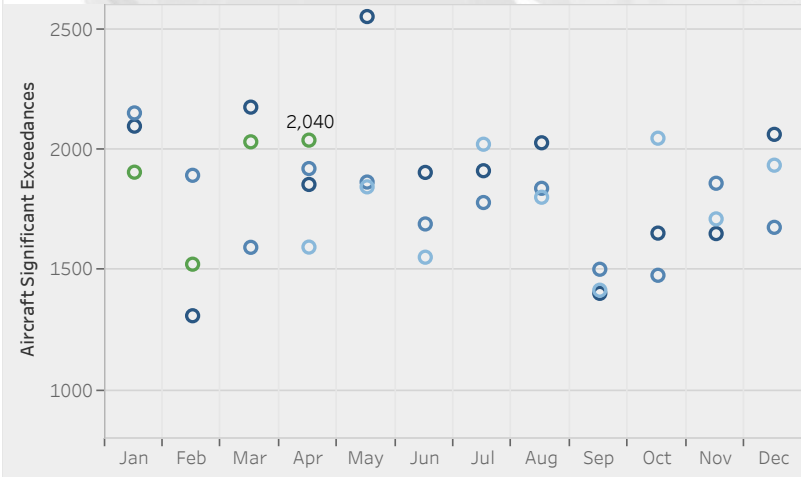


Color image (left) centered on SFO is 2019 1st Quarter noise contour generated by computer modeling. The contours show various Aircraft CNEL exposure. California's Title 21 Noise Regulation established acceptable level of aircraft noise at less than 65dBA CNEL. Noise Monitor's CNEL values (top) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft and Community monthly CNEL average for each monitor site are provided, along with daily average aircraft counts with the average Sound Exposure Level (SEL) and Maximum Level (LMax).



The graph below shows aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

Significant Exceedances



Note: Site 2 is currently not operational

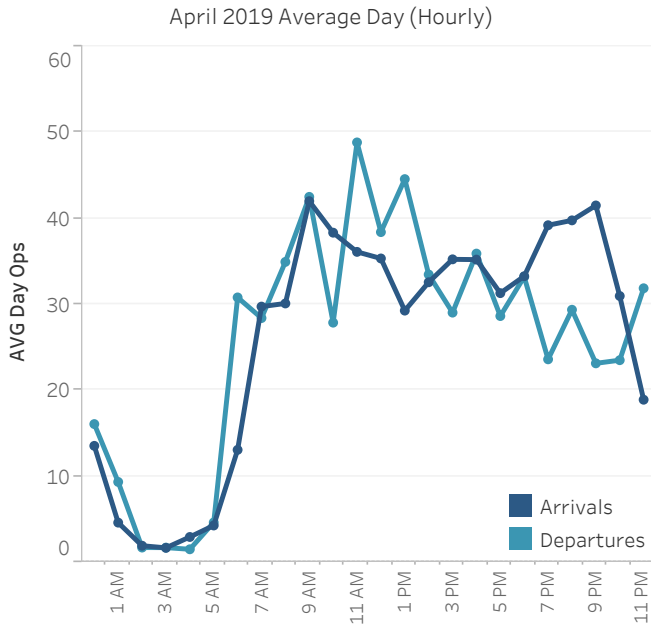
Operations

April 2019

Monthly Ops AVG Daily Ops 12 Month AVG YOY Growth

37,212	1,240	37,838	-0.8%
--------	-------	--------	-------

Major Arrival and Departure Routes (West Flow)



West Flow is depicted in the above image and is a predominate flow at SFO
West Flow 100%

Top Destinations

Los Angeles	Seattle
7%	5%

Down the Bay vs Peninsula

1.1 BDEGA East	28%
1.2 BDEGA West	72%

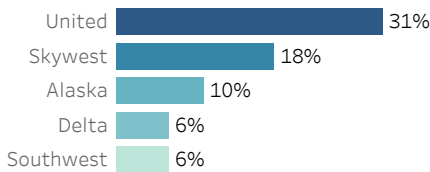
Arrival Route

1. BDEGA	27%
2. DYAMD	39%
3. SERFR	28%
4. OCEANIC	6%

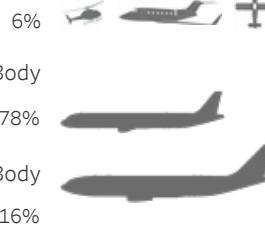
Departure Route

A. GAP	25%
B. SSTIK	29%
C. NIITE	8%
D. TRUKN RWY 01	35%
D. TRUKN RWY 28	4%

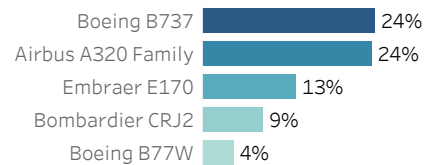
Airlines with the Most Operations



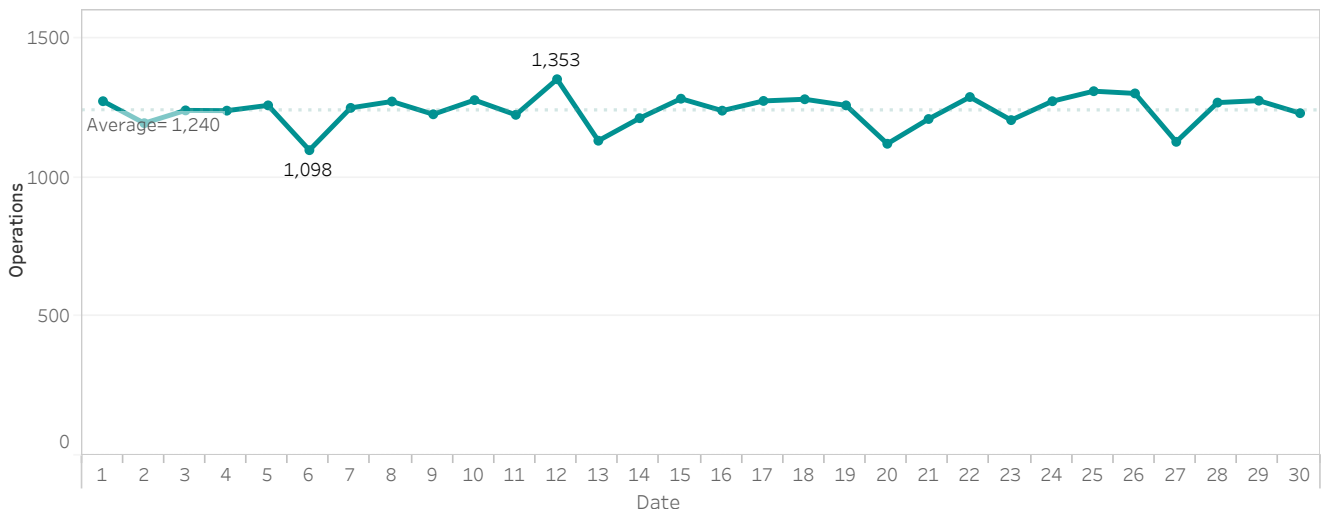
Non Airline



Most Utilized Aircraft Types



Daily Aircraft Operations



Runway Usage and Nighttime Operations

Monthly Runway usage is shown for arrivals and departures, further categorized by all hours and nighttime hours. Graph at the bottom of the page shows hourly nighttime operations for each day. Power Runup locations are depicted on the airport map with airlines nighttime power runup counts shown below. Percent [%] is rounded to the nearest whole number.

Runway Utilization

	Arrivals	Departures
01 L/R		74% 12,959
10 L/R		0% 3
28 L/R	100% 17,533	26% 4,606

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

	Departures
10 L/R	0% 2
01 L/R	40% 191
28 L/R	60% 284

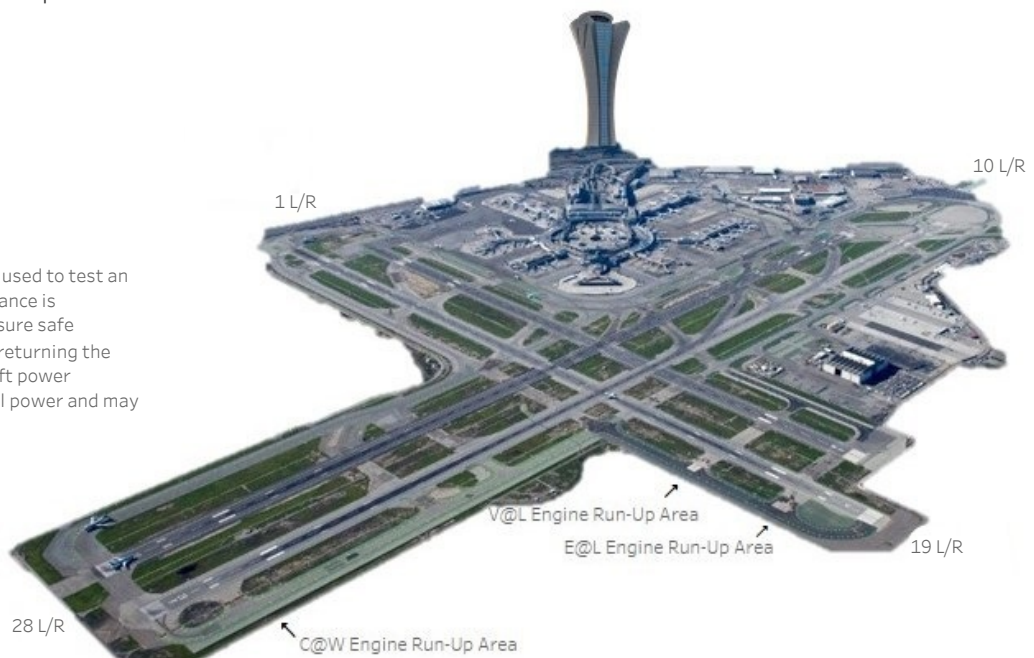
Runway Utilization

Arrivals	
28L	28R
46%	54%
Night (10pm-7am)	
32%	68%

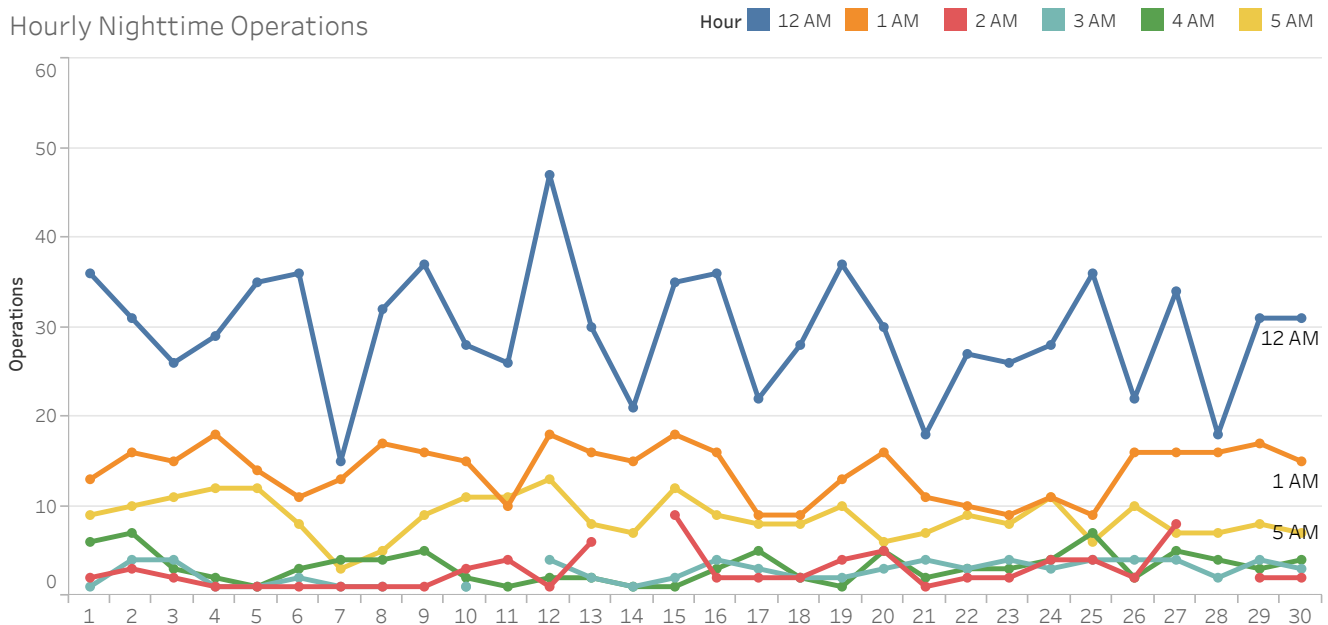
Nighttime Power Run-Ups 10pm-7am

- Alaska Airlines 4
- American Airlines 10
- United Airlines 7

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



Hourly Nighttime Operations



Noise Reports

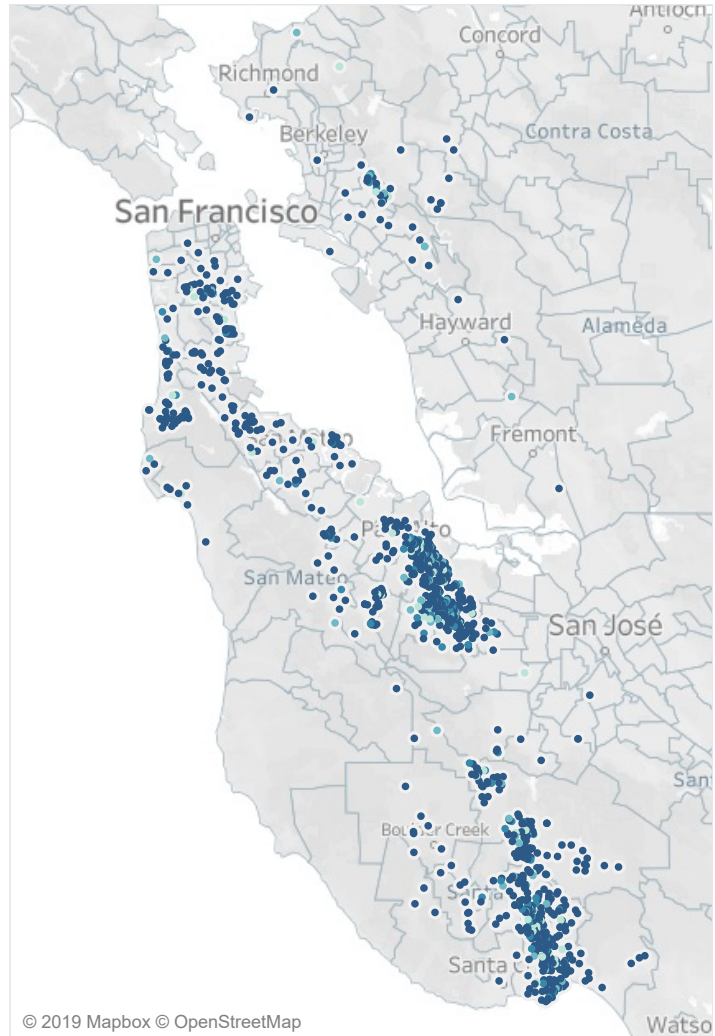
April 2019

Noise Reporters / Noise Reports

Community	Reporters	Noise Reports
Atherton	5	1,215
Belmont	5	493
Brisbane	34	2,849
Burlingame	16	245
Daly City	8	1,181
El Granada	2	803
Foster City	15	763
Half Moon Bay	8	642
Hillsborough	7	1,005
Menlo Park	21	1,628
Millbrae	5	12
Pacifica	48	4,130
Portola Valley	30	6,999
Redwood City	16	1,971
San Bruno	7	484
San Carlos	3	211
San Francisco	45	7,410
San Mateo	13	2,029
South San Francisco	14	28
Woodside	10	1,277
Alameda	1	6
Aptos	10	355
Ben Lomond	4	37
Berkeley	2	30
Bonny Doon	2	89
Boulder Creek	6	157
Brookdale	1	8
Capitola	18	2,740
Carmel	3	74
Castro Valley	1	2
Cupertino	1	924
East Palo Alto	3	114
Felton	13	824
Fremont	1	5
Hayward	1	191
Lafayette	2	31
Los Altos	131	22,871
Los Altos Hills	26	11,063
Los Gatos	123	21,493
Moraga	5	346
Morgan Hill	2	221
Mountain View	35	4,995
Oakland	29	11,145
Orinda	1	99
Palo Alto	202	49,408
Piedmont	1	15
Pinole	1	535
Richmond	4	2,481
San Jose	1	1
Santa Cruz	125	23,938
Saratoga	6	503
Scotts Valley	72	12,954
Soquel	81	12,249
Sunnyvale	8	1,047
Union City	1	599
Watsonville	1	103
Total	1,236	217,028

Reporters Annual AVG	1,313
Reports Annual AVG	199,407
New Reporters	51
New Reporters Top City	Pacifica
Furthest Report	87 Miles
Reports per SFO Operation	6
Top Aircraft Type	B737 A320 A319
Top Flight Number	AAL2466 UAL2201 ASA1969

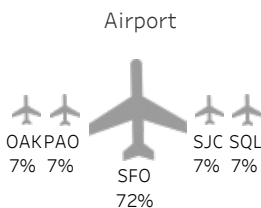
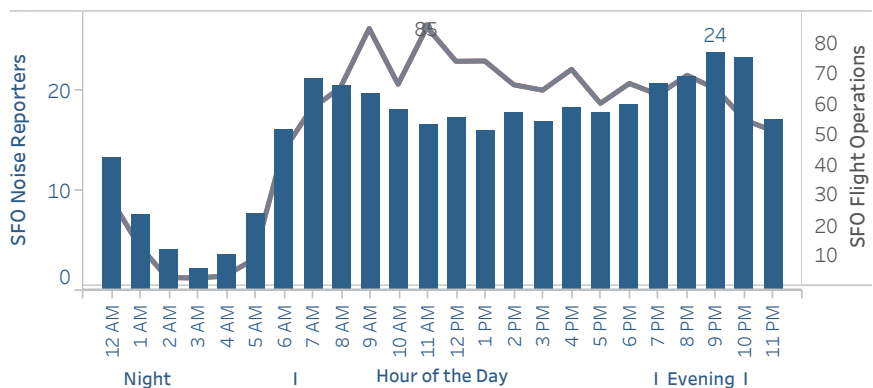
Noise Reporters Location Map



Roundtable Communities

Other Communities

Hourly Noise Reports (Average Day in a Month) ■ Noise Reporters ■ Operations



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

Source: SFO Intl Airport Noise Monitoring System

Notes: Our software vendor's address validation relies on USPS-provided ZIP Code look up table and USPS-specified default city values.



Fly Quiet Report

Presented at the June 5, 2019
Airport Community Roundtable Meeting






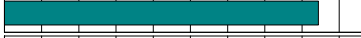







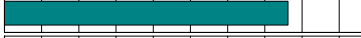
































































Aircraft Noise Abatement Office
First Quarter 2019



San Francisco
International
Airport

























Airline Fly Quiet Summary Report - 1st Quarter 2019

January 1 to March 31, 2019

Airline		Fleet Noise Quality	Noise Exceedance	Nighttime Runway Use	Departures Shoreline	Arrivals Foster City	Final Score	Airline Fly Quiet Rating
 VIR	8.17	9.97	10.00	-	9.69	-	9.46	
 JAL	7.15	9.94	-	-	8.61	-	8.57	
 ANA	7.15	9.94	-	-	8.23	-	8.44	
 SAS	8.12	9.83	-	-	6.39	-	8.11	
 UAE	10.00	9.77	-	-	4.46	-	8.08	
 AAY	6.43	10.00	-	-	6.88	-	7.77	
 SKW	10.00	9.93	5.28	9.11	5.88	5.55	7.62	
 ANZ	7.01	9.76	-	-	5.88	-	7.55	
 CES	6.06	10.00	-	-	6.41	-	7.49	
 CRK	9.50	10.00	-	-	2.67	-	7.39	
 SWR	7.15	9.88	-	-	5.10	-	7.38	
 CCA	9.90	9.89	0.00	-	9.33	-	7.28	
 AIJ	4.85	9.60	5.00	-	9.25	-	7.18	
 DAL	6.27	9.64	5.19	7.30	7.39	6.93	7.12	
 AFR	7.15	9.94	-	-	4.11	-	7.07	
 JZA	10.00	9.95	6.67	7.38	3.33	5.00	7.06	
 ACA	7.10	9.57	6.67	6.90	6.85	5.23	7.05	
 FFT	4.97	9.60	4.84	10.00	4.55	7.98	6.99	
 UAL	5.96	9.51	4.62	8.39	7.45	5.55	6.91	
 SWA	5.93	9.60	4.25	9.82	5.28	6.46	6.89	
 EIN	4.05	9.94	-	-	6.22	-	6.74	
 ICE	4.29	10.00	-	3.75	8.75	-	6.70	
 IBE	4.05	10.00	-	10.00	2.74	-	6.70	
 FBU	9.50	9.81	0.00	6.67	9.17	5.00	6.69	
 CSN	7.15	6.87	-	-	5.82	-	6.61	
 FDX	3.83	8.78	-	8.13	7.14	5.14	6.60	
 THY	7.15	9.66	-	-	2.97	-	6.59	
 CKS	3.81	7.34	-	8.00	8.69	5.00	6.57	
 SCX	5.82	9.48	5.00	7.50	4.25	7.14	6.53	
 ASA	5.08	9.56	5.44	8.33	4.46	5.59	6.41	
							6.38	SFO AVERAGE
 KLM	5.34	10.00	-	0.38	9.58	-	6.33	
 JBU	4.75	9.54	5.98	7.34	3.36	6.60	6.26	
 AAL	4.91	9.48	4.62	8.32	3.52	6.61	6.24	
 DLH	9.09	7.57	3.33	5.00	7.04	5.00	6.17	
 TAI	4.87	7.54	4.00	-	7.50	5.00	5.78	
 CPA	7.54	6.77	2.00	-	6.05	-	5.59	
 VOI	4.85	8.77	0.00	-	9.17	5.00	5.56	
 AMX	5.82	8.45	2.78	-	4.29	5.83	5.44	
 HAL	4.05	8.80	3.33	-	5.43	5.00	5.32	





































Airline Fly Quiet Summary Report - 1st Quarter 2019































January 1 to March 31, 2019

Airline		Fleet Noise Quality	Noise Exceedance	Nighttime Runway Use	Departures Shoreline	Arrivals Gap Foster City	Final Score	Airline Fly Quiet Rating												
 SIA		8.53	6.61	0.87	-	4.86	5.22													
 BAW		5.43	9.37	-	0.00	5.89	5.17													
 KAL		7.88	4.75	1.83	-	5.98	5.09													
 CMP		7.69	8.21	2.24	3.75	2.97	4.98													
 AIC		7.15	6.05	3.81	0.00	7.33	4.89													
 AAR		7.56	2.75	2.06	-	6.07	4.69													
 PAL		7.16	2.71	0.00	10.00	3.20	4.61													
 EVA		7.15	4.57	1.61	-	4.69	4.60													
 FJI		4.05	3.54	-	-	5.99	4.53													
 CAL		5.74	3.95	0.97	-	5.95	4.22													
 QFA		3.43	5.50	0.00	-	7.82	4.18													
 GTI		3.52	0.00	1.90	-	5.47	3.13													
SFO Average		6.47	8.29	3.39	6.89	6.09	5.50	6.38												

Fleet Noise Quality - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Nationwide		San Francisco		Fleet Noise Quality Rating
	Fleet Noise Quality Rating	Average Daily Jet Operations	Score		
 UAE	7.20	1	10.00		
 JZA	8.90	4	10.00		
 SKW	8.50	54	10.00		
 CCA	6.90	1	9.90		
 CRK	6.50	1	9.50		
 FBU	6.50	1	9.50		
 DLH	6.60	2	9.09		
 SIA	7.30	2	8.53		
 VIR	6.10	0	8.17		
 SAS	4.90	1	8.12		
 KAL	6.60	3	7.88		
 CMP	5.50	2	7.69		
 AAR	6.90	1	7.56		
 CPA	7.30	2	7.54		
 PAL	6.90	1	7.16		
 AFR	7.00	1	7.15		
 ANA	7.80	1	7.15		
 CSN	7.30	1	7.15		
 JAL	7.80	1	7.15		
 SWR	4.90	1	7.15		
 THY	5.70	1	7.15		
 AIC	7.30	1	7.15		
 EVA	6.90	3	7.15		
 ACA	6.60	5	7.10		
 ANZ	7.90	1	7.01		
			6.47	SFO AVERAGE	
 AAY	5.10	0	6.43		
 DAL	5.80	36	6.27		
 CES	4.90	1	6.06		
 UAL	5.70	156	5.96		
 SWA	5.50	36	5.93		
 AMX	7.90	3	5.82		
 SCX	5.30	1	5.82		
 CAL	6.40	2	5.74		
 BAW	7.30	2	5.43		
 KLM	6.60	0	5.34		
 ASA	5.20	65	5.08		

Airline	San Francisco		Fleet Noise Quality Rating	
	Nationwide Fleet Noise Quality Rating	Average Daily Jet Operations		Score
 FRONTIER AIRLINES FFT	5.20	2	4.97	
 American Airlines AAL	5.50	33	4.91	
 Avianca TAI	5.18	2	4.87	
 Interjet AIJ	5.00	1	4.85	
 volaris VOI	5.20	0	4.85	
 jetBlue JBU	5.80	14	4.75	
 ICELANDAIR ICE	6.90	0	4.29	
 Aer Lingus EIN	4.50	1	4.05	
 FIJI AIRWAYS FJI	4.40	0	4.05	
 HAWAIIAN AIRLINES HAL	5.60	2	4.05	
 IBERIA IBE	5.20	0	4.05	
 FedEx FDX	5.10	1	3.83	
 KALITTA AIR CKS	5.60	1	3.81	
 ATLAS AIR GTI	5.60	1	3.52	
 QANTAS QFA	5.80	1	3.43	
AVERAGE	6.24	9	6.47	



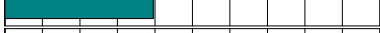



Noise Exceedance Rating Report - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Noise Exceedances				Noise Exceedance Quality Rating
	Total Noise Exceedances	Total Quarterly Operations	Exceedances per 1000 Operations	Score	
AAY	0	6	0	10.00	
CES	0	258	0	10.00	
CRK	0	102	0	10.00	
IBE	0	52	0	10.00	
ICE	0	85	0	10.00	
KLM	0	182	0	10.00	
VIR	1	334	3	9.97	
JZA	3	676	4	9.95	
AFR	1	182	5	9.94	
ANA	1	180	6	9.94	
EIN	1	180	6	9.94	
JAL	1	180	6	9.94	
SKW	136	19,607	7	9.93	
CCA	2	182	11	9.89	
SWR	2	178	11	9.88	
SAS	3	178	17	9.83	
FBU	2	109	18	9.81	
UAE	4	180	22	9.77	
ANZ	4	172	23	9.76	
QXE	27	1,084	25	9.74	
THY	6	180	33	9.66	
DAL	223	6,432	35	9.64	
AIJ	9	233	39	9.60	
SWA	250	6,419	39	9.60	
FFT	17	431	39	9.60	
CPZ	68	1,678	41	9.58	
ACA	57	1,364	42	9.57	
ASA	507	11,735	43	9.56	
JBU	115	2,570	45	9.54	
UAL	1,451	30,537	48	9.51	
SCX	8	159	50	9.48	
AAL	317	6,197	51	9.48	
BAW	22	358	61	9.37	
HAL	44	376	117	8.80	
FDX	30	253	119	8.78	
VOI	3	25	120	8.77	
AMX	79	524	151	8.45	
				8.34	
					SFO AVERAGE
CMP	58	333	174	8.21	

Noise Exceedance Rating Report - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Noise Exceedances				Noise Exceedance Quality Rating
	Total Noise Exceedances	Total Quarterly Operations	Exceedances per 1000 Operations	Score	
 Lufthansa DLH	82	346	237	7.57	
 Avianca TAI	86	359	240	7.54	
 KALITTA AIR CKS	64	247	259	7.34	
 中国南方航空 CSN	54	177	305	6.87	
 CATHAY PACIFIC CPA	160	508	315	6.77	
 SINGAPORE AIRLINES SIA	145	438	331	6.61	
 AIR INDIA AIC	89	231	385	6.05	
 QANTAS QFA	116	264	439	5.50	
 KOREAN AIR KAL	262	512	512	4.75	
 EVA AIR EVA	268	506	530	4.57	
 CHINA AIRLINES CAL	171	290	590	3.95	
 FUJI AIRWAYS FJI	34	54	630	3.54	
 ASIANA AIRLINES AAR	186	263	707	2.75	
 Philippines PAL	145	204	711	2.71	
 ATLAS AIR GTI	119	122	975	0.00	
TOTAL	5,433	98,432			
SFO AVERAGE			162	8.34	

Nighttime Preferential Runway Use - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Nighttime Departures (1:00 am to 6:00 am)						Nighttime Runway Use Rating
	Total	10L/R	28L/R Shoreline	01L/R	28L/R Straight	Score	
VIR	1	100%	0%	0%	0%	10.00	
ACA	6	50%	0%	50%	0%	6.67	
JZA	1	0%	100%	0%	0%	6.67	
JBU	39	41%	3%	51%	5%	5.98	
ASA	19	32%	5%	58%	5%	5.44	
SKW	24	33%	4%	50%	13%	5.28	
DAL	18	28%	17%	39%	17%	5.19	
SCX	6	17%	17%	67%	0%	5.00	
AIJ	4	25%	0%	75%	0%	5.00	
FFT	51	20%	14%	59%	8%	4.84	
UAL	217	25%	5%	53%	17%	4.62	
AAL	39	23%	10%	49%	18%	4.62	
SWA	146	13%	3%	83%	1%	4.25	
CPZ	80	15%	0%	80%	5%	4.17	
TAI	65	15%	0%	74%	11%	4.00	
AIC	35	26%	17%	3%	54%	3.81	
3.39							SFO AVERAGE
DLH	2	0%	50%	0%	50%	3.33	
HAL	1	0%	0%	100%	0%	3.33	
AMX	12	8%	0%	58%	33%	2.78	
CMP	70	19%	6%	0%	76%	2.24	
AAR	34	21%	0%	0%	79%	2.06	
CPA	40	20%	0%	0%	80%	2.00	
GTI	21	19%	0%	0%	81%	1.90	
KAL	71	18%	0%	0%	82%	1.83	
EVA	62	16%	0%	0%	84%	1.61	
CAL	31	10%	0%	0%	90%	0.97	
SIA	23	9%	0%	0%	91%	0.87	
CCA	1	0%	0%	0%	100%	0.00	
FBU	1	0%	0%	0%	100%	0.00	
PAL	3	0%	0%	0%	100%	0.00	
QFA	1	0%	0%	0%	100%	0.00	
VOI	1	0%	0%	0%	100%	0.00	
TOTAL	1,125						
SFO AVERAGE		19%	8%	30%	44%	3.39	











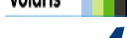





















































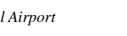



Shoreline Departure Rating - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Shoreline Departures					Shoreline Departure Rating
	Total	Successful	Marginal	Poor	Score	
FFT	16	100%	0%	0%	10.00	
IBE	1	100%	0%	0%	10.00	
PAL	1	100%	0%	0%	10.00	
QXE	1	100%	0%	0%	10.00	
SWA	56	96%	4%	0%	9.82	
CPZ	15	87%	13%	0%	9.33	
SKW	186	85%	12%	3%	9.11	
UAL	387	73%	22%	5%	8.39	
ASA	230	68%	30%	2%	8.33	
AAL	176	68%	30%	2%	8.32	
FDX	8	63%	38%	0%	8.13	
CKS	5	80%	0%	20%	8.00	
SCX	4	50%	50%	0%	7.50	
JZA	21	48%	52%	0%	7.38	
JBU	79	47%	53%	1%	7.34	
DAL	178	53%	40%	7%	7.30	
ACA	50	54%	30%	16%	6.90	
					6.89	SFO AVERAGE
FBU	3	33%	67%	0%	6.67	
DLH	4	25%	50%	25%	5.00	
CMP	4	0%	75%	25%	3.75	
ICE	4	0%	75%	25%	3.75	
KLM	13	0%	8%	92%	0.38	
AIC	7	0%	0%	100%	0.00	
BAW	1	0%	0%	100%	0.00	
TOTAL	1,450					
SFO AVERAGE		55%	27%	18%	6.89	




































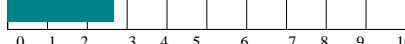
Gap Departure Climb Rating - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Gap Departures		Gap Departure Quality Rating
	Total	Score	
 VIR	40	9.69	
 KLM	3	9.58	
 CCA	75	9.33	
 AIJ	15	9.25	
 FBU	42	9.17	
 VOI	6	9.17	
 ICE	3	8.75	
 CKS	42	8.69	
 JAL	62	8.61	
 ANA	74	8.23	
 QFA	114	7.82	
 TAI	17	7.50	
 UAL	3541	7.45	
 DAL	184	7.39	
 AIC	74	7.33	
 FDX	7	7.14	
 DLH	142	7.04	
 AAY	2	6.88	
 ACA	25	6.85	
 CES	109	6.41	
 CPZ	74	6.39	
 SAS	74	6.39	
 EIN	75	6.22	
 QXE	68	6.19	
			SFO AVERAGE
 AAR	109	6.07	
 CPA	211	6.05	
 FJI	24	5.99	
 KAL	212	5.98	
 CAL	126	5.95	
 BAW	126	5.89	
 ANZ	74	5.88	
 SKW	981	5.88	
 CSN	75	5.82	
 GTI	48	5.47	
 HAL	26	5.43	





















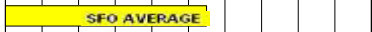




































Gap Departure Climb Rating - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Gap Departures		Gap Departure Quality Rating
	Total	Score	
 SWA	304	5.28	
 SWR	76	5.10	
 SIA	183	4.86	
 EVA	213	4.69	
 FFT	14	4.55	
 ASA	590	4.46	
 UAE	74	4.46	
 AMX	39	4.29	
 SCX	5	4.25	
 AFR	66	4.11	
 AAL	332	3.52	
 JBU	64	3.36	
 JZA	18	3.33	
 PAL	88	3.20	
 CMP	143	2.97	
 THY	75	2.97	
 IBE	21	2.74	
 CRK	43	2.67	
TOTAL	9228		
SFO Average		6.09	

Foster City Arrival Rating - 1st Quarter 2019

January 1 to March 31, 2019

Airline	Foster City Arrivals					Foster City Arrival Rating
	Total	Successful	Marginal	Poor	Score	
 FFT	62	60%	40%	0%	7.98	
 SCX	7	43%	57%	0%	7.14	
 DAL	272	39%	60%	1%	6.93	
 AAL	347	32%	68%	0%	6.61	
 JBU	237	32%	68%	0%	6.60	
 SWA	243	31%	67%	2%	6.46	
 AMX	6	17%	83%	0%	5.83	
 ASA	438	14%	84%	2%	5.59	
 UAL	910	14%	84%	3%	5.55	
 SKW	136	14%	83%	3%	5.55	
					5.50	
 ACA	22	9%	86%	5%	5.23	
 FDX	37	3%	97%	0%	5.14	
 AAR	28	0%	100%	0%	5.00	
 AIC	28	0%	100%	0%	5.00	
 CKS	47	2%	96%	2%	5.00	
 CMP	48	4%	92%	4%	5.00	
 CPZ	94	1%	98%	1%	5.00	
 DLH	1	0%	100%	0%	5.00	
 EVA	4	0%	100%	0%	5.00	
 FBU	1	0%	100%	0%	5.00	
 HAL	9	0%	100%	0%	5.00	
 JZA	4	0%	100%	0%	5.00	
 KAL	63	0%	100%	0%	5.00	
 QXE	13	0%	100%	0%	5.00	
 TAI	63	0%	100%	0%	5.00	
 VOI	1	0%	100%	0%	5.00	
 GTI	22	0%	95%	5%	4.77	
 CAL	10	0%	90%	10%	4.50	
TOTAL	3,153					
SFO AVERAGE		11%	87%	1%	5.50	



MEMORANDUM

TO: BRISBANE COMMUNITY

FROM: SAN FRANCISCO INTERNATIONAL AIRPORT AIRCRAFT NOISE ABATEMENT OFFICE

SUBJECT: 2Q 2019 BRISBANE NOISE MONITORING REPORT

DATE: MAY 24, 2019

The San Francisco International Airport (SFO) Aircraft Noise Abatement Office (ANAO) conducts quarterly aircraft noise monitoring in the City of Brisbane, California to determine noise levels within the community from aircraft operations at SFO. Noise monitoring occurs every quarter for a 14-day data collection period. This quarter's measurement period was from April 18, 2019, to May 2, 2019. The monitoring is made possible with the assistance of the City Manager, resulting in two temporary sites in Brisbane. The first site was located above the Brisbane Community Pool (Site 1001) at the end of Trinity Road and the second site was located at the Mission Blue Center (Site 966). Due to a power outage at site 966, we were unable to process any data between April 28, 2019 and May 2,

Brisbane is located approximately 4 miles from the SFO Airport, and aircraft noise events sources include primarily SFO departures utilizing the SSTIK and OFFSHORE departure procedures. During the monitoring period, there were no changes to departure procedures. Aircraft departing SFO from Runways 01L/R for destinations to the west, south, and southeast typically overfly Brisbane. Occasionally when the winds on the airfield are stronger from the west, the TRUKN or NIITE departures will be utilized for destinations to the northeast and east. Departing aircraft from Runways 28L/R will initiate a right turn once the aircraft reaches the minimum altitude of 520 feet, consequently, this may have some aircraft fly over Brisbane. SFO aircraft arrivals from the north (BDEGA) on a typical day (West Plan) overfly Brisbane at 10,000 feet or higher. The ambient levels within Brisbane during the monitoring period were as follows: Site 966 - 49dBA and Site 1001 - 57dBA. Non-aircraft noise sources included construction and maintenance activity and weather-related conditions such as wind.

The overall average daily noise level from all Aircraft at Site 1001 was 56dBA CNEL, and at Site 966, it was 53dBA. Community and Total CNEL values along with other noise metrics are shown in the summary section of the data report. Noise from all aircraft increased the total average daily noise level by 1.5dBA at each of the sites. In comparison, the human ear can detect a 3dB sound change, and a 6dB increase may result in higher annoyance levels.

During the noise-monitoring period, SFO ANAO received noise reports from 25 individuals in Brisbane. The majority of aircraft noise events at both sites occurred between 7 am and 9 pm. Since the monitoring locations in Brisbane are in an urban area with ambient noise in the 50dBA range, any aircraft noise above this threshold may become a nuisance for the residents as evident in the Sound Exposure Level comparison table. Additionally, the frequency of flights due to the proximity of the Airport may increase annoyance levels.

dBA- stands for A-weighted decibel. Decibel unit measures the loudness of a sound and is computed as the signal to noise ratio. A-weighting is used to adjust for the frequency range of human hearing. The human ear perceives an increase of ten decibels as a doubling of noise.

CNEL- This metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport. California Title 21 Noise Regulations established an acceptable level of aircraft noise of 65dBA CNEL.

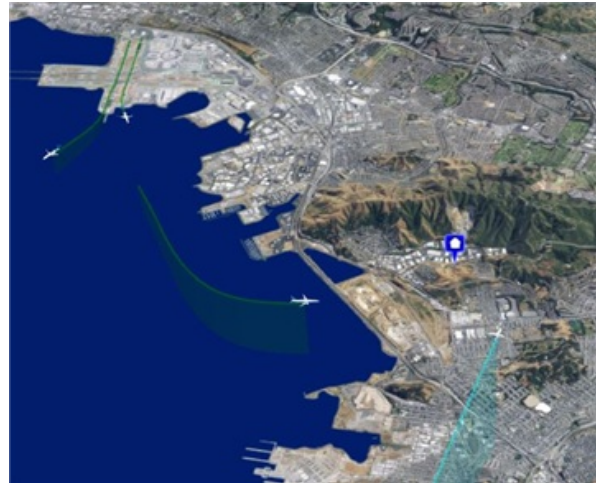
West Plan – Standard operations at the Bay Area International Airports. Aircraft arrive to the west at all three airports. At San Jose and Oakland Airports, aircraft depart to the west. While at San Francisco Airport, aircraft depart either to the north or to the west depending on wind conditions on the airfield.

TRUKN and NIITE – RNAV departure procedures off Runways 28L/R at SFO, has aircraft climb heading of 284° to 520 feet then right turn to initial fix. These procedures replaced the legacy departures procedures SHORELINE and QUIET, respectively.

Mission Blue Center 2Q 2019

April 19 - April 27

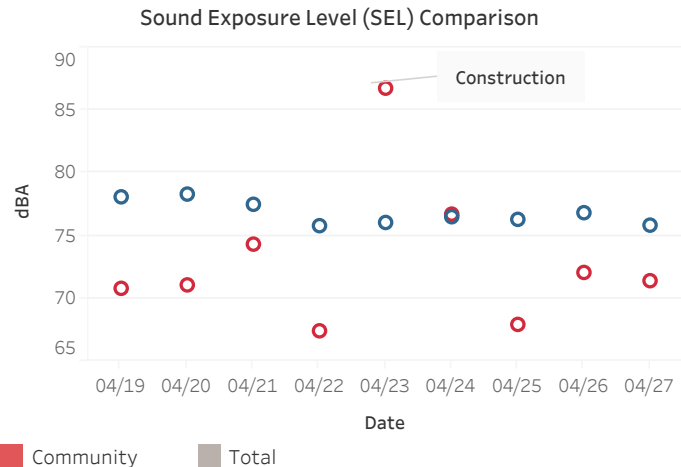
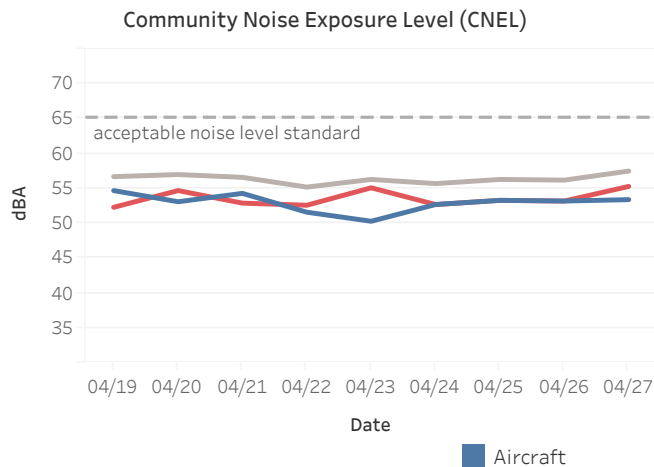
Aircraft CNEL: 53dBA
Community CNEL: 54dBA
Total CNEL: 56dBA
Aircraft SEL: 76dBA
Aircraft LMax: 66dBA
Ambient Noise: 49dBA
Noise Monitor Treshold: 57dBA
SFO Aircraft Noise Events: 126 per day
SFO Operations Flow: West Flow all days and West Flow-Straight 28 on April 20
Cause of Aircraft Overflights : SFO SSTIK Departures from Runway 01L/R making a left turn over Brisbane and departures making a right turn from Runways 28L/R performing the TRUKN / NIITE Departure



Daily Noise Event Averages

Date	SFO			Non-SFO			Community		
	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)
Apr 19	140	78	65	19	71	61	10	71	64
20	27	78	66	26	70	60	109	71	62
21	166	77	65	32	72	61	4	74	68
22	119	76	64	15	72	61	15	67	61
23	138	76	64	17	71	60	13	87	66
24	122	77	64	35	74	61	10	77	63
25	136	76	65	29	72	61	7	68	62
26	141	77	65	37	72	61	18	72	65
27	143	76	64	11	71	63	158	71	63
Daily AVG	126	77	65	25	71	61	38	73	63

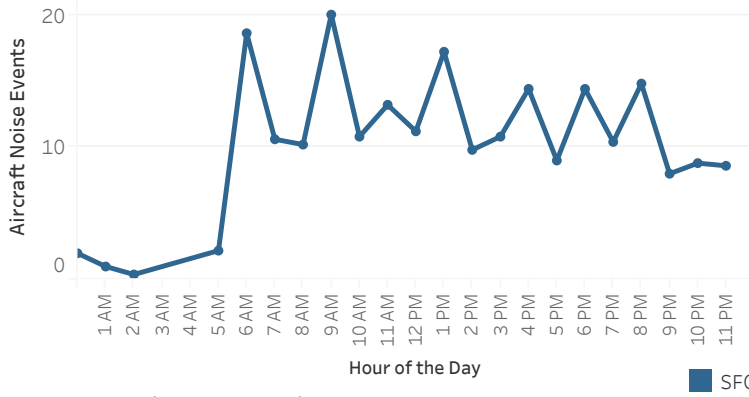
SFO Events are: Single SFO Aircraft, Multiple SFO Aircraft, Simultaneous SFO and Non-SFO Aircraft, and Simultaneous Community and SFO Aircraft.
SEL - Sound Exposure Level of a noise event is measured over time between the initial and final points when the noise level exceeds a predetermined threshold and its energy is compressed into one second.
Lmax - The maximum noise level is a measurement of the peak level of a noise event.
CNEL - This metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport. California Title 21 Noise Regulations established acceptable level of aircraft noise of 65dBA CNEL.



SFO Aircraft Noise Events by Day (7am-7pm), Evening (7pm-10pm) and Night (10pm-7am)

	Noise Events	SFO Noise Events (%)	Avg. SEL (dBA)	Min. SEL (dBA)	Max. SEL (dBA)	Avg. LMax (dB)	Min. LMax (dBA)	Max. LMax (dBA)	Avg. Duration (sec)	Min. Duration (sec)	Max. Duration (sec)
Day	758	67%	77	62	86	64	57	76	25	5	71
Evening	166	15%	76	63	82	65	57	75	25	5	53
Night	208	18%	77	64	85	65	58	74	31	5	120

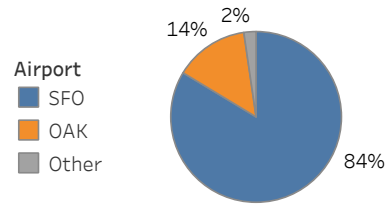
SFO Noise Events by Hour of the Day



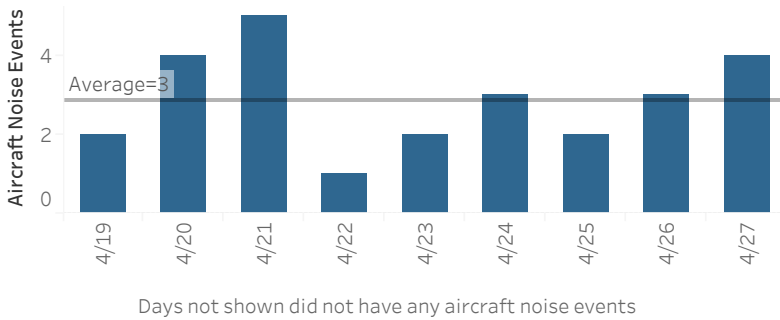
Only aircraft that registered a noise event on the monitor are considered.

SFO Departures Altitude

Altitude	Percentage
3000ft	12%
3500ft	23%
4000ft	24%
4500ft	17%
≥5,000ft	24%

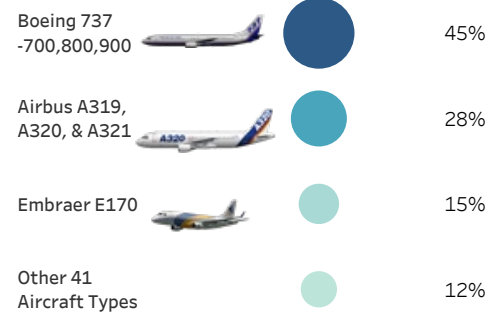


SFO Nighttime (Midnight-6am)



Operation Type	Percentage
Arrivals	1%
Departures	99%

Aircraft Type



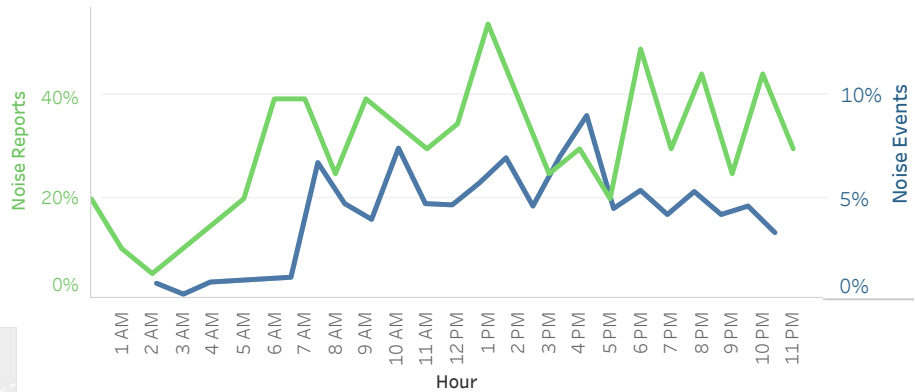
15% of overflights registered a noise event.
(433 avg daily overflights of which 66 created a noise event)

Noise Reporters

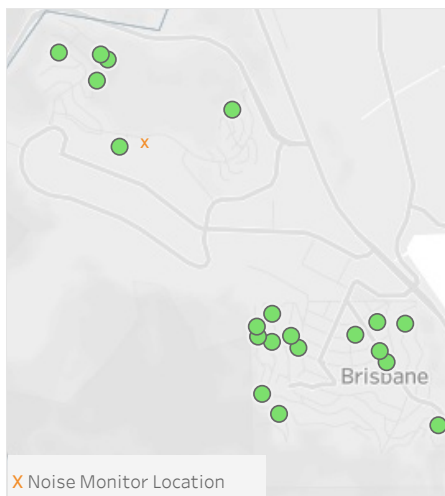
Date	Noise Reporters	Noise Reports
Apr 19	11	100
20	10	36
21	11	156
22	8	115
23	9	210
24	12	102
25	6	129
26	8	165
27	10	48
Total	20 *	1,061

*Individual Reporters

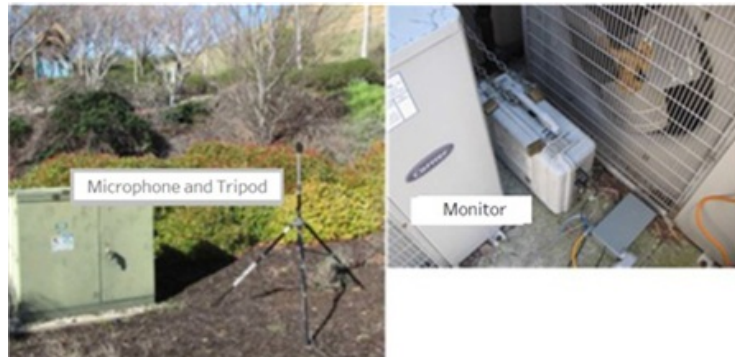
Noise Reports vs Aircraft Noise Events



Noise Reporters Location



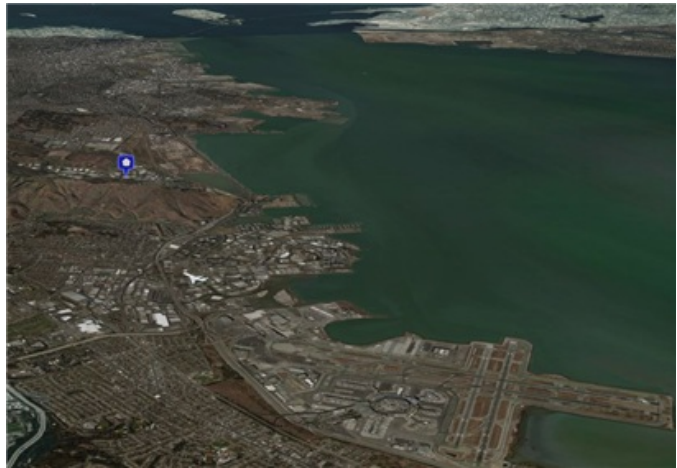
Noise Monitor on Location



Trinity Road 2Q 2019

April 19 - May 2

Aircraft CNEL: 56dBA
Community CNEL: 58dBA
Total CNEL: 60dBA
Aircraft SEL: 79dBA
Aircraft LMax: 65dBA
Ambient Noise: 57BA
Noise Monitor Treshold: 57dBA
SFO Aircraft Noise Events: 125 per day
SFO Operations Flow: West Flow all days and West Flow-Straight 28 on April 20
Cause of Aircraft Overflights : SFO SSTIK Departures from Runway 01L/R making the left turn over Brisbane, departures making a right turn from Runways 28L/R performing the TRUKN / NIITE Departure and BDEGA arrivals from the north entering the right traffic pattern for Runway 28R

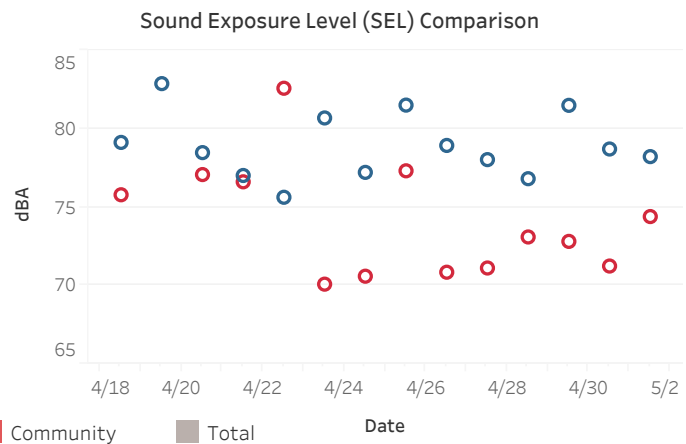
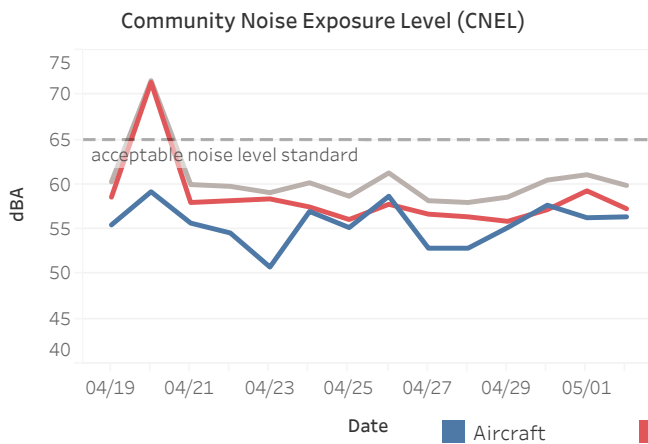


Daily Noise Event Averages

Date	SFO			Non-SFO			Community		
	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)	Noise Events	Avg. SEL (dBA)	Avg. LMax (dB)
19	146	79	65	33	72	61	147	76	65
20	45	83	68	17	87	69	908 +	87	71
21	215	78	66	54	78	65	280	77	67
22	113	77	63	19	75	60	69	77	60
23	112	76	63	20	70	60	22	83	62
24	97	81	66	37	71	60	29	70	60
25	112	77	65	26	71	60	20	71	62
26	121	81	67	32	72	60	17	77	65
27	101	79	65	6	69	61	70	71	62
28	110	78	66	12	71	61	70	71	62
29	131	77	63	33	74	61	71	73	59
30	145	81	67	25	72	62	321 +	73	63
May 1	183	79	65	46	72	62	251 +	71	63
2	114	78	65	18	71	61	87	74	64
Daily Average	125	79	65	27	73	62	169	75	66

+ wind

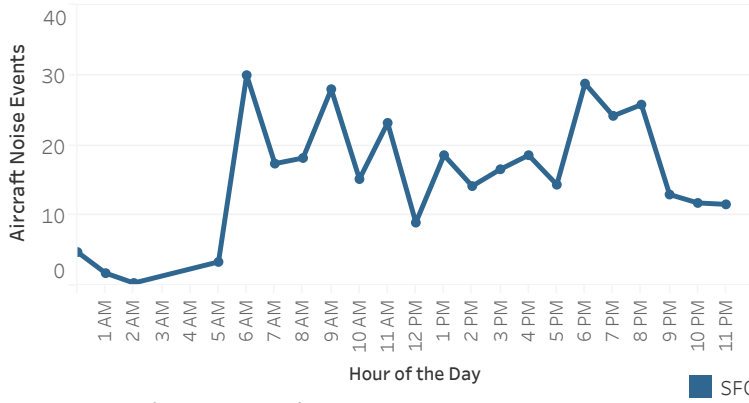
SFO Events are: Single SFO Aircraft, Multiple SFO Aircraft, Simultaneous SFO and Non-SFO Aircraft, and Simultaneous Community and SFO Aircraft.
SEL - Sound Exposure Level of a noise event is measured over time between the initial and final points when the noise level exceeds a predetermined threshold and its energy is compressed into one second.
Lmax - The maximum noise level is a measurement of the peak level of a noise event.
CNEL - This metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport. California Title 21 Noise Regulations established acceptable level of aircraft noise of 65dBA CNEL.



SFO Aircraft Noise Events by Day (7am-7pm), Evening (7pm-10pm) and Night (10pm-7am)

Day	Noise Events	SFO Noise Events (%)	Avg. SEL (dBA)	Min. SEL (dBA)	Max. SEL (dBA)	Avg. LMax (dB)	Min. LMax (dBA)	Max. LMax (dBA)	Avg. Duration (sec)	Min. Duration (sec)	Max. Duration (sec)
Day	1,111	64%	79	60	94	65	57	84	28	1	120
Evening	315	18%	78	62	92	65	56	86	24	5	85
Night	317	18%	81	63	93	66	57	83	34	5	120

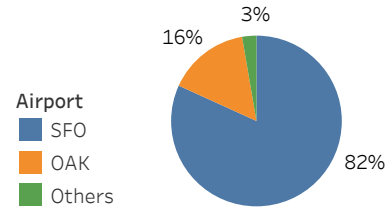
SFO Noise Events by Hour of the Day



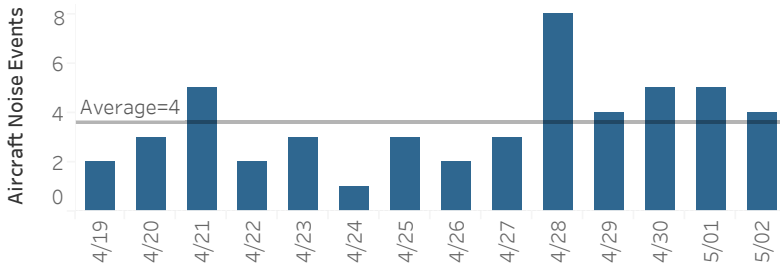
SFO Departures Altitude

Altitude	Percentage
≤3000ft	10%
3000ft	15%
3500ft	24%
4000ft	19%
≥4500ft	31%

Only aircraft that registered a noise event on the monitor are considered.



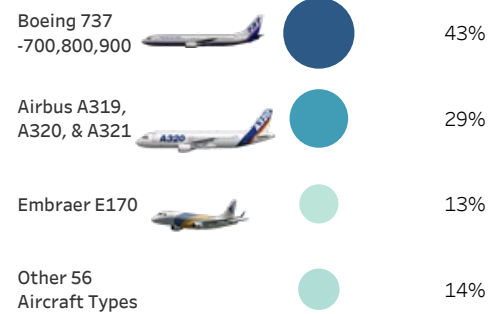
SFO Nighttime (Midnight-6am)



Days that are not shown had zero Aircraft Noise Events.

Operation Type	Arrivals	Departures
	2%	98%

Aircraft Type



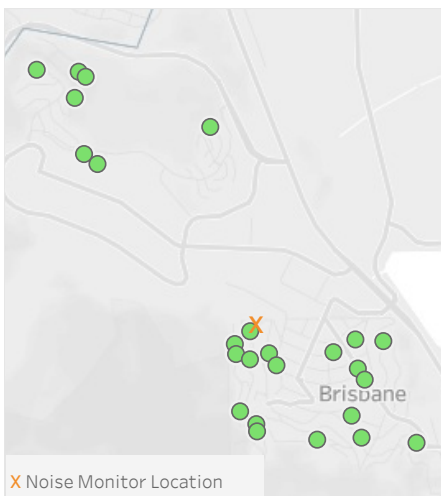
Noise Reporters

	Noise Reporters	Noise Reports
April 18	10	151
19	11	100
20	10	36
21	11	156
22	8	115
23	9	210
24	12	102
25	6	129
26	8	165
27	10	48
28	14	160
29	13	93
30	13	110
Total	25 *	1,575

May 1 and 2 are unavailable

*Individual Reporters

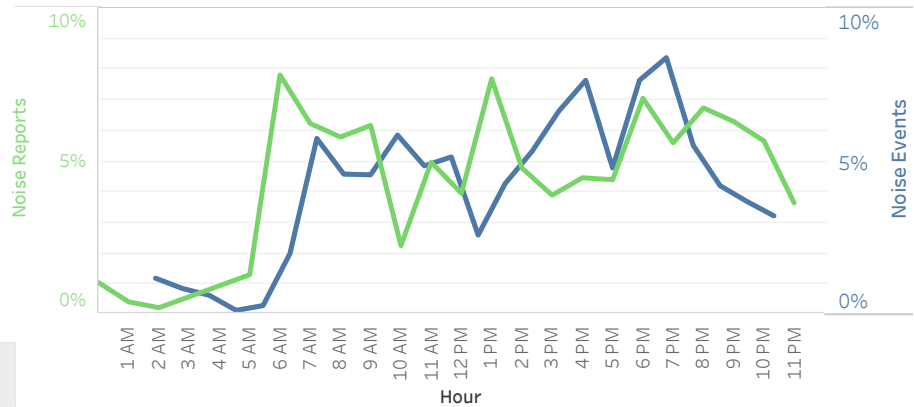
Noise Reporters Location



32%

of overflights registered a noise event.
(376 avg daily overflights of which 122 created a noise event)

Noise Reports vs Aircraft Noise Events

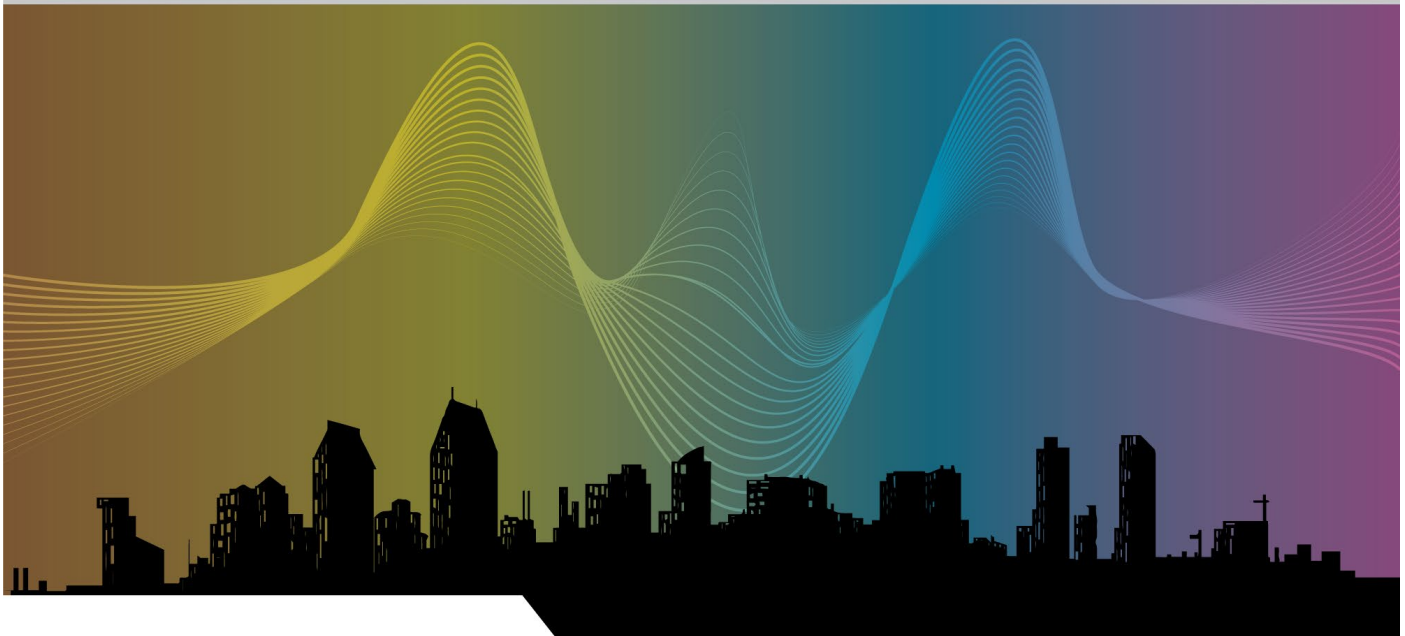


Noise Monitor on Location



Report #2019-007

May 15, 2019



Palo Alto Aircraft Noise Measurements

San Francisco International Airport

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San Francisco, CA 94128-8097



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1. Background

BridgeNet International was contracted by the San Francisco International Airport (SFO) Aircraft Noise Abatement Office to evaluate noise levels in the Palo Alto community. Four noise monitoring locations, identified by the City of Palo Alto, were selected near the arrival paths into SFO. The study includes portable noise monitoring and an evaluation of flight track data correlated to noise event results. The goals of the measurement program were as follows:

- **Conduct Noise Monitoring.** Continuously collect noise data at four locations within the Palo Alto community. This data was used to determine noise levels related to SFO Airport operations, noise due to operations from other airports, and ambient noise sources. The measurements included the continuous collection of one-second A-weighted noise data, along with frequency data and the audio signal.
- **Correlate with Radar Data.** Radar track data for flights that operated near the study area were analyzed and correlated to the measured noise data. The flight track analysis included determining the aircraft type, path location, altitude, and other flight parameters that are factors in noise generation.
- **Calculate Noise metrics.** The primary metric used in airport noise is the Community Noise Equivalent Level (CNEL) metric. This is the metric used by the State of California and the FAA (for airports in California) to assess airport noise. In this study, it was determined from measured noise data. In addition, the measurements were used to calculate ambient background noise and a number of single event noise metrics. These single event metrics included the Maximum Noise Level (Lmax), Sound Exposure Level (SEL), and duration of the noise events.
- **Support Side by Side Measurements.** Residents of the City of Palo Alto are developing their own measurement system, and they wish to compare their measurements with the portable measurements collected in this study. The raw measured noise data has been provided to the City for their use.

2. Noise Monitoring Locations

Four locations in Palo Alto were measured as part of this study. These sites were selected by the City of Palo Alto staff with input and assistance from SFO Noise Abatement staff and members of the consulting team. These sites are described below, with the locations presented in **Figure 1**.

- **Site 401 (Rinconada Library)** was a short-term monitoring location placed in the north patio in the Rinconada Library. The site was exposed to traffic noise from Newell Drive. This is a lightly used road, but during the daytime hours there are measurable traffic events as cars travel on the road. The measurement and analysis cover arrivals from SFO as well as aircraft operating from other airports in the region.

- **Site 402 (Gamble House Garden)** was a short-term monitoring location placed in the garden on the south side of the Gamble House building. The site was exposed to traffic noise from Embarcadero Road, Waverley Road and activities on the garden property. This site had more exposure to other ambient sources that could make measurements of SFO aircraft operations in the daytime period more difficult. The measurement and analysis cover arrivals from SFO as well as aircraft operating from other airports in the region.
- **Site 403 (Hoover Park/Matadaro Creek)** was a short-term monitoring location placed in the Matadaro Creek right-away adjacent to Hoover Park. The site was exposed to light traffic noise from Cowpers Road and activities within the park. The measurement and analysis cover arrivals from SFO as well as aircraft operating from other airports in the region. This site was farther from the primary arrival patterns into SFO.
- **Site 404 (Tevis Place)** was a short-term monitoring location located in a backyard of a residential home. The site had minimal exposure to other noise sources such as roadway traffic. This location is closest to Palo Alto Airport then the other sites. The measurement and analysis cover arrivals from SFO as well as aircraft operating from other airports in the region.

3. Methodology

Noise Monitoring Durations

The measurement program was originally scheduled for a 1-month period but was extended by the Airport to collect data for over 2 months. The noise monitoring equipment was setup on October 30, 2018 and operated continuously through January 4, 2019. The equipment was operating unattended using battery power and was checked and calibrated approximately every 2 weeks. The measurements were continuous, except for a period at Site 401 where the battery power was disconnected and at Site 403 where the battery was stolen.

Noise Monitoring Equipment

During the entire duration of the noise measurements, the sound level meters were mounted on tripods five feet above the ground and equipped with windscreens at all locations. State-of-the-art sound level meters were used to continuously measure the noise and record a measured noise value once every second (continuous one-second noise levels).

The measures used 01dB DUO and 01dB FUSION family of sound level meters. The equipment used meets the International Standard IEC 61672 specification for Class 1 precision sound level meters. The microphones were calibrated before the tests with a Brüel & Kjær Type 4231 sound level calibrator that meets International Standard IEC 60942. Calibration is traceable to the National Institute of Standards and Technology (NIST).

Noise Measurement Data

The noise measurements continuously measured and stored noise data. The data measured and stored includes:

- A-weighted noise level
- 1/3 octave frequency levels
- Continuous audio signal

The A-weighted noise level is the level used to calculate the CNEL noise metric and the Lmax and SEL noise metrics (described in the next section of the report). The A-weighted measurement is the primary measure used in aircraft noise and is used to calculate CNEL, Lmax, and SEL.

Radar Data

Radar data from October 30th, 2018 through January 4th, 2019 was collected from the airport noise monitoring system. This includes data from the airspace surrounding SFO and other airports in the region. The data includes the raw radar tracking data (position, altitude, speed) and associated aircraft type, date, time, runway, descent rate, and aircraft performance. The radar data was reviewed and correlated with noise event data to accurately identify sources of noise.

Data Analysis

The measured noise data was used to calculate noise metrics of interest. This was accomplished through BridgeNet's software tool Volans™. The tool uses radar data and the measurements to determine aircraft noise events and calculate noise metrics. The system determines noise events and calculated noise metrics in an automated process that uses the radar information to identify potential noise events. In addition to the automated system, the software also allows the user to manually determine noise events and correlations to aircraft.

4. Definition of Terms

Characteristics of Sound

Sound can be described technically in terms of amplitude (loudness), frequency (pitch), or duration (time). Frequency (or pitch) is measured in hertz (Hz). The standard unit of measurement for the loudness of sound is the decibel (dB). Decibels are based on a logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers (in a manner similar to the Richter scale used to measure earthquakes).

Human hearing is not equally sensitive to sound at all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the

human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to measure loudness in a way that reflects how the human ear actually perceives sound. Community noise levels are measured in terms of this A-weighted decibel scale (or dBA), which is widely used in industrial and environmental noise-management contexts.

Propagation of Noise

Outdoor sound levels decrease as a result of several factors, including increased distance from the sound source, atmospheric absorption (characteristics in the atmosphere that absorb sound), and ground attenuation (characteristics on the ground that absorb sound). If sound radiates from a source in a homogeneous and undisturbed manner, the sound travels in spherical waves. As the sound wave travels away from the source, the sound energy is spread over a greater area dispersing the power of the sound wave.

Atmospheric temperature and humidity also influence the sound levels received by the observer. How much sound is absorbed by the atmosphere depends on the frequency of the sound as well as the humidity and air temperature. For example, when the air is cold and humid, and therefore denser, atmospheric absorption is lowest and sound travels farther. Higher frequencies are more readily absorbed than the lower frequencies. The fluctuations in sound levels created by atmospheric conditions increase with distance and become particularly important at distances greater than 1,000 feet. Over large distances, lower frequency sounds become dominant as the higher frequencies are attenuated. Noise propagation is one of the reasons that aircraft noise will be higher one day than other days even when the same aircraft are flying the same path and altitude.

Noise Metrics

The description, analysis, and reporting of noise levels around communities is made difficult by the complexity of human response to noise and the variety of metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community impact.

Noise metrics can be divided into two categories: single event and cumulative. Single event metrics describe the noise levels from an individual event such as an aircraft flyover. Cumulative metrics average the total noise over a specific time period, typically from one to 24 hours. This study presents single event measurement results.

- **Maximum Noise Level**, or Lmax, is the maximum or peak sound level during an aircraft noise event. The metric accounts only for the peak intensity of the sound and not for the duration of the event. As an aircraft passes by an observer, the sound level increases to a maximum level and then decreases. Typical single event noise levels range from over 90 dBA close to the airport to the low 50s dBA at more distant locations.
- **Single Event Noise Exposure Level (SEL)** - The duration of a noise event, or an aircraft flyover, is an important factor in assessing annoyance and is measured most typically as SEL. The effective duration of a sound starts when a sound rises above the background sound level and ends when it drops back below the background level. An SEL is calculated

by summing the dB level at each second during a noise event and compressing that noise into one second. It is the level the noise would be if it all occurred in one second. The SEL value is the integration of all the acoustic energy contained within the event. This metric takes into account the maximum noise level of the event and the duration of the event. For aircraft flyovers, the SEL value is numerically about 10 dBA higher than the maximum noise level.

- **Community Noise Equivalent Level (CNEL)** is a measure of not just one event like Lmax but of average noise over twenty-four hours; it applies a weighting factor that penalizes noise events occurring during the evening and night hours (when humans are typically more sensitive to noise and sleep disturbance is a concern). More specifically, noises occurring during the evening (from 7 PM to 10 PM) are penalized by 5 dB, while noises occurring during the night (10 PM to 7 AM) are penalized by 10 dB. CNEL noise levels near airports range from 70 CNEL directly next to an airport to less than 45 CNEL at more distant locations.

5. Radar Data

The radar data for the study period was collected and analyzed. An example of one day of SFO arrival radar tracks is presented in **Figure 2**. This figure shows each of the primary jet arrival procedures that fly into SFO Airport when operating in primary flow (i.e., landing on Runways 28L and 28R). The flight procedures that primarily overfly the study area are the SERFR and BDEGA (west leg) STARs (Standard Terminal Arrival Route) and the OCEANIC route. Procedures from the east, DYAMD and YOSEM STARs rarely fly over the study area. Also, the BDEGA (east Leg) procedure that directs the aircraft on the BDEGA procedure to fly downwind to the east also rarely overflies the study area.

Radar track data during the measurement period is presented in **Figure 3** (a through e) for the different flight procedures that fly near the study area. These figures are described in more detail below.

- **Figure 3a** – SERFR STAR radar tracks for those flights that have some portion of the flight that is radar vectored. Radar vector is when controllers direct pilots to turn, change altitude or change speed to separate and space aircraft prior to landing. This is roughly half of the total SERFR flight tracks. There were 4,707 radar tracks in the study period.
- **Figure 3b** – SERFR STAR radar tracks for those flights that were not radar vectored and the aircraft flew straight to final approach. There were 4,403 radar tracks in the study period. For the purposes of this study this is called SERFR-ST.
- **Figure 3c** – BDEGA STAR tracks that are radar vectored by controllers to the approach. There were 6,800 radar tracks in the study period.
- **Figure 3d** – OCEANIC route tracks that are radar vectored by controllers to the approach. There were 1,866 radar tracks in the study period.

- **Figure 3e** – Missed approach and other radar tracks that are radar vectored by controllers back to the approach for landing. Missed approaches are those aircraft that were on final approach but did not land and the aircraft is flying back to be sequenced back into the arrival pattern for a second landing attempt. There were 233 missed approach radar tracks in the study period. Of Those tracks, 35% were flying the DYAMD, 33% the SERFR, 21% the BDEGA West, 6% the BDEGA East, and 3% the OCEANIC.

In evaluating the radar data, the majority of the SFO arriving aircraft that generated a measurable event (97%) passed within 2 nautical miles of one of the four sites. Thus, the radar data for these flights are presented in **Figure 4**. This data was also analyzed with respect to the altitude, dispersion, and aircraft flight parameters when the aircraft flew closest to each site. This data is presented in **Figure 5** (a through f). These figures present information on the altitude of the aircraft on each flight for each procedure, the dispersion of the tracks when it flew closest to each site, the descent rate and descent angle, and aircraft speed. In general, the aircraft are flying at a similar altitude and descending when flying any of the different procedures. The aircraft average just under 5,000 feet MSL and are descending at 2 to 3 degrees. When aircraft are being radar vectored, the dispersion is mostly equal over the study area.

Besides the aircraft from SFO landing on Runways 28L/R, there are other aircraft operations that overfly the study area. This includes departures at SFO and OAK that can cross back over the study area at high altitudes, arrivals to OAK, arrivals to SJC in reverse flow configuration, operations at Palo Alto Airport (PAO), medical helicopter flights into Stanford Medical Center, military, and other general aviation activities. As an example, **Figure 6a** presents departure and arrival radar tracks at PAO Airport. The airport is within 2 miles of Site 404. **Figure 6b** presents overflight radar tracks from other General Aviation airports around the region. This includes helicopter aircraft from the helipad located at Stanford Medical Center located less than 2 nautical miles from the closest site. The altitude and dispersion of these tracks was also determined. **Figure 7** presents the altitude and dispersion of the arrivals and departures into PAO as well as from other airport overflights that flew within 1 nautical mile of Site 404. The data shows that these aircraft are around 1,000 feet MSL for arrivals and 1,500 feet MSL for departures.

6. Ambient Noise Monitoring Results

The ambient background noise during the time of the measurements was also determined. Ambient background noise represents the typical residual noise that exists in the area independent of the aircraft noise. These results are presented in **Table 1** below. The results are presented in terms of the L% statistical noise levels. The L% is the percent of time that the noise is above that level. The L50 or mean noise level, which is defined as the point at which half the time the noise is above that value and half below that value. These results show that the ambient noise ranged from 42 dBA at the Tevis site (404) to 48 dBA at the Gamble site (402).

The Tevis and Hoover location are a quieter setting with minimum other traffic, whereas Gamble and Rinconada are closer to roadways with more vehicle traffic and urban noise. When ambient

noise levels are higher, then it becomes difficult to separate the aircraft noise events from other noise sources. When the ambient noise level is lower, then quieter aircraft events are more easily measured.

Ambient noise varies throughout the day; typically, ambient noise is reduced at night, are lower than the daytime. When ambient noise is low, the sound of an aircraft may be distinct, while when ambient noise is higher the same aircraft emitting the same noise may be not audible at all. The data in **Table 1** shows the ambient noise during the daytime hours (7am to 10pm) and the nighttime hours (10 pm to 7 am). The ambient noise levels at night are roughly 5 dBA quieter than in the daytime hours.

Table 1
Ambient Noise Measurement Results

Site	Description	Measured Ambient Noise Levels (dBA)						
		Lmax	L1	L10	L50	L90	L99	Lmin
All Hours								
401	Rinconada Library	97	61	54	47	40	35	29
402	Gamble House	93	62	55	48	40	36	32
403	Hoover Park	91	60	51	44	38	34	30
404	Tevis Residence	95	61	51	42	36	32	26
Daytime Hours								
401	Rinconada Library	97	62	55	49	43	39	33
402	Gamble House	93	63	57	50	45	41	33
403	Hoover Park	91	61	53	45	40	36	31
404	Tevis Residence	95	62	53	44	38	34	27
Nighttime Hours								
401	Rinconada Library	83	58	50	43	37	34	29
402	Gamble House	84	59	50	43	37	35	32
403	Hoover Park	89	57	47	41	36	33	30
404	Tevis Residence	75	57	47	40	35	30	26

7. Correlated Noise Events

An automated process was used to calculate noise events and when possible, correlated to an aircraft that generated the noise event when. An example is shown in the top part of **Figure 8a** that shows the continuous measured 1-second noise for a 15-minute period (dark blue) at the Gamble House. The background noise at the time of the event is below 40 dBA. The noise event period is shown in dark red with the red box showing the calculated single event metrics with a peak Lmax value of nearly 70 dBA. The black parabolic line from the top of the chart shows the second Y access the slant range distance from the aircraft as it passes near the site. An orange parabolic line from the bottom shows the predicted noise associated with that flight based upon an approximate noise model prediction.

The bottom part of **Figure 8a** graphic shows a second 15-minute period from the Gamble House where there are 3 aircraft events showing the same data as described above. Note the short duration peaks during this period are vehicle traffic on the nearby road. The same information described in the above paragraph is presented in these graphics.

Note that the lower the ambient, the greater possibility to measure lower noise level events. When the ambient is higher, or other noise sources are present, the more difficult it is to measure and separate aircraft events from other sources of noise. As an example, the top portion of **Figure 8b** shows a busy period of operations from the Gamble House site that includes both SFO and PAO noise events. Because they occurred separately it was possible to measure these separate noise events. The bottom of Figure 8b shows a busy period where the ambient conditions interfered with the measurements of aircraft noise. Vehicle traffic noise was higher than the aircraft noise, making it difficult to measure the aircraft noise separate from other sources. Both the Gamble House and the Rinconada Library site had higher background environments that made measurements of lower noise level events difficult during busy times of the day. The Hoover Park and Tevis sites had lower ambient that allowed for the ability to separate quieter noise events from the background.

The automated process was supplemented with the ability to manually create, edit and correlate noise events. This was used for a number of days of the measurements. This can be used to fix missed or wrong correlations and create noise events that are closer to the ambient where it is more difficult to do automatically.

8. Measured Single Event Noise Levels

The noise event calculation and correlation process were completed for the 2 months of measured noise data. This was completed for all potential aircraft operations, with the dominant number of events coming from SFO arrivals and PAO operations. This automatic process was supplemented with the ability to complete a manual review and edit the events and correlation.

The results of one day of SFO events is presented in **Figure 9**. This figure lists all the correlated noise events with the measured noise metrics (Lmax, SEL) and information on the aircraft that was correlated to the event. This data is for December 1st, 2018 at Site 401, 402, 403 and 404.

This data showed a wide range of measured single event noise levels for SFO arrivals that varied primarily with distance away from the measurement location, type of aircraft and altitude of the aircraft. Those aircraft that flew directly overhead generated the loudest events. These events often generated Lmax noise levels greater than 60 dBA.

The average noise level of these events for SFO arrivals for each of the different flight procedures is presented in Table 2. This table presents the average Lmax noise level of all SFO Runway 28L/R arrivals that flew within 2 nautical miles within any one of the sites. The data is presented for each of the arrival procedures that fly near or over the study area. Generally, the aircraft generate similar noise levels from all procedures, with the highest from the SERFR tracks that fly straight on the procedure without radar vectoring. This is because these sites are very close to that path. Note that this is an average level, with the Lmax of the noise events ranging from the 40s to low 70s.

Table 2
Measure Average Lmax Noise Level at Noise Measurement Location

SITE	DESCRIPTION	AVERAGE LMAX NOISE LEVEL (DBA)					ALL
		SERFR	SERFR-ST	BDEGA	OCEANIC	OTHER	
401	Rinconada Library	56	59	57	57	56	57
402	Gamble House	59	60	59	58	59	59
403	Hoover Park	56	57	56	57	56	56
404	Tevis Residence	55	60	56	57	57	57

The average daily number of measured aircraft events was also determined. These results are presented in Table 3. This table gives a count of the number of average daily events detected for each flight procedure. This data is presented for higher noise levels events (60 dBA or greater) and for all detected events.

At night and at sites with lower background noise then the other measurement sites more low-level events can be detected. Noise events are measurable from more distant operations then when the ambient is higher. This results in some noise events generated noise levels at or near the ambient level that existed at the time of the event.

The level of 60 dBA was used to identify higher noise level events from those that were close to the ambient. Events above 60 dBA are typically close to the minimum threshold used by permanent monitoring systems in that events. Noise events above 60 dBA were generally from aircraft that flew directly over the site.

Table 3
Average Daily Measured Noise Events

SITE	DESCRIPTION	AVERAGE DAILY EVENTS					
		SERFR	SERFR-ST	BDEGA	OCEANIC	OTHER	TOTAL
Events Greater than 60 dBA							
401	Rinconada Library	14	30	24	8	1	77
402	Gamble House	15	28	27	8	1	80
403	Hoover Park	13	19	18	6	1	56
404	Tevis Residence	11	35	22	8	1	78
All Measured Events							
401	Rinconada Library	67	72	98	25	5	274
402	Gamble House	49	53	78	22	3	206
403	Hoover Park	56	65	82	22	3	229
404	Tevis Residence	53	71	91	24	4	244

9. Measured CNEL Noise Levels

CNEL is a measure of cumulative noise throughout the day. CNEL noise levels typically range from 70 CNEL very close to an airport to less than 55 CNEL at communities a number of miles away. Note that measuring CNEL at levels below 55 CNEL becomes less precise because the noise from aircraft events can be close to existing ambient noise, and it is not always technically possible to separate the two. (Note that CNEL differs from the Lmax values presented previously. Lmax values are numerically higher than CNEL values because the CNEL represents an average that includes both peak sounds [like the Lmax] and lower values when aircraft noise is not present.)

Aircraft noise events and the time when aircraft noise was present were calculated for identified aircraft events above the ambient threshold and correlated with an aircraft that caused that event. The CNEL metric can be calculated by summing the noise energy from the aircraft events and applying the evening and night weighting penalty. The results are presented in **Table 4** for the measurement period from October 30th through January 3rd.

The results show that the measured SFO aircraft CNEL levels were in the low 50s CNEL for all the sites. Daily noise levels ranged from 49 to 55 CNEL. CNEL levels from aircraft operating at airports other than SFO also in the low 50s CNEL, but less than the SFO CNEL. The noise from aircraft operating at the other airports also had more variability than SFO in that the number of operations and the pattern of the flights varied much more widely than the more precise SFO arrival procedures.

Note the Total CNEL is a measure of all the noise throughout the day including aircraft, traffic and background sounds. It also includes the evening and nighttime noise penalty.

Table 4
CNEL Measurement Results

SITE	DESCRIPTION	ENERGY AVERAGE MEASURED CNEL		
		SFO Aircraft Events	Other Airports Potential Events	Total All Noise
401	Rinconada Library	52	51	56
402	Gamble House	53	52	57
403	Hoover Park	51	50	54
404	Tevis Residence	52	50	55

10. Conclusion

BridgeNet International was contracted by the SFO Aircraft Noise Abatement Office to evaluate noise levels in the Palo Alto community. The study included portable noise monitoring near the arrival paths into SFO at four locations identified by the City of Palo Alto. Noise measurements were correlated with flight track data and cumulative and single event noise metrics were calculated for aircraft operating at SFO, aircraft from other airports, and ambient sources of noise. This data will be provided to the City for their use in side by side noise measurements using their own system.

APPENDIX

Report Figures

Figure 1
Measurement Site Map

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

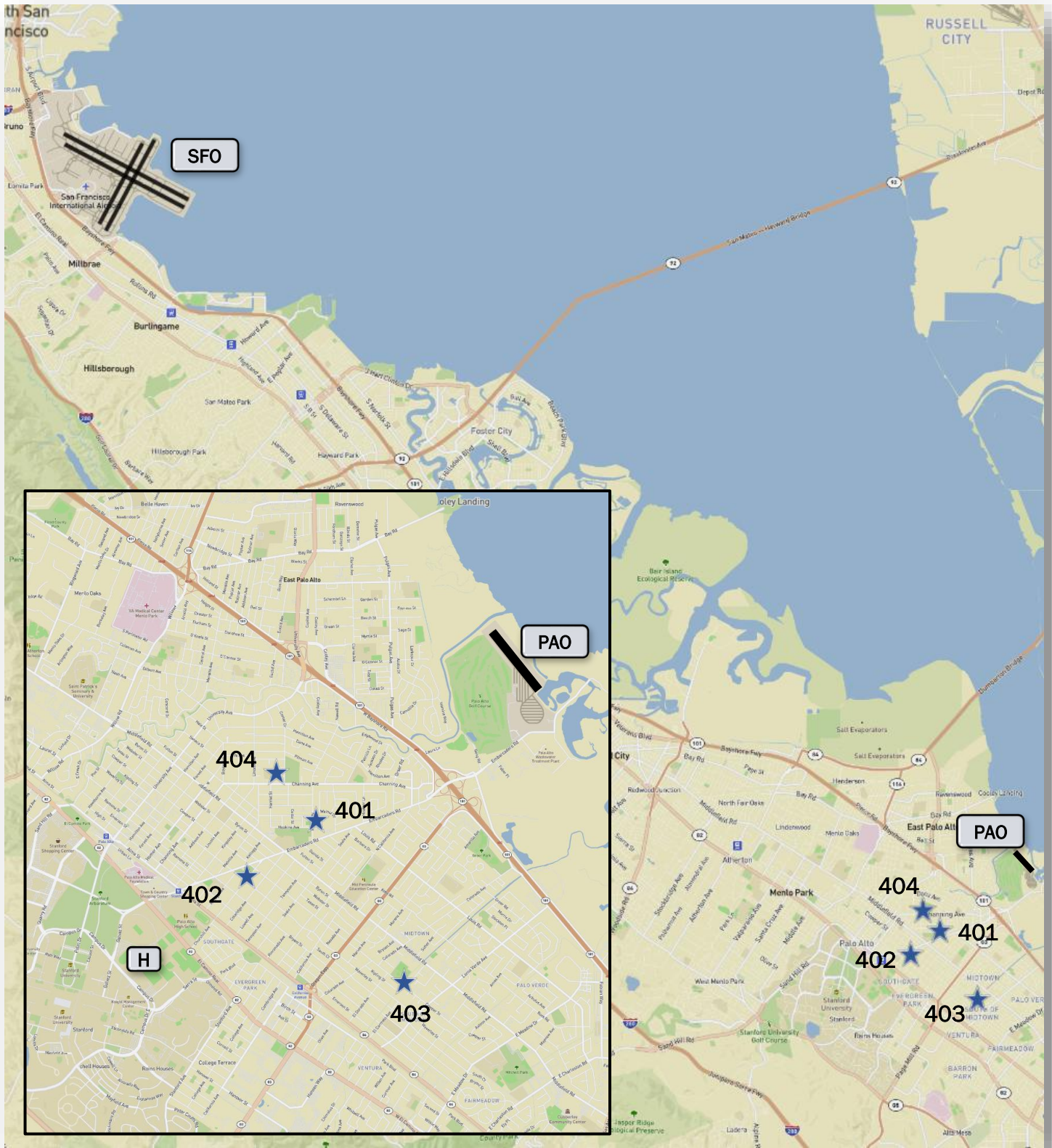
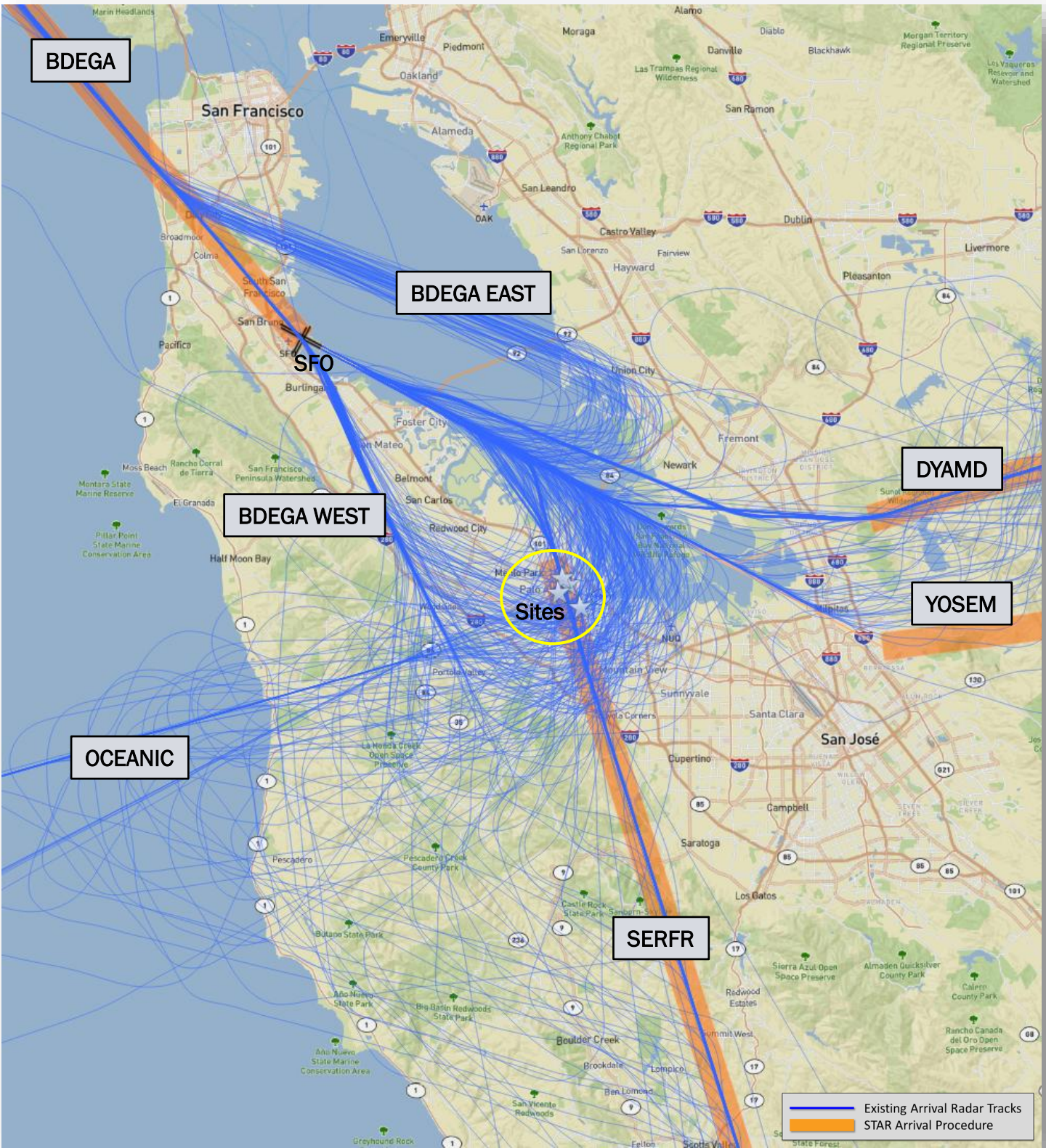


Figure 2
Arrival Procedures

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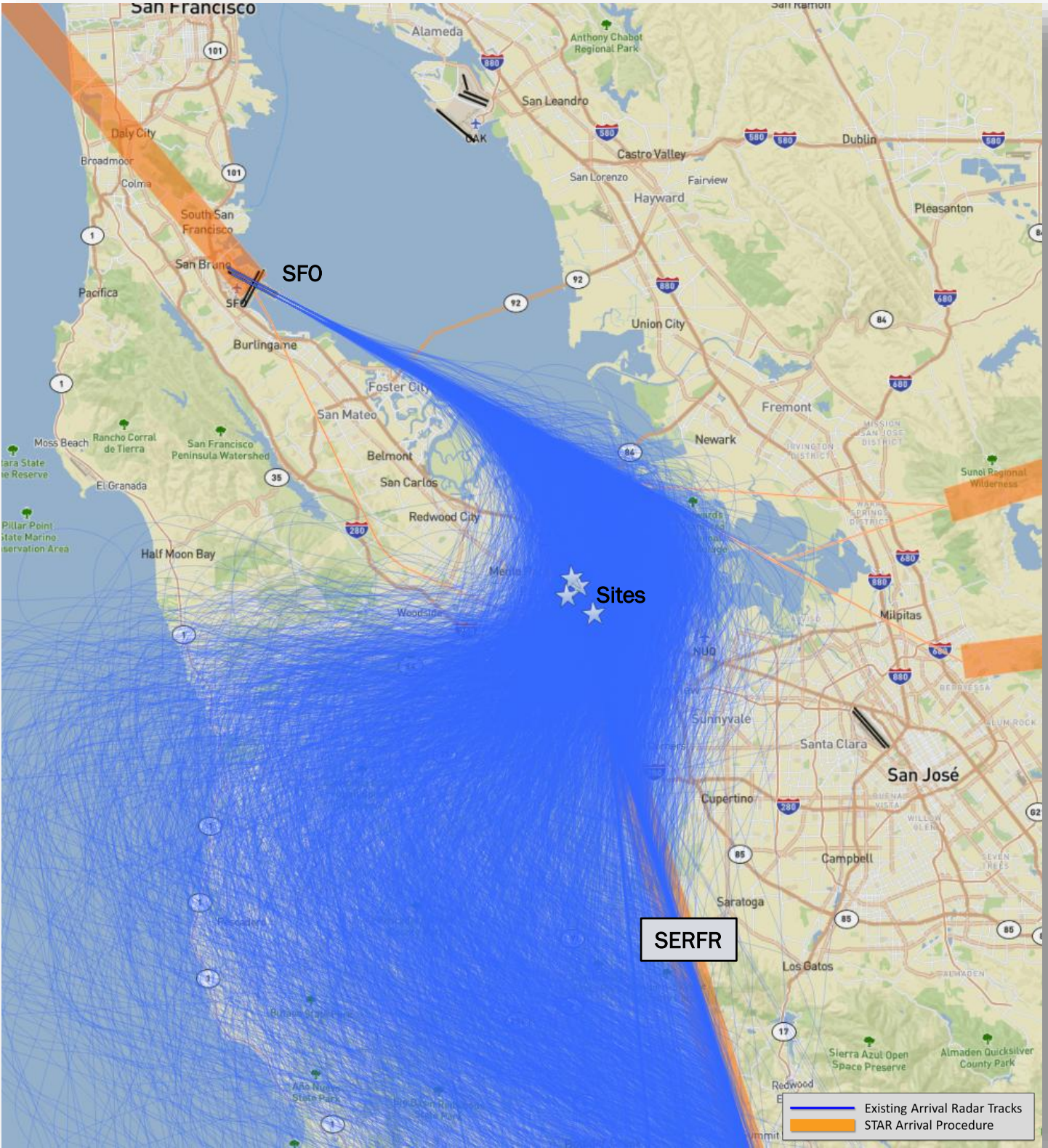


SFO Runways 28L/R Arrival Tracks on December 1st, 2018

532 Tracks

Figure 3a
SERFR Arrival Flight Tracks
 (SERFR Tracks with Radar Vectoring)

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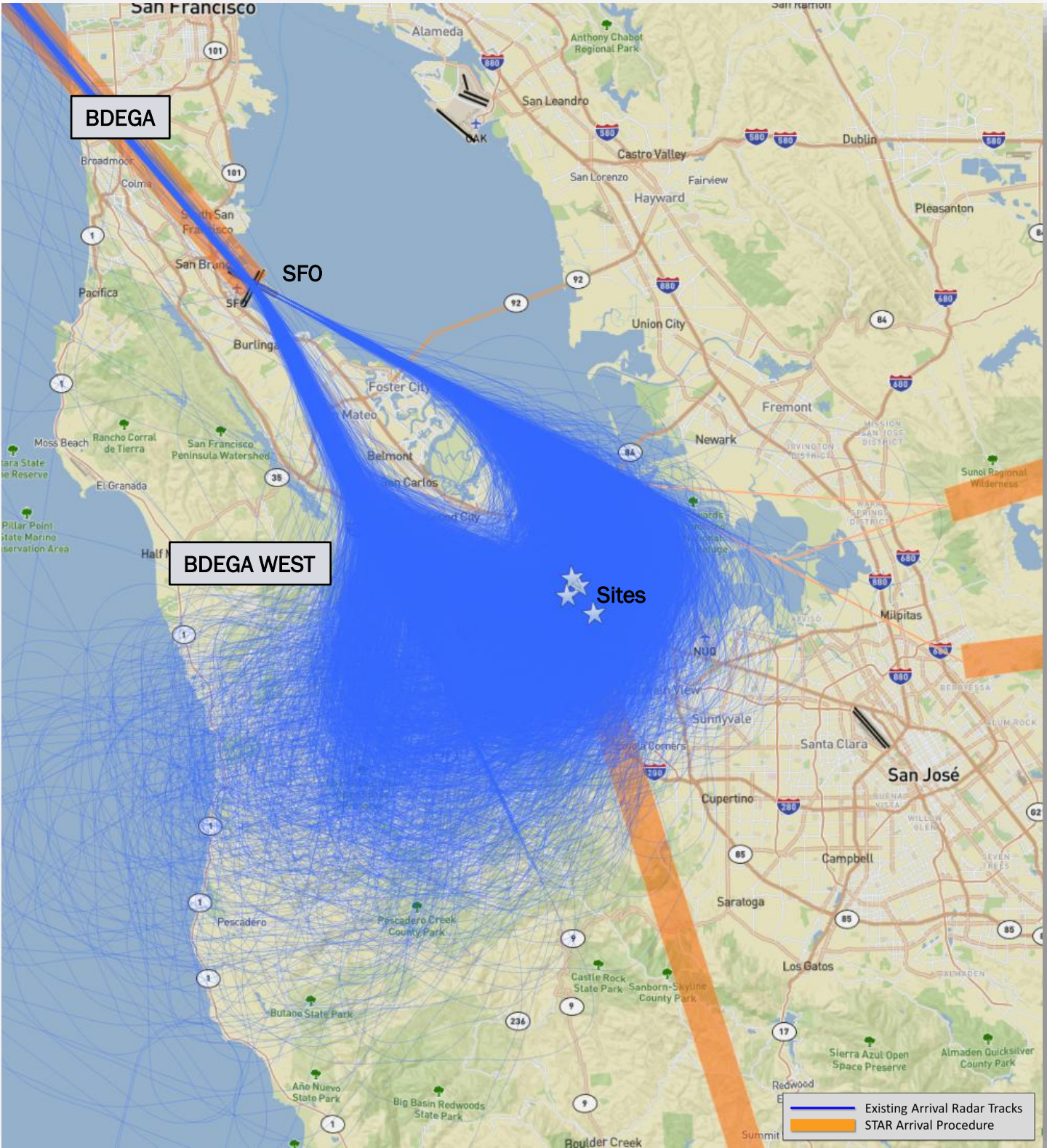


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

4707 Tracks

Figure 3c
BDEGA West Arrival Flight Tracks

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

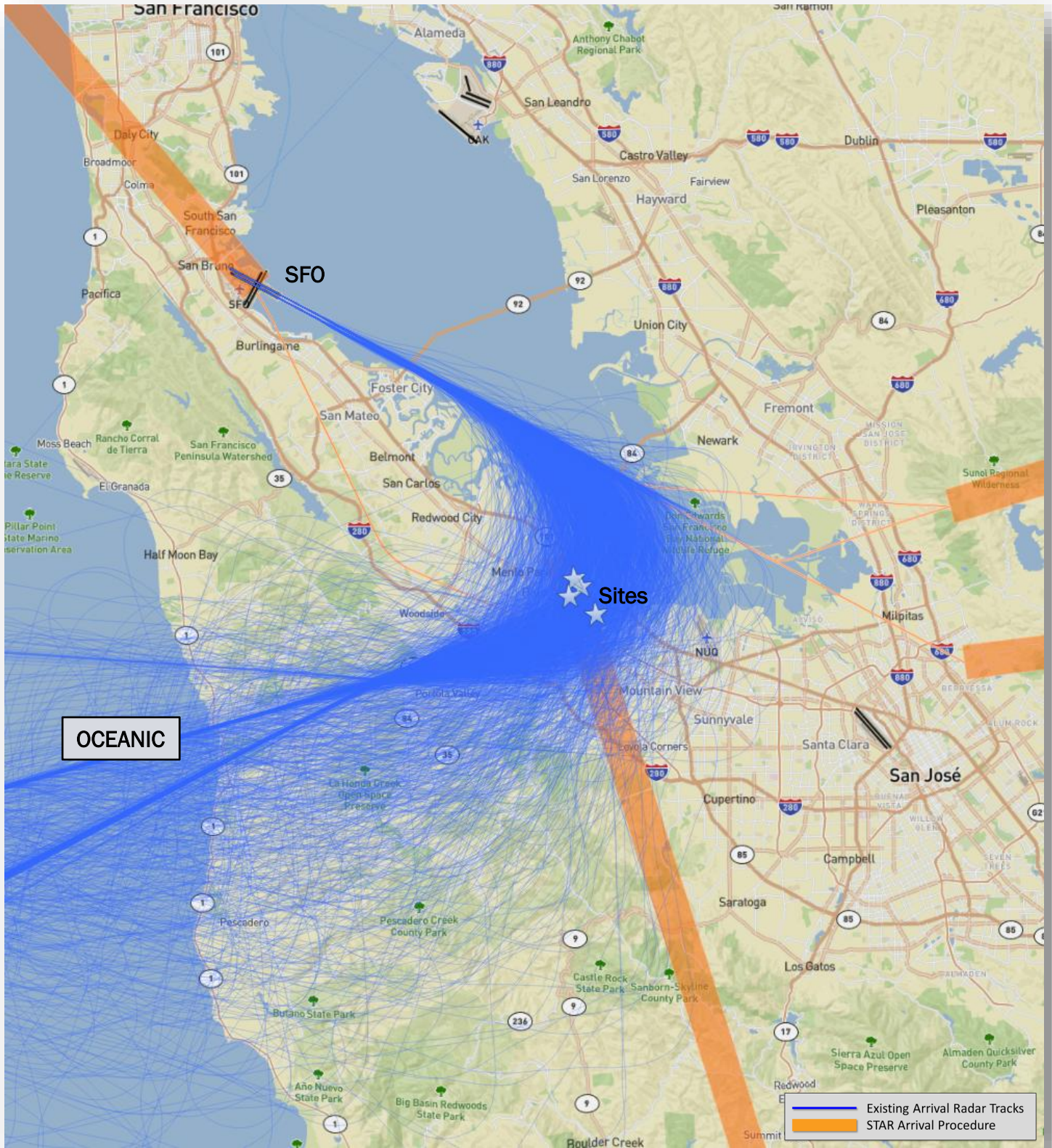


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

6800 Tracks

Figure 3d
 OCEANIC Arrival Flight Tracks

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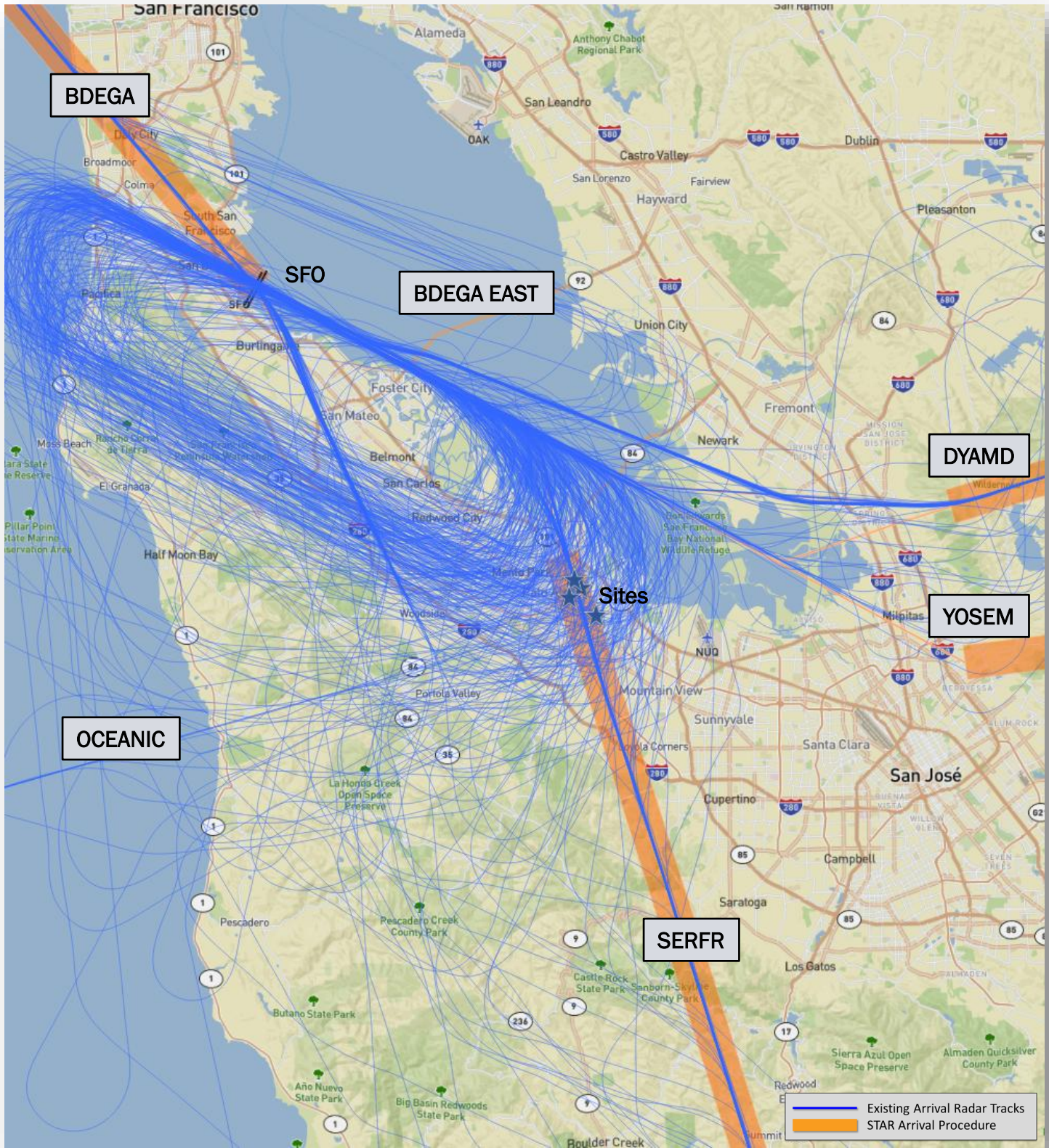


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

1866 Tracks

Figure 3e
Missed and Other Landing Flight Tracks

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

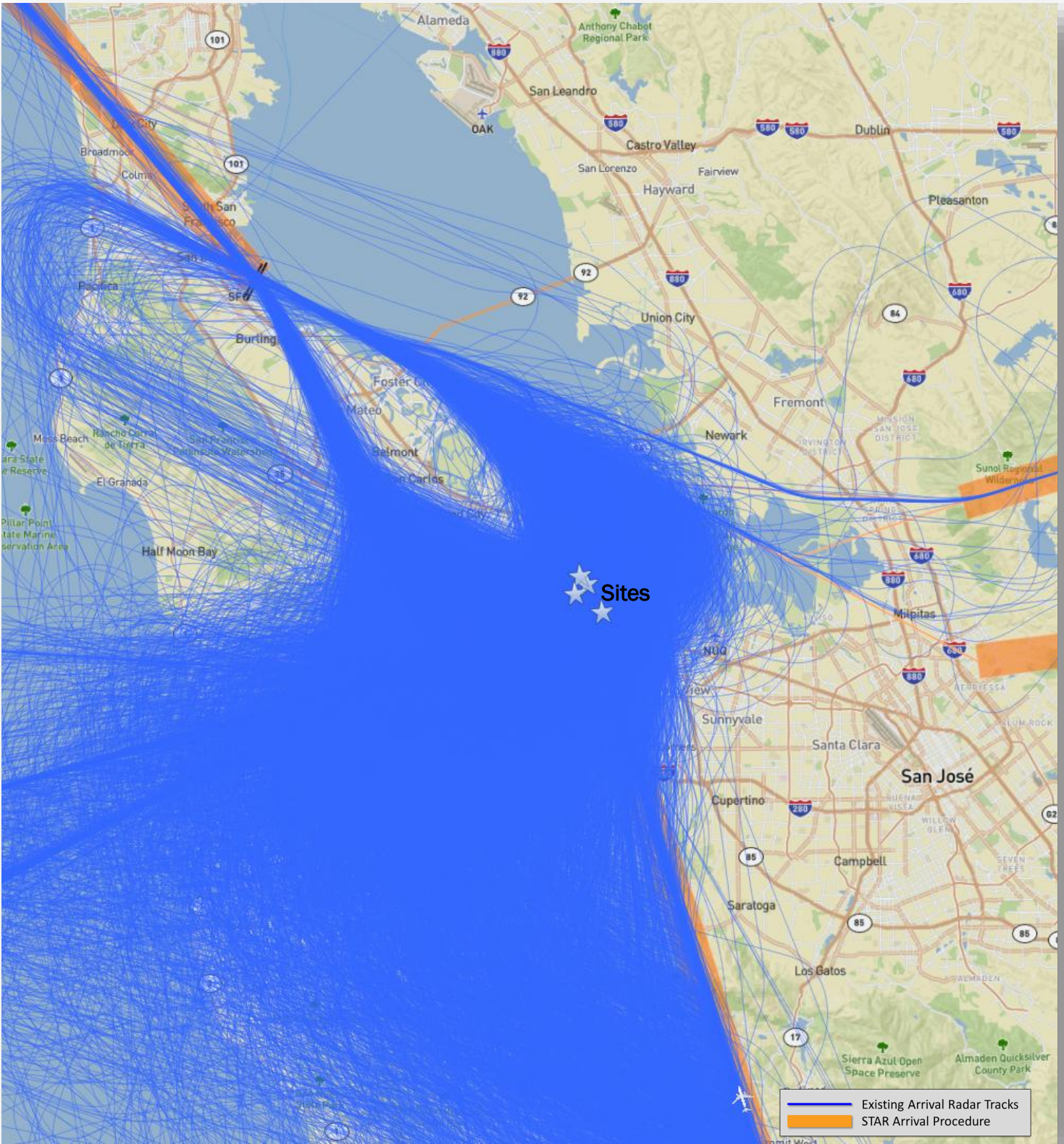


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

233 Tracks

Figure 4
All SFO Arrival Flight Tracks (within 2nm of any sites)

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

16,552 Tracks

Figure 5a (Part A)

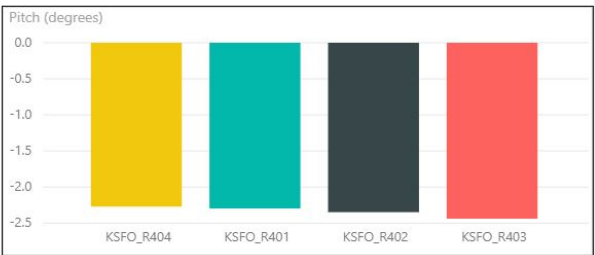
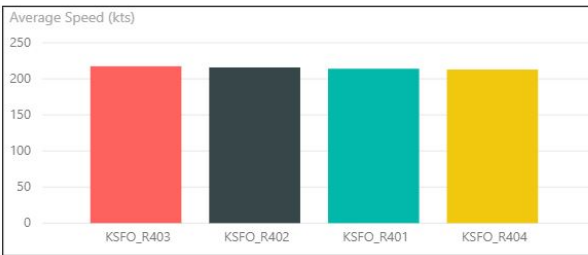
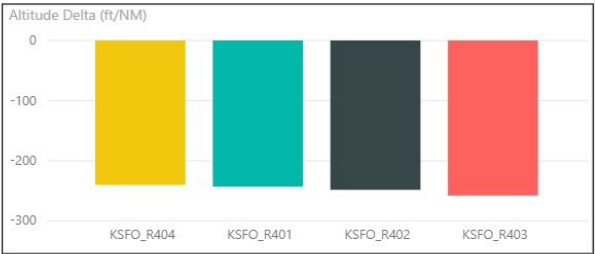
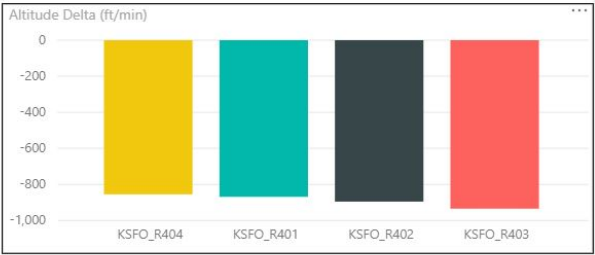
SFO Aircraft Performance Data at Noise Measurement Sites (*within 2 Nautical Miles*)

(SERFR Procedure with Radar Vector and SERFR flying straight without Radar Vector)

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

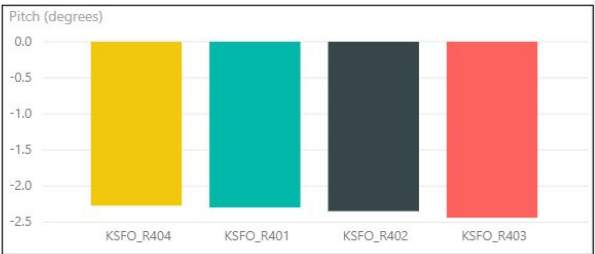
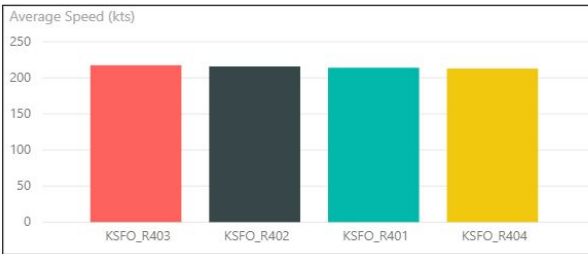
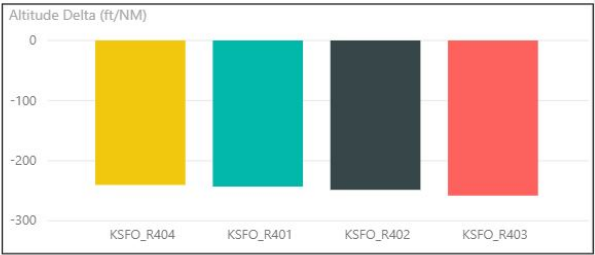
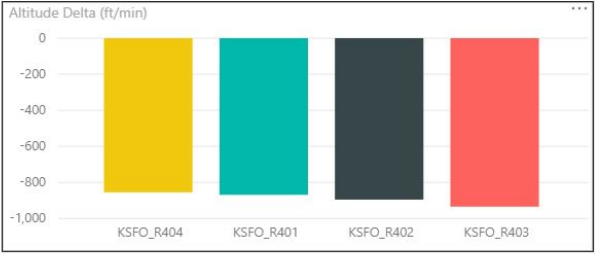
**SERFR
Radar Vector**

Waypoint	Ops	Alt (ft msl)	Alt Delta (ft/Min)	Alt Delta (ft/NM)	Pitch (deg)	Speed (kts)
KSFO_R401	3,476	4,661	-868.6	-243.0	-2.30	214.0
KSFO_R402	3,157	4,748	-894.9	-248.4	-2.35	215.8
KSFO_R403	3,766	4,949	-934.0	-258.0	-2.44	217.4
KSFO_R404	3,260	4,571	-854.6	-240.3	-2.27	212.9
Total	13,659	4,739	-889.4	-247.7	-2.34	215.1



**SERFR
Straight**

Waypoint	Ops	Alt (ft msl)	Alt Delta (ft/Min)	Alt Delta (ft/NM)	Pitch (deg)	Speed (kts)
KSFO_R401	3,476	4,661	-868.6	-243.0	-2.30	214.0
KSFO_R402	3,157	4,748	-894.9	-248.4	-2.35	215.8
KSFO_R403	3,766	4,949	-934.0	-258.0	-2.44	217.4
KSFO_R404	3,260	4,571	-854.6	-240.3	-2.27	212.9
Total	13,659	4,739	-889.4	-247.7	-2.34	215.1



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of each Measurement Site.

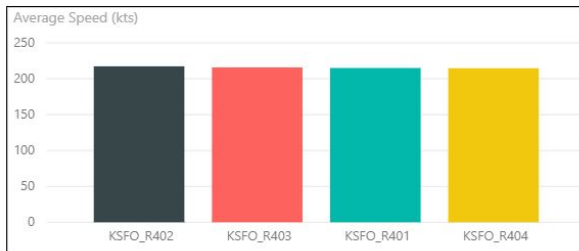
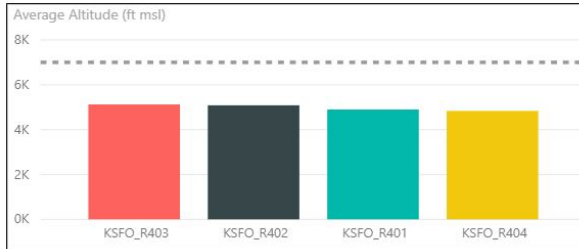
Figure 5b (Part B)

SFO Aircraft Performance Data at Noise Measurement Sites (*within 2 Nautical Miles*) (BDEGA Procedure and OCEANIC)

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

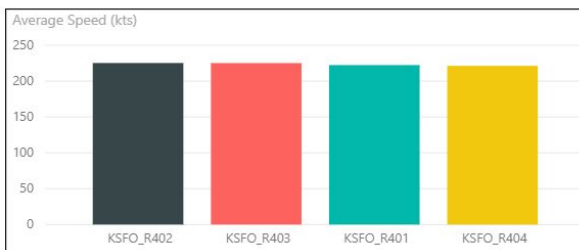
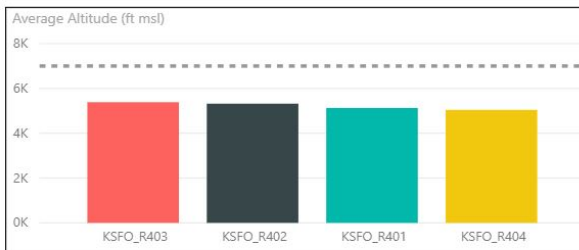
BDEGA

Waypoint	Ops	Alt (ft msl)	Alt Delta (ft/Min)	Alt Delta (ft/NM)	Pitch (deg)	Speed (kts)
KSFO_R401	5,552	4,897	-1,055.2	-294.0	-2.78	215.0
KSFO_R402	5,454	5,085	-1,111.1	-306.6	-2.90	217.3
KSFO_R403	5,285	5,124	-1,072.6	-298.6	-2.82	215.8
KSFO_R404	5,434	4,835	-1,051.7	-293.2	-2.77	214.7
Total	21,725	4,984	-1,072.6	-298.1	-2.82	215.7



OCEANIC

Waypoint	Ops	Alt (ft msl)	Alt Delta (ft/Min)	Alt Delta (ft/NM)	Pitch (deg)	Speed (kts)
KSFO_R401	1,554	5,128	-1,194.3	-321.1	-3.03	222.3
KSFO_R402	1,567	5,319	-1,231.6	-327.1	-3.09	225.3
KSFO_R403	1,518	5,385	-1,209.1	-321.3	-3.04	225.2
KSFO_R404	1,506	5,042	-1,186.5	-320.5	-3.03	221.3
Total	6,145	5,219	-1,205.6	-322.5	-3.05	223.5



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of each Measurement Site.

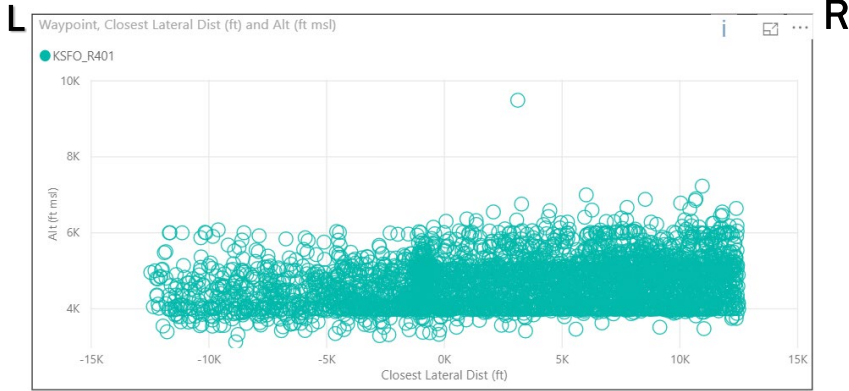
Figure 5c

Aircraft Altitude and Path Dispersion (Site 401 Rinconada Library)

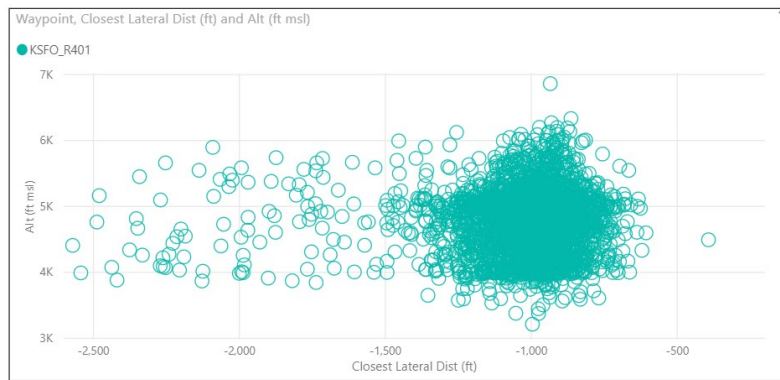
(within 2 Nautical Miles)

Site

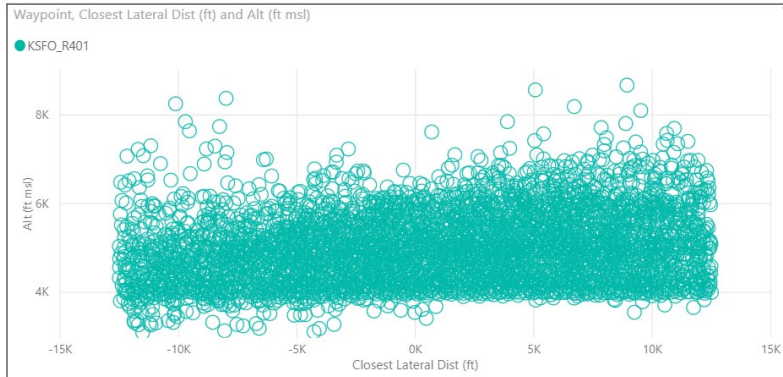
SERFR
Radar Vector



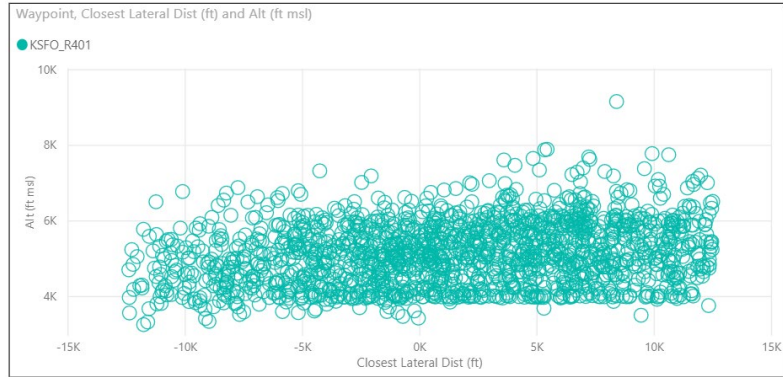
SERFR
Straight



BDEGA



OCEANIC



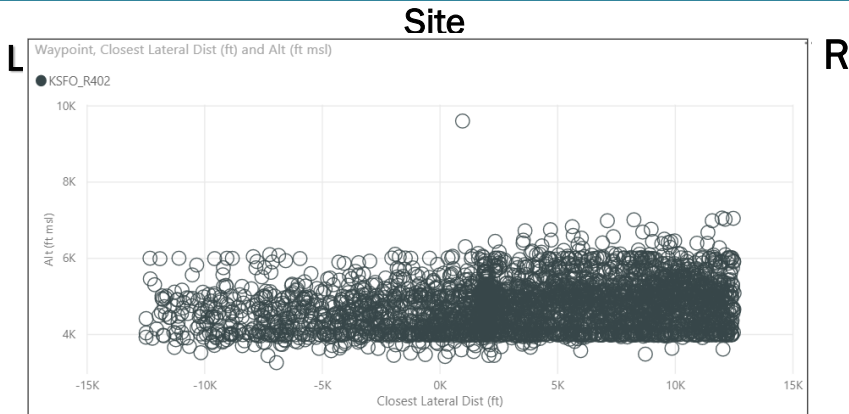
SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

Figure 5d Aircraft Altitude and Path Dispersion (Site 402 Gamble House)

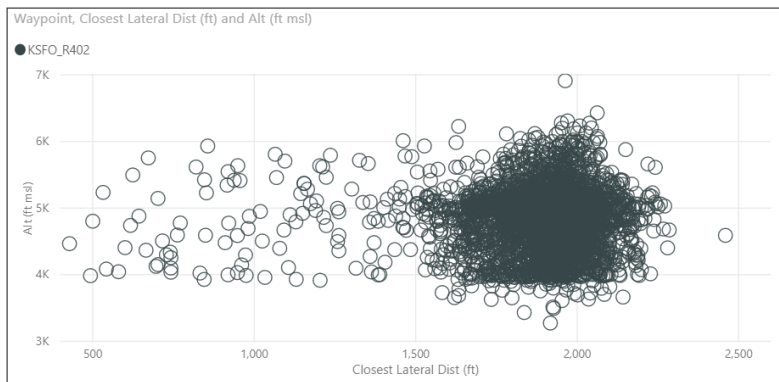
(within 2 Nautical Miles)

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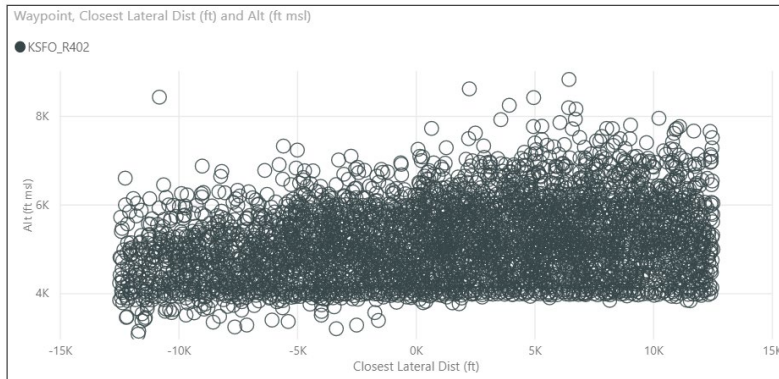
SERFR
Radar Vector



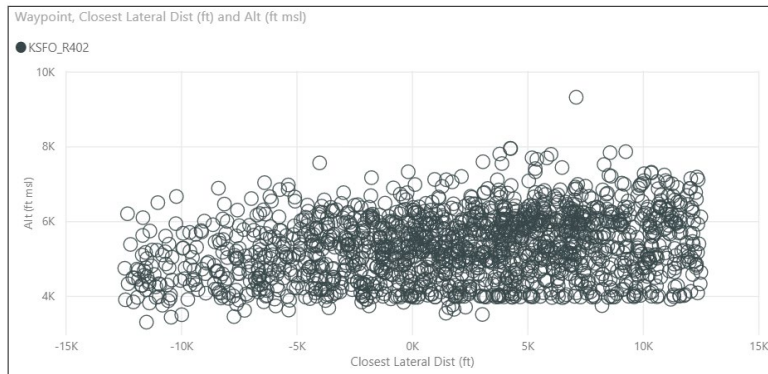
SERFR
Straight



BDEGA



OCEANIC

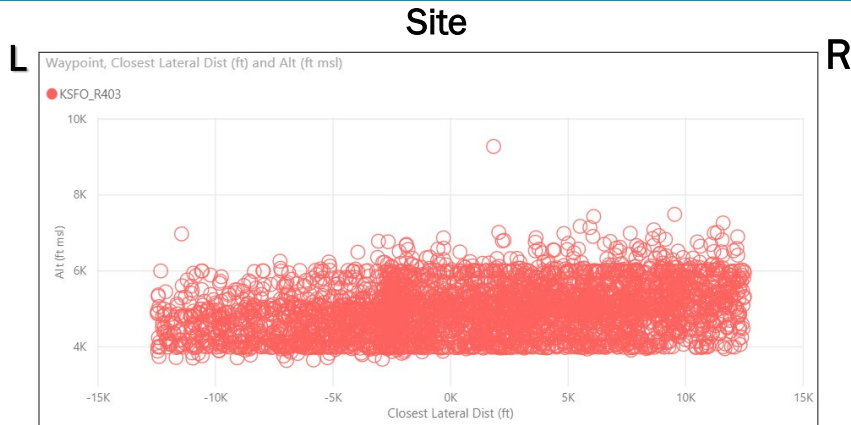


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

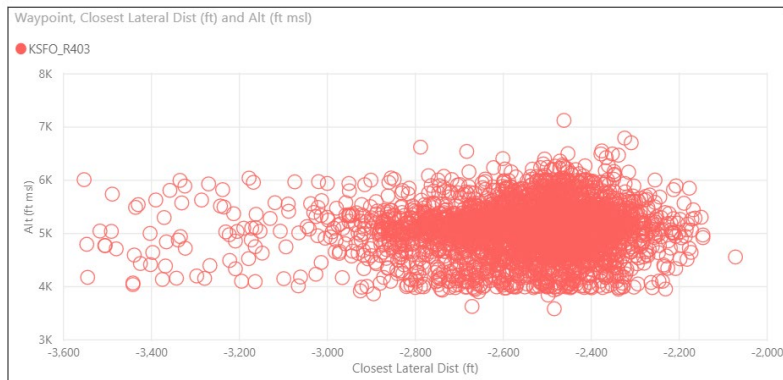
Figure 5e Aircraft Altitude and Path Dispersion (Site 403 Hoover Park)

(within 2 Nautical Miles)

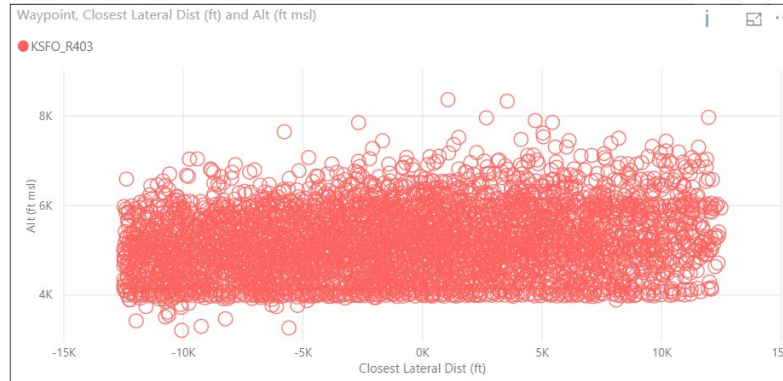
SERFR
Radar Vector



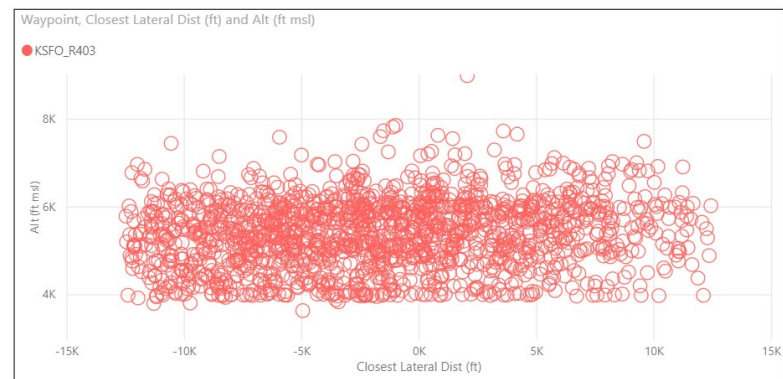
SERFR
Straight



BDEGA



OCEANIC

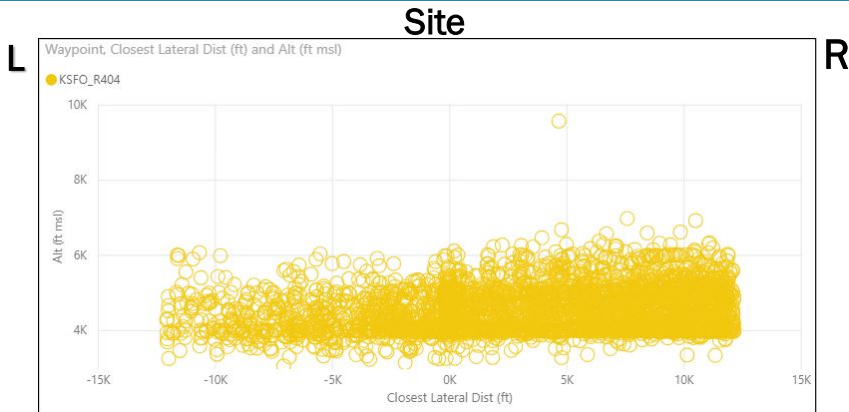


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

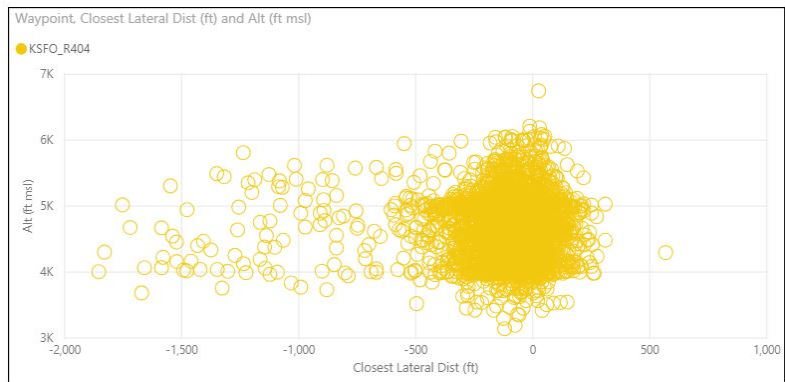
Figure 5f Aircraft Altitude and Path Dispersion (Site 404 Tevis Residence)

(within 2 Nautical Miles)

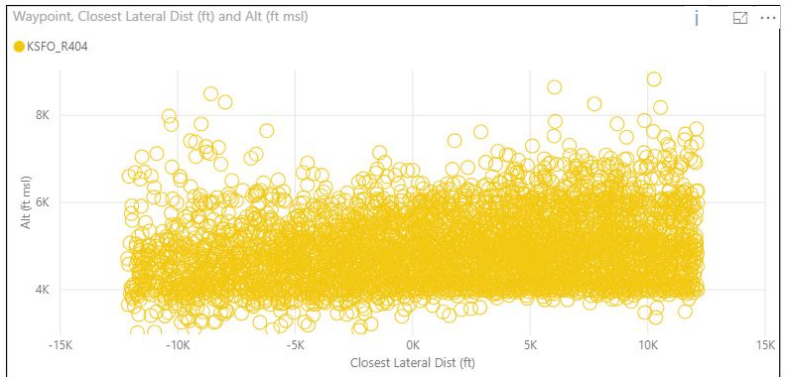
SERFR
Radar Vector



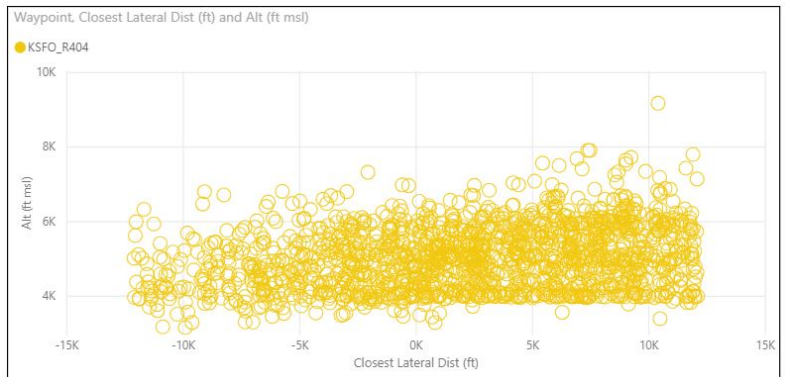
SERFR
Straight



BDEGA



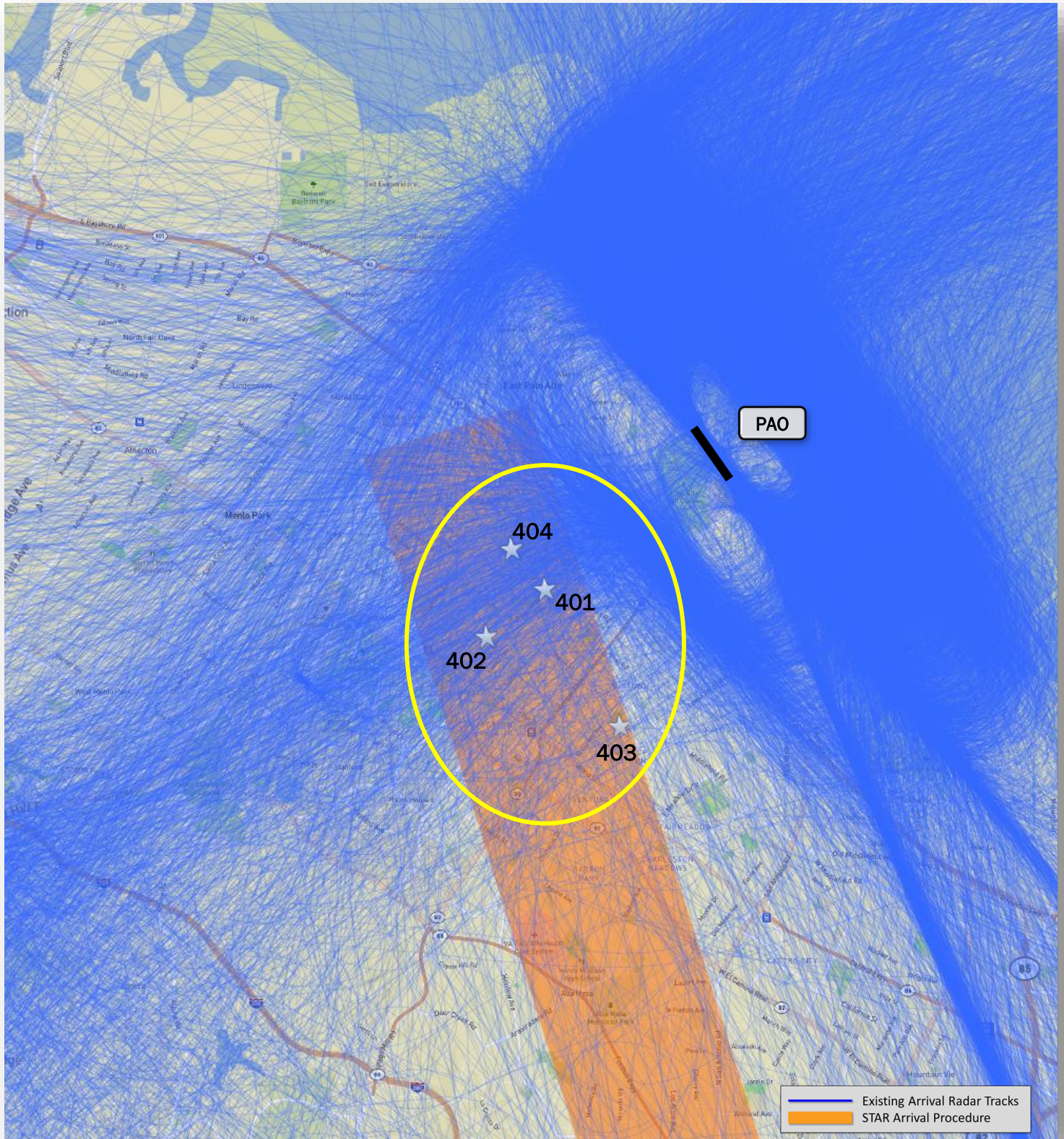
OCEANIC



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

Figure 6a
Palo Alto Airport (PAO) Flight Tracks

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

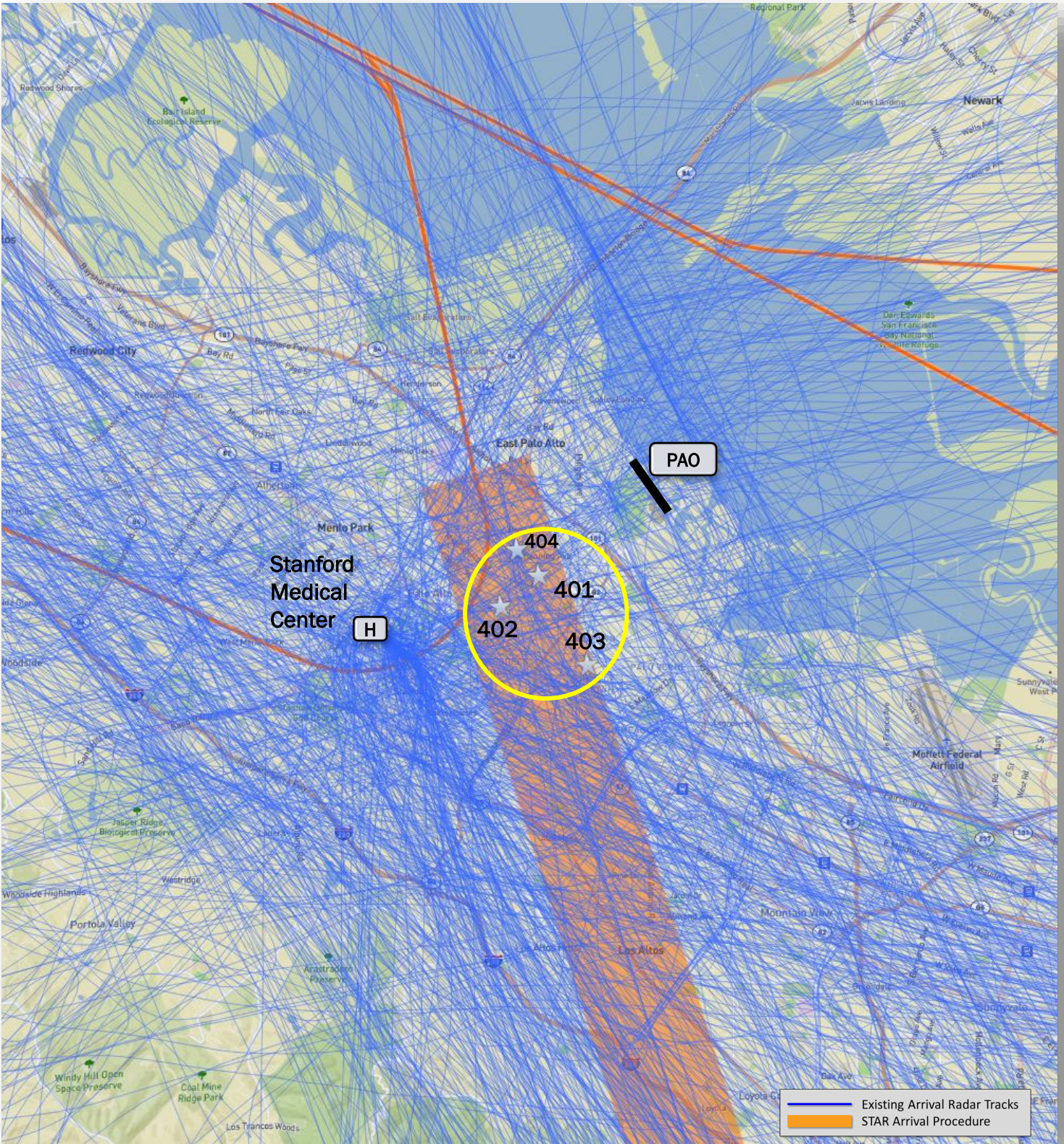


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

13,065 Tracks

Figure 6b
Other Airport Overflight Flight Tracks

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019.

911 Tracks

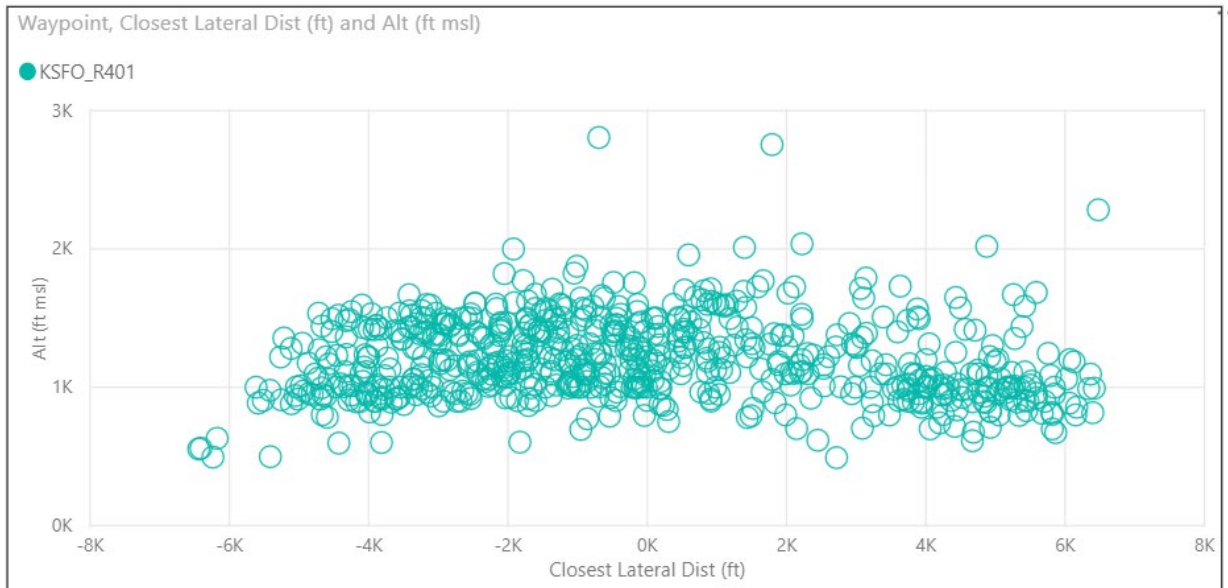
Figure 7a

PAO Aircraft Altitude and Path Dispersion (Site 401 Rinconada Library)

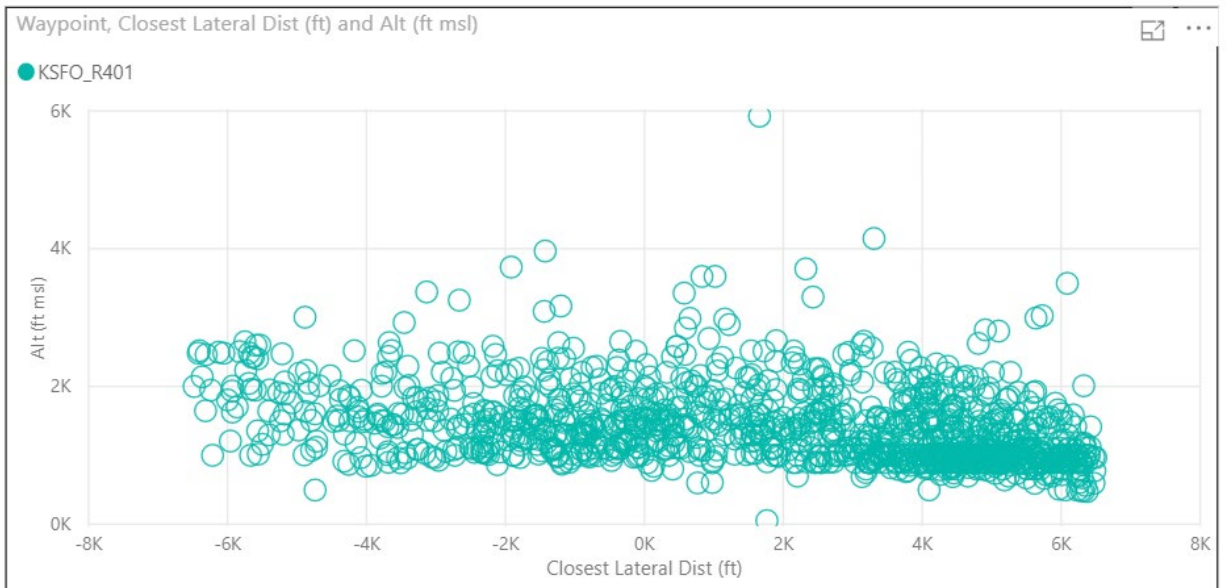
(within 1 Nautical Miles)

L Site R

PAO Arrivals



PAO Departures



SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

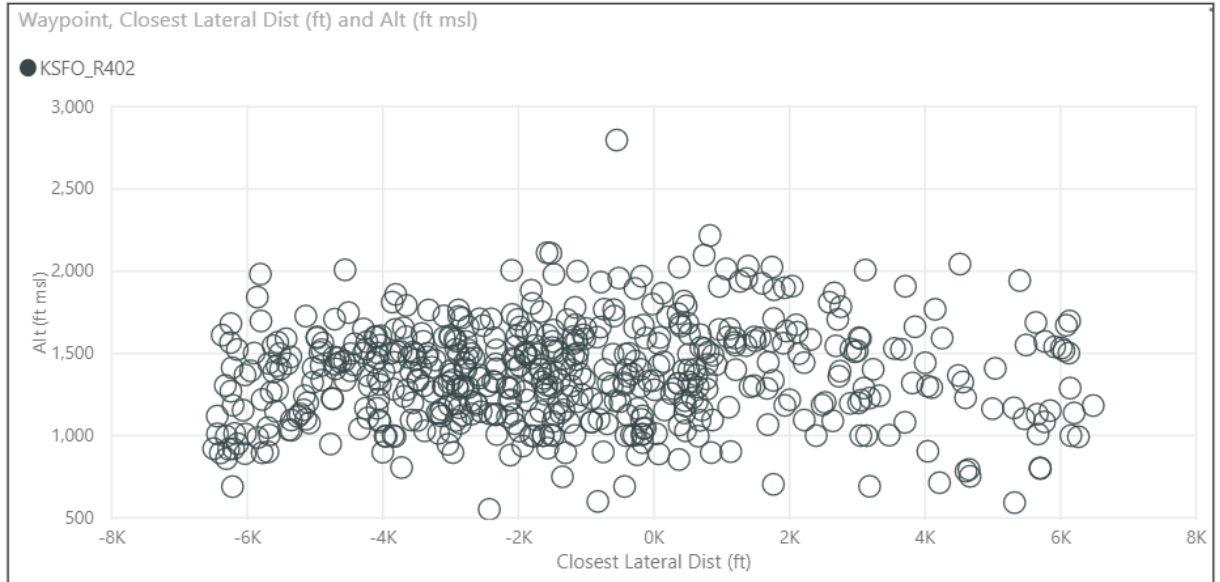
Figure 7b

PAO Aircraft Altitude and Path Dispersion (Site 402 Gamble House)

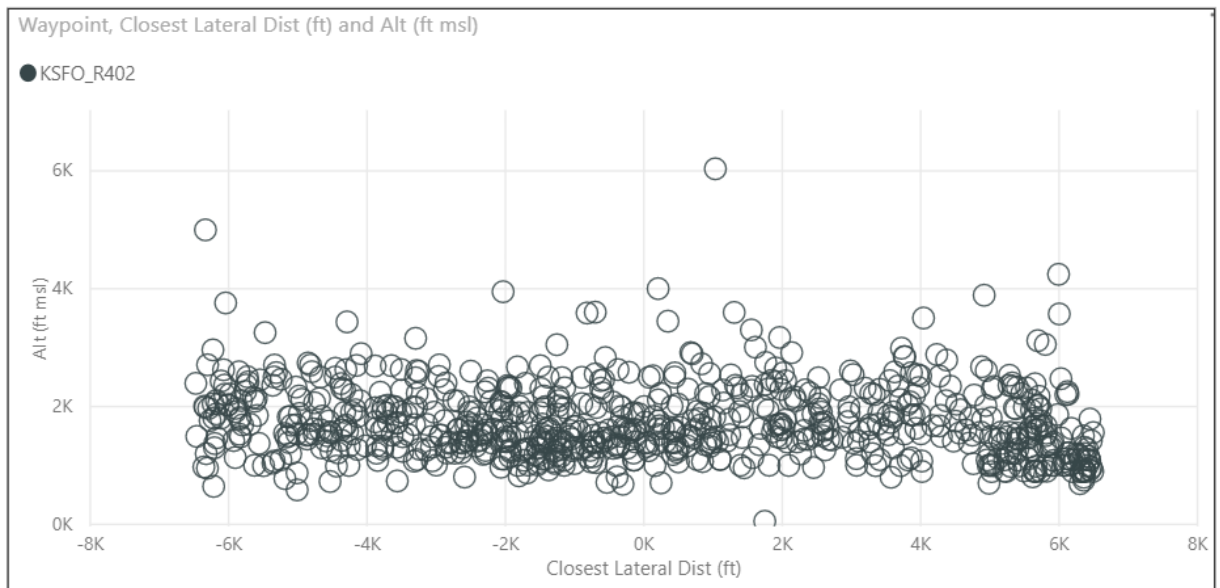
(within 1 Nautical Miles)

L Site R

PAO Arrivals



PAO Departures



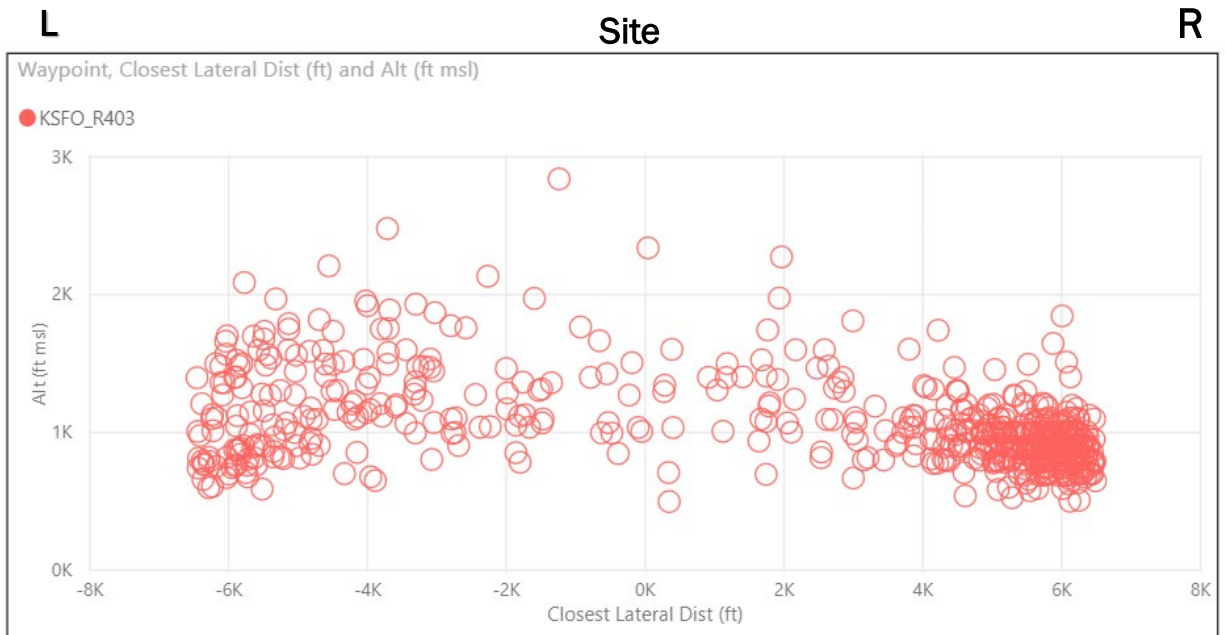
SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

Figure 7c

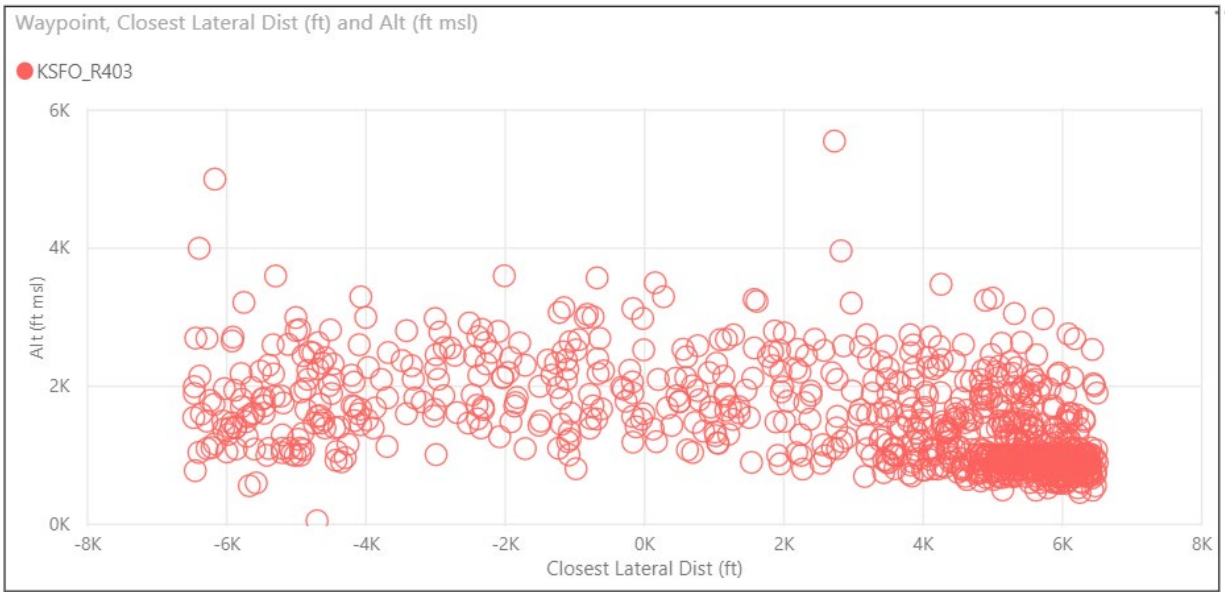
PAO Aircraft Altitude and Path Dispersion (Site 403 Hoover Park)

(within 1 Nautical Miles)

PAO
Arrivals



PAO
Departures



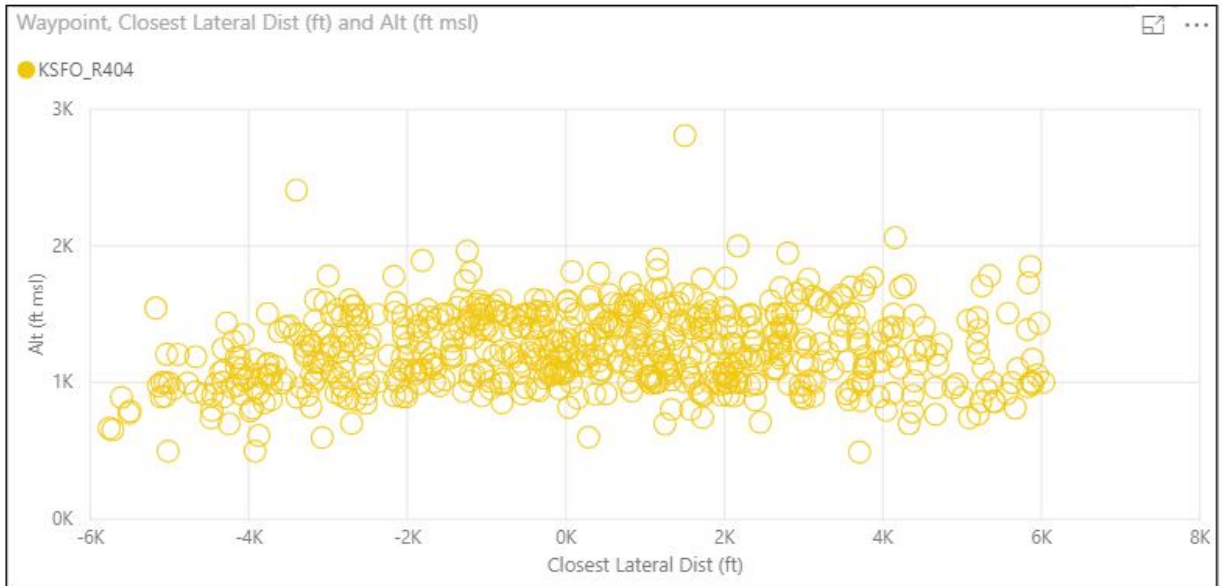
SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019
Within 2 Nautical Miles of Site 404.

Figure 7d

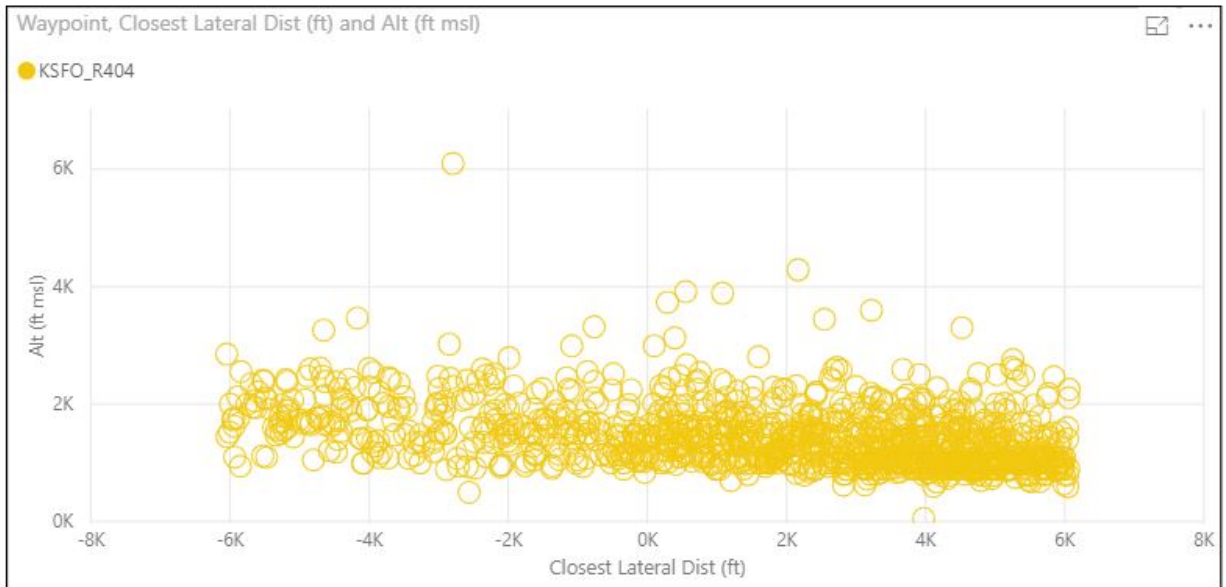
PAO Aircraft Altitude and Path Dispersion (Site 404 Tevis Residence) (within 1 Nautical Miles)

L Site R

PAO Arrivals



PAO Departures

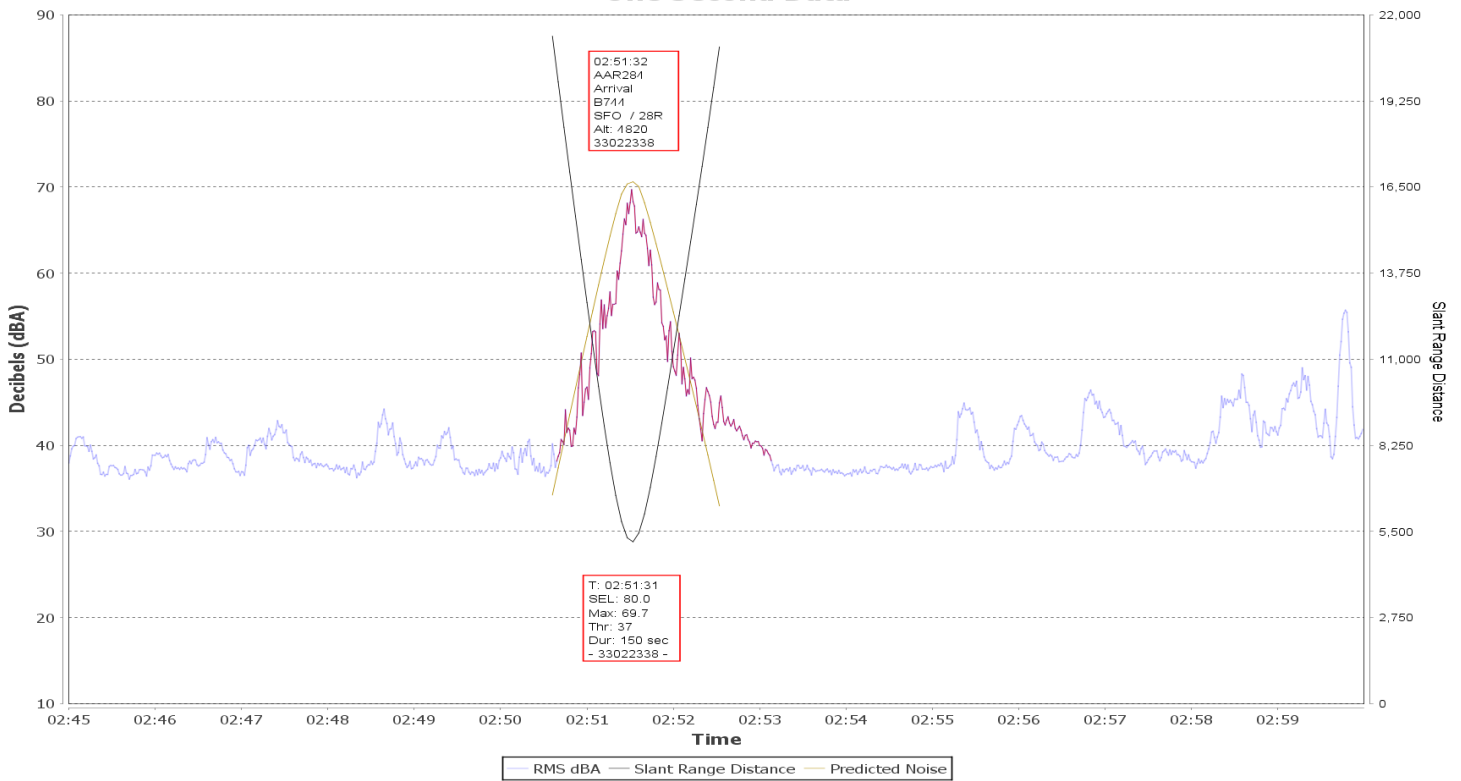


SFO Runways 28L/R Arrival Tracks between October 30th 2018 and January 4th 2019 Within 2 Nautical Miles of Site 404.

Figure 8a
Example Time History Noise Plots
 402 – Gamble House (Dec, 1st 2018)

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

One Second Data



One Second Data

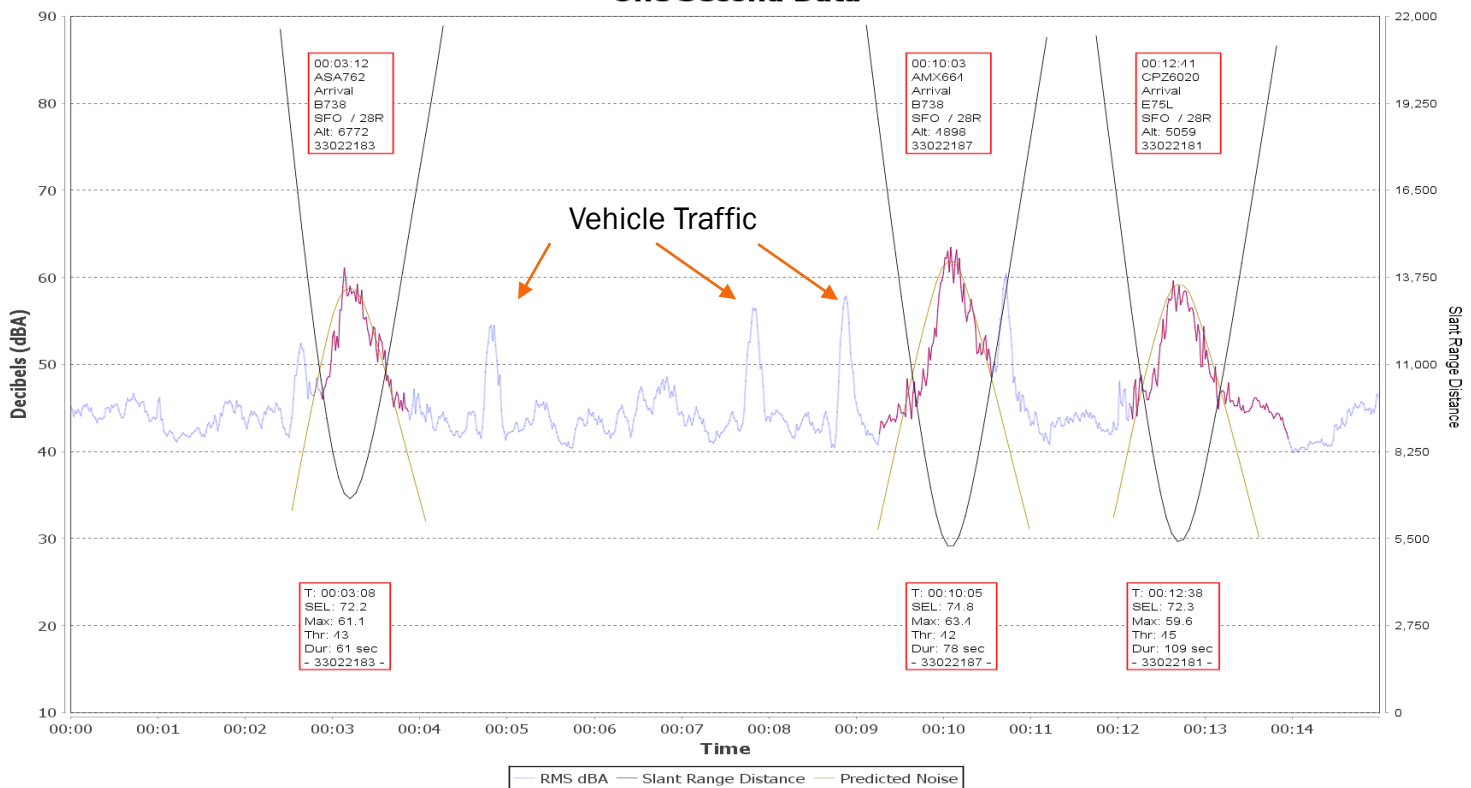


Figure 8b

Example Time History Noise Plots

402 – Gamble House (Dec, 1st 2018)

SAN FRANCISCO INTERNATIONAL – PALO ALTO NOISE MONITORING REPORT

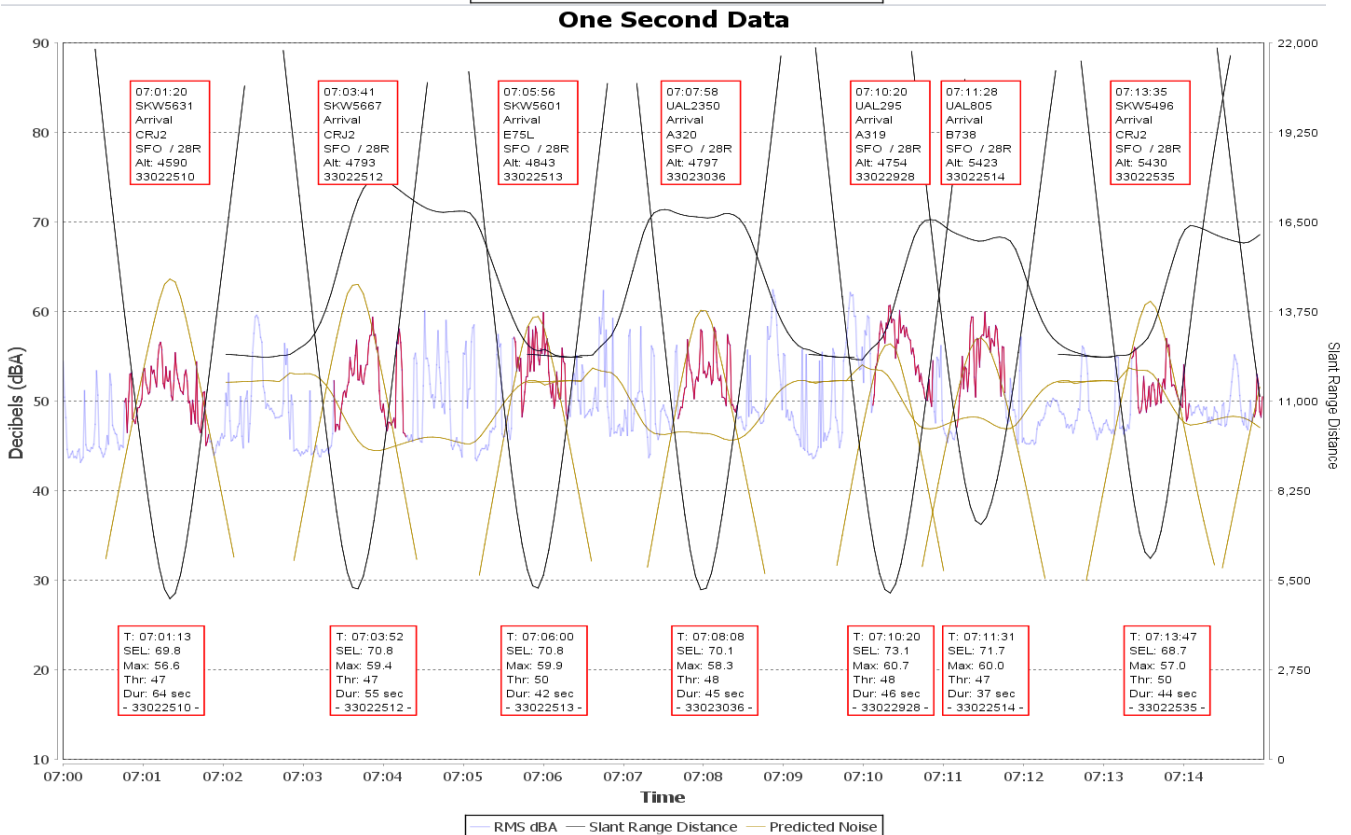
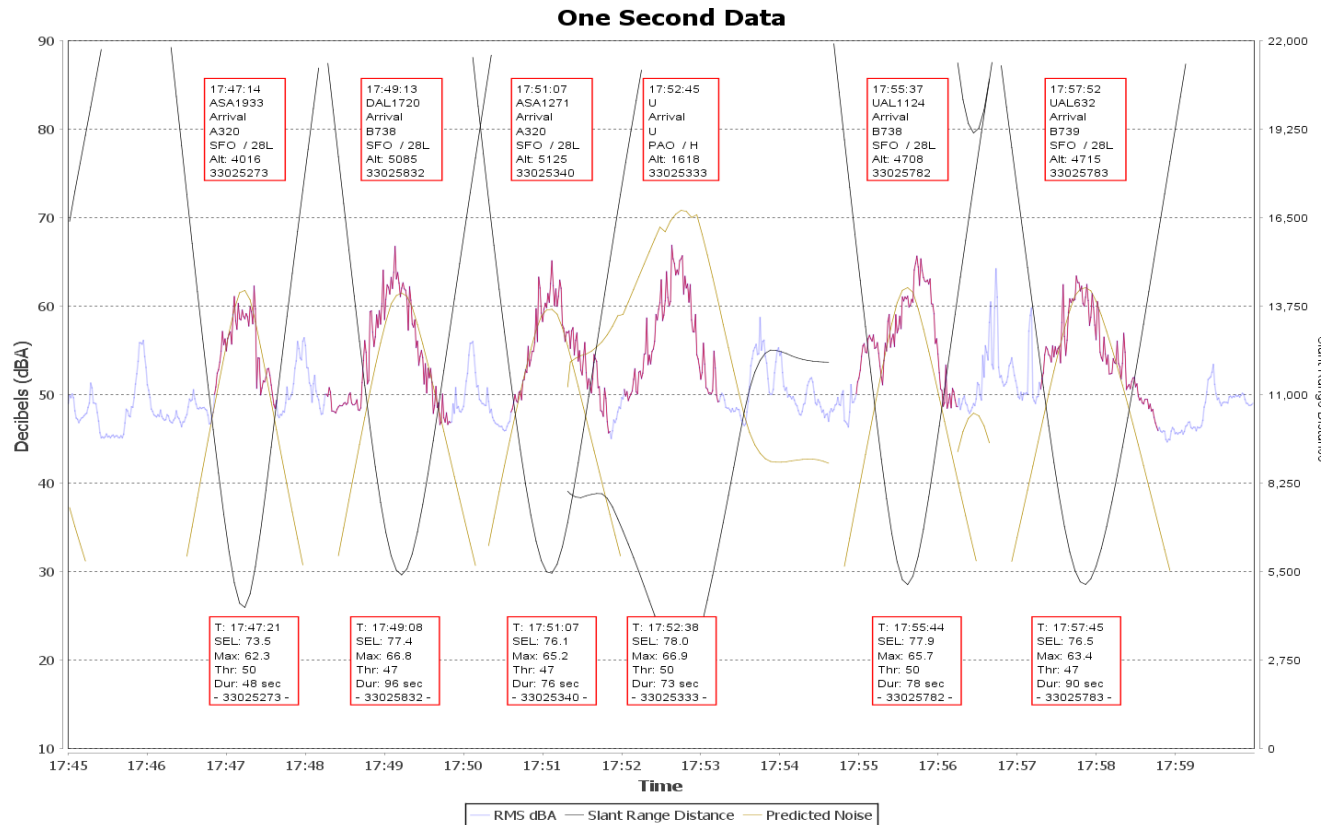


Figure 9a
Correlated Noise Event Report
Site 401 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
401	12/1/2018 0:03:16	A	SFO	B738	ASA762	ASA	OCEANIC	28R	62	74	(641)	6,623	213	-3.0	(1,140)	38
401	12/1/2018 0:10:04	A	SFO	B738	AMX664	AMX	SERFR-ST	28R	64	76	(935)	4,774	200	-3.7	(1,294)	345
401	12/1/2018 0:12:42	A	SFO	E75L	CP26020	CPZ	SERFR-ST	28R	59	72	(941)	5,000	186	-2.1	(671)	345
401	12/1/2018 0:17:09	A	SFO	B748	KAL213	KAL	SERFR-ST	28R	70	81	(1,012)	5,118	270	-2.4	(1,128)	346
401	12/1/2018 0:23:01	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	60	73	(1,034)	4,812	183	-2.3	(746)	346
401	12/1/2018 0:37:08	A	SFO	A320	ASA1949	ASA	SERFR-ST	28R	62	75	(1,341)	4,182	178	-3.8	(1,185)	346
401	12/1/2018 1:19:15	A	SFO	C750	U	U	SERFR	28R	53	65	(4,219)	4,030	245	-1.2	(518)	337
401	12/1/2018 2:12:29	D	PAO	EC35	CMD12	CMD	U	H	47	58	8,952	98	7	0.0	-	344
401	12/1/2018 2:51:29	A	SFO	B744	AAR284	AAR	SERFR-ST	28R	71	81	(1,026)	4,771	215	-2.7	(1,035)	346
401	12/1/2018 3:25:30	A	SFO	B739	UAL2550	UAL	BDEGA	28R	56	67	7,545	3,989	216	-0.1	(38)	61
401	12/1/2018 3:46:29	A	SFO	B738	UAL1639	UAL	OCEANIC	28L	63	72	3,789	6,658	245	-1.8	(755)	61
401	12/1/2018 3:58:11	A	SFO	B738	UAL1724	UAL	OCEANIC	28R	63	75	2,113	5,786	250	-3.6	(1,602)	64
401	12/1/2018 4:09:28	A	SFO	B772	UAL396	UAL	OCEANIC	28R	57	69	(7,329)	6,502	265	-1.1	(522)	27
401	12/1/2018 4:10:56	A	SFO	B738	UAL1746	UAL	OCEANIC	28R	59	70	4,059	7,472	243	-2.5	(1,069)	69
401	12/1/2018 4:38:19	A	SFO	B753	UAL2553	UAL	BDEGA	28R	53	64	14,060	4,776	173	-2.4	(727)	339
401	12/1/2018 5:13:22	A	SFO	B789	UAL955	UAL	BDEGA	28R	61	71	5,725	4,319	282	-3.1	(1,525)	97
401	12/1/2018 5:36:56	A	SFO	B738	UAL1557	UAL	OCEANIC	28R	66	75	4,773	5,698	270	-4.8	(2,270)	78
401	12/1/2018 5:39:10	A	SFO	B77W	AIC173	AIC	OTHER	28R	55	68						
401	12/1/2018 5:46:45	A	SFO	B753	UAL1575	UAL	OCEANIC	28R	54	66	8,578	6,734	258	-2.7	(1,230)	80
401	12/1/2018 5:49:28	A	SFO	B77W	UAL916	UAL	OCEANIC	28R	60	71	6,814	6,164	254	-4.1	(1,815)	79
401	12/1/2018 6:04:11	A	SFO	B77W	EVA008	EVA	BDEGA	28R	59	74	668	5,851	229	-3.1	(1,253)	114
401	12/1/2018 6:12:17	A	SJC	GALX	U	U	U	12R	52	64	11,336	2,133	219	-2.0	(791)	17
401	12/1/2018 6:21:11	A	SFO	CRJ2	SKW5738	SKW	BDEGA	28R	50	63	(10,317)	4,074	256	-5.7	(2,573)	46
401	12/1/2018 6:28:42	A	SFO	P28A	UAL872	UAL	BDEGA	28R	57	70	7,116	5,533	264	-2.7	(1,241)	99
401	12/1/2018 6:40:14	A	SFO	CRJ2	SKW5276	SKW	BDEGA	28R	55	68	4,266	4,421	260	-3.3	(1,489)	34
401	12/1/2018 6:57:42	A	SFO	E75L	SKW5358	SKW	BDEGA	28R	50	64	(11,311)	3,884	251	-4.6	(2,055)	63
401	12/1/2018 6:59:13	A	SFO	CRJ7	SKW5802	SKW	BDEGA	28L	54	65	(10,152)	3,454	228	-3.5	(1,425)	77
401	12/1/2018 7:01:15	A	SFO	CRJ2	SKW5631	SKW	SERFR-ST	28R	55	66	(1,024)	4,547	221	-1.7	(647)	345
401	12/1/2018 7:03:47	A	SFO	CRJ2	SKW5667	SKW	SERFR-ST	28R	54	67	(932)	4,755	226	-3.3	(1,328)	345
401	12/1/2018 7:06:01	A	SFO	E75L	SKW5601	SKW	SERFR-ST	28R	58	69	(952)	4,800	236	-3.1	(1,299)	345
401	12/1/2018 7:08:01	A	SFO	A320	UAL2350	UAL	SERFR-ST	28R	61	70	(864)	4,754	231	-1.2	(506)	346
401	12/1/2018 7:10:21	A	SFO	A319	UAL295	UAL	SERFR-ST	28R	63	74	(1,054)	4,697	212	-3.2	(1,182)	345
401	12/1/2018 7:11:38	A	SFO	B738	UAL805	UAL	BDEGA	28R	59	71	(5,067)	5,247	224	-3.3	(1,291)	46
401	12/1/2018 7:13:41	A	SFO	CRJ2	SKW5496	SKW	BDEGA	28R	59	69	(1,844)	5,311	205	-2.9	(1,057)	67
401	12/1/2018 7:15:19	A	SFO	A359	SIA32	SIA	BDEGA	28R	57	71	1,894	5,664	219	-2.3	(900)	110
401	12/1/2018 7:34:44	A	SFO	E75L	CP26034	CPZ	SERFR-ST	28L	63	76	(930)	4,920	195	-2.3	(795)	345
401	12/1/2018 7:36:49	A	SFO	A320	ASA1925	ASA	SERFR-ST	28L	60	72	(1,071)	4,097	241	-1.7	(739)	346
401	12/1/2018 7:37:43	A	SFO	B789	UAL858	UAL	BDEGA	28R	65	76	724	5,396	247	-3.3	(1,425)	44
401	12/1/2018 7:49:39	A	SFO	B77W	UAL862	UAL	BDEGA	28R	57	69	10,308	5,134	189	-2.7	(887)	348
401	12/1/2018 7:50:58	A	SFO	A320	UAL618	UAL	BDEGA	28L	66	76	(1,012)	5,373	230	-4.5	(1,830)	115
401	12/1/2018 7:55:00	A	SFO	A320	UAL612	UAL	SERFR-ST	28L	67	78	(978)	4,493	186	-3.5	(1,159)	345
401	12/1/2018 7:58:45	A	SFO	A320	JBU1136	JBU	SERFR-ST	28L	69	77	(914)	3,982	217	-0.3	(104)	346
401	12/1/2018 8:02:21	A	SJC	A320	JBU826	JBU	U	12R	57	67	8,206	1,994	209	-1.3	(495)	11
401	12/1/2018 8:04:44	A	SJC	B737	SWA2630	SWA	U	12R	59	69	5,748	2,985	161	0.2	60	3
401	12/1/2018 8:07:29	A	SFO	CRJ7	SKW5464	SKW	BDEGA	28L	59	70	4,155	5,596	242	-3.8	(1,628)	59
401	12/1/2018 8:13:14	A	SFO	A320	ASA1951	ASA	SERFR	28L	67	78	(822)	4,293	182	-3.9	(1,235)	343
401	12/1/2018 8:15:49	A	SFO	A21N	ASA1591	ASA	SERFR-ST	28L	59	71	(1,149)	5,037	202	-4.0	(1,414)	345
401	12/1/2018 8:18:34	A	SFO	B739	UAL1294	UAL	SERFR-ST	28L	61	73	(910)	4,647	242	-2.9	(1,221)	345
401	12/1/2018 8:20:59	A	SFO	B77W	UAL838	UAL	OCEANIC	28R	64	77	730	6,187	225	-3.3	(1,320)	32
401	12/1/2018 8:24:09	A	SFO	B77W	ANA8	ANA	BDEGA	28R	62	74	(3,744)	5,442	255	-3.6	(1,601)	38
401	12/1/2018 8:26:34	A	SFO	B77W	CESS89	CES	BDEGA	28L	62	74	1,071	4,596	203	-2.5	(890)	33
401	12/1/2018 8:33:08	A	SFO	E75L	SKW5642	SKW	BDEGA	28L	58	71	(4,127)	4,953	232	-1.5	(600)	64
401	12/1/2018 8:35:06	A	SFO	B739	UAL662	UAL	SERFR-ST	28L	61	74	(954)	4,438	180	-4.2	(1,332)	345
401	12/1/2018 8:36:43	A	SFO	A332	CES767	CES	BDEGA	28R	58	73	6,026	6,632	215	-3.8	(1,433)	79
401	12/1/2018 8:40:39	A	SFO	E75L	QXE2283	QXE	BDEGA	28L	56	69	4,907	6,538	243	-2.2	(965)	70
401	12/1/2018 8:42:48	A	SFO	B737	SWA3330	SWA	SERFR	28L	56	69	14,462	5,961	216	-2.2	(836)	37
401	12/1/2018 8:44:47	A	SFO	B77W	CPA870	CPA	BDEGA	28R	61	72	(7,263)	6,963	234	-3.9	(1,622)	115
401	12/1/2018 8:49:29	A	SFO	B77W	KAL023	KAL	BDEGA	28R	67	77	1,139	4,011	218	-0.5	(184)	30
401	12/1/2018 8:52:10	A	SFO	A320	ACA574	ACA	BDEGA	28L	56	70	(12,048)	6,152	257	-0.6	(289)	113
401	12/1/2018 8:52:49	A	SFO	A320	ACA574	ACA	BDEGA	28L	52	61	(12,048)	6,152	257	-0.6	(289)	113
401	12/1/2018 8:54:10	D	SFO	A320	UAL234	UAL	U	28L	57	71	(1,653)	14,746	431	2.4	1,790	106
401	12/1/2018 8:56:16	A	SJC	E75L	CP25772	CPZ	U	12R	54	64	6,701	2,038	214	-2.1	(809)	15
401	12/1/2018 8:58:07	A	SJC	B788	ANA172	ANA	U	12R	55	65	8,858	2,759	189	-2.5	(840)	19
401	12/1/2018 9:01:03	A	SJC	E75L	QXE2810	QXE	U	12R	55	65	8,342	2,927	183	-2.3	(736)	14
401	12/1/2018 9:02:33	A	SJC	GLF6	N240CX	GA	U	12R	52	61	6,964	2,812	181	-3.7	(1,171)	6
401	12/1/2018 9:05:37	A	SJC	B737	SWA921	SWA	U	12R	55	67	8,002	2,683	194	-4.3	(1,470)	9
401	12/1/2018 9:07:47	A	SJC	E75L	QXE2259	QXE	U	12R	50	60	9,318	2,837	212	-2.8	(1,035)	8
401	12/1/2018 9:11:44	A	SFO	B738	UAL1615	UAL	BDEGA	28L	62	73	(3,294)	6,631	263	-3.8	(1,773)	114
401	12/1/2018 9:16:00	A	SFO	B738	UAL2055	UAL	BDEGA	28L	55	65	6,218	5,032	208	-1.6	(597)	59
401	12/1/2018 9:22:17	A	SFO	A319	ASA1751	ASA	BDEGA	28L	55	66	11,024	4,923	250	-3.8	(1,680)	37
401	12/1/2018 9:22:52	A	SJC	B739	ASA346	ASA	U	12R	57	68	8,206	2,008	156	-1.0	(260)	13
401	12/1/2018 9:25:36	A	SFO	B789	UAL2	UAL	BDEGA	28R	58	71	6,112	5,918	234	-2.5	(1,035)	27
401	12/1/2018 9:28:17	A	SFO	A319	UAL820	UAL	SERFR	28L	57	69	7,147	4,998	223	-0.5	(194)	61
401	12/1/2018 9:33:00	A	SFO	B789	UAL876	UAL	BDEGA	28R	62	74	(3,315)	4,774	211	-0.6	(240)	3
401	12/1/2018 9:43:50	A	SFO	CRJ9	JZA579	JZA	BDEGA	28L	54	66	(2,614)	5,001	217	-0.5	(184)	3
401	12/1/2018 9:45:16	D	PAO	U	U	U	U	31	58	69	6,150	997	87	1.8	280	157
401	12/1/2018 9:48:33	A	SFO	B739	UAL274	UAL	SERFR	28L	55	67	7,757	5,019	216	-0.8	(300)	60
401	12/1/2018 9:52:54	A	SFO	A319	ASA1935	ASA	SERFR	28L	51	60						
401	12/1/2018 9:56:21	A	SJC	PC12	N903PJ	GA	U	30	63	71	(3,868)	1,943	135	-1.0	(231)	316
401	12/1/2018 10:01:07	A	SJC	B737	SWA3249	SWA	U	12R	56	66	6,433	2,670	201	-2.8	(975)	10
401	12/1/2018 10:04:35	A	SFO	A321	JBU133	JBU	MISSED	28L	56	69	7					

Figure 9a
 Correlated Noise Event Report
 Site 401 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
401	12/1/2018 10:54:23	A	SFO	E75L	QXE2267	QXE	BDEGA	28L	55	66	8,488	4,074	182	-3.4	(1,078)	355
401	12/1/2018 10:59:06	A	SFO	A332	FJ1870	FJI	OCEANIC	28R	63	75	6,701	4,941	257	-4.2	(1,920)	52
401	12/1/2018 11:02:27	A	SFO	B788	ACA737	ACA	BDEGA	28R	56	70	8,495	5,466	271	-1.7	(799)	91
401	12/1/2018 11:09:37	D	SQL	S22T	N173CK	GA	U	30	58	70	7,937	2,391	168	3.7	1,101	108
401	12/1/2018 11:19:59	A	SQL	BE35	N8366D	GA	U	30	57	65	(3,475)	2,119	96	-3.2	(535)	314
401	12/1/2018 11:31:06	A	SFO	B739	ASA484	ASA	OCEANIC	28L	56	69	(12,713)	6,019	251	0.1	30	101
401	12/1/2018 11:36:33	A	SFO	CRJ2	SKW5899	SKW	BDEGA	28L	52	63	6,371	4,990	221	-0.9	(350)	88
401	12/1/2018 11:38:26	A	SFO	A320	ASA1027	ASA	SERFR	28L	55	68	10,867	6,000	252	0.0	-	87
401	12/1/2018 11:44:32	A	SFO	B737	SWA4146	SWA	SERFR	28L	50	60	-	-	-	-	-	-
401	12/1/2018 11:47:59	A	SFO	A320	UAL708	UAL	SERFR	28L	49	59	11,716	4,054	162	-1.7	(491)	327
401	12/1/2018 11:50:17	A	SFO	B738	UAL1763	UAL	BDEGA	28L	53	64	(9,514)	8,102	241	-2.4	(1,028)	113
401	12/1/2018 11:57:36	A	SFO	B752	UAL207	UAL	BDEGA	28L	54	64	-	-	-	-	-	-
401	12/1/2018 11:58:30	A	SFO	B738	SWA3582	SWA	BDEGA	28L	53	63	14,412	4,740	169	-4.0	(1,185)	9
401	12/1/2018 12:00:22	A	SFO	A319	ASA1332	ASA	BDEGA	28L	57	71	8,477	4,056	218	-1.0	(376)	53
401	12/1/2018 12:05:40	A	SFO	B744	QFA73	QFA	OCEANIC	28R	60	72	11,851	4,805	204	-6.4	(2,297)	12
401	12/1/2018 12:11:23	A	SFO	A388	UAE225	UAE	BDEGA	28R	66	76	3,699	4,938	220	-1.0	(383)	28
401	12/1/2018 12:17:24	A	SFO	B789	KLM281	KLM	BDEGA	28R	56	69	14,146	5,940	218	-1.0	(370)	30
401	12/1/2018 12:19:14	A	SFO	A321	AAL1956	AAL	BDEGA	28L	60	69	-	-	-	-	-	-
401	12/1/2018 12:23:14	A	SFO	B772	UAL949	UAL	BDEGA	28L	62	73	8,511	5,145	198	-2.8	(983)	32
401	12/1/2018 12:25:00	D	SFO	A319	UAL1830	UAL	U	28L	58	66	2,764	15,859	458	2.3	1,875	108
401	12/1/2018 12:26:42	A	SFO	E75L	SKW5586	SKW	SERFR-ST	28L	62	74	(936)	4,255	208	-2.2	(821)	345
401	12/1/2018 12:29:20	A	SFO	E75L	SKW5446	SKW	SERFR-ST	28L	59	70	(934)	5,181	201	-0.3	(113)	344
401	12/1/2018 12:32:57	A	SFO	A320	AJ1820	AJ	SERFR-ST	28L	67	77	(1,128)	5,022	185	0.0	-	344
401	12/1/2018 12:35:14	O	UNK	CRJ2	SKW5332	SKW	U	U	56	70	-	-	-	-	-	-
401	12/1/2018 12:37:17	A	SFO	A321	AAL789	AAL	SERFR-ST	28L	66	77	(805)	4,287	202	-3.2	(1,140)	345
401	12/1/2018 12:40:23	A	SFO	E75L	SKW5203	SKW	SERFR-ST	28L	59	71	(958)	4,757	204	-3.4	(1,218)	345
401	12/1/2018 12:47:11	A	SFO	CRJ2	SKW5655	SKW	SERFR	28L	55	67	(1,531)	5,967	235	-3.4	(1,424)	345
401	12/1/2018 12:59:17	A	SFO	CRJ2	SKW5476	SKW	SERFR	28L	56	67	3,256	5,000	242	-0.3	(109)	21
401	12/1/2018 13:00:09	A	SFO	CRJ2	SKW5476	SKW	SERFR	28L	55	66	3,256	5,000	242	-0.3	(109)	21
401	12/1/2018 13:00:24	A	SFO	CRJ2	SKW5476	SKW	SERFR	28L	54	62	3,256	5,000	242	-0.3	(109)	21
401	12/1/2018 13:01:43	A	SFO	B738	ASA621	ASA	SERFR	28L	56	69	9,959	4,988	219	0.2	93	8
401	12/1/2018 13:03:22	A	SFO	A346	DLH454	DLH	BDEGA	28L	58	70	10,594	6,016	202	0.2	84	49
401	12/1/2018 13:06:41	A	SFO	CRJ2	SKW5416	SKW	SERFR-ST	28R	56	68	(1,328)	5,039	206	-4.2	(1,515)	346
401	12/1/2018 13:08:51	A	SFO	B737	SWA4136	SWA	SERFR-ST	28L	67	77	(992)	4,282	201	-5.1	(1,803)	344
401	12/1/2018 13:11:39	A	SFO	A320	ASA1804	ASA	BDEGA	28L	62	73	(4,445)	4,855	210	-3.7	(1,362)	1
401	12/1/2018 13:13:52	A	SFO	CRJ7	SKW5697	SKW	BDEGA	28L	61	72	(2,747)	4,668	212	-4.5	(1,665)	22
401	12/1/2018 13:16:45	A	SFO	B77W	KAL025	KAL	BDEGA	28L	63	75	3,840	6,007	232	-4.8	(1,967)	20
401	12/1/2018 13:19:08	D	PAO	U	U	U	U	31	58	69	9,189	9	38	0.0	-	322
401	12/1/2018 13:20:04	A	SFO	A319	UAL1745	UAL	BDEGA	28L	59	70	6,941	4,449	225	-3.2	(1,284)	37
401	12/1/2018 13:22:47	A	SFO	E75L	SKW5967	SKW	BDEGA	28L	57	67	(10,459)	5,794	229	-1.7	(668)	107
401	12/1/2018 13:23:18	A	SFO	E75L	SKW5967	SKW	BDEGA	28L	57	70	(10,459)	5,794	229	-1.7	(668)	107
401	12/1/2018 13:29:30	A	SFO	B77W	AFR084	AFR	BDEGA	28L	68	79	1,205	4,904	215	-3.7	(1,395)	21
401	12/1/2018 13:33:35	A	SFO	B744	BAW11M	BAW	BDEGA	28L	62	73	(7,486)	4,782	214	-3.5	(1,325)	27
401	12/1/2018 13:35:52	D	PAO	U	U	U	U	31	55	67	9,187	9	33	0.0	-	321
401	12/1/2018 13:37:37	A	SFO	A320	ASA1957	ASA	SERFR	28L	54	64	13,695	4,208	226	-2.1	(832)	339
401	12/1/2018 13:41:58	A	SFO	B738	UAL390	UAL	SERFR	28L	66	76	784	4,375	217	-3.1	(1,201)	30
401	12/1/2018 13:44:38	A	SFO	B737	SWA974	SWA	SERFR	28L	57	70	7,946	5,258	221	-4.7	(1,830)	11
401	12/1/2018 13:46:23	A	SFO	CRJ7	SKW5615	SKW	BDEGA	28L	67	75	(735)	4,001	213	-0.9	(349)	38
401	12/1/2018 13:51:43	A	SFO	A319	ASA1340	ASA	BDEGA	28R	66	78	(1,586)	4,344	235	-4.2	(1,732)	48
401	12/1/2018 13:58:06	A	SFO	A320	UAL2383	UAL	SERFR-ST	28L	66	77	(949)	4,031	202	-4.6	(1,635)	344
401	12/1/2018 14:05:55	D	PAO	U	U	U	U	31	56	67	9,187	9	33	0.0	-	322
401	12/1/2018 14:07:33	A	SFO	B39M	CMP208	CMP	SERFR-ST	28L	63	71	(920)	4,747	216	-2.9	(1,121)	344
401	12/1/2018 14:08:26	A	SFO	B39M	CMP208	CMP	SERFR-ST	28L	55	63	(920)	4,747	216	-2.9	(1,121)	344
401	12/1/2018 14:10:08	A	SFO	B739	UAL444	UAL	SERFR	28L	60	69	987	4,593	231	-3.0	(1,229)	340
401	12/1/2018 14:12:38	A	SFO	E75L	CPZ6007	CPZ	SERFR-ST	28L	68	78	(1,002)	4,755	219	-2.2	(864)	344
401	12/1/2018 14:14:34	A	SFO	B738	SWA3950	SWA	SERFR-ST	28L	64	75	(947)	4,210	233	-3.8	(1,575)	345
401	12/1/2018 14:17:03	A	SFO	B739	UAL372	UAL	OCEANIC	28L	67	77	(899)	4,873	212	-2.7	(991)	345
401	12/1/2018 14:18:40	A	SFO	A359	AAR212	AAR	BDEGA	28L	54	68	5,791	4,754	212	-2.8	(1,063)	19
401	12/1/2018 14:20:21	D	PAO	U	U	U	U	31	58	70	(3,480)	1,600	110	-0.7	(138)	55
401	12/1/2018 14:25:39	A	SFO	B772	UAL900	UAL	BDEGA	28L	67	72	(5,754)	4,965	216	-0.5	(174)	52
401	12/1/2018 14:28:05	A	SFO	B77W	EVA018	EVA	OCEANIC	28L	65	77	106	5,200	224	-4.0	(1,575)	31
401	12/1/2018 14:30:14	A	SFO	B752	UAL477	UAL	BDEGA	28L	63	73	3,809	5,567	206	-5.8	(2,115)	29
401	12/1/2018 14:47:15	A	SFO	B738	UAL2148	UAL	SERFR	28L	56	65	7,414	4,789	204	-3.6	(1,275)	346
401	12/1/2018 14:51:24	A	SFO	A320	ASA1388	ASA	BDEGA	28L	54	62	10,606	4,091	206	-1.4	(523)	346
401	12/1/2018 14:59:13	D	SFO	B738	AMX669	AMX	U	01L	55	68	(13,952)	15,714	405	2.8	1,992	133
401	12/1/2018 15:02:49	A	PAO	C172	N733ZK	GA	U	31	54	67	9,201	9	15	0.0	-	321
401	12/1/2018 15:04:03	D	SQL	SR20	N345BS	GA	U	30	59	69	8,991	2,747	140	2.6	645	114
401	12/1/2018 15:06:51	D	PAO	U	U	U	U	31	59	71	9,132	39	50	-2.7	(240)	327
401	12/1/2018 15:08:55	A	SFO	A332	EIN147	EIN	BDEGA	28L	63	73	6,394	5,034	228	-3.5	(1,414)	1
401	12/1/2018 15:11:51	A	SFO	E75L	QXE2042	QXE	SERFR-ST	28L	55	67	(922)	5,166	238	-5.1	(2,130)	344
401	12/1/2018 15:14:13	D	PAO	U	U	U	U	31	58	66	9,187	9	41	0.0	-	321
401	12/1/2018 15:18:00	A	SFO	E75L	SKW5617	SKW	SERFR-ST	28L	57	70	(973)	5,034	202	-4.3	(1,546)	344
401	12/1/2018 15:28:07	D	PAO	U	U	U	U	31	59	67	9,188	9	36	0.0	-	321
401	12/1/2018 15:29:19	A	SFO	CRJ2	SKW5362	SKW	SERFR-ST	28L	57	67	(864)	4,787	228	-2.5	(990)	344
401	12/1/2018 15:31:53	A	SFO	B739	UAL2351	UAL	SERFR-ST	28L	62	73	(909)	4,352	229	-2.6	(1,047)	343
401	12/1/2018 15:34:00	A	SFO	E75L	SKW5954	SKW	BDEGA	28R	62	74	2,066	4,454	201	-1.4	(507)	350
401	12/1/2018 15:36:08	A	SFO	CRJ2	SKW5870	SKW	SERFR	28L	57	67	786	4,798	214	-3.3	(1,252)	357
401	12/1/2018 15:40:08	D	PAO	U	U	U	U	31	54	68	2,549	893	127	-1.3	(294)	129
401	12/1/2018 15:41:04	A	SFO	B738	UAL1919	UAL	SERFR-ST	28L	67	76	(909)	4,716	208	-1.8	(674)	343
401	12/1/2018 15:43:58	A	SFO	GLEX	TWY468	TWY	SERFR-ST	28L	62	73	(905)	4,045	239	-1.7	(726)	344
401	12/1/2018 15:45:54	D	SIC	C421	N700LC	GA	U	30L	58	71	3,836					

Figure 9a
 Correlated Noise Event Report
 Site 401 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
401	12/1/2018 16:09:03	A	SFO	B712	DAL2356	DAL	SERFR	28L	67	76	(135)	3,991	218	-0.4	(134)	25
401	12/1/2018 16:09:31	D	PAO	C172	N172EL	GA	U	31	65	74	134	841	97	1.4	236	76
401	12/1/2018 16:12:29	A	SFO	A321	AAL1983	AAL	SERFR	28L	66	78	550	4,177	194	-3.0	(1,043)	37
401	12/1/2018 16:14:33	A	SFO	E75L	SKW5861	SKW	SERFR	28L	53	65	9,450	5,054	211	-4.1	(1,530)	82
401	12/1/2018 16:19:28	A	SFO	CRJ2	SKW5347	SKW	BDEGA	28L	55	64	4,753	5,160	198	-5.6	(1,965)	26
401	12/1/2018 16:31:50	D	SFO	CRJ2	SKW391Z	SKW	U	01L	53	65	(7,510)	16,354	398	1.6	1,136	105
401	12/1/2018 16:34:21	A	PAO	P20P	N231KD	GA	U	31	54	67	4,926	710	103	-2.9	(526)	139
401	12/1/2018 16:40:04	A	SFO	CRJ2	SKW5286	SKW	SERFR-ST	28L	59	70	(936)	4,608	228	-3.2	(1,295)	345
401	12/1/2018 16:42:34	A	SFO	A320	UAL1243	UAL	SERFR-ST	28L	57	70	(804)	4,634	235	-1.8	(752)	344
401	12/1/2018 16:45:44	A	SFO	E75L	CPZ6045	CPZ	SERFR-ST	28L	62	75	(986)	3,904	216	-3.7	(1,412)	345
401	12/1/2018 16:54:46	D	PAO	U	U	U	U	31	53	64	5,603	1,000	106	0.0	-	136
401	12/1/2018 16:58:34	A	SFO	B789	QFA49	QFA	OCEANIC	28L	59	71	6,361	4,762	194	-2.3	(786)	347
401	12/1/2018 17:00:45	A	SFO	B737	SWA4139	SWA	SERFR-ST	28L	58	71	(1,060)	4,768	193	-3.2	(1,080)	344
401	12/1/2018 17:08:19	A	PAO	DA40	N202LS	GA	U	31	60	74	(1,708)	1,205	121	-1.4	(296)	51
401	12/1/2018 17:11:33	A	SFO	E75L	SKW5248	SKW	SERFR-ST	28L	57	69	(930)	4,970	226	-1.4	(540)	345
401	12/1/2018 17:22:02	A	SFO	B737	SWA3308	SWA	SERFR	28L	55	69	5,553	4,888	226	-3.7	(1,470)	16
401	12/1/2018 17:23:13	A	PAO	U	U	U	U	H	53	65	2,222	2,037	148	-1.4	(356)	79
401	12/1/2018 17:24:56	A	SFO	A319	UAL1051	UAL	SERFR-ST	28L	63	75	(849)	5,142	195	-3.8	(1,302)	345
401	12/1/2018 17:30:23	D	PAO	U	U	U	U	31	60	70	(474)	925	110	-2.0	(391)	61
401	12/1/2018 17:34:54	A	SFO	E75L	SKW3460	SKW	SERFR-ST	28L	64	74	(975)	3,376	236	-5.4	(2,231)	345
401	12/1/2018 17:35:38	A	SFO	B739	DAL1889	DAL	BDEGA	28L	63	75	(1,176)	5,323	210	-3.3	(1,206)	42
401	12/1/2018 17:44:21	A	SFO	A359	FBU711	FBU	OCEANIC	28L	61	71	(4,633)	4,082	183	-3.2	(1,028)	35
401	12/1/2018 17:47:14	A	SFO	A320	ASA1933	ASA	SERFR-ST	28L	62	73	(1,144)	4,022	236	0.4	150	344
401	12/1/2018 17:49:10	A	SFO	B738	DAL1720	DAL	SERFR-ST	28L	64	76	(1,046)	5,042	198	-2.1	(736)	344
401	12/1/2018 17:51:12	A	SFO	A320	ASA1271	ASA	SERFR	28L	65	77	(1,097)	5,105	197	-1.6	(560)	344
401	12/1/2018 17:53:01	A	PAO	U	U	U	U	H	72	81	156	1,439	133	-5.1	(1,195)	84
401	12/1/2018 17:55:43	A	SFO	B738	UAL1124	UAL	SERFR-ST	28L	68	76	(964)	4,682	218	-1.6	(621)	343
401	12/1/2018 17:57:58	A	SFO	B739	UAL632	UAL	SERFR-ST	28L	62	75	(946)	4,676	172	-2.1	(638)	344
401	12/1/2018 18:06:04	A	SFO	A319	ASA1273	ASA	SERFR	28L	67	77	2,708	4,055	202	-1.1	(407)	30
401	12/1/2018 18:09:48	A	SFO	CRJ9	JZA743	JZA	BDEGA	28L	60	67	7,570	4,583	211	-3.5	(1,313)	28
401	12/1/2018 18:11:14	A	SFO	B738	AAL1454	AAL	SERFR	28L	54	64	10,296	4,307	205	-3.0	(1,080)	14
401	12/1/2018 18:15:49	D	PAO	U	U	U	U	H	64	76	(3,838)	1,598	104	0.1	26	253
401	12/1/2018 18:17:38	A	SFO	A319	UAL1240	UAL	SERFR	28L	53	65	11,862	4,297	164	-3.4	(990)	8
401	12/1/2018 18:20:48	A	SFO	B752	UAL560	UAL	BDEGA	28L	56	67	11,854	4,013	157	-1.6	(445)	324
401	12/1/2018 18:22:31	A	SFO	B77W	CAL004	CAL	OCEANIC	28L	54	67	13,394	6,019	242	-1.0	(418)	79
401	12/1/2018 18:26:46	A	SFO	B77W	EVA028	EVA	OCEANIC	28L	54	66						
401	12/1/2018 18:29:25	A	SFO	A320	ASA1747	ASA	BDEGA	28L	56	68	10,373	3,933	155	-1.0	(265)	324
401	12/1/2018 18:39:23	A	SFO	A320	UAL587	UAL	BDEGA	28L	58	70	5,889	6,505	273	-1.8	(857)	100
401	12/1/2018 18:41:57	A	SFO	B737	SWA2989	SWA	SERFR	28L	51	65	10,493	5,877	226	-4.6	(1,826)	20
401	12/1/2018 18:43:50	A	SFO	A319	ASA1923	ASA	SERFR-ST	28L	69	80	(831)	3,706	195	-4.0	(1,380)	344
401	12/1/2018 18:46:22	A	SFO	A319	UAL2016	UAL	SERFR	28L	54	67	12,546	4,239	195	-1.0	(345)	336
401	12/1/2018 18:48:09	A	SFO	B737	SWA4050	SWA	SERFR	28L	60	71	3,320	5,731	197	-1.8	(639)	359
401	12/1/2018 18:53:04	A	SFO	E35L	N84AW	GA	SERFR-ST	28L	55	67	(985)	5,761	236	-4.6	(1,912)	345
401	12/1/2018 18:55:02	A	SFO	CRJ7	SKW5765	SKW	BDEGA	28L	61	71	4,682	3,997	198	-0.3	(91)	357
401	12/1/2018 18:55:35	A	SFO	A321	JBU915	JBU	BDEGA	28L	55	66	(10,472)	5,088	291	-4.3	(2,220)	113
401	12/1/2018 19:03:17	A	SFO	B737	SWA3361	SWA	SERFR-ST	28L	59	72	(841)	4,360	217	-1.9	(740)	344
401	12/1/2018 19:05:35	A	SFO	B738	UAL2352	UAL	SERFR-ST	28L	65	75	(889)	4,277	227	-3.9	(1,575)	344
401	12/1/2018 19:08:08	A	SFO	CRJ2	SKW5700	SKW	BDEGA	28L	56	67	(4,532)	4,056	208	-1.4	(527)	38
401	12/1/2018 19:10:58	A	SFO	A320	TAI564	TAI	SERFR-ST	28L	67	79	(978)	4,288	200	-3.5	(1,225)	345
401	12/1/2018 19:12:23	A	SFO	CRJ2	SKW5457	SKW	SERFR-ST	28L	56	68	(990)	4,784	214	-2.5	(940)	343
401	12/1/2018 19:14:01	A	SFO	B739	UAL1604	UAL	OCEANIC	28L	57	71	7,176	4,279	211	-3.4	(1,274)	33
401	12/1/2018 19:16:45	A	SFO	B77W	SIA2	SIA	OCEANIC	28L	59	73	3,402	4,438	220	-3.1	(1,197)	31
401	12/1/2018 19:18:07	A	SFO	A321	AAL686	AAL	SERFR	28R	56	70	10,535	5,068	176	-5.8	(1,793)	346
401	12/1/2018 19:19:52	A	SFO	A319	ASA1279	ASA	SERFR	28L	60	74	3,066	5,667	207	-3.9	(1,422)	12
401	12/1/2018 19:22:00	A	SFO	A388	DLH458	DLH	BDEGA	28R	59	69	10,582	4,041	196	-1.9	(644)	344
401	12/1/2018 19:26:47	A	SFO	E75L	SKW5592	SKW	SERFR-ST	28L	57	70	(981)	4,238	195	-3.3	(1,145)	344
401	12/1/2018 19:28:47	A	SFO	B737	SWA4154	SWA	SERFR	28L	59	71	5,019	4,598	204	-4.5	(1,606)	11
401	12/1/2018 19:42:58	A	SFO	E75L	CPZ6015	CPZ	SERFR-ST	28L	60	71	(905)	5,327	176	-3.5	(1,098)	344
401	12/1/2018 19:44:43	A	SFO	CRJ2	SKW5718	SKW	BDEGA	28L	52	65	5,687	4,770	219	-4.1	(1,598)	30
401	12/1/2018 19:46:01	D	SFO	B739	UAL394	UAL	U	01L	54	67	(2,050)	15,937	430	2.7	2,011	106
401	12/1/2018 19:47:18	A	SFO	A319	ASA1595	ASA	SERFR-ST	28R	66	78	(1,017)	4,418	166	-3.7	(1,095)	345
401	12/1/2018 19:48:50	A	SFO	B772	UAL340	UAL	BDEGA	28L	57	68	4,879	5,772	202	-2.9	(1,029)	60
401	12/1/2018 19:53:31	D	SFO	A320	ASA1940	ASA	U	01L	53	66	(5,710)	16,792	451	2.7	2,142	105
401	12/1/2018 19:54:27	A	SFO	E75L	SKW5440	SKW	SERFR-ST	28L	58	71	(975)	4,674	234	-2.8	(1,140)	345
401	12/1/2018 19:55:57	A	SFO	B752	UAL1584	UAL	BDEGA	28L	59	74	(851)	5,381	176	-6.4	(1,975)	37
401	12/1/2018 19:58:59	A	SFO	B739	UAL2201	UAL	SERFR	28L	62	75	4,994	4,012	197	-0.1	(47)	346
401	12/1/2018 20:00:23	A	SFO	B38M	ACA781	ACA	BDEGA	28L	62	74	1,279	4,143	176	-4.1	(1,275)	345
401	12/1/2018 20:03:01	A	SFO	B739	UAL384	UAL	SERFR	28L	64	76	(188)	4,594	201	-3.8	(1,356)	355
401	12/1/2018 20:05:52	A	SFO	E75L	QXE2271	QXE	BDEGA	28L	62	74	6,121	5,285	213	-8.2	(3,090)	32
401	12/1/2018 20:11:00	A	SFO	B789	UAL28	UAL	OCEANIC	28L	62	74	(4,304)	4,038	202	-1.5	(525)	29
401	12/1/2018 20:13:38	A	SFO	A320	ASA1963	ASA	SERFR-ST	28L	69	80	(1,095)	4,064	201	-1.8	(628)	344
401	12/1/2018 20:18:44	A	SFO	A332	HAL12	HAL	OCEANIC	28L	54	64	14,595	4,176	181	-1.7	(540)	344
401	12/1/2018 20:22:35	A	SFO	A321	AAL547	AAL	BDEGA	28L	66	76	4,515	4,800	221	-5.3	(2,069)	86
401	12/1/2018 20:25:21	A	SFO	B738	UAL1152	UAL	OCEANIC	28L	55	69	7,613	4,005	189	0.0	-	351
401	12/1/2018 20:28:58	A	SFO	A320	ASA1945	ASA	SERFR-ST	28L	65	77	(1,994)	4,533	197	-3.5	(1,230)	343
401	12/1/2018 20:32:09	A	SFO	B789	ACA739	ACA	BDEGA	28L	51	62	(13,325)	3,934	193	-0.9	(304)	31
401	12/1/2018 20:34:40	A	SFO	B739	UAL643	UAL	OCEANIC	28L	58	67	(7,888)	3,819	205	-3.7	(1,321)	22
401	12/1/2018 20:35:09	A	SFO	B77W	CPA872	CPA	BDEGA	28L	53	64	9,755	5,588	221	-2.6	(1,022)	48
401	12/1/2018 20:41:31	A	SFO	B738	UAL1722	UAL	OCEANIC	28L	64	73	(3,646)	5,212	194	-4.5	(1,530)	357
401	12/1/2018 20:58:53	D	SFO	B752	UAL349	UAL	U	01L	50	64	(2,307)	16,086	464			

Figure 9a
 Correlated Noise Event Report
 Site 401 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
401	12/1/2018 21:28:44	A	SFO	GLF4	U	U	SERFR-ST	28R	62	72	(1,033)	4,230	238	-3.2	(1,355)	343
401	12/1/2018 21:30:32	A	SFO	CRJ7	SKW5873	SKW	SERFR-ST	28L	55	68	(891)	4,796	208	-2.3	(827)	344
401	12/1/2018 21:32:17	A	SFO	B739	UAL1568	UAL	SERFR-ST	28L	64	75	(926)	5,136	206	-2.4	(885)	343
401	12/1/2018 21:35:08	A	SFO	B738	AMX664	AMX	SERFR-ST	28L	60	71	(946)	5,043	202	-1.5	(545)	344
401	12/1/2018 21:38:17	A	SFO	CRJ2	SKW5616	SKW	SERFR	28L	53	63	7,440	5,102	205	-3.8	(1,380)	9
401	12/1/2018 21:40:01	A	SFO	E75L	SKW5483	SKW	SERFR	28L	57	68	1,915	5,637	229	-3.4	(1,359)	8
401	12/1/2018 21:42:48	A	SFO	A332	HAL42	HAL	OCEANIC	28L	59	69	11,103	4,044	169	-1.0	(300)	348
401	12/1/2018 21:46:06	A	SFO	E75L	SKW3381	SKW	SERFR-ST	28L	60	73	(964)	4,744	192	-2.7	(917)	345
401	12/1/2018 21:49:26	A	SFO	A320	ASA1776	ASA	BDEGA	28L	65	74	3,577	4,842	213	-4.4	(1,648)	41
401	12/1/2018 21:51:56	A	SFO	A320	ACA568	ACA	BDEGA	28L	69	78	(1,586)	4,199	203	-2.2	(780)	3
401	12/1/2018 21:53:49	A	SFO	A321	JBU833	JBU	BDEGA	28L	55	67	(8,898)	4,090	175	-2.5	(774)	17
401	12/1/2018 21:56:06	D	OAK	B38M	SWA6868	SWA	U	30	54	64	(1,329)	15,998	407	3.2	2,306	139
401	12/1/2018 22:01:56	A	SFO	A320	AJJ830	AJJ	SERFR-ST	28L	60	72	(940)	4,735	224	-3.3	(1,300)	345
401	12/1/2018 22:04:03	A	SFO	B738	DAL1700	DAL	SERFR-ST	28L	66	77	(956)	4,330	197	-4.0	(1,387)	344
401	12/1/2018 22:14:27	A	SFO	B739	UAL650	UAL	OCEANIC	28L	61	73	(3,834)	5,176	215	-4.5	(1,725)	31
401	12/1/2018 22:34:20	A	SFO	CRJ7	SKW5461	SKW	SERFR-ST	28R	55	67	(633)	5,114	198	-2.6	(914)	346
401	12/1/2018 22:38:24	A	SFO	E75L	CPZ6085	CPZ	SERFR-ST	28R	60	73	(942)	5,084	202	-2.4	(840)	344
401	12/1/2018 22:40:37	A	SFO	B738	UAL1712	UAL	SERFR-ST	28R	61	74	(954)	4,937	186	-3.2	(1,035)	343
401	12/1/2018 22:42:28	A	SFO	B738	ASA759	ASA	OCEANIC	28R	61	73	3,786	5,204	182	-4.2	(1,335)	4
401	12/1/2018 22:45:32	A	SFO	B738	UAL1288	UAL	OCEANIC	28R	61	72	(2,666)	6,083	232	-1.9	(787)	26
401	12/1/2018 22:59:18	D	SFO	B752	UAL2360	UAL	U	01R	51	64	9,230	14,190	444	1.9	1,462	122
401	12/1/2018 23:05:05	A	SFO	B738	CMP382	CMP	SERFR-ST	28R	64	76	(945)	4,797	204	-2.4	(874)	344
401	12/1/2018 23:10:01	A	SFO	A321	AAL2374	AAL	BDEGA	28R	61	70	(4,859)	4,201	203	-3.5	(1,243)	67
401	12/1/2018 23:15:43	D	SFO	B752	UAL308	UAL	U	01L	50	64	12,980	16,979	394	1.4	981	107
401	12/1/2018 23:17:35	A	SFO	B738	UAL435	UAL	OCEANIC	28R	57	69	6,082	5,869	232	-3.3	(1,365)	32
401	12/1/2018 23:21:00	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	66	76	(821)	4,284	237	-3.5	(1,470)	345
401	12/1/2018 23:21:37	A	SFO	B752	DAL2344	DAL	BDEGA	28R	58	72	3,920	5,708	216	-5.5	(2,096)	39
401	12/1/2018 23:25:24	A	SFO	B752	UAL1056	UAL	BDEGA	28R	56	69	(2,703)	5,580	213	-2.5	(930)	120
401	12/1/2018 23:38:20	A	SFO	A320	TAI560	TAI	SERFR-ST	28R	65	75	(991)	4,682	226	-1.8	(710)	345

BridgeNet International 2019

Figure 9b
 Correlated Noise Event Report
 Site 402 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
402	12/1/2018 0:03:08	A	SFO	B738	ASA762	ASA	OCEANIC	28R	61	72	(229)	6,774	230	-2.3	(925)	52
402	12/1/2018 0:10:05	A	SFO	B738	AMX664	AMX	SERFR-ST	28R	63	75	1,971	4,856	203	-3.7	(1,305)	345
402	12/1/2018 0:12:38	A	SFO	E75L	CP26020	CPZ	SERFR-ST	28R	60	72	1,960	5,045	191	-2.3	(763)	345
402	12/1/2018 0:17:07	A	SFO	B748	KAL213	KAL	SERFR-ST	28R	67	80	1,868	5,178	288	-2.1	(1,048)	346
402	12/1/2018 0:22:59	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	60	73	1,850	4,865	183	-2.4	(783)	346
402	12/1/2018 0:37:06	A	SFO	A320	ASA1949	ASA	SERFR-ST	28R	61	75	1,536	4,261	179	-3.8	(1,185)	346
402	12/1/2018 1:19:03	A	SFO	C750	U	U	SERFR	28R	57	69	(1,174)	4,046	244	-1.4	(613)	336
402	12/1/2018 2:12:17	D	PAO	EC35	CMD12	CMD	U	H	48	58	12,034	98	7	0.0	-	344
402	12/1/2018 2:51:31	A	SFO	B744	AAR284	AAR	SERFR-ST	28R	70	80	1,858	4,833	217	-2.7	(1,043)	345
402	12/1/2018 3:25:16	A	SFO	B739	UAL2550	UAL	BDEGA	28R	58	69	6,902	3,997	215	-0.1	(52)	66
402	12/1/2018 3:46:24	A	SFO	B738	UAL1639	UAL	OCEANIC	28L	63	73	3,087	6,763	258	-1.6	(724)	68
402	12/1/2018 3:58:04	A	SFO	B738	UAL1724	UAL	OCEANIC	28R	66	75	1,289	5,990	256	-3.5	(1,561)	69
402	12/1/2018 4:09:10	A	SFO	B772	UAL396	UAL	OCEANIC	28R	57	69	(6,103)	6,551	267	-0.9	(410)	32
402	12/1/2018 4:10:37	A	SFO	B738	UAL1746	UAL	OCEANIC	28R	61	71	3,054	7,602	247	-2.5	(1,080)	69
402	12/1/2018 4:39:21	A	SFO	B753	UAL2553	UAL	BDEGA	28R	45	61						
402	12/1/2018 5:13:14	A	SFO	B789	UAL955	UAL	BDEGA	28R	64	74	3,348	4,479	289	-3.6	(1,815)	105
402	12/1/2018 5:36:50	A	SFO	B738	UAL1557	UAL	OCEANIC	28R	65	77	3,266	5,947	276	-5.1	(2,460)	80
402	12/1/2018 5:38:17	A	SFO	B77W	AIC173	AIC	OTHER	28R	52	64						
402	12/1/2018 5:46:47	A	SFO	B753	UAL1575	UAL	OCEANIC	28R	59	70	7,023	6,867	264	-2.5	(1,149)	80
402	12/1/2018 5:49:12	A	SFO	B77W	UAL916	UAL	OCEANIC	28R	60	73	5,310	6,348	256	-3.9	(1,746)	79
402	12/1/2018 6:03:48	A	SFO	B77W	EVA008	EVA	BDEGA	28R	59	72	2,163	5,927	227	-3.2	(1,285)	114
402	12/1/2018 6:11:59	A	SJC	GALX	U	U	U	12R	47	62	13,025	2,155	217	-2.2	(825)	13
402	12/1/2018 6:20:55	A	SFO	CRJ2	SKW5738	SKW	BDEGA	28R	46	58	(10,086)	4,313	261	-5.7	(2,610)	52
402	12/1/2018 6:28:39	A	SFO	P28A	UAL872	UAL	BDEGA	28R	61	73	4,710	5,652	266	-2.8	(1,316)	105
402	12/1/2018 6:40:11	A	SFO	CRJ2	SKW5276	SKW	BDEGA	28R	52	66	5,094	4,617	255	-3.7	(1,675)	38
402	12/1/2018 6:57:47	A	SFO	E75L	SKW5358	SKW	BDEGA	28R	58	69	(12,043)	4,021	248	-4.7	(2,070)	71
402	12/1/2018 7:01:13	A	SFO	CRJ2	SKW5631	SKW	SERFR-ST	28R	57	70	1,874	4,584	219	-2.3	(892)	345
402	12/1/2018 7:03:52	A	SFO	CRJ2	SKW5667	SKW	SERFR-ST	28R	59	71	1,965	4,829	227	-3.4	(1,371)	345
402	12/1/2018 7:06:00	A	SFO	E75L	SKW5601	SKW	SERFR-ST	28R	60	71	1,946	4,872	232	-3.0	(1,230)	345
402	12/1/2018 7:08:08	A	SFO	A320	UAL2350	UAL	SERFR-ST	28R	58	70	2,017	4,783	234	-1.3	(521)	346
402	12/1/2018 7:10:20	A	SFO	A319	UAL295	UAL	SERFR-ST	28R	61	73	1,847	4,770	214	-2.8	(1,048)	345
402	12/1/2018 7:11:31	A	SFO	B738	UAL805	UAL	BDEGA	28R	60	72	(4,753)	5,437	227	-3.6	(1,451)	45
402	12/1/2018 7:13:47	A	SFO	CRJ2	SKW5496	SKW	BDEGA	28R	57	69	(2,978)	5,429	210	-3.6	(1,335)	81
402	12/1/2018 7:15:15	A	SFO	A359	SIA32	SIA	BDEGA	28R	63	71	4,621	5,724	222	-2.7	(1,073)	112
402	12/1/2018 7:34:47	A	SFO	E75L	CP26034	CPZ	SERFR-ST	28L	60	74	1,974	4,964	199	-1.7	(585)	345
402	12/1/2018 7:37:02	A	SFO	A320	ASA1925	ASA	SERFR-ST	28L	62	72	1,812	4,136	243	-1.9	(824)	346
402	12/1/2018 7:37:25	A	SFO	B789	UAL858	UAL	BDEGA	28R	63	74	1,032	5,570	259	-3.6	(1,653)	47
402	12/1/2018 7:50:48	A	SFO	A320	UAL618	UAL	BDEGA	28L	65	76	1,835	5,495	233	-4.3	(1,770)	116
402	12/1/2018 7:54:58	A	SFO	A320	UAL612	UAL	SERFR-ST	28L	67	77	1,922	4,572	185	-3.4	(1,104)	345
402	12/1/2018 7:58:44	A	SFO	A320	JBU1136	JBU	SERFR-ST	28L	64	76	1,946	3,989	222	-0.2	(92)	346
402	12/1/2018 8:02:10	A	SJC	A320	JBU826	JBU	U	12R	52	68	10,242	2,027	209	-1.7	(630)	2
402	12/1/2018 8:04:23	A	SJC	B737	SWA2630	SWA	U	12R	57	68	7,991	2,982	158	-0.2	(46)	351
402	12/1/2018 8:07:16	A	SFO	CRJ2	SKW5464	SKW	BDEGA	28L	60	71	3,099	5,913	239	-4.0	(1,707)	85
402	12/1/2018 8:13:12	A	SFO	A320	ASA1951	ASA	SERFR	28L	66	78	2,105	4,373	182	-4.1	(1,298)	344
402	12/1/2018 8:15:15	A	SFO	A21N	ASA1591	ASA	SERFR-ST	28L	60	73	1,739	5,124	212	-4.2	(1,572)	345
402	12/1/2018 8:18:31	A	SFO	B739	UAL1294	UAL	SERFR-ST	28L	61	72	1,984	4,711	243	-3.0	(1,266)	345
402	12/1/2018 8:20:54	A	SFO	B77W	UAL838	UAL	OCEANIC	28R	65	77	1,691	6,365	238	-3.0	(1,271)	34
402	12/1/2018 8:24:07	A	SFO	B77W	ANAB	ANA	BDEGA	28R	63	76	(3,134)	5,611	251	-3.7	(1,633)	43
402	12/1/2018 8:26:25	A	SFO	B77W	CES589	CES	BDEGA	28L	64	75	1,897	4,744	209	-3.2	(1,161)	40
402	12/1/2018 8:33:14	A	SFO	E75L	SKW5642	SKW	BDEGA	28L	61	73	(5,021)	5,003	238	-0.3	(135)	77
402	12/1/2018 8:35:03	A	SFO	B739	UAL662	UAL	SERFR-ST	28L	60	74	1,934	4,534	181	-4.1	(1,310)	345
402	12/1/2018 8:36:07	A	SFO	A332	CES767	CES	BDEGA	28R	62	73	4,106	6,908	228	-3.3	(1,344)	96
402	12/1/2018 8:40:25	A	SFO	E75L	QXE2283	QXE	BDEGA	28L	59	72	3,749	6,669	270	-2.2	(1,052)	76
402	12/1/2018 8:44:40	A	SFO	B77W	CPA870	CPA	BDEGA	28R	59	74	(4,426)	7,051	236	-4.1	(1,704)	114
402	12/1/2018 8:49:28	A	SFO	B77W	KAL023	KAL	BDEGA	28R	65	77	2,200	4,046	231	-1.0	(412)	36
402	12/1/2018 8:52:14	A	SFO	A320	ACA574	ACA	BDEGA	28L	57	70	(9,235)	6,165	254	-0.6	(268)	113
402	12/1/2018 8:56:08	A	SJC	E75L	CP25772	CPZ	U	12R	51	64	8,636	2,086	206	-2.7	(975)	5
402	12/1/2018 8:58:13	A	SJC	B788	ANA172	ANA	U	12R	53	67	10,533	2,814	187	-2.4	(798)	10
402	12/1/2018 9:01:04	A	SJC	E75L	QXE2810	QXE	U	12R	55	66	10,192	2,955	179	-1.9	(600)	8
402	12/1/2018 9:02:32	A	SJC	GLF6	N240CX	GA	U	30	50	65	9,240	2,880	170	-2.9	(885)	354
402	12/1/2018 9:05:30	A	SJC	B737	SWA921	SWA	U	12R	53	64	10,059	2,781	190	-3.8	(1,290)	358
402	12/1/2018 9:11:35	A	SFO	B738	UAL1615	UAL	BDEGA	28L	61	74	476	6,741	261	-4.0	(1,830)	113
402	12/1/2018 9:15:57	A	SFO	B738	UAL2055	UAL	BDEGA	28L	62	73	5,759	5,119	217	-1.7	(639)	59
402	12/1/2018 9:19:26	A	SFO	B752	UAL433	UAL	BDEGA	28R	49	61	(11,878)	7,140	232	-2.4	(973)	116
402	12/1/2018 9:23:04	A	SFO	A319	ASA1751	ASA	BDEGA	28L	51	64	11,657	5,201	246	-4.0	(1,717)	44
402	12/1/2018 9:25:31	D	SFO	A319	UAL1406	UAL	U	28L	63	73	(336)	17,004	465	1.8	1,443	106
402	12/1/2018 9:27:44	A	SFO	A319	UAL820	UAL	SERFR	28R	59	69	6,240	5,064	238	-1.4	(583)	77
402	12/1/2018 9:32:46	A	SFO	B789	UAL876	UAL	BDEGA	28R	66	78	(940)	4,800	215	-0.8	(317)	1
402	12/1/2018 9:43:41	A	SFO	CRJ9	JZA579	JZA	BDEGA	28L	59	70	(249)	5,017	215	-0.2	(77)	3
402	12/1/2018 9:56:16	A	SQL	PC12	N903PJ	GA	U	30	69	79	(712)	1,939	133	-0.9	(217)	316
402	12/1/2018 9:57:40	A	SJC	C56X	U	U	U	12R	53	67	9,932	3,047	178	-1.2	(390)	13
402	12/1/2018 10:01:02	A	SJC	B737	SWA3249	SWA	U	12R	55	66	8,480	2,735	200	-2.9	(1,035)	1
402	12/1/2018 10:04:16	A	SFO	A321	JBU133	JBU	MISSED	28L	56	68	6,781	5,011	196	0.1	45	73
402	12/1/2018 10:24:03	A	SFO	B77W	CSN659	CSN	BDEGA	28R	61	72	9,417	5,015	203	-0.9	(309)	21
402	12/1/2018 10:25:37	D	SFO	B737	SWA4698	SWA	U	28R	69	78	(8,832)	19,002	460	3.5	2,805	105
402	12/1/2018 10:51:57	A	SFO	B77W	ANZ8	ANZ	OCEANIC	28R	55	67	9,682	4,141	207	-1.9	(682)	12
402	12/1/2018 10:54:25	A	SFO	E75L	QXE2267	QXE	BDEGA	28L	52	62	11,103	4,178	179	-3.2	(1,005)	355
402	12/1/2018 10:58:50	A	SFO	A332	FJ1870	FJI	OCEANIC	28R	66	76	6,646	5,170	257	-4.2	(1,903)	51
402	12/1/2018 11:09:26	D	SQL	S2T	N173CK	GA	U	30	60	70	10,595	2,281	174	3.3	1,000	107
402	12/1/2018 11:20:10	A	SQL	BE35	N8366D	GA	U	30	61	72	(343)	2,098	94	-3.1	(516)	312
402	12/1/2018 11:27:00	A	SFO	A319												

Figure 9b
 Correlated Noise Event Report
 Site 402 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
402	12/1/2018 12:11:14	A	SFO	A388	UAE225	UAE	BDEGA	28R	63	75	4,914	4,987	238	-1.1	(450)	30
402	12/1/2018 12:17:32	D	PAO	U	U	U	U	31	60	71	6,878	1,003	109	-0.5	(98)	133
402	12/1/2018 12:23:06	A	SFO	B772	UAL949	UAL	BDEGA	28L	61	71	9,555	5,276	197	-2.7	(937)	30
402	12/1/2018 12:26:41	A	SFO	E75L	SKW5586	SKW	SERFR-ST	28L	63	75	1,953	4,308	206	-1.9	(703)	345
402	12/1/2018 12:29:37	A	SFO	E75L	SKW5446	SKW	SERFR-ST	28L	61	72	1,973	5,188	203	-0.3	(97)	345
402	12/1/2018 12:32:59	A	SFO	A320	AJ820	AJ	SERFR-ST	28L	66	76	1,792	5,022	186	-0.1	(28)	344
402	12/1/2018 12:35:00	O	UNK	CRJ2	SKW5332	SKW	U	U	62	72						
402	12/1/2018 12:37:05	A	SFO	A321	AAL789	AAL	SERFR-ST	28L	67	76	2,096	4,346	203	-3.1	(1,128)	345
402	12/1/2018 12:40:21	A	SFO	E75L	SKW5203	SKW	SERFR-ST	28L	60	71	1,933	4,836	209	-2.9	(1,073)	345
402	12/1/2018 12:46:46	A	SFO	CRJ2	SKW5655	SKW	SERFR	28L	61	72	1,355	6,059	238	-3.3	(1,380)	345
402	12/1/2018 12:59:10	A	SFO	CRJ2	SKW5476	SKW	SERFR	28L	54	68	4,883	5,012	239	-0.3	(114)	15
402	12/1/2018 13:01:41	A	SFO	B738	ASA621	ASA	SERFR	28L	55	69	12,138	4,978	218	0.0	(6)	7
402	12/1/2018 13:03:05	A	SFO	A346	DLH454	DLH	BDEGA	28L	55	68	10,632	5,990	214	0.4	144	51
402	12/1/2018 13:06:47	A	SFO	CRJ2	SKW5416	SKW	SERFR-ST	28R	59	68	1,554	5,108	205	-4.2	(1,525)	346
402	12/1/2018 13:08:49	A	SFO	B737	SWA4136	SWA	SERFR-ST	28L	66	76	1,921	4,393	200	-5.1	(1,786)	344
402	12/1/2018 13:11:37	A	SFO	A320	ASA1804	ASA	BDEGA	28L	64	74	(1,993)	5,002	211	-3.9	(1,440)	-
402	12/1/2018 13:13:42	A	SFO	CRJ7	SKW5697	SKW	BDEGA	28L	62	74	(1,132)	4,894	218	-4.5	(1,725)	19
402	12/1/2018 13:16:39	A	SFO	B77W	KAL025	KAL	BDEGA	28L	63	72	5,541	6,215	229	-5.1	(2,070)	16
402	12/1/2018 13:20:00	A	SFO	A319	UAL1745	UAL	BDEGA	28L	60	70	7,533	4,681	233	-3.2	(1,320)	43
402	12/1/2018 13:23:44	A	SFO	E75L	SKW5967	SKW	BDEGA	28L	56	68	(7,839)	5,846	237	-2.2	(915)	107
402	12/1/2018 13:29:24	A	SFO	B77W	AFR084	AFR	BDEGA	28L	68	78	2,757	5,085	222	-4.0	(1,565)	22
402	12/1/2018 13:33:15	A	SFO	B744	BAW11M	BAW	BDEGA	28L	62	74	(6,262)	4,924	216	-3.4	(1,275)	31
402	12/1/2018 13:41:48	A	SFO	B738	UAL390	UAL	SERFR	28L	63	76	1,930	4,538	215	-3.4	(1,296)	29
402	12/1/2018 13:44:51	A	SFO	B737	SWA974	SWA	SERFR	28L	54	67	9,992	5,427	214	-4.1	(1,555)	10
402	12/1/2018 13:46:16	A	SFO	CRJ7	SKW5615	SKW	BDEGA	28L	67	75	(223)	4,066	213	-2.0	(766)	49
402	12/1/2018 13:51:34	A	SFO	A319	ASA1340	ASA	BDEGA	28R	67	76	(1,621)	4,586	228	-5.5	(2,205)	61
402	12/1/2018 13:58:02	A	SFO	A320	UAL2383	UAL	SERFR-ST	28L	69	77	1,968	4,140	201	-4.8	(1,710)	345
402	12/1/2018 14:07:33	A	SFO	B39M	CMP208	CMP	SERFR-ST	28L	60	71	1,990	4,813	217	-2.7	(1,035)	344
402	12/1/2018 14:09:51	A	SFO	B739	UAL444	UAL	SERFR	28L	58	71	3,990	4,646	231	-2.8	(1,141)	341
402	12/1/2018 14:12:42	A	SFO	E75L	CPZ6007	CPZ	SERFR-ST	28L	61	71	1,907	4,805	222	-2.0	(768)	345
402	12/1/2018 14:14:37	A	SFO	B738	SWA3950	SWA	SERFR-ST	28L	60	73	1,957	4,294	233	-3.8	(1,570)	345
402	12/1/2018 14:17:06	A	SFO	B739	UAL372	UAL	OCEANIC	28L	65	75	2,002	4,934	215	-2.7	(1,020)	345
402	12/1/2018 14:19:57	D	PAO	U	U	U	U	31	57	67	(3,756)	1,634	109	-3.0	(576)	53
402	12/1/2018 14:25:43	A	SFO	B772	UAL900	UAL	BDEGA	28L	63	72	(5,914)	4,979	213	0.0	-	61
402	12/1/2018 14:27:55	A	SFO	B77W	EVA018	EVA	OCEANIC	28L	67	77	988	5,404	239	-3.7	(1,575)	31
402	12/1/2018 14:30:01	A	SFO	B752	UAL477	UAL	BDEGA	28L	61	72	4,955	5,866	216	-5.2	(1,969)	31
402	12/1/2018 14:59:23	A	SFO	CRJ2	SKW5984	SKW	SERFR	28L	56	65	2,106	5,215	213	-3.7	(1,374)	343
402	12/1/2018 15:06:57	A	SFO	B789	UAL892	UAL	OCEANIC	28L	60	71	9,995	4,753	238	-2.1	(875)	19
402	12/1/2018 15:09:04	A	SFO	A332	EIN147	EIN	BDEGA	28L	60	70	8,818	5,152	222	-3.5	(1,380)	-
402	12/1/2018 15:11:39	A	SFO	E75L	QXE2042	QXE	SERFR-ST	28L	57	69	1,989	5,308	235	-5.2	(2,160)	345
402	12/1/2018 15:12:44	A	SFO	E75L	QXE2042	QXE	SERFR-ST	28L	57	68	1,989	5,308	235	-5.2	(2,160)	345
402	12/1/2018 15:17:53	A	SFO	E75L	SKW5617	SKW	SERFR-ST	28L	61	71	1,934	5,129	202	-4.2	(1,495)	345
402	12/1/2018 15:29:17	A	SFO	CRJ2	SKW5362	SKW	SERFR-ST	28L	66	74	2,057	4,845	230	-2.4	(990)	344
402	12/1/2018 15:31:48	A	SFO	B739	UAL2351	UAL	SERFR-ST	28L	62	74	2,022	4,405	229	-2.8	(1,146)	344
402	12/1/2018 15:34:08	A	SFO	E75L	SKW5954	SKW	BDEGA	28R	62	74	4,855	4,490	199	-0.7	(242)	349
402	12/1/2018 15:35:57	A	SFO	CRJ2	SKW5870	SKW	SERFR	28L	56	68	3,342	4,911	214	-3.3	(1,230)	357
402	12/1/2018 15:41:03	A	SFO	B738	UAL1919	UAL	SERFR-ST	28L	65	76	2,022	4,757	210	-1.5	(545)	344
402	12/1/2018 15:43:52	A	SFO	GLEX	TWY468	TWY	SERFR-ST	28R	62	73	2,004	4,081	239	-2.0	(836)	345
402	12/1/2018 15:45:47	D	SJC	C421	N700LC	GA	U	30L	60	67	6,816	1,624	126	0.4	86	301
402	12/1/2018 15:50:50	A	SFO	E55P	EJA406	EJA	SERFR-ST	28R	61	72	1,925	5,027	238	-0.5	(222)	345
402	12/1/2018 15:52:25	A	SQL	BE9L	NS30CH	GA	U	30	64	75	(732)	2,216	159	-2.7	(748)	311
402	12/1/2018 15:55:51	D	PAO	U	U	U	U	31	60	70	8,303	898	103	-0.5	(93)	134
402	12/1/2018 15:58:19	A	SFO	B739	UAL1687	UAL	SERFR	28L	67	77	13,558	6,026	184	0.3	80	22
402	12/1/2018 15:59:40	D	SFO	A321	AAL1844	AAL	U	01L	60	71	(3,819)	15,783	415	3.7	2,745	134
402	12/1/2018 16:05:44	A	SFO	A320	ASA1959	ASA	SERFR	28L	65	72	7,606	4,068	198	-1.1	(393)	11
402	12/1/2018 16:09:06	A	SFO	B712	DAL2356	DAL	SERFR	28L	64	76	1,249	4,002	218	0.3	108	23
402	12/1/2018 16:09:47	D	PAO	C172	N172EL	GA	U	31	60	69	(387)	806	110	-0.6	(121)	43
402	12/1/2018 16:12:25	A	SFO	A321	AAL1983	AAL	SERFR	28L	66	78	1,349	4,359	190	-4.3	(1,440)	33
402	12/1/2018 16:14:24	A	SFO	E75L	SKW5861	SKW	SERFR	28L	54	67	7,833	5,248	210	-4.4	(1,611)	82
402	12/1/2018 16:19:35	A	SFO	CRJ2	SKW5347	SKW	BDEGA	28L	59	70	6,001	5,469	192	-5.2	(1,766)	32
402	12/1/2018 16:34:14	A	PAO	P20P	N231KD	GA	U	31	59	67	8,094	711	103	-2.9	(530)	139
402	12/1/2018 16:40:00	A	SFO	CRJ2	SKW5286	SKW	SERFR-ST	28L	59	71	1,965	4,678	226	-3.4	(1,354)	345
402	12/1/2018 16:42:31	A	SFO	A320	UAL1243	UAL	SERFR-ST	28L	57	70	2,108	4,672	231	-2.2	(898)	344
402	12/1/2018 16:45:46	A	SFO	E75L	CPZ6045	CPZ	SERFR-ST	28L	62	73	1,906	3,987	218	-3.6	(1,398)	345
402	12/1/2018 16:54:26	D	PAO	U	U	U	U	31	61	69	8,761	1,000	106	0.0	-	136
402	12/1/2018 16:58:39	A	SFO	B789	QFA49	QFA	OCEANIC	28L	57	70	9,199	4,825	193	-2.4	(822)	349
402	12/1/2018 17:00:37	A	SFO	B737	SWA4139	SWA	SERFR-ST	28L	58	72	1,852	4,836	193	-3.1	(1,069)	344
402	12/1/2018 17:07:35	A	PAO	DA40	N202LS	GA	U	31	58	70	(1,579)	1,308	111	-2.6	(512)	46
402	12/1/2018 17:11:28	A	SFO	E75L	SKW5248	SKW	SERFR-ST	28L	59	71	1,971	4,999	218	-0.9	(340)	345
402	12/1/2018 17:19:55	D	PAO	U	U	U	U	31	55	67	12,356	9	54	0.0	-	322
402	12/1/2018 17:22:43	A	PAO	U	U	U	U	H	56	69	741	2,097	108	-1.3	(243)	82
402	12/1/2018 17:24:42	A	SFO	A319	UAL1051	UAL	SERFR-ST	28L	61	73	2,050	5,228	197	-3.5	(1,213)	345
402	12/1/2018 17:30:05	D	PAO	U	U	U	U	31	55	67	(1,000)	1,033	111	-4.0	(780)	63
402	12/1/2018 17:34:49	A	SFO	E75L	SKW3460	SKW	SERFR-ST	28L	63	73	1,927	3,493	233	-5.5	(2,262)	345
402	12/1/2018 17:35:34	A	SFO	B739	DAL1889	DAL	BDEGA	28L	64	73	(807)	5,500	204	-3.9	(1,395)	50
402	12/1/2018 17:38:52	D	SFO	B712	DAL1048	DAL	U	01L	57	69	(9,570)	12,678	377	2.8	1,835	137
402	12/1/2018 17:44:16	A	SFO	A359	FBU711	FBU	OCEANIC	28L	62	72	(3,908)	4,205	192	-1.7	(583)	44
402	12/1/2018 17:47:21	A	SFO	A320	ASA1933	ASA	SERFR-ST	28L	62	74	1,777	4,014	234	0.2	61	344
402	12/1/2018 17:49:08	A	SFO	B738	DAL1720	DAL	SERFR-ST	28L	67	77	1,867	5,088	200	-2.1	(745)	344
402	12/1/2018 17:51:07	A	SFO	A320	ASA1271	ASA	SERFR	28L	65	76	1,820	5,13				

Figure 9b
 Correlated Noise Event Report
 Site 402 - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
402	12/1/2018 18:48:06	A	SFO	B737	SWA4050	SWA	SERFR	28L	58	69	5,814	5,790	198	-2.0	(690)	358
402	12/1/2018 18:53:11	A	SFO	E35L	N84AW	GA	SERFR-ST	28L	55	69	1,913	5,882	242	-4.1	(1,770)	345
402	12/1/2018 18:54:51	A	SFO	CRJ7	SKW5765	SKW	BDEGA	28L	58	71	7,250	4,007	200	-0.4	(147)	357
402	12/1/2018 18:55:50	A	SFO	A321	JBU915	JBU	BDEGA	28L	57	70	(7,664)	5,232	296	-4.3	(2,220)	116
402	12/1/2018 19:03:12	A	SFO	B737	SWA3361	SWA	SERFR-ST	28L	59	71	2,077	4,399	220	-2.4	(936)	344
402	12/1/2018 19:05:33	A	SFO	B738	UAL2352	UAL	SERFR-ST	28L	63	73	2,023	4,363	226	-4.0	(1,580)	345
402	12/1/2018 19:07:50	A	SFO	CRJ2	SKW5700	SKW	BDEGA	28L	60	71	(4,060)	4,120	215	-2.3	(875)	55
402	12/1/2018 19:10:52	A	SFO	A320	TAI564	TAI	SERFR-ST	28L	65	77	1,920	4,366	199	-3.3	(1,170)	345
402	12/1/2018 19:12:25	A	SFO	CRJ2	SKW5457	SKW	SERFR-ST	28L	54	67	1,952	4,835	217	-2.6	(991)	343
402	12/1/2018 19:14:03	A	SFO	B739	UAL1604	UAL	OCEANIC	28L	58	67	8,043	4,498	215	-4.3	(1,621)	36
402	12/1/2018 19:16:21	A	SFO	B77W	SIA2	SIA	OCEANIC	28L	60	73	4,516	4,585	209	-3.9	(1,454)	28
402	12/1/2018 19:18:09	A	SFO	A321	AAL686	AAL	SERFR	28R	56	64	13,426	5,170	175	-6.0	(1,862)	345
402	12/1/2018 19:19:37	A	SFO	A319	ASA1279	ASA	SERFR	28L	61	73	5,087	5,846	206	-2.7	(975)	9
402	12/1/2018 19:21:57	A	SFO	A388	DLH458	DLH	BDEGA	28R	53	67	13,498	4,080	194	-2.3	(781)	344
402	12/1/2018 19:26:26	A	SFO	E75L	SKW5592	SKW	SERFR-ST	28L	56	70	1,927	4,309	197	-3.8	(1,320)	345
402	12/1/2018 19:28:32	A	SFO	B737	SWA4154	SWA	SERFR	28L	60	73	7,043	4,802	206	-4.0	(1,471)	12
402	12/1/2018 19:42:57	A	SFO	E75L	CPZ6015	CPZ	SERFR-ST	28L	60	73	2,022	5,404	177	-3.1	(968)	344
402	12/1/2018 19:43:53	D	SFO	CRJ2	SKW5696	SKW	U	01L	58	67	7,685	15,078	403	1.1	795	108
402	12/1/2018 19:44:38	A	SFO	CRJ2	SKW5718	SKW	BDEGA	28L	56	67	6,450	5,135	239	-3.6	(1,514)	49
402	12/1/2018 19:46:08	D	SFO	B739	UAL394	UAL	U	01L	58	72	(536)	15,853	428	2.6	1,985	105
402	12/1/2018 19:47:19	A	SFO	A319	ASA1595	ASA	SERFR-ST	28R	65	78	1,885	4,491	166	-3.8	(1,125)	345
402	12/1/2018 19:48:10	A	SFO	B772	UAL340	UAL	BDEGA	28L	59	68	3,567	5,995	202	-0.4	(123)	99
402	12/1/2018 19:54:35	A	SFO	E75L	SKW5440	SKW	SERFR-ST	28L	58	71	1,929	4,726	241	-2.6	(1,099)	345
402	12/1/2018 19:55:53	A	SFO	B752	UAL1584	UAL	BDEGA	28L	61	74	(317)	5,773	173	-7.0	(2,130)	46
402	12/1/2018 19:59:00	A	SFO	B739	UAL2201	UAL	SERFR	28L	59	71	7,860	4,015	198	0.0	-	349
402	12/1/2018 20:00:13	A	SFO	B38M	ACA781	ACA	BDEGA	28L	59	72	4,173	4,228	173	-4.4	(1,335)	345
402	12/1/2018 20:02:57	A	SFO	B739	UAL384	UAL	SERFR	28L	63	76	2,419	4,716	201	-3.9	(1,385)	357
402	12/1/2018 20:05:49	A	SFO	E75L	QXE2271	QXE	BDEGA	28L	61	72	7,167	5,691	211	-8.3	(3,105)	34
402	12/1/2018 20:11:08	A	SFO	B789	UAL28	UAL	OCEANIC	28L	66	76	(3,136)	4,123	198	-2.5	(865)	29
402	12/1/2018 20:13:42	A	SFO	A320	ASA1963	ASA	SERFR-ST	28L	68	78	1,811	4,102	203	-2.0	(717)	345
402	12/1/2018 20:14:39	A	SFO	B772	UAL724	UAL	OCEANIC	28L	58	72	-9,752	6,701	245	-5.7	(2,480)	84
402	12/1/2018 20:22:38	A	SFO	A321	AAL547	AAL	BDEGA	28L	66	77	2,341	5,107	233	-5.5	(2,265)	102
402	12/1/2018 20:25:11	A	SFO	B738	UAL1152	UAL	OCEANIC	28L	53	65	10,358	4,005	193	-0.1	(32)	354
402	12/1/2018 20:28:54	A	SFO	A320	ASA1945	ASA	SERFR-ST	28L	66	78	948	4,588	198	-3.4	(1,200)	343
402	12/1/2018 20:32:07	A	SFO	B789	ACA739	ACA	BDEGA	28L	54	66	(12,263)	3,964	199	-1.0	(358)	34
402	12/1/2018 20:34:19	A	SFO	B739	UAL643	UAL	OCEANIC	28L	60	70	(6,346)	4,008	207	-4.2	(1,549)	20
402	12/1/2018 20:34:39	A	SFO	B77W	CPA872	CPA	BDEGA	28L	62	69	9,307	5,946	226	-2.5	(1,010)	79
402	12/1/2018 20:41:27	A	SFO	B738	UAL1722	UAL	OCEANIC	28L	62	75	(1,173)	5,330	195	-4.5	(1,537)	6
402	12/1/2018 20:44:36	A	OAK	B738	ASA840	ASA	U	30	57	69	14,120	3,924	266	-0.6	(299)	74
402	12/1/2018 21:03:29	A	SFO	GLF4	WWI31	WWI	SERFR-ST	28L	63	74	1,786	4,428	199	-3.5	(1,231)	344
402	12/1/2018 21:05:42	A	SFO	B738	UAL2132	UAL	BDEGA	28L	59	68	(10,315)	3,969	206	-0.5	(195)	41
402	12/1/2018 21:13:06	A	SFO	E75L	QXE2038	QXE	SERFR-ST	28L	63	73	1,932	4,064	218	-2.3	(894)	345
402	12/1/2018 21:14:24	A	SFO	A320	UAL1217	UAL	BDEGA	28L	58	70	6,920	5,572	222	-3.9	(1,512)	43
402	12/1/2018 21:16:48	A	SFO	E75L	SKW5681	SKW	SERFR-ST	28L	61	74	1,953	4,689	190	-4.0	(1,335)	345
402	12/1/2018 21:19:07	A	SFO	CRJ2	SKW5366	SKW	SERFR-ST	28L	59	70	1,876	4,304	214	-4.7	(1,770)	346
402	12/1/2018 21:26:22	A	SFO	B737	SWA485	SWA	SERFR-ST	28L	60	72	1,955	4,774	220	-2.6	(1,010)	345
402	12/1/2018 21:28:55	A	SFO	GLF4	U	U	SERFR-ST	28R	61	70	1,908	4,291	239	-3.6	(1,529)	344
402	12/1/2018 21:30:30	A	SFO	CRJ7	SKW5873	SKW	SERFR-ST	28L	58	68	2,032	4,844	209	-2.3	(835)	344
402	12/1/2018 21:32:25	A	SFO	B739	UAL1568	UAL	SERFR-ST	28L	61	74	2,007	5,187	206	-2.4	(885)	344
402	12/1/2018 21:35:13	A	SFO	B738	AMX664	AMX	SERFR-ST	28L	57	71	1,966	5,078	205	-2.0	(735)	344
402	12/1/2018 21:38:00	A	SFO	CRJ2	SKW5616	SKW	SERFR	28L	59	67	9,550	5,248	208	-4.0	(1,466)	9
402	12/1/2018 21:39:39	A	SFO	E75L	SKW5483	SKW	SERFR	28L	56	67	4,076	5,772	229	-3.0	(1,223)	8
402	12/1/2018 21:43:03	A	SFO	A332	HAL42	HAL	OCEANIC	28L	56	67	13,934	4,064	175	-1.1	(345)	347
402	12/1/2018 21:46:05	A	SFO	E75L	SKW3381	SKW	SERFR-ST	28L	61	71	1,935	4,804	192	-2.6	(867)	345
402	12/1/2018 21:49:16	A	SFO	A320	ASA1776	ASA	BDEGA	28L	66	74	3,284	5,218	233	-4.4	(1,822)	70
402	12/1/2018 21:51:59	A	SFO	A320	ACA568	ACA	BDEGA	28L	67	78	651	4,277	206	-1.9	(688)	16
402	12/1/2018 21:53:31	A	SFO	A321	JBU833	JBU	BDEGA	28L	63	71	(7,176)	4,186	186	-2.3	(743)	20
402	12/1/2018 21:56:09	D	OAK	B38M	SWA6868	SWA	U	30	50	62	1,841	15,992	407	3.2	2,299	139
402	12/1/2018 22:01:54	A	SFO	A320	AU830	AUJ	SERFR-ST	28L	61	72	1,966	4,805	224	-3.6	(1,439)	345
402	12/1/2018 22:04:00	A	SFO	B738	DAL1700	DAL	SERFR-ST	28L	64	77	1,954	4,415	199	-4.2	(1,485)	345
402	12/1/2018 22:14:05	A	SFO	B739	UAL650	UAL	OCEANIC	28L	60	72	(2,754)	5,403	212	-4.7	(1,770)	30
402	12/1/2018 22:34:09	A	SFO	CRJ7	SKW5461	SKW	SERFR-ST	28R	55	68	2,230	5,176	198	-2.7	(952)	347
402	12/1/2018 22:38:16	A	SFO	E75L	CPZ6085	CPZ	SERFR-ST	28R	61	73	1,969	5,130	205	-2.2	(803)	344
402	12/1/2018 22:40:33	A	SFO	B738	UAL1712	UAL	SERFR-ST	28R	61	73	1,992	5,001	187	-3.1	(1,003)	343
402	12/1/2018 22:42:08	A	SFO	B738	ASA759	ASA	OCEANIC	28R	56	69	5,824	5,465	196	-3.9	(1,355)	18
402	12/1/2018 22:45:36	A	SFO	B738	UAL1288	UAL	OCEANIC	28R	59	72	(1,423)	6,179	238	-2.4	(1,005)	34
402	12/1/2018 23:04:53	A	SFO	B738	CMP382	CMP	SERFR-ST	28R	63	75	1,963	4,849	205	-2.4	(885)	344
402	12/1/2018 23:09:55	A	SFO	A321	AAL2374	AAL	BDEGA	28R	56	68	(5,873)	4,333	220	-4.4	(1,725)	82
402	12/1/2018 23:17:49	A	SFO	B738	UAL435	UAL	OCEANIC	28R	56	67	7,179	5,979	239	-3.3	(1,370)	27
402	12/1/2018 23:20:52	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	64	75	2,084	4,360	238	-3.6	(1,516)	345
402	12/1/2018 23:21:19	A	SFO	B752	DAL2344	DAL	BDEGA	28R	62	72	3,894	6,205	219	-3.9	(1,511)	73
402	12/1/2018 23:23:15	A	SFO	A321	JBU1415	JBU	BDEGA	28R	55	65	(9,020)	6,879	242	-1.6	(690)	126
402	12/1/2018 23:25:30	A	SFO	B752	UAL1056	UAL	BDEGA	28R	59	68	245	5,628	213	-2.4	(895)	120
402	12/1/2018 23:38:18	A	SFO	A320	TAI560	TAI	SERFR-ST	28R	62	74	1,902	4,720	229	-1.9	(783)	345
402	12/1/2018 23:58:47	D	SFO	B753	UAL2237	UAL	U	01R	52	65	(8,210)	14,063	427	2.1	1,571	105

BridgeNet International 2019

Figure 9c
Correlated Noise Event Report
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Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
403	12/1/2018 0:03:13	A	SFO	B738	ASA762	ASA	OCEANIC	28R	57	68	(6,800)	6,706	222	-2.7	(1,065)	46
403	12/1/2018 0:09:59	A	SFO	B738	AMX664	AMX	SERFR-ST	28R	58	72	(2,429)	5,167	212	-3.2	(1,212)	345
403	12/1/2018 0:12:30	A	SFO	E75L	CP26020	CPZ	SERFR-ST	28R	57	70	(2,464)	5,250	207	-2.4	(864)	345
403	12/1/2018 0:16:46	A	SFO	B748	KAL213	KAL	SERFR-ST	28R	65	77	(2,652)	5,386	245	-3.6	(1,575)	346
403	12/1/2018 0:22:36	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	59	72	(2,621)	5,084	185	-2.8	(900)	344
403	12/1/2018 0:36:49	A	SFO	A320	ASA1949	ASA	SERFR-ST	28R	58	72	(2,945)	4,576	190	-3.4	(1,138)	345
403	12/1/2018 0:56:22	A	PAO	EC35	CMD12	CMD	U	H	43	52	10,365	98	3	0.0	-	199
403	12/1/2018 1:18:53	A	SFO	C750	U	U	SERFR	28R	52	64	(4,714)	4,262	243	-3.2	(1,385)	335
403	12/1/2018 2:12:51	D	PAO	EC35	CMD12	CMD	U	H	44	55	10,602	98	7	0.0	-	344
403	12/1/2018 2:47:44	D	NUQ	PC12	N562NA	GA	U		45	61						
403	12/1/2018 2:51:24	A	SFO	B744	AAR284	AAR	SERFR-ST	28R	67	78	(2,515)	5,084	223	-3.0	(1,185)	344
403	12/1/2018 3:25:19	A	SFO	B739	UAL2550	UAL	BDEGA	28R	63	75	987	3,990	217	-0.1	(45)	61
403	12/1/2018 3:46:28	A	SFO	B738	UAL1639	UAL	OCEANIC	28L	62	72	(2,771)	6,660	245	-1.8	(756)	61
403	12/1/2018 3:58:13	A	SFO	B738	UAL1724	UAL	OCEANIC	28R	61	71	(4,447)	5,779	250	-3.6	(1,605)	63
403	12/1/2018 4:09:01	A	SFO	B772	UAL396	UAL	OCEANIC	28R	49	62	(12,838)	6,559	267	-0.8	(394)	33
403	12/1/2018 4:10:54	A	SFO	B738	UAL1746	UAL	OCEANIC	28R	61	71	(2,440)	7,430	243	-2.6	(1,127)	69
403	12/1/2018 4:37:49	A	SFO	B753	UAL2553	UAL	BDEGA	28R	51	65	12,052	5,291	200	-3.7	(1,290)	2
403	12/1/2018 5:13:33	A	SFO	B789	UAL955	UAL	BDEGA	28R	68	78	160	4,177	281	-2.1	(1,061)	84
403	12/1/2018 5:36:52	A	SFO	B738	UAL1557	UAL	OCEANIC	28R	66	76	(1,568)	5,558	265	-4.7	(2,184)	75
403	12/1/2018 5:38:13	A	SFO	B77W	AIC173	AIC	OTHER	28R	54	67	10,997	6,561	254	-3.4	(1,539)	71
403	12/1/2018 5:46:40	A	SFO	B753	UAL1575	UAL	OCEANIC	28R	59	72	2,306	6,636	250	-2.9	(1,290)	78
403	12/1/2018 5:49:32	A	SFO	B77W	UAL916	UAL	OCEANIC	28R	60	73	462	5,998	248	-4.2	(1,821)	74
403	12/1/2018 6:04:14	A	SFO	B77W	EVA008	EVA	BDEGA	28R	59	70	3,508	5,604	227	-2.9	(1,148)	109
403	12/1/2018 6:10:22	D	PAO	U	U	U	U		48	57	10,185	436	83	4.4	645	135
403	12/1/2018 6:11:56	A	SJC	GALX	U	U	U	13	56	65	6,787	2,210	219	-2.4	(945)	2
403	12/1/2018 6:14:18	D	PAO	U	U	U	U	13	49	58	10,649	399	78	4.6	630	135
403	12/1/2018 6:21:13	A	SFO	CRJ2	SKW5738	SKW	BDEGA	28R	48	63						
403	12/1/2018 6:28:55	A	SFO	P28A	UAL872	UAL	BDEGA	28R	63	75	1,358	5,327	255	-2.8	(1,240)	85
403	12/1/2018 6:40:10	A	SFO	CRJ2	SKW5276	SKW	BDEGA	28R	56	67	(1,645)	4,592	257	-3.6	(1,650)	38
403	12/1/2018 6:46:30	A	SFO	B789	UAL870	UAL	OCEANIC	28R	50	66	13,164	5,260	233	-2.9	(1,205)	13
403	12/1/2018 6:57:14	A	SFO	E75L	SKW5358	SKW	BDEGA	28R	50	62						
403	12/1/2018 7:01:07	A	SFO	CRJ2	SKW5631	SKW	SERFR-ST	28R	55	67	(2,483)	4,881	213	-5.2	(1,937)	344
403	12/1/2018 7:03:29	A	SFO	CRJ2	SKW5667	SKW	SERFR-ST	28R	53	68	(2,480)	5,137	231	-3.6	(1,466)	345
403	12/1/2018 7:05:52	A	SFO	E75L	SKW5601	SKW	SERFR-ST	28R	57	69	(2,484)	5,132	236	-2.4	(1,017)	345
403	12/1/2018 7:07:43	A	SFO	A320	UAL2350	UAL	SERFR-ST	28R	56	68	(2,473)	4,911	240	-1.9	(805)	345
403	12/1/2018 7:09:53	A	SFO	A319	UAL295	UAL	SERFR-ST	28R	62	72	(2,579)	4,977	226	-1.4	(563)	345
403	12/1/2018 7:11:23	A	SFO	B738	UAL805	UAL	BDEGA	28R	50	61	(11,385)	5,360	228	-3.5	(1,388)	45
403	12/1/2018 7:13:48	A	SFO	CRJ2	SKW5496	SKW	BDEGA	28R	49	62	(8,401)	5,300	204	-2.8	(1,023)	65
403	12/1/2018 7:15:27	A	SFO	A359	SIA32	SIA	BDEGA	28R	56	67	(6,798)	5,539	218	-2.4	(912)	99
403	12/1/2018 7:34:20	A	SFO	E75L	CP26034	CPZ	SERFR-ST	28L	61	72	(2,455)	5,100	205	-2.3	(826)	345
403	12/1/2018 7:36:29	A	SFO	A320	ASA1925	ASA	SERFR-ST	28L	59	71	(2,655)	4,316	251	-2.2	(988)	345
403	12/1/2018 7:37:42	A	SFO	B789	UAL858	UAL	BDEGA	28R	59	73	(5,565)	5,491	255	-3.5	(1,575)	46
403	12/1/2018 7:41:28	D	PAO	U	U	U	U	13	56	71	10,538	413	88	6.7	1,035	142
403	12/1/2018 7:49:49	A	SFO	B77W	UAL862	UAL	BDEGA	28R	56	69	7,161	5,716	191	-3.1	(1,058)	18
403	12/1/2018 7:51:07	A	SFO	A320	UAL618	UAL	BDEGA	28L	65	74	3,330	4,996	216	-5.0	(1,920)	106
403	12/1/2018 7:53:09	D	SFO	B38M	SWA4128	SWA	U		57	67	7,879	18,198	432	2.8	2,129	106
403	12/1/2018 7:54:40	A	SFO	A320	UAL612	UAL	SERFR-ST	28L	67	76	(2,487)	4,879	182	-3.9	(1,253)	344
403	12/1/2018 7:58:26	A	SFO	A320	JBU1136	JBU	SERFR-ST	28L	62	75	(2,571)	4,006	244	-0.1	(46)	345
403	12/1/2018 8:02:08	A	SJC	A320	JBU826	JBU	U	12R	66	75	4,553	2,081	208	-2.2	(790)	352
403	12/1/2018 8:04:31	A	SJC	B737	SWA2630	SWA	U	12R	65	74	3,186	2,988	168	-0.2	(45)	330
403	12/1/2018 8:07:32	A	SFO	CRJ7	SKW5464	SKW	BDEGA	28L	58	70	(2,377)	5,659	241	-3.8	(1,620)	64
403	12/1/2018 8:12:52	A	SFO	A320	ASA1951	ASA	SERFR	28L	64	77	(2,276)	4,786	179	-4.9	(1,530)	345
403	12/1/2018 8:15:33	A	SFO	A21N	ASA1591	ASA	SERFR-ST	28L	55	69	(2,673)	5,465	241	-2.7	(1,125)	344
403	12/1/2018 8:18:07	A	SFO	B739	UAL1294	UAL	SERFR-ST	28L	63	76	(2,437)	4,969	243	-2.9	(1,230)	345
403	12/1/2018 8:20:56	A	SFO	B77W	UAL838	UAL	OCEANIC	28R	62	73	(5,061)	6,361	238	-3.0	(1,275)	34
403	12/1/2018 8:24:14	A	SFO	B77W	ANA8	ANA	BDEGA	28R	54	66	(9,821)	5,579	251	-3.6	(1,617)	42
403	12/1/2018 8:26:32	A	SFO	B77W	CESS89	CES	BDEGA	28L	58	71	(4,824)	4,717	208	-3.1	(1,125)	39
403	12/1/2018 8:33:12	A	SFO	E75L	SKW5642	SKW	BDEGA	28L	57	67	(10,683)	4,953	232	-1.5	(600)	64
403	12/1/2018 8:34:40	A	SFO	B739	UAL662	UAL	SERFR-ST	28L	60	72	(2,531)	4,875	176	-3.2	(989)	345
403	12/1/2018 8:36:29	A	SFO	A332	CE5767	CES	BDEGA	28R	64	75	399	6,526	210	-3.9	(1,429)	71
403	12/1/2018 8:40:38	A	SFO	E75L	QXE2283	QXE	BDEGA	28L	58	68	(1,604)	6,506	239	-2.3	(950)	69
403	12/1/2018 8:42:30	A	SFO	B737	SWA3330	SWA	SERFR	28R	51	64	8,458	6,065	230	-2.1	(840)	37
403	12/1/2018 8:45:02	A	SFO	B77W	CPA870	CPA	BDEGA	28R	60	73	(3,326)	6,628	230	-3.5	(1,425)	113
403	12/1/2018 8:49:33	A	SFO	B77W	KAL023	KAL	BDEGA	28R	61	74	(4,549)	4,044	230	-1.0	(393)	36
403	12/1/2018 8:52:45	A	SFO	A320	ACA574	ACA	BDEGA	28L	60	72	(8,118)	6,098	269	-0.6	(288)	114
403	12/1/2018 8:54:01	D	SFO	A320	UAL234	UAL	U	28L	54	68	2,987	14,937	434	2.4	1,815	106
403	12/1/2018 8:56:04	A	SJC	E75L	CP25772	CPZ	U	12R	65	75	2,977	2,208	185	-4.0	(1,302)	344
403	12/1/2018 8:57:55	A	SJC	B788	ANA172	ANA	U	12R	63	74	4,323	2,875	182	-2.2	(704)	1
403	12/1/2018 9:00:47	A	SJC	E75L	QXE2810	QXE	U	12R	64	74	4,388	3,004	183	0.0	-	348
403	12/1/2018 9:02:24	A	SJC	GLF6	N240CX	GA	U	12R	58	69	4,491	2,975	169	-1.0	(300)	334
403	12/1/2018 9:05:27	A	SJC	B737	SWA921	SWA	U	12R	60	72	4,491	2,867	188	-3.1	(1,035)	348
403	12/1/2018 9:07:41	A	SJC	E75L	QXE2259	QXE	U	12R	55	66	5,746	2,962	209	-2.0	(735)	348
403	12/1/2018 9:12:02	A	SFO	B738	UAL1615	UAL	BDEGA	28L	62	75	666	6,292	266	-3.7	(1,732)	114
403	12/1/2018 9:16:00	A	SFO	B738	UAL2055	UAL	BDEGA	28L	63	74	(339)	5,038	208	-1.6	(595)	59
403	12/1/2018 9:22:02	A	SFO	A319	ASA1751	ASA	BDEGA	28L	65	77	4,978	5,144	248	-3.9	(1,710)	42
403	12/1/2018 9:25:13	A	SFO	B789	UAL2	UAL	BDEGA	28R	65	76	615	6,079	231	-2.5	(1,031)	32
403	12/1/2018 9:27:58	A	SFO	A319	UAL820	UAL	SERFR	28L	67	77	595	5,000	223	-0.6	(222)	62
403	12/1/2018 9:32:46	A	SFO	B789	UAL876	UAL	BDEGA	28R	61	72	(6,590)	4,861	218	-1.6	(600)	-
403	12/1/2018 9:35:57	A	SFO	B739	DAL1275	DAL	BDEGA	28L	57	70	6,496	5,174	193	-3.7	(1,245)	11
403	12/1/2018 9:43:33	A	SFO	CRJ9	JZA579	JZA	BDEGA	28L	52	64	(6,030)	5,019	216	0.2	72	2
403	12/1/2018 9:45:24	A	SFO	B739	UAL501	UAL	SERFR	28L	56	70	8,717	5,691	211	-2.5	(936)	3

Figure 9c
 Correlated Noise Event Report
 Site 403- December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
403	12/1/2018 10:00:45	A	SJC	B737	SWA3249	SWA	U	12R	60	72	2,902	2,838	201	-2.5	(880)	349
403	12/1/2018 10:03:59	A	SJC	B738	SWA4630	SWA	U	12R	58	69	6,030	2,045	161	-2.2	(623)	2
403	12/1/2018 10:04:25	A	SFO	A321	JBU133	JBU	MISSED	28L	61	73	1,180	5,016	199	0.0	13	64
403	12/1/2018 10:07:41	A	SJC	E75L	CPZ5686	CPZ	U	12R	56	66	7,442	2,998	198	0.0	-	345
403	12/1/2018 10:23:11	A	SFO	B77W	CSN659	CSN	BDEGA	28R	61	74	2,838	5,035	205	-1.3	(479)	20
403	12/1/2018 10:35:09	A	SJC	E75L	QXE2224	QXE	U	30L	55	69	5,352	2,998	195	0.0	-	358
403	12/1/2018 10:51:53	A	SFO	B77W	ANZ8	ANZ	OCEANIC	28R	61	74	3,390	4,225	210	-2.3	(840)	13
403	12/1/2018 10:53:56	A	SFO	E75L	QXE2267	QXE	BDEGA	28L	55	68	5,895	4,395	184	-2.9	(945)	354
403	12/1/2018 10:55:46	A	SFO	B738	UAL209	UAL	SERFR	28L	57	70	4,745	4,348	195	-1.8	(632)	25
403	12/1/2018 10:59:02	A	SFO	A332	FJI870	FJI	OCEANIC	28R	70	80	227	5,018	257	-4.2	(1,920)	52
403	12/1/2018 11:03:01	A	SFO	B788	ACA737	ACA	BDEGA	28R	63	74	2,524	5,360	263	-1.8	(811)	84
403	12/1/2018 11:08:45	A	SFO	B748	CCA985	CCA	BDEGA	28L	56	67	11,626	5,616	220	-3.4	(1,335)	32
403	12/1/2018 11:12:02	A	SFO	B737	SWA360	SWA	SERFR	28L	51	61	12,282	5,997	207	0.2	60	65
403	12/1/2018 11:19:31	A	SQL	BE35	N8366D	GA	U	30	61	69	(2,209)	2,454	102	-4.1	(735)	326
403	12/1/2018 11:27:02	A	SFO	A319	UAL698	UAL	OCEANIC	28R	60	74	5,601	5,884	220	-1.6	(633)	63
403	12/1/2018 11:31:18	A	SFO	B739	ASA484	ASA	OCEANIC	28L	59	70	7,678	6,014	244	-0.1	(45)	101
403	12/1/2018 11:32:10	D	SQL	SR20	N321SL	GA	U	30	54	67	(1,672)	2,519	81	-2.7	(390)	113
403	12/1/2018 11:36:05	A	SFO	CRJ2	SKW5899	SKW	BDEGA	28L	55	66	492	4,976	220	-0.1	(21)	88
403	12/1/2018 11:38:33	A	SFO	A320	ASA1027	ASA	SERFR	28L	62	74	4,939	5,997	246	-0.1	(22)	87
403	12/1/2018 11:46:22	A	SFO	A320	UAL708	UAL	SERFR	28L	57	68	8,763	5,574	222	-3.6	(1,412)	79
403	12/1/2018 11:47:35	A	SFO	B77W	JAL2	JAL	OCEANIC	28R	52	66	11,387	5,792	249	-1.9	(826)	23
403	12/1/2018 11:50:23	A	SFO	B738	UAL1763	UAL	BDEGA	28L	53	66	(5,432)	7,863	240	-2.9	(1,230)	53
403	12/1/2018 12:00:10	A	SFO	A319	ASA1332	ASA	BDEGA	28L	65	77	1,980	4,071	221	-1.2	(469)	113
403	12/1/2018 12:04:50	A	SFO	B744	QFA73	QFA	OCEANIC	28R	56	70	7,568	5,379	189	-6.8	(2,285)	12
403	12/1/2018 12:11:13	A	SFO	A388	UAE225	UAE	BDEGA	28R	67	77	(1,816)	4,998	239	-1.1	(450)	31
403	12/1/2018 12:22:57	A	SFO	B772	UAL949	UAL	BDEGA	28L	66	76	2,812	5,292	197	-2.7	(941)	30
403	12/1/2018 12:26:06	A	SFO	E75L	SKW5586	SKW	SERFR-ST	28L	60	73	(2,473)	4,539	201	-3.7	(1,315)	345
403	12/1/2018 12:28:47	A	SFO	E75L	SKW5446	SKW	SERFR-ST	28L	59	69	(2,458)	5,251	217	-1.1	(429)	345
403	12/1/2018 12:32:51	A	SFO	A320	AUJ820	AUJ	SERFR-ST	28L	67	77	(2,563)	5,071	180	-1.5	(478)	345
403	12/1/2018 12:36:46	A	SFO	A321	AAL789	AAL	SERFR-ST	28L	65	75	(2,358)	4,620	206	-3.2	(1,171)	345
403	12/1/2018 12:39:54	A	SFO	E75L	SKW5203	SKW	SERFR-ST	28L	55	69	(2,483)	5,062	218	-2.6	(997)	345
403	12/1/2018 12:46:56	A	SFO	CRJ2	SKW5655	SKW	SERFR	28L	54	66	(3,104)	6,357	249	-3.8	(1,680)	345
403	12/1/2018 12:49:59	A	SFO	B712	DAL1514	DAL	SERFR	28L	54	68	13,005	6,000	199	0.1	37	22
403	12/1/2018 12:58:57	A	SFO	CRJ2	SKW5476	SKW	SERFR	28L	56	68	(1,514)	5,021	236	-0.1	(52)	9
403	12/1/2018 13:01:28	A	SFO	B738	ASA621	ASA	SERFR	28L	63	74	6,089	4,988	216	-0.6	(234)	9
403	12/1/2018 13:02:49	A	SFO	A346	DLH454	DLH	BDEGA	28L	65	76	4,170	6,009	207	0.5	196	50
403	12/1/2018 13:06:30	A	SFO	CRJ2	SKW5416	SKW	SERFR-ST	28R	54	69	(2,979)	5,476	201	-4.2	(1,494)	346
403	12/1/2018 13:08:34	A	SFO	B737	SWA4136	SWA	SERFR-ST	28L	64	75	(2,478)	4,838	202	-4.8	(1,725)	345
403	12/1/2018 13:11:16	A	SFO	A320	ASA1804	ASA	BDEGA	28L	57	68	(7,555)	5,264	214	-4.3	(1,626)	358
403	12/1/2018 13:13:32	A	SFO	CRJ7	SKW5697	SKW	BDEGA	28L	53	65	(7,652)	5,009	218	-4.4	(1,680)	19
403	12/1/2018 13:16:27	A	SFO	B77W	KAL025	KAL	BDEGA	28L	62	75	(836)	6,410	226	-5.4	(2,160)	12
403	12/1/2018 13:20:04	A	SFO	A319	UAL1745	UAL	BDEGA	28L	66	77	852	4,612	232	-3.3	(1,365)	42
403	12/1/2018 13:24:02	A	SFO	E75L	SKW5967	SKW	BDEGA	28L	55	68	(5,825)	5,689	216	-1.7	(630)	107
403	12/1/2018 13:29:18	A	SFO	B77W	AFR084	AFR	BDEGA	28L	65	77	(3,858)	5,176	223	-4.3	(1,694)	22
403	12/1/2018 13:32:58	A	SFO	B744	BAW11M	BAW	BDEGA	28L	56	68	(13,008)	4,942	215	-3.3	(1,265)	32
403	12/1/2018 13:36:01	D	OAK	B737	SWA3839	SWA	U	30	53	67	2,311	18,144	455	3.0	2,415	135
403	12/1/2018 13:41:45	A	SFO	B738	UAL390	UAL	SERFR	28L	62	72	(4,801)	4,568	216	-3.5	(1,317)	29
403	12/1/2018 13:44:19	A	SFO	B737	SWA974	SWA	SERFR	28L	67	74	3,835	5,613	210	-3.7	(1,353)	9
403	12/1/2018 13:46:17	A	SFO	CRJ7	SKW5615	SKW	BDEGA	28L	55	66	(6,854)	4,038	214	-1.7	(635)	45
403	12/1/2018 13:51:43	A	SFO	A319	ASA1340	ASA	BDEGA	28R	56	68	(7,962)	4,455	231	-4.8	(1,965)	54
403	12/1/2018 13:57:51	A	SFO	A320	UAL2383	UAL	SERFR-ST	28L	65	75	(2,456)	4,539	203	-4.6	(1,650)	345
403	12/1/2018 14:07:20	A	SFO	B39M	CMP208	CMP	SERFR-ST	28L	59	70	(2,409)	5,048	237	-2.7	(1,145)	345
403	12/1/2018 14:09:41	A	SFO	B739	UAL444	UAL	SERFR	28L	63	72	(235)	4,905	239	-2.7	(1,144)	345
403	12/1/2018 14:12:28	A	SFO	E75L	CPZ6007	CPZ	SERFR-ST	28L	55	69	(2,492)	4,945	224	-1.0	(382)	344
403	12/1/2018 14:14:20	A	SFO	B738	SWA3950	SWA	SERFR-ST	28L	65	76	(2,429)	4,621	235	-3.4	(1,408)	344
403	12/1/2018 14:16:59	A	SFO	B739	UAL372	UAL	OCEANIC	28L	61	72	(2,440)	5,180	215	-3.2	(1,203)	346
403	12/1/2018 14:18:18	A	SFO	A359	AAR212	AAR	BDEGA	28L	59	72	854	4,996	222	-3.4	(1,319)	23
403	12/1/2018 14:19:59	D	PAO	U	U	U	U	31	50	62	(10,006)	1,608	109	0.1	21	56
403	12/1/2018 14:25:49	A	SFO	B772	UAL900	UAL	BDEGA	28L	55	64	(12,192)	4,970	215	-0.4	(135)	55
403	12/1/2018 14:28:03	A	SFO	B77W	EVA018	EVA	OCEANIC	28L	60	73	(5,755)	5,428	241	-3.7	(1,575)	31
403	12/1/2018 14:30:08	A	SFO	B752	UAL477	UAL	BDEGA	28L	63	75	(1,790)	5,895	218	-5.1	(1,956)	32
403	12/1/2018 14:32:27	A	SFO	B738	DAL2971	DAL	SERFR	28L	59	69	8,320	3,956	212	-0.7	(250)	31
403	12/1/2018 14:35:32	A	SFO	A346	VIR192	VIR	BDEGA	28L	61	75	14,635	6,108	201	0.1	25	80
403	12/1/2018 14:38:40	A	SFO	B738	ASA534	ASA	BDEGA	28L	54	65	11,125	5,111	206	-1.7	(604)	44
403	12/1/2018 14:47:09	A	SFO	B738	UAL2148	UAL	SERFR	28L	55	70	5,694	5,199	201	-3.7	(1,324)	349
403	12/1/2018 14:51:09	A	SFO	A320	ASA1388	ASA	BDEGA	28L	55	69	8,894	4,348	208	-3.8	(1,405)	349
403	12/1/2018 14:59:02	A	SFO	CRJ2	SKW5984	SKW	SERFR	28L	55	66	(2,296)	5,548	215	-3.7	(1,395)	346
403	12/1/2018 15:06:40	A	SFO	B789	UAL892	UAL	OCEANIC	28L	69	78	3,413	4,829	249	-2.2	(963)	25
403	12/1/2018 15:08:44	A	SFO	A332	EIN147	EIN	BDEGA	28L	68	78	3,304	5,376	201	-3.6	(1,290)	355
403	12/1/2018 15:11:29	A	SFO	E75L	QXE2042	QXE	SERFR-ST	28L	56	69	(2,442)	5,731	221	-4.8	(1,860)	345
403	12/1/2018 15:17:39	A	SFO	E75L	SKW5617	SKW	SERFR-ST	28L	53	68	(2,472)	5,482	193	-3.4	(1,153)	345
403	12/1/2018 15:28:53	A	SFO	CRJ2	SKW5362	SKW	SERFR-ST	28L	54	66	(2,348)	5,068	236	-2.7	(1,135)	345
403	12/1/2018 15:31:33	A	SFO	B739	UAL2351	UAL	SERFR-ST	28L	59	72	(2,404)	4,676	234	-3.4	(1,380)	346
403	12/1/2018 15:33:33	A	SFO	E75L	SKW5954	SKW	BDEGA	28R	61	73	132	4,547	190	-1.3	(438)	348
403	12/1/2018 15:35:31	A	SFO	CRJ2	SKW5870	SKW	SERFR	28L	55	66	(2,098)	5,130	212	-3.2	(1,180)	358
403	12/1/2018 15:40:59	A	SFO	B738	UAL1919	UAL	SERFR-ST	28L	62	73	(2,353)	4,869	221	-1.5	(588)	345
403	12/1/2018 15:43:38	A	SFO	GLEX	TWY468	TWY	SERFR-ST	28R	63	70	(2,442)	4,291	237	-3.2	(1,353)	345
403	12/1/2018 15:45:17	D	SJC	C421	N700LC	GA	U	30L	54	64	6,870	1,543	141	-1.4	(345)	312
403	12/1/2018 15:50:41	A	SFO	E55P	EJA406	EJA	SERFR-ST	28R	61	71	(2,532)	5,093	238	-1.7	(705)	345
403	12/1/2018 15:51:07	A	SFO	A319	UAL1											

Figure 9c
 Correlated Noise Event Report
 Site 403- December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
403	12/1/2018 16:19:16	A	SFO	CRJ2	SKW5347	SKW	BDEGA	28L	53	66	(746)	5,544	190	-5.0	(1,665)	34
403	12/1/2018 16:34:29	A	PAO	P20P	N231KD	GA	U	31	64	66	6,297	700	114	0.1	13	136
403	12/1/2018 16:39:39	A	SFO	CRJ2	SKW5286	SKW	SERFR-ST	28L	54	67	(2,439)	5,006	223	-3.6	(1,425)	345
403	12/1/2018 16:42:19	A	SFO	A320	UAL1243	UAL	SERFR-ST	28L	56	69	(2,257)	4,924	219	-3.7	(1,425)	345
403	12/1/2018 16:45:20	A	SFO	E75L	CPZ6045	CPZ	SERFR-ST	28L	59	71	(2,500)	4,309	224	-3.6	(1,428)	344
403	12/1/2018 16:48:53	A	SFO	CRJ2	SKW5535	SKW	BDEGA	28L	51	62	8,504	4,986	216	-4.0	(1,520)	32
403	12/1/2018 16:51:03	A	SFO	BE20	DLX622	DLX	SERFR	28L	54	65	8,953	6,082	173	-0.1	(26)	49
403	12/1/2018 16:52:52	A	SFO	B712	DAL525	DAL	BDEGA	28L	68	79						
403	12/1/2018 16:55:18	A	SFO	A319	UAL718	UAL	SERFR	28L	57	68	9,187	4,691	179	-4.2	(1,320)	29
403	12/1/2018 16:58:07	A	SFO	B789	QFA49	QFA	OCEANIC	28L	62	73	3,739	5,089	201	-2.5	(885)	10
403	12/1/2018 17:00:19	A	SFO	B737	SWA4139	SWA	SERFR-ST	28L	56	69	(2,520)	5,106	196	-2.7	(933)	345
403	12/1/2018 17:11:28	A	SFO	E75L	SKW5248	SKW	SERFR-ST	28L	57	70	(2,455)	5,107	249	-2.6	(1,126)	345
403	12/1/2018 17:21:39	A	SFO	B737	SWA3308	SWA	SERFR	28L	59	70	978	5,173	209	-3.2	(1,172)	14
403	12/1/2018 17:24:29	A	SFO	A319	UAL1051	UAL	SERFR-ST	28L	60	72	(2,338)	5,514	200	-2.7	(935)	344
403	12/1/2018 17:31:07	D	PAO	U	U	U	U	31	47	60	6,285	603	105	-1.1	(195)	140
403	12/1/2018 17:34:31	A	SFO	E75L	SKW3460	SKW	SERFR-ST	28L	59	71	(2,531)	3,982	239	-6.0	(2,527)	345
403	12/1/2018 17:35:41	A	SFO	B739	DAL1889	DAL	BDEGA	28L	57	67	(7,396)	5,433	207	-3.7	(1,336)	46
403	12/1/2018 17:44:21	A	SFO	A359	FBU711	FBU	OCEANIC	28L	51	64	(10,600)	4,179	189	-2.1	(690)	41
403	12/1/2018 17:47:02	A	SFO	A320	ASA1933	ASA	SERFR-ST	28L	60	72	(2,651)	4,041	227	-1.2	(461)	346
403	12/1/2018 17:48:48	A	SFO	B738	DAL1720	DAL	SERFR-ST	28L	67	77	(2,573)	5,268	217	-2.1	(790)	346
403	12/1/2018 17:50:45	A	SFO	A320	ASA1271	ASA	SERFR	28L	62	74	(2,649)	5,295	202	-1.8	(642)	346
403	12/1/2018 17:53:12	A	PAO	U	U	U	U	H	61	69	(5,873)	1,122	128	-7.6	(1,726)	85
403	12/1/2018 17:55:20	A	SFO	B738	UAL1124	UAL	SERFR-ST	28L	59	72	(2,408)	4,915	229	-3.0	(1,226)	345
403	12/1/2018 17:57:27	A	SFO	B739	UAL632	UAL	SERFR-ST	28L	65	75	(2,443)	4,903	193	-2.7	(931)	345
403	12/1/2018 18:06:00	A	SFO	A319	ASA1273	ASA	SERFR	28L	65	76	(2,899)	4,129	203	-1.8	(652)	30
403	12/1/2018 18:09:14	A	SFO	CRJ9	JZA743	JZA	BDEGA	28L	54	67	1,380	4,885	223	-4.6	(1,802)	53
403	12/1/2018 18:11:00	A	SFO	B738	AAL1454	AAL	SERFR	28L	58	72	6,051	4,556	195	-4.5	(1,530)	8
403	12/1/2018 18:13:37	A	SFO	A388	BAW287	BAW	BDEGA	28R	55	67	12,236	5,341	191	-3.4	(1,133)	356
403	12/1/2018 18:15:29	D	PAO	U	U	U	U	H	51	64	(10,161)	1,558	77	4.4	600	263
403	12/1/2018 18:17:14	A	SFO	A319	UAL1240	UAL	SERFR	28L	61	71	7,929	4,628	170	-3.6	(1,090)	10
403	12/1/2018 18:20:18	A	SFO	B752	UAL560	UAL	BDEGA	28L	48	61	12,864	4,228	160	-3.7	(1,035)	320
403	12/1/2018 18:22:21	A	SFO	B77W	CAL004	CAL	OCEANIC	28L	55	69	7,202	5,982	241	-1.1	(478)	81
403	12/1/2018 18:27:39	A	SFO	A320	ASA1747	ASA	BDEGA	28L	53	66	9,564	5,247	219	-2.2	(851)	90
403	12/1/2018 18:39:49	A	SFO	A320	UAL587	UAL	BDEGA	28L	55	69	121	6,384	256	-1.6	(735)	85
403	12/1/2018 18:41:20	A	SFO	B737	SWA2989	SWA	SERFR	28L	56	68	5,562	6,220	219	-4.3	(1,657)	20
403	12/1/2018 18:43:31	A	SFO	A319	ASA1923	ASA	SERFR-ST	28L	65	77	(2,501)	4,169	194	-4.2	(1,425)	347
403	12/1/2018 18:46:12	A	SFO	A319	UAL2016	UAL	SERFR	28L	55	66	11,024	4,704	205	-3.5	(1,258)	9
403	12/1/2018 18:47:42	A	SFO	B737	SWA4050	SWA	SERFR	28L	58	71	354	5,937	199	-2.4	(840)	357
403	12/1/2018 18:52:54	A	SFO	E35L	N84AW	GA	SERFR-ST	28L	51	66	(2,491)	6,200	256	-2.5	(1,119)	345
403	12/1/2018 18:54:35	A	SFO	CRJ7	SKW5765	SKW	BDEGA	28L	63	74	1,882	4,042	197	-0.7	(244)	355
403	12/1/2018 18:56:21	A	SFO	A321	JBU915	JBU	BDEGA	28L	58	70	5,439	4,554	271	-3.9	(1,890)	91
403	12/1/2018 19:03:03	A	SFO	B737	SWA3361	SWA	SERFR-ST	28L	61	70	(2,312)	4,658	228	-3.7	(1,500)	345
403	12/1/2018 19:05:19	A	SFO	B738	UAL2352	UAL	SERFR-ST	28L	61	72	(2,422)	4,715	227	-4.1	(1,645)	345
403	12/1/2018 19:08:09	A	SFO	CRJ2	SKW5700	SKW	BDEGA	28L	48	59	(10,617)	4,084	210	-2.0	(735)	48
403	12/1/2018 19:10:36	A	SFO	A320	TAI564	TAI	SERFR-ST	28L	63	76	(2,522)	4,694	197	-4.4	(1,530)	346
403	12/1/2018 19:12:01	A	SFO	CRJ2	SKW5457	SKW	SERFR-ST	28L	57	68	(2,409)	5,091	232	-3.0	(1,230)	346
403	12/1/2018 19:14:06	A	SFO	B739	UAL1604	UAL	OCEANIC	28L	64	76	1,294	4,497	215	-4.3	(1,620)	36
403	12/1/2018 19:16:26	A	SFO	B77W	SIA2	SIA	OCEANIC	28L	60	72	(2,205)	4,629	208	-4.2	(1,523)	27
403	12/1/2018 19:18:04	A	SFO	A321	AAL686	AAL	SERFR	28R	54	67	9,202	5,688	174	-7.4	(2,265)	342
403	12/1/2018 19:19:39	A	SFO	A319	ASA1279	ASA	SERFR	28L	62	75	(1,007)	5,948	203	-1.5	(533)	5
403	12/1/2018 19:21:28	A	SFO	A388	DLH458	DLH	BDEGA	28R	62	74	8,612	4,471	204	-3.2	(1,147)	3
403	12/1/2018 19:26:29	A	SFO	E75L	SKW5592	SKW	SERFR-ST	28L	53	66	(2,504)	4,635	198	-2.7	(932)	345
403	12/1/2018 19:28:27	A	SFO	B737	SWA4154	SWA	SERFR	28L	62	75	772	4,975	206	-3.8	(1,380)	12
403	12/1/2018 19:34:01	D	SFO	E75L	SKW5960	SKW	U	01L	47	60	(13,393)	16,233	413	2.4	1,725	105
403	12/1/2018 19:40:48	A	SFO	CRJ2	SKW5872	SKW	BDEGA	28L	52	64						
403	12/1/2018 19:42:24	A	SFO	E75L	CPZ6015	CPZ	SERFR-ST	28L	56	70	(2,310)	5,597	181	-1.0	(306)	344
403	12/1/2018 19:44:47	A	SFO	CRJ2	SKW5718	SKW	BDEGA	28L	54	65	(221)	5,032	240	-3.6	(1,520)	43
403	12/1/2018 19:46:59	A	SFO	A319	ASA1595	ASA	SERFR-ST	28R	64	76	(2,628)	4,809	172	-3.4	(1,039)	346
403	12/1/2018 19:48:37	A	SFO	B772	UAL340	UAL	BDEGA	28L	56	70	(1,678)	5,803	202	-2.8	(990)	63
403	12/1/2018 19:54:07	A	SFO	E75L	SKW5440	SKW	SERFR-ST	28L	57	68	(2,504)	4,956	231	-2.9	(1,164)	345
403	12/1/2018 19:56:09	A	SFO	B752	UAL1584	UAL	BDEGA	28L	54	68	(6,964)	5,636	173	-6.8	(2,055)	43
403	12/1/2018 19:58:33	A	SFO	B739	UAL2201	UAL	SERFR	28L	67	78	2,995	4,002	198	0.6	194	350
403	12/1/2018 19:59:47	A	SFO	B38M	ACA781	ACA	BDEGA	28L	63	74	(245)	4,601	167	-3.1	(919)	342
403	12/1/2018 20:02:32	A	SFO	B739	UAL384	UAL	SERFR	28L	62	74	(2,996)	5,004	197	-4.5	(1,575)	357
403	12/1/2018 20:05:52	A	SFO	E75L	QXE2271	QXE	BDEGA	28L	67	78	422	5,691	211	-8.3	(3,105)	34
403	12/1/2018 20:11:07	A	SFO	B789	UAL28	UAL	OCEANIC	28L	56	65	(9,868)	4,143	197	-2.7	(934)	29
403	12/1/2018 20:13:12	A	SFO	A320	ASA1963	ASA	SERFR-ST	28L	66	77	(2,666)	4,311	207	-3.1	(1,123)	346
403	12/1/2018 20:15:35	A	SFO	B772	UAL724	UAL	OCEANIC	28L	66	76	5,321	6,154	233	-6.3	(2,565)	80
403	12/1/2018 20:17:27	A	SFO	A332	HAL12	HAL	OCEANIC	28L	55	70	10,413	4,612	220	-2.7	(1,057)	32
403	12/1/2018 20:22:40	A	SFO	A321	AAL547	AAL	BDEGA	28L	69	77	(1,813)	4,651	219	-5.1	(1,980)	76
403	12/1/2018 20:24:58	A	SFO	B738	UAL1152	UAL	OCEANIC	28L	60	72	4,962	4,061	196	-1.9	(659)	2
403	12/1/2018 20:28:38	A	SFO	A320	ASA1945	ASA	SERFR-ST	28L	62	74	(3,339)	4,878	207	-2.7	(983)	344
403	12/1/2018 20:34:17	A	SFO	B739	UAL643	UAL	OCEANIC	28L	49	59	(12,906)	4,141	209	-4.6	(1,702)	19
403	12/1/2018 20:35:03	A	SFO	B77W	CPA872	CPA	BDEGA	28L	59	72	3,321	5,672	221	-2.7	(1,035)	54
403	12/1/2018 20:36:17	A	SFO	B77W	CPA872	CPA	BDEGA	28L	50	60	3,321	5,672	221	-2.7	(1,035)	54
403	12/1/2018 20:41:23	A	SFO	B738	UAL1722	UAL	OCEANIC	28L	56	68	(7,412)	5,521	209	-4.3	(1,575)	24
403	12/1/2018 20:44:32	A	OAK	B738	ASA840	ASA	U	30	55	65	8,789	3,867	244	-0.8	(326)	68
403	12/1/2018 20:59:23	D	SFO	B752	UAL349	UAL	U	01L	50	65	2,380	16,321	457	2.9	2,310	106
403	12/1/2018 21:03:21	A	SFO	GLF4	WWI31	WWI	SERFR-ST	28L	60	70	(2,561)	4,769	203	-3.7	(1,335)	345
403	12/1/2018 21:05:54	A	SFO	B738	UAL2132	UAL	BDEGA	28L	44							

Figure 9c
 Correlated Noise Event Report
 Site 403- December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
403	12/1/2018 21:34:55	A	SFO	B738	AMX664	AMX	SERFR-ST	28L	58	70	(2,417)	5,282	215	-2.5	(930)	345
403	12/1/2018 21:37:39	A	SFO	CRJ2	SKW5616	SKW	SERFR	28L	51	63	3,461	5,442	210	-3.7	(1,375)	8
403	12/1/2018 21:39:38	A	SFO	E75L	SKW5483	SKW	SERFR	28L	55	66	(1,956)	5,934	230	-1.9	(749)	1
403	12/1/2018 21:42:23	A	SFO	A332	HAL42	HAL	OCEANIC	28L	57	70	9,404	4,205	193	-2.6	(892)	349
403	12/1/2018 21:45:54	A	SFO	E75L	SKW3381	SKW	SERFR-ST	28L	61	70	(2,486)	5,036	219	-3.1	(1,183)	345
403	12/1/2018 21:49:13	A	SFO	A320	ASA1776	ASA	BDEGA	28L	63	74	(2,774)	4,997	221	-4.5	(1,755)	55
403	12/1/2018 21:51:49	A	SFO	A320	ACA568	ACA	BDEGA	28L	61	71	(5,851)	4,331	214	-1.6	(601)	28
403	12/1/2018 21:53:20	A	SFO	A321	JBU833	JBU	BDEGA	28L	48	61	(13,754)	4,232	191	-2.1	(721)	23
403	12/1/2018 21:56:29	D	OAK	B38M	SWA6868	SWA	U	30	50	61	(87)	16,380	415	3.4	2,460	139
403	12/1/2018 22:01:49	A	SFO	A320	AJ830	AJ	SERFR-ST	28L	59	70	(2,461)	5,160	228	-3.9	(1,575)	345
403	12/1/2018 22:03:36	A	SFO	B738	DAL1700	DAL	SERFR-ST	28L	64	76	(2,453)	4,845	202	-5.1	(1,815)	345
403	12/1/2018 22:14:31	A	SFO	B739	UAL650	UAL	OCEANIC	28L	51	65	(9,494)	5,415	212	-4.7	(1,770)	30
403	12/1/2018 22:34:15	A	SFO	CRJ7	SKW5461	SKW	SERFR-ST	28R	54	65	(2,295)	5,411	206	-2.3	(824)	345
403	12/1/2018 22:38:02	A	SFO	E75L	CPZ6085	CPZ	SERFR-ST	28R	58	71	(2,406)	5,329	196	-2.4	(815)	344
403	12/1/2018 22:40:16	A	SFO	B738	UAL1712	UAL	SERFR-ST	28R	61	73	(2,339)	5,275	191	-2.8	(930)	345
403	12/1/2018 22:42:16	A	SFO	B738	ASA759	ASA	OCEANIC	28R	61	74	(726)	5,616	201	-3.8	(1,335)	24
403	12/1/2018 22:45:38	A	SFO	B738	UAL1288	UAL	OCEANIC	28R	58	66	(8,170)	6,190	239	-2.5	(1,035)	35
403	12/1/2018 22:59:42	D	SFO	B752	UAL2360	UAL	U	01R	54	65	12,599	14,351	447	1.8	1,380	120
403	12/1/2018 23:04:46	A	SFO	B738	CMP382	CMP	SERFR-ST	28R	63	75	(2,419)	5,083	207	-2.9	(1,050)	344
403	12/1/2018 23:10:20	A	SFO	A321	AAL2374	AAL	BDEGA	28R	50	62	(11,419)	4,196	202	-3.4	(1,221)	67
403	12/1/2018 23:17:23	A	SFO	B738	UAL435	UAL	OCEANIC	28R	62	74	462	6,019	240	-3.2	(1,351)	26
403	12/1/2018 23:20:43	A	SFO	B738	AMX662	AMX	SERFR-ST	28R	63	74	(2,358)	4,694	237	-3.8	(1,575)	346
403	12/1/2018 23:21:31	A	SFO	B752	DAL2344	DAL	BDEGA	28R	65	74	(2,335)	5,928	212	-5.3	(1,965)	49
403	12/1/2018 23:23:39	A	SFO	A321	JBU1415	JBU	BDEGA	28R	58	69	8,187	4,712	162	-3.9	(1,110)	344
403	12/1/2018 23:25:51	A	SFO	A321	JBU1415	JBU	BDEGA	28R	54	68	8,187	4,712	162	-3.9	(1,110)	344
403	12/1/2018 23:37:59	A	SFO	A320	TAI560	TAI	SERFR-ST	28R	57	70	(2,522)	4,908	236	-2.8	(1,163)	345
403	12/1/2018 23:59:26	D	SFO	B753	UAL2237	UAL	U	01R	50	64	(6,055)	14,314	425	2.3	1,755	105

BridgeNet International 2019

Figure 9d
Correlated Noise Event Report
Site 404 (Tevis) - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
404	12/1/2018 0:03:10	Arrival	SFO	B738	ASA762	ASA	OCEANIC	28R	60	74	1,466	6,576	209	-3.2	(1,167)	33
404	12/1/2018 0:10:20	Arrival	SFO	B738	AMX664	AMX	SERFR-ST	28R	63	76	(27)	4,636	196	-4.0	(1,377)	345
404	12/1/2018 0:12:59	Arrival	SFO	E75L	CP26020	CPZ	SERFR-ST	28R	59	72	(28)	4,941	185	-1.6	(5,10)	344
404	12/1/2018 0:17:12	Arrival	SFO	B748	KAL213	KAL	SERFR-ST	28R	73	83	(80)	5,000	230	-3.5	(1,394)	345
404	12/1/2018 0:23:16	Arrival	SFO	B738	AMX662	AMX	SERFR-ST	28R	61	73	(85)	4,727	182	-2.5	(793)	345
404	12/1/2018 0:37:22	Arrival	SFO	A320	ASA1949	ASA	SERFR-ST	28R	64	75	(380)	4,059	178	-3.3	(1,046)	346
404	12/1/2018 1:19:19	Arrival	SFO	C750	U	U	SERFR	28R	55	67	(3,567)	4,004	247	-0.6	(264)	337
404	12/1/2018 2:51:37	Arrival	SFO	B744	AAR284	AAR	SERFR-ST	28R	70	81	(60)	4,684	211	-2.7	(990)	346
404	12/1/2018 3:25:22	Arrival	SFO	B739	UAL2550	UAL	BDEGA	28R	51	61	9,716	3,991	217	-0.1	(45)	62
404	12/1/2018 3:46:29	Arrival	SFO	B738	UAL1639	UAL	OCEANIC	28L	59	69	5,961	6,671	247	-1.8	(762)	62
404	12/1/2018 3:58:07	Arrival	SFO	B738	UAL1724	UAL	OCEANIC	28R	62	73	4,272	5,816	251	-3.6	(1,590)	65
404	12/1/2018 4:09:20	Arrival	SFO	B772	UAL396	UAL	OCEANIC	28R	63	72	(5,310)	6,487	264	-1.2	(557)	26
404	12/1/2018 4:10:39	Arrival	SFO	B738	UAL1746	UAL	OCEANIC	28R	56	67	6,143	7,507	244	-2.4	(1,041)	69
404	12/1/2018 4:38:12	Arrival	SFO	B753	UAL2553	UAL	BDEGA	28R	43	59	14,643	4,624	168	-2.7	(813)	334
404	12/1/2018 5:13:23	Arrival	SFO	B789	UAL955	UAL	BDEGA	28R	57	70	(7,179)	4,443	287	-3.5	(1,772)	104
404	12/1/2018 5:36:50	Arrival	SFO	B738	UAL1557	UAL	OCEANIC	28R	60	71	6,716	5,799	273	-4.9	(2,360)	80
404	12/1/2018 5:38:01	Arrival	SFO	B77W	AIC173	AIC	OTHER	28R	43	59						
404	12/1/2018 5:46:48	Arrival	SFO	B753	UAL1575	UAL	OCEANIC	28R	53	64	10,495	6,785	262	-2.7	(1,230)	80
404	12/1/2018 5:49:16	Arrival	SFO	B77W	UAL916	UAL	OCEANIC	28R	56	69	8,750	6,221	255	-4.0	(1,793)	79
404	12/1/2018 6:00:48	Arrival	SFO	B77W	EVA008	EVA	BDEGA	28R	59	71	(1,631)	5,957	226	-3.2	(1,280)	113
404	12/1/2018 6:16:40	Departure	PAO	U	U	U	U	13	45	59	9,188	117	77	-4.7	(645)	143
404	12/1/2018 6:20:53	Arrival	SFO	CRJ2	SKW5738	SKW	BDEGA	28R	52	62	(8,123)	4,048	255	-5.7	(2,582)	45
404	12/1/2018 6:28:41	Arrival	SFO	P28A	UAL872	UAL	BDEGA	28R	57	69	(8,538)	5,640	266	-2.8	(1,307)	104
404	12/1/2018 6:40:24	Arrival	SFO	CRJ2	SKW5276	SKW	BDEGA	28R	48	61	6,379	4,386	259	-3.2	(1,450)	34
404	12/1/2018 6:57:45	Arrival	SFO	E75L	SKW5358	SKW	BDEGA	28R	53	65	(9,157)	3,892	251	-4.6	(2,055)	63
404	12/1/2018 6:59:15	Arrival	SFO	CRJ7	SKW5802	SKW	BDEGA	28L	58	67	(8,167)	3,469	228	-3.5	(1,417)	78
404	12/1/2018 7:01:26	Arrival	SFO	CRJ2	SKW5631	SKW	SERFR-ST	28R	59	67	(93)	4,512	221	-1.0	(395)	345
404	12/1/2018 7:03:52	Arrival	SFO	CRJ2	SKW5667	SKW	SERFR-ST	28R	53	66	(17)	4,641	225	-3.2	(1,286)	345
404	12/1/2018 7:06:03	Arrival	SFO	E75L	SKW5601	SKW	SERFR-ST	28R	58	70	(33)	4,678	235	-3.5	(1,457)	345
404	12/1/2018 7:08:05	Arrival	SFO	A320	UAL2350	UAL	SERFR-ST	28R	60	71	79	4,703	227	-1.5	(600)	345
404	12/1/2018 7:10:27	Arrival	SFO	A319	UAL295	UAL	SERFR-ST	28R	62	75	(134)	4,586	210	-3.4	(1,275)	345
404	12/1/2018 7:11:43	Arrival	SFO	B738	UAL805	UAL	BDEGA	28R	62	73	(2,863)	5,245	224	-3.3	(1,290)	46
404	12/1/2018 7:13:41	Arrival	SFO	CRJ2	SKW5496	SKW	BDEGA	28R	56	68	306	5,335	205	-3.1	(1,134)	71
404	12/1/2018 7:15:05	Arrival	SFO	A359	SIA32	SIA	BDEGA	28R	59	71	800	5,739	222	-2.8	(1,110)	112
404	12/1/2018 7:34:47	Arrival	SFO	E75L	CP26034	CPZ	SERFR-ST	28L	62	76	(27)	4,813	190	-2.8	(930)	344
404	12/1/2018 7:37:04	Arrival	SFO	A320	ASA1925	ASA	SERFR-ST	28L	60	71	(113)	4,044	236	-1.5	(624)	346
404	12/1/2018 7:37:42	Arrival	SFO	B789	UAL858	UAL	BDEGA	28R	65	73	2,921	5,371	245	-3.3	(1,412)	44
404	12/1/2018 7:50:04	Arrival	SFO	B77W	UAL862	UAL	BDEGA	28R	49	60	11,321	5,058	189	-2.2	(739)	348
404	12/1/2018 7:50:46	Arrival	SFO	A320	UAL618	UAL	BDEGA	28L	67	76	(1,936)	5,522	233	-4.3	(1,759)	116
404	12/1/2018 7:52:59	Departure	SFO	B38M	SWA4128	SWA	U	28R	52	63	(1,988)	17,891	417	2.7	1,999	106
404	12/1/2018 7:55:13	Arrival	SFO	A320	UAL612	UAL	SERFR-ST	28L	66	78	(64)	4,376	185	-3.8	(1,230)	344
404	12/1/2018 7:58:53	Arrival	SFO	A320	JBU1136	JBU	SERFR-ST	28L	70	78	67	3,970	212	-0.4	(145)	347
404	12/1/2018 8:02:24	Arrival	SIC	A320	JBU826	JBU	U	12R	47	61	10,086	1,991	209	-1.3	(479)	12
404	12/1/2018 8:04:49	Arrival	SIC	B737	SWA2630	SWA	U	12R	55	65	7,567	2,995	172	0.5	146	15
404	12/1/2018 8:07:31	Arrival	SFO	CRJ7	SKW5464	SKW	BDEGA	28L	53	68	6,341	5,670	240	-3.8	(1,624)	65
404	12/1/2018 8:10:28	Departure	SQL	PC12	PXT494	PXT	U	30	47	60	13,995	2,698	229	4.3	1,748	103
404	12/1/2018 8:13:29	Arrival	SFO	A320	ASA1951	ASA	SERFR	28L	66	78	(48)	4,176	182	-3.4	(1,080)	343
404	12/1/2018 8:14:52	Arrival	SFO	A21N	ASA1591	ASA	SERFR-ST	28L	50	62	(180)	4,917	188	-3.4	(1,130)	346
404	12/1/2018 8:15:51	Arrival	SFO	A21N	ASA1591	ASA	SERFR-ST	28L	61	73	(180)	4,917	188	-3.4	(1,130)	346
404	12/1/2018 8:18:40	Arrival	SFO	B739	UAL1294	UAL	SERFR-ST	28L	63	73	(23)	4,549	242	-2.8	(1,203)	345
404	12/1/2018 8:21:04	Arrival	SFO	B77W	UAL838	UAL	OCEANIC	28R	65	76	2,807	6,132	221	-3.5	(1,354)	30
404	12/1/2018 8:24:10	Arrival	SFO	B77W	ANAB	ANA	BDEGA	28R	62	76	(1,588)	5,412	256	-3.6	(1,613)	38
404	12/1/2018 8:26:41	Arrival	SFO	B77W	CESS89	CES	BDEGA	28L	62	73	3,160	4,565	202	-2.3	(829)	31
404	12/1/2018 8:33:04	Arrival	SFO	E75L	SKW5642	SKW	BDEGA	28L	62	72	(1,980)	4,966	232	-1.2	(497)	67
404	12/1/2018 8:33:26	Arrival	SIC	E145	DYN101	DYN	U	12R	50	60	9,192	2,815	216	-2.3	(879)	7
404	12/1/2018 8:35:28	Arrival	SFO	B739	UAL662	UAL	SERFR-ST	28L	63	74	(33)	4,296	177	-4.1	(1,282)	345
404	12/1/2018 8:36:13	Departure	PAO	U	U	U	U	13	57	67	9,228	87	77	-2.6	(355)	141
404	12/1/2018 8:40:39	Arrival	SFO	E75L	QXE2283	QXE	BDEGA	28L	54	65	6,978	6,578	251	-2.2	(979)	72
404	12/1/2018 8:44:46	Arrival	SFO	B77W	CPA870	CPA	BDEGA	28R	56	69	(8,220)	7,091	236	-4.2	(1,736)	113
404	12/1/2018 8:49:47	Arrival	SFO	B77W	KAL023	KAL	BDEGA	28R	63	76	3,188	4,006	217	-0.3	(127)	28
404	12/1/2018 8:51:57	Arrival	SFO	A320	ACA574	ACA	BDEGA	28L	51	64	(13,039)	6,171	253	-0.6	(251)	113
404	12/1/2018 8:53:57	Departure	SFO	A320	UAL234	UAL	U	28L	50	65	(2,878)	14,671	430	2.3	1,751	106
404	12/1/2018 8:56:11	Arrival	SIC	E75L	CPZ5772	CPZ	U	12R	45	60	8,588	2,033	215	-2.1	(795)	16
404	12/1/2018 8:59:12	Departure	SFO	A319	UAL580	UAL	U	28L	49	62	(4,532)	17,469	447	2.5	1,955	106
404	12/1/2018 9:01:11	Arrival	SIC	E75L	QXE2810	QXE	U	12R	49	61	10,273	2,896	188	-2.7	(885)	21
404	12/1/2018 9:02:46	Departure	SFO	A319	UAL2229	UAL	U	28L	46	58						
404	12/1/2018 9:05:36	Arrival	SIC	B737	SWA921	SWA	U	12R	49	59	9,891	2,621	199	-4.4	(1,556)	15
404	12/1/2018 9:07:50	Arrival	SIC	E75L	QXE2259	QXE	U	12R	44	58	11,178	2,804	215	-2.8	(1,075)	13
404	12/1/2018 9:11:44	Arrival	SFO	B738	UAL1615	UAL	BDEGA	28L	60	72	(4,279)	6,759	262	-4.0	(1,834)	113
404	12/1/2018 9:16:03	Arrival	SFO	B738	UAL2055	UAL	BDEGA	28L	53	64	8,398	5,042	209	-1.6	(593)	59
404	12/1/2018 9:22:24	Arrival	SFO	A319	ASA1751	ASA	BDEGA	28L	50	62	13,143	4,844	247	-3.7	(1,603)	34
404	12/1/2018 9:23:12	Departure	PAO	U	U	U	U	46	59	9,285	9	64	0.0	-	322	
404	12/1/2018 9:25:45	Arrival	SFO	B789	UAL2	UAL	BDEGA	28R	56	67	8,168	5,890	235	-2.6	(1,074)	28
404	12/1/2018 9:28:03	Arrival	SFO	A319	UAL820	UAL	SERFR	28L	56	68	9,333	5,000	223	-0.6	(219)	62
404	12/1/2018 9:33:09	Arrival	SFO	B789	UAL876	UAL	BDEGA	28R	64	75	(1,782)	4,755	207	-0.7	(244)	4
404	12/1/2018 9:34:22	Departure	SFO	B739	ASA710	ASA	U	28R	55	66	(3,391)	17,155	433	2.3	1,771	106
404	12/1/2018 9:36:43	Arrival	SFO	B739	DAL1275	DAL	BDEGA	28L	51	63	12,586	4,884	196	-2.5	(879)	13
404	12/1/2018 9:43:44	Arrival	SFO	CRJ9	JZA579	JZA	BDEGA	28L	55	68	(1,117)	4,978	218	-0.8	(316)	3
404	12/1/2018 9:45:56	Arrival	SFO	B739	UAL501	UAL	SERFR	28L	49	62						
404	12/1/2018 9:48:13	Arrival	SFO	B739	UAL274	UAL	SERFR	28L	50	64	9,929	5,025	217	-0.8	(300	

Figure 9d
 Correlated Noise Event Report
 Site 404 (Tevis) - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
404	12/1/2018 10:23:35	Arrival	SFO	B77W	CSN659	CSN	BDEGA	28R	55	64	9,907	4,993	194	-0.1	(45)	24
404	12/1/2018 10:25:22	Departure	SFO	SR20	N321SL	GA	U	30	70	80	(1,408)	2,653	108	3.6	690	190
404	12/1/2018 10:27:32	Departure	OAK	CRJ9	ASH5796	ASH	U	30	57	69	(1,925)	16,665	412	3.2	2,349	134
404	12/1/2018 10:35:23	Arrival	SJC	E75L	QXE2224	QXE	U	30L	48	62	11,601	2,998	203	0.0	-	20
404	12/1/2018 10:42:44	Departure	PAO	U	U	U	U	31	49	63	9,274	103	76	8.1	1,124	323
404	12/1/2018 10:51:57	Arrival	SFO	B77W	ANZ8	ANZ	OCEANIC	28R	56	69	9,466	4,054	205	-1.2	(421)	13
404	12/1/2018 10:54:51	Arrival	SFO	E75L	QXE2267	QXE	BDEGA	28L	50	63	9,666	4,005	176	-0.6	(199)	350
404	12/1/2018 10:56:46	Arrival	SFO	B738	UAL209	UAL	SERFR	28L	51	63	10,372	4,018	167	-0.2	(45)	327
404	12/1/2018 10:58:58	Arrival	SFO	A332	FJH870	FJI	OCEANIC	28R	58	70	8,909	4,947	257	-4.2	(1,920)	52
404	12/1/2018 11:02:53	Arrival	SFO	B788	ACA737	ACA	BDEGA	28R	54	64	10,166	5,519	270	-1.8	(840)	93
404	12/1/2018 11:06:09	Departure	PAO	BE36	N100JB	GA	U	31	44	61	9,285	9	83	0.0	-	322
404	12/1/2018 11:09:14	Departure	SFO	S22T	N173CK	GA	U	30	55	67	6,764	2,271	175	3.2	978	106
404	12/1/2018 11:16:27	Departure	PAO	BE36	N100JB	GA	U	31	52	65	9,268	183	112	8.5	1,680	316
404	12/1/2018 11:20:23	Arrival	SFO	BE35	N8366D	GA	U	30	58	67	(3,856)	2,018	89	-3.4	(533)	308
404	12/1/2018 11:26:44	Arrival	SFO	A319	UAL698	UAL	OCEANIC	28R	54	64	14,308	5,916	224	-1.3	(502)	64
404	12/1/2018 11:29:47	Departure	SFO	B738	UAL2128	UAL	U	28R	53	62	(5,369)	16,348	452	1.2	990	106
404	12/1/2018 11:33:24	Arrival	SFO	B753	UAL2042	UAL	BDEGA	28R	53	64						
404	12/1/2018 11:36:04	Arrival	SFO	CRJ2	SKW5899	SKW	BDEGA	28L	46	59	8,120	5,011	221	-1.5	(580)	88
404	12/1/2018 11:38:17	Arrival	SFO	A320	ASA1027	ASA	SERFR	28L	55	66	12,638	6,000	256	0.0	-	87
404	12/1/2018 11:48:14	Arrival	SFO	A320	UAL708	UAL	SERFR	28L	51	65	12,067	4,021	166	-0.8	(219)	330
404	12/1/2018 11:50:11	Arrival	SFO	B738	UAL1763	UAL	BDEGA	28L	49	61	(10,541)	8,182	244	-2.2	(928)	112
404	12/1/2018 11:59:14	Arrival	SFO	B738	SWA3582	SWA	BDEGA	28L	54	67						
404	12/1/2018 12:00:15	Arrival	SFO	A319	ASA1332	ASA	BDEGA	28L	54	67	10,683	4,058	219	-1.0	(389)	53
404	12/1/2018 12:05:37	Arrival	SFO	B744	QFA73	QFA	OCEANIC	28R	50	63	13,593	4,674	208	-5.9	(2,147)	12
404	12/1/2018 12:10:28	Arrival	SFO	A388	UAE225	UAE	BDEGA	28R	50	63	5,751	4,925	215	-1.0	(390)	28
404	12/1/2018 12:11:30	Arrival	SFO	A388	UAE225	UAE	BDEGA	28R	62	73	5,751	4,925	215	-1.0	(390)	28
404	12/1/2018 12:17:36	Departure	PAO	U	U	U	U	31	51	66	3,455	1,039	105	-2.3	(418)	132
404	12/1/2018 12:23:23	Arrival	SFO	B772	UAL949	UAL	BDEGA	28L	54	64	10,620	5,111	198	-3.0	(1,035)	33
404	12/1/2018 12:26:49	Arrival	SFO	E75L	SKW5586	SKW	SERFR-ST	28L	65	74	(13)	4,153	210	-2.9	(1,084)	345
404	12/1/2018 12:29:24	Arrival	SFO	E75L	SKW5446	SKW	SERFR-ST	28L	59	71	(47)	5,148	199	-1.1	(389)	344
404	12/1/2018 12:33:30	Arrival	SFO	A320	AJ820	AJ	SERFR-ST	28L	66	78	(231)	5,020	181	-0.1	(35)	344
404	12/1/2018 12:35:14	Overflight	UNK	CRJ2	SKW5332	SKW	U	U	56	68						
404	12/1/2018 12:37:22	Arrival	SFO	A321	AAL789	AAL	SERFR-ST	28L	68	78	(72)	4,141	199	-3.7	(1,316)	343
404	12/1/2018 12:40:28	Arrival	SFO	E75L	SKW5203	SKW	SERFR-ST	28L	58	70	(61)	4,645	205	-3.2	(1,164)	344
404	12/1/2018 12:47:18	Arrival	SFO	CRJ2	SKW5655	SKW	SERFR	28L	56	67	(598)	5,837	233	-3.7	(1,509)	345
404	12/1/2018 12:54:46	Arrival	SFO	CRJ2	SKW5349	SKW	BDEGA	28L	56	65						
404	12/1/2018 12:57:55	Arrival	SFO	CRJ2	SKW5279	SKW	BDEGA	28L	60	69						
404	12/1/2018 12:59:19	Arrival	SFO	CRJ2	SKW5476	SKW	SERFR	28L	53	66	5,235	4,997	241	-0.2	(99)	23
404	12/1/2018 13:01:49	Arrival	SFO	B738	ASA621	ASA	SERFR	28L	56	68	11,614	4,995	220	0.3	125	8
404	12/1/2018 13:02:58	Arrival	SFO	A346	DLH454	DLH	BDEGA	28L	54	68	12,803	6,016	202	0.2	81	49
404	12/1/2018 13:06:41	Arrival	SFO	CRJ2	SKW5416	SKW	SERFR-ST	28R	57	69	(399)	4,869	205	-4.1	(1,499)	345
404	12/1/2018 13:08:57	Arrival	SFO	B737	SWA4136	SWA	SERFR-ST	28L	67	78	(91)	4,107	203	-5.1	(1,815)	344
404	12/1/2018 13:11:42	Arrival	SFO	A320	ASA1804	ASA	BDEGA	28L	65	75	(3,002)	4,750	210	-3.6	(1,331)	1
404	12/1/2018 13:13:46	Arrival	SFO	CRJ7	SKW5697	SKW	BDEGA	28L	64	75	(768)	4,569	208	-4.6	(1,678)	24
404	12/1/2018 13:16:56	Arrival	SFO	B77W	KAL025	KAL	BDEGA	28L	59	70	5,766	5,932	233	-4.7	(1,939)	21
404	12/1/2018 13:20:07	Arrival	SFO	A319	UAL1745	UAL	BDEGA	28L	55	67	9,066	4,376	221	-3.1	(1,196)	33
404	12/1/2018 13:22:21	Arrival	SFO	A320	ASA1899	ASA	SERFR	28L	54	66						
404	12/1/2018 13:29:24	Arrival	SFO	B77W	AFR084	AFR	BDEGA	28L	66	79	3,103	4,822	209	-3.7	(1,380)	19
404	12/1/2018 13:33:41	Arrival	SFO	B744	BAW111M	BAW	BDEGA	28L	64	78	(5,468)	4,747	212	-3.5	(1,320)	26
404	12/1/2018 13:37:37	Arrival	SFO	A320	ASA1957	ASA	SERFR	28L	57	70	14,188	4,069	219	-1.7	(673)	330
404	12/1/2018 13:41:56	Arrival	SFO	B738	UAL390	UAL	SERFR	28L	65	79	2,862	4,346	217	-3.1	(1,185)	30
404	12/1/2018 13:46:23	Arrival	SFO	CRJ7	SKW5615	SKW	BDEGA	28L	63	75	1,406	3,995	213	-0.8	(308)	37
404	12/1/2018 13:51:37	Arrival	SFO	A319	ASA1340	ASA	BDEGA	28R	67	78	621	4,340	235	-4.2	(1,725)	47
404	12/1/2018 13:58:15	Arrival	SFO	A320	UAL2383	UAL	SERFR-ST	28L	69	78	(66)	3,865	202	-4.3	(1,538)	344
404	12/1/2018 14:07:38	Arrival	SFO	B39M	CMP208	CMP	SERFR-ST	28L	62	72	(16)	4,651	228	-3.1	(1,230)	344
404	12/1/2018 14:10:09	Arrival	SFO	B739	UAL444	UAL	SERFR	28L	59	71	1,674	4,476	229	-3.1	(1,265)	338
404	12/1/2018 14:12:50	Arrival	SFO	E75L	CPZ6007	CPZ	SERFR-ST	28L	56	69	(136)	4,655	213	-2.9	(1,076)	343
404	12/1/2018 14:14:41	Arrival	SFO	B738	SWA3950	SWA	SERFR-ST	28L	62	73	(32)	4,072	232	-4.0	(1,619)	345
404	12/1/2018 14:17:12	Arrival	SFO	B739	UAL372	UAL	OCEANIC	28L	67	77	(21)	4,785	206	-2.5	(913)	345
404	12/1/2018 14:18:19	Arrival	SFO	A359	AAR212	AAR	BDEGA	28L	49	63	7,675	4,698	215	-2.7	(1,035)	18
404	12/1/2018 14:20:23	Departure	PAO	U	U	U	U	31	64	74	(1,280)	1,604	110	-0.5	(104)	55
404	12/1/2018 14:25:44	Arrival	SFO	B772	UAL900	UAL	BDEGA	28L	64	74	(3,545)	4,964	216	-0.5	(180)	52
404	12/1/2018 14:28:07	Arrival	SFO	B77W	EVA018	EVA	OCEANIC	28L	63	76	1,979	5,157	221	-4.0	(1,575)	30
404	12/1/2018 14:30:07	Arrival	SFO	B752	UAL477	UAL	BDEGA	28L	58	70	5,868	5,473	204	-5.9	(2,115)	29
404	12/1/2018 14:40:01	Arrival	SFO	B738	ASA534	ASA	BDEGA	28L	53	65						
404	12/1/2018 14:42:15	Departure	PAO	U	U	U	U	31	49	57	9,285	9	47	0.0	-	322
404	12/1/2018 14:43:09	Arrival	SFO	CRJ2	SKW5657	SKW	SERFR	28L	48	56						
404	12/1/2018 14:47:30	Arrival	SFO	B738	UAL2148	UAL	SERFR	28L	51	64	8,368	4,658	205	-3.6	(1,304)	346
404	12/1/2018 14:48:36	Arrival	SFO	BE20	N654FM	GA	BDEGA	28R	52	59	(11,411)	4,110	170	-0.7	(195)	56
404	12/1/2018 14:50:03	Departure	PAO	U	U	U	U	31	50	62	9,275	106	66	8.3	961	323
404	12/1/2018 14:51:33	Arrival	SFO	A320	ASA1388	ASA	BDEGA	28L	51	64	11,569	4,055	205	-1.0	(372)	346
404	12/1/2018 14:59:32	Arrival	SFO	CRJ2	SKW5984	SKW	SERFR	28L	55	67	(8)	5,025	211	-3.6	(1,335)	342
404	12/1/2018 15:03:57	Departure	SQL	SR20	N345BS	GA	U	30	58	65	8,013	2,638	138	2.8	690	112
404	12/1/2018 15:07:00	Arrival	SFO	B789	UAL892	UAL	OCEANIC	28L	54	66	9,396	4,420	214	-3.2	(1,222)	358
404	12/1/2018 15:08:57	Arrival	SFO	A332	EIN147	EIN	BDEGA	28L	60	71	7,858	4,933	230	-3.5	(1,425)	2
404	12/1/2018 15:12:00	Arrival	SFO	E75L	QXE2042	QXE	SERFR-ST	28L	58	69	(49)	5,002	239	-4.6	(1,936)	343
404	12/1/2018 15:12:19	Arrival	PAO	C152	N152UF	GA	U	31	55	65	(1,159)	1,414	100	-1.4	(254)	78
404	12/1/2018 15:18:06	Arrival	SFO	E75L	SKW5617	SKW	SERFR-ST	28L	57	68	(83)	4,882	201	-4.3	(1,525)	344
404	12/1/2018 15:29:24	Arrival	SFO	CRJ2	SKW5362	SKW	SERFR-ST	28L	56	67	(11)	4,704	226	-2.4	(942)	343
404	12/1/2018 15:32:03	Arrival	SFO	B739	UAL2351	UAL	SERFR-ST	28L	62	73	(66)	4,271	227	-2.2	(896)	342
404	12/1/2018 15:34:18	Arrival	SFO	E75L												

Figure 9d
 Correlated Noise Event Report
 Site 404 (Tevis) - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
404	12/1/2018 15:52:25	Arrival	SQL	BE9L	NS30CH	GA	U	30	56	67	(4,238)	2,148	154	-2.9	(795)	309
404	12/1/2018 15:55:25	Departure	PAO	U	U	U	U	31	51	57	4,914	896	102	1.4	241	133
404	12/1/2018 15:56:28	Departure	PAO	U	U	U	U	H	60	69	8,663	918	40	9.9	-	315
404	12/1/2018 15:58:24	Arrival	SQL	PC12	N903PJ	GA	U	30	62	71	(4,347)	1,845	148	-1.4	(369)	307
404	12/1/2018 16:04:27	Arrival	SFO	B738	UAL1268	UAL	SERFR	28L	51	63						
404	12/1/2018 16:04:59	Arrival	SFO	A320	ASA1959	ASA	SERFR	28L	49	60	7,303	4,035	209	-0.2	(86)	11
404	12/1/2018 16:05:57	Arrival	SFO	A320	ASA1959	ASA	SERFR	28L	59	70	7,303	4,035	209	-0.2	(86)	11
404	12/1/2018 16:09:12	Arrival	SFO	B712	DAL2356	DAL	SERFR	28L	66	76	1,862	3,983	217	-0.5	(172)	25
404	12/1/2018 16:12:29	Arrival	SFO	A321	AAL1983	AAL	SERFR	28L	66	76	2,711	4,155	195	-2.8	(975)	38
404	12/1/2018 16:14:42	Arrival	SFO	E75L	SKW5861	SKW	SERFR	28L	47	57	11,333	5,136	214	-4.1	(1,539)	82
404	12/1/2018 16:34:03	Arrival	SFO	B738	UAL222	UAL	DYAMD	28R	47	58						
404	12/1/2018 16:40:12	Arrival	SFO	CRJ2	SKW5286	SKW	SERFR-ST	28L	59	71	(18)	4,502	230	-3.0	(1,230)	345
404	12/1/2018 16:41:52	Arrival	PAO	U	U	U	U	H	57	64	4,155	2,062	128	-1.1	(259)	79
404	12/1/2018 16:42:51	Arrival	SFO	A320	UAL1243	UAL	SERFR-ST	28L	58	69	100	4,586	239	-1.3	(560)	344
404	12/1/2018 16:45:53	Arrival	SFO	E75L	CPZ6045	CPZ	SERFR-ST	28L	62	74	(56)	3,771	208	-3.8	(1,411)	345
404	12/1/2018 16:56:21	Arrival	SFO	A319	UAL718	UAL	SERFR	28L	53	63						
404	12/1/2018 16:58:58	Arrival	SFO	B789	QFA49	QFA	OCEANIC	28L	54	68	7,351	4,684	195	-2.4	(840)	347
404	12/1/2018 17:00:55	Arrival	SFO	B737	SWA4139	SWA	SERFR-ST	28L	59	70	(151)	4,652	192	-3.3	(1,123)	345
404	12/1/2018 17:02:55	Departure	PAO	U	U	U	U	31	48	60	9,395	227	55	11.7	1,125	327
404	12/1/2018 17:07:49	Arrival	PAO	DA40	N202LS	GA	U	31	66	73	499	1,206	121	-1.4	(295)	51
404	12/1/2018 17:08:24	Departure	SQL	C172	N606LP	GA	U	30	62	69	6,419	2,995	139	1.2	300	110
404	12/1/2018 17:11:36	Arrival	SFO	E75L	SKW5248	SKW	SERFR-ST	28L	58	69	(14)	4,896	238	-2.0	(847)	345
404	12/1/2018 17:19:17	Departure	PAO	U	U	U	U	31	56	68	9,338	177	83	10.1	1,466	326
404	12/1/2018 17:22:07	Arrival	SFO	B737	SWA3308	SWA	SERFR	28L	53	63	7,377	4,800	228	-3.8	(1,521)	16
404	12/1/2018 17:24:59	Arrival	SFO	A319	UAL1051	UAL	SERFR-ST	28L	64	75	(85)	5,009	194	-3.8	(1,316)	345
404	12/1/2018 17:30:24	Departure	PAO	U	U	U	U	31	54	64	1,696	939	111	-1.9	(371)	61
404	12/1/2018 17:34:55	Arrival	SFO	E75L	SKW3460	SKW	SERFR-ST	28L	64	74	(75)	3,193	239	-5.3	(2,220)	344
404	12/1/2018 17:35:43	Arrival	SFO	B739	DAL1889	DAL	BDEGA	28L	63	74	1,007	5,305	210	-3.2	(1,185)	41
404	12/1/2018 17:38:58	Overflight	UNK	U	U	U	U	49	65	65						
404	12/1/2018 17:44:15	Arrival	SFO	A359	FBU711	FBU	OCEANIC	28L	63	74	(2,526)	4,041	182	-3.5	(1,140)	32
404	12/1/2018 17:47:21	Arrival	SFO	A320	ASA1933	ASA	SERFR-ST	28L	60	72	(275)	4,039	236	0.5	195	343
404	12/1/2018 17:49:21	Arrival	SFO	B738	DAL1720	DAL	SERFR-ST	28L	67	77	(153)	4,962	195	-2.3	(786)	344
404	12/1/2018 17:51:19	Arrival	SFO	A320	ASA1271	ASA	SERFR	28L	65	77	(217)	5,055	195	-1.4	(495)	344
404	12/1/2018 17:52:37	Arrival	SFO	A320	ASA1271	ASA	SERFR	28L	67	77	(217)	5,055	195	-1.4	(495)	344
404	12/1/2018 17:55:46	Arrival	SFO	B738	UAL1124	UAL	SERFR-ST	28L	66	77	(126)	4,632	215	-1.4	(540)	342
404	12/1/2018 17:58:07	Arrival	SFO	B739	UAL632	UAL	SERFR-ST	28L	64	75	(72)	4,579	167	-2.9	(846)	343
404	12/1/2018 18:04:02	Arrival	SFO	B788	UAL890	UAL	OCEANIC	28L	52	61						
404	12/1/2018 18:06:16	Arrival	SFO	A319	ASA1273	ASA	SERFR	28L	61	73	4,790	4,043	202	-1.0	(350)	30
404	12/1/2018 18:10:15	Arrival	SFO	CRJ9	JZA743	JZA	BDEGA	28L	50	63	8,088	4,097	201	-1.7	(618)	324
404	12/1/2018 18:11:36	Arrival	SFO	B738	AAL1454	AAL	SERFR	28L	48	62	12,100	4,252	208	-2.6	(946)	15
404	12/1/2018 18:14:01	Arrival	SFO	A388	BAW287	BAW	BDEGA	28R	48	62						
404	12/1/2018 18:16:06	Departure	PAO	U	U	U	U	H	68	81	(1,767)	1,612	113	1.0	200	250
404	12/1/2018 18:17:31	Arrival	SFO	A319	UAL1240	UAL	SERFR	28L	50	63	13,539	4,235	164	-3.2	(930)	10
404	12/1/2018 18:20:43	Arrival	SFO	B752	UAL560	UAL	BDEGA	28L	48	61	11,950	3,941	158	-1.7	(469)	322
404	12/1/2018 18:22:27	Arrival	SFO	B77W	CAL004	CAL	OCEANIC	28L	47	61						
404	12/1/2018 18:27:23	Arrival	SFO	B77W	EVA028	EVA	OCEANIC	28L	48	62						
404	12/1/2018 18:30:01	Arrival	SFO	A320	ASA1747	ASA	BDEGA	28L	56	67	10,494	3,887	158	-1.2	(326)	323
404	12/1/2018 18:39:07	Arrival	SFO	A320	UAL587	UAL	BDEGA	28L	56	68	(7,265)	6,576	283	-1.9	(960)	106
404	12/1/2018 18:44:00	Arrival	SFO	A319	ASA1923	ASA	SERFR-ST	28L	70	81	(21)	3,566	195	-4.0	(1,380)	342
404	12/1/2018 18:46:45	Arrival	SFO	A319	UAL2016	UAL	SERFR	28L	50	64	13,123	4,206	197	-0.7	(245)	335
404	12/1/2018 18:48:08	Arrival	SFO	B737	SWA4050	SWA	SERFR	28L	57	69	4,731	5,679	196	-1.8	(610)	-
404	12/1/2018 18:53:17	Arrival	SFO	E35L	N84AW	GA	SERFR-ST	28L	56	68	(50)	5,619	228	-5.0	(2,025)	345
404	12/1/2018 18:55:00	Arrival	SFO	CRJ7	SKW5765	SKW	BDEGA	28L	61	71	5,968	3,993	196	-0.1	(33)	355
404	12/1/2018 19:03:27	Arrival	SFO	B737	SWA3361	SWA	SERFR-ST	28L	58	70	(37)	4,313	212	-1.3	(467)	344
404	12/1/2018 19:05:37	Arrival	SFO	B738	UAL2352	UAL	SERFR-ST	28L	65	75	(20)	4,140	229	-3.9	(1,575)	343
404	12/1/2018 19:08:10	Arrival	SFO	CRJ2	SKW5700	SKW	BDEGA	28L	56	67	(2,394)	4,051	208	-1.4	(495)	37
404	12/1/2018 19:11:02	Arrival	SFO	A320	TAI564	TAI	SERFR-ST	28L	67	78	(46)	4,158	203	-3.7	(1,326)	345
404	12/1/2018 19:12:35	Arrival	SFO	CRJ2	SKW5457	SKW	SERFR-ST	28L	57	67	(159)	4,701	211	-2.3	(866)	342
404	12/1/2018 19:14:03	Arrival	SFO	B739	UAL1604	UAL	OCEANIC	28L	50	65	9,275	4,240	210	-3.2	(1,201)	32
404	12/1/2018 19:16:36	Arrival	SFO	B77W	SIA2	SIA	OCEANIC	28L	55	68	5,507	4,405	222	-2.9	(1,140)	32
404	12/1/2018 19:18:32	Arrival	SFO	A321	AAL686	AAL	SERFR	28R	52	66	11,518	4,911	176	-5.4	(1,665)	347
404	12/1/2018 19:19:47	Arrival	SFO	A319	ASA1279	ASA	SERFR	28L	60	72	4,810	5,562	207	-4.4	(1,612)	12
404	12/1/2018 19:22:18	Arrival	SFO	A388	DLH458	DLH	BDEGA	28R	55	67	11,505	3,998	200	-1.3	(462)	345
404	12/1/2018 19:26:55	Arrival	SFO	E75L	SKW5592	SKW	SERFR-ST	28L	57	68	(88)	4,141	193	-2.7	(928)	344
404	12/1/2018 19:28:46	Arrival	SFO	B737	SWA4154	SWA	SERFR	28L	55	68	6,705	4,476	203	-4.6	(1,656)	10
404	12/1/2018 19:40:31	Arrival	SFO	CRJ2	SKW5872	SKW	BDEGA	28L	46	60	(11,685)	3,926	232	-3.7	(1,530)	34
404	12/1/2018 19:43:07	Arrival	SFO	E75L	CPZ6015	CPZ	SERFR-ST	28L	59	71	(43)	5,196	174	-4.2	(1,275)	343
404	12/1/2018 19:45:34	Arrival	SFO	CRJ2	SKW5718	SKW	BDEGA	28L	52	60	7,717	4,657	208	-4.4	(1,606)	25
404	12/1/2018 19:46:20	Departure	SFO	B739	UAL394	UAL	U	01L	52	65	(3,301)	15,854	428	2.6	1,986	105
404	12/1/2018 19:47:33	Arrival	SFO	A319	ASA1595	ASA	SERFR-ST	28R	67	78	(132)	4,277	163	-3.6	(1,035)	343
404	12/1/2018 19:48:55	Arrival	SFO	B772	UAL340	UAL	BDEGA	28L	56	66	7,036	5,827	201	-2.6	(931)	65
404	12/1/2018 19:53:14	Departure	SFO	A320	ASA1940	ASA	U	01L	50	62	(6,992)	16,728	448	2.8	2,205	105
404	12/1/2018 19:54:41	Arrival	SFO	E75L	SKW5440	SKW	SERFR-ST	28L	59	70	(67)	4,554	222	-3.1	(1,229)	344
404	12/1/2018 19:55:52	Arrival	SFO	B752	UAL1584	UAL	BDEGA	28L	63	75	1,305	5,367	176	-6.3	(1,965)	37
404	12/1/2018 19:58:48	Arrival	SFO	B739	UAL2201	UAL	SERFR	28L	60	72	5,782	4,001	197	-0.3	(93)	339
404	12/1/2018 20:00:25	Arrival	SFO	B38M	ACA781	ACA	BDEGA	28L	62	73	2,192	4,044	170	-2.4	(735)	344
404	12/1/2018 20:03:10	Arrival	SFO	B739	UAL384	UAL	SERFR	28L	63	76	1,016	4,476	203	-3.6	(1,296)	352
404	12/1/2018 20:06:28	Arrival	SFO	E75L	QXE2271	QXE	BDEGA	28L	57	71	8,223	5,118	212	-8.4	(3,137)	32
404	12/1/2018 20:11:07	Arrival	SFO	B789	UAL28	UAL	OCEANIC	28L	67	77	(2,244)	4,021	202	-1.3	(450)	29
404	12/1/2018 20:13:46	Arrival	SFO	A320	ASA1963	ASA	SERFR-ST	28L	67	79	(202)	4,022	196	-1.2	(398)	344
404	12/1/2018 20:15:20	Arrival	SFO	B772	UAL724	UAL	OCEANIC									

Figure 9d
 Correlated Noise Event Report
 Site 404 (Tevis) - December 1st 2018

Site ID	Event Max Time	Operation	Airport	Aircraft Type	Flight ID	Airline Code	Procedure	Runway	Lmax dBA	SEL	Closest Lateral Dist. (Feet)	Altitude (ft msl)	Speed (Kts)	Pitch (Degrees)	Alt Delta (ft/min)	Heading (True)
404	12/1/2018 20:58:51	Departure	SFO	B752	UAL349	UAL	U	01L	51	64	(3,558)	16,013	466	2.8	2,310	105
404	12/1/2018 21:03:43	Arrival	SFO	GLF4	WW131	WWI	SERFR-ST	28L	63	74	(262)	4,252	193	-3.0	(1,011)	344
404	12/1/2018 21:05:53	Arrival	SFO	B738	UAL2132	UAL	BDEGA	28L	61	69	(9,122)	3,970	212	0.0	3	33
404	12/1/2018 21:11:12	Arrival	SFO	A319	DAL752	DAL	BDEGA	28L	48	59						
404	12/1/2018 21:13:11	Arrival	SFO	E75L	QXE2038	QXE	SERFR-ST	28L	58	71	(68)	3,998	209	-0.7	(275)	344
404	12/1/2018 21:14:59	Arrival	SFO	A320	UAL1217	UAL	BDEGA	28L	59	69	7,108	4,985	201	-3.3	(1,180)	353
404	12/1/2018 21:17:03	Arrival	SFO	E75L	SKW5681	SKW	SERFR-ST	28L	62	73	(68)	4,495	187	-2.9	(972)	343
404	12/1/2018 21:19:22	Arrival	SFO	CRJ2	SKW5366	SKW	SERFR-ST	28L	60	71	(69)	4,040	209	-4.1	(1,527)	345
404	12/1/2018 21:20:16	Departure	SFO	A20N	FFT1998	FFT	U	01L	49	60	3,232	17,030	463	2.9	2,355	107
404	12/1/2018 21:26:31	Arrival	SFO	B737	SWA485	SWA	SERFR-ST	28L	62	72	(56)	4,630	217	-2.5	(952)	344
404	12/1/2018 21:28:52	Arrival	SFO	GLF4	U	U	SERFR-ST	28R	65	74	(207)	4,138	236	-2.5	(1,054)	342
404	12/1/2018 21:30:52	Arrival	SFO	CRJ7	SKW5873	SKW	SERFR-ST	28L	55	69	(25)	4,714	207	-2.3	(840)	343
404	12/1/2018 21:32:40	Arrival	SFO	B739	UAL1568	UAL	SERFR-ST	28L	63	75	(68)	5,052	203	-2.4	(845)	343
404	12/1/2018 21:35:15	Arrival	SFO	B738	AMX664	AMX	SERFR-ST	28L	58	71	(36)	5,024	197	-0.5	(172)	344
404	12/1/2018 21:37:58	Arrival	SFO	CRJ2	SKW5616	SKW	SERFR	28L	47	54	9,123	5,016	204	-3.7	(1,331)	10
404	12/1/2018 21:40:02	Arrival	SFO	E75L	SKW5483	SKW	SERFR	28L	56	67	3,563	5,542	231	-3.7	(1,493)	8
404	12/1/2018 21:43:13	Arrival	SFO	A332	HAL42	HAL	OCEANIC	28L	52	62	12,169	4,021	165	-0.7	(213)	349
404	12/1/2018 21:46:20	Arrival	SFO	E75L	SKW3381	SKW	SERFR-ST	28L	61	74	(50)	4,651	188	-2.7	(885)	345
404	12/1/2018 21:49:40	Arrival	SFO	A320	ASA1776	ASA	BDEGA	28L	61	72	5,712	4,743	210	-4.1	(1,512)	32
404	12/1/2018 21:52:04	Arrival	SFO	A320	ACA568	ACA	BDEGA	28L	68	80	(271)	4,127	205	-2.4	(864)	356
404	12/1/2018 21:53:57	Arrival	SFO	A321	JBU833	JBU	BDEGA	28L	60	72	(7,057)	4,031	171	-2.8	(833)	16
404	12/1/2018 21:56:11	Departure	OAK	B38M	SWA6868	SWA	U	30	51	64	(1,376)	15,901	404	3.1	2,205	139
404	12/1/2018 22:01:59	Arrival	SFO	A320	AJ1830	AJ1	SERFR-ST	28L	63	74	(30)	4,639	222	-2.7	(1,070)	344
404	12/1/2018 22:04:13	Arrival	SFO	B738	DAL1700	DAL	SERFR-ST	28L	66	78	(66)	4,209	195	-3.5	(1,195)	344
404	12/1/2018 22:14:28	Arrival	SFO	B739	UAL650	UAL	OCEANIC	28L	65	75	(1,737)	5,098	217	-4.3	(1,648)	32
404	12/1/2018 22:34:34	Arrival	SFO	CRJ7	SKW5461	SKW	SERFR-ST	28R	54	67	310	5,031	200	-2.3	(827)	345
404	12/1/2018 22:38:42	Arrival	SFO	E75L	CPZ6085	CPZ	SERFR-ST	28R	63	73	(41)	4,994	199	-2.5	(861)	344
404	12/1/2018 22:40:48	Arrival	SFO	B738	UAL1712	UAL	SERFR-ST	28R	63	74	(98)	4,828	184	-3.0	(983)	343
404	12/1/2018 22:43:02	Arrival	SFO	B738	ASA759	ASA	OCEANIC	28R	61	71	5,090	5,006	173	-4.1	(1,233)	350
404	12/1/2018 22:45:39	Arrival	SFO	B738	UAL1288	UAL	OCEANIC	28R	64	74	(699)	6,055	230	-1.9	(765)	23
404	12/1/2018 22:59:14	Departure	SFO	B752	UAL2360	UAL	U	01R	49	64	8,541	14,124	443	2.0	1,598	123
404	12/1/2018 23:05:15	Arrival	SFO	B738	CMP382	CMP	SERFR-ST	28R	65	76	(36)	4,717	201	-2.3	(797)	345
404	12/1/2018 23:09:59	Arrival	SFO	A321	AAL2374	AAL	BDEGA	28R	63	72	(2,698)	4,225	206	-3.7	(1,361)	71
404	12/1/2018 23:17:39	Arrival	SFO	B738	UAL435	UAL	OCEANIC	28R	55	66	8,220	5,818	230	-3.5	(1,427)	34
404	12/1/2018 23:21:07	Arrival	SFO	B738	AMX662	AMX	SERFR-ST	28R	65	76	(94)	4,170	235	-3.3	(1,351)	345
404	12/1/2018 23:21:52	Arrival	SFO	B752	DAL2344	DAL	BDEGA	28R	58	68	6,077	5,662	216	-5.5	(2,110)	38
404	12/1/2018 23:25:17	Arrival	SFO	B752	UAL1056	UAL	BDEGA	28R	55	68	(3,468)	5,668	213	-2.4	(885)	120
404	12/1/2018 23:38:32	Arrival	SFO	A320	TAI560	TAI	SERFR-ST	28R	65	76	(55)	4,623	220	-1.7	(650)	345
404	12/1/2018 23:58:45	Departure	SFO	B753	UAL2237	UAL	U	01R	48	64	(12,047)	14,064	427	2.1	1,572	105

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