San Francisco International
Airport/Community Roundtable

455 County Center, 2nd Floor
Redwood City, CA 94063
T (650) 363-1853
F (650) 363-4849
www.sforoundtable.org

MEETING PACKET

Meeting No. 299

Wednesday, February 3, 2016 - 7:00 p.m.

David Chetcuti Community Room – Millbrae City Hall
450 Popular 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
Cliff Lentz, Roundtable Chairperson / James A. Castaneda, AICP, Roundtable Coordinator

2. Elections of Roundtable Chairperson for Calendar Year 2016
ACTION
Roundtable Chairperson

3. Elections of Roundtable Vice-Chairperson for Calendar Year 2016
ACTION
Roundtable Chairperson

4. Approval of Resolution 16-01: Designating Roundtable Meeting Dates, Time and Place for Calendar Year 2016 pg. 11
ACTION
Roundtable Chairperson

5. 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 ITEMS

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.

6. Review of Airport Director's Report for September 2015 pg. 17
ACTION

REGULAR AGENDA

7. Review of SFO FlyQuiet Report for Q3 2015 pg. 27
INFORMATION
Bert Ganoung, Manager - Aircraft Noise Abatement Office

8. Airport Director's Comments
INFORMATION
John Martin, Director – San Francisco International Airport

9. Consideration of amending the Roundtable's Memorandum of Understand and Bylaws to include the City of Palo Alto as a voting member
ACTION pg. 41
Roundtable Chairperson

10. Consideration of allowing Supporting Cities Liaisons on the Roundtable
ACTION pg. 43
Roundtable Chairperson

11. Consideration of a resolution regarding the FAA Initiative to Address Noise Concerns
ACTION pg. 45
Roundtable Chairperson

12. Consideration of a creating an online petition for public support of FAA Initiative to Address Noise Concerns
ACTION pg. 49
Roundtable Chairperson

REGULAR AGENDA – WORK PROGRAM ITEMS

13. Status, Departures Technical Working Group
INFORMATION pg. 51
Cindy Gibbs, Roundtable Aviation Technical Consultant

14. Status, Arrivals Technical Working Group
INFORMATION
Cindy Gibbs, Roundtable Aviation Technical Consultant

15. Budget for FY 2015-2016
ACTION pg. 57
James Castañeda, Roundtable Coordinator

OTHER MATTERS

16. Airport Noise Briefing
INFORMATION
Cindy Gibbs, Roundtable Aviation Technical Consultant

Continued on next page

OTHER MATTERS (continued)

17. Member Communications / Announcements
INFORMATION
Roundtable Members and Staff

18. Adjourn in memory of Carol Klatt
ACTION
Roundtable Chairperson

Next Roundtable Regular Meeting Date: Wednesday, April 6, 2016

Note: Public records that relate to any item on the open session Agenda (Consent and Regular Agendas) for a Regular Airport/Community Roundtable Meeting are available for public inspection. Those records that are distributed less than 72 hours prior to a Regular Meeting are available for public inspection at the same time they are distributed to all Roundtable Members, or a majority of the Members of the Roundtable. The Roundtable has designated the San Mateo County Planning & Building Department, at 455 County Center, 2nd Floor Redwood City, California 94063, for the purpose of making those public records available for inspection. The documents are also available on the Roundtable website at: www.sforoundtable.org.

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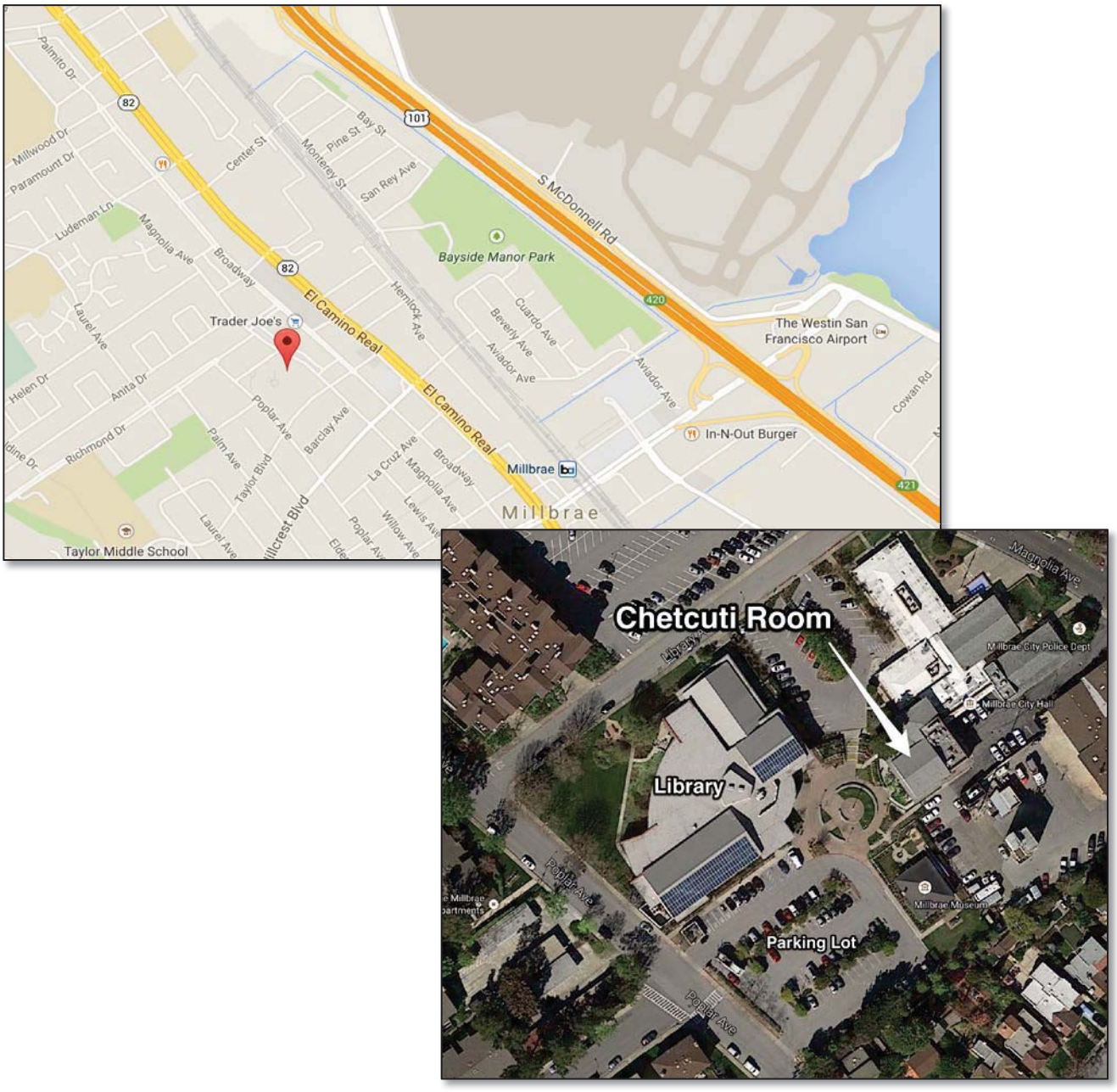
REGULAR MEETING LOCATION

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

Access through Millbrae Library parking lot on Poplar Avenue



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ABOUT THE AIRPORT/COMMUNITY ROUNDTABLE

OVERVIEW

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. The Roundtable is scheduled to meet on the first Wednesday of the following months: February, April, June, September and November. **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. 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."* (49 U.S.C. A. Section 1302(a)(1)).

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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, Agenda 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:
CLIFF LENTZ
Representative, City of Brisbane
clifflentz@ci.brisbane.ca.us

Vice-Chairperson:
ELIZABETH LEWIS
Representative, Town of Atherton
elewis@ci.atherton.ca.us

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

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MEMBERSHIP ROSTER FEBRUARY 2016
REGULAR MEMBERS

CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
Representative: Vacant
Alternate: Vacant

CITY AND COUNTY OF SAN FRANCISCO MAYOR'S OFFICE
Vacant, David Takashima
Alternate: Edwin Lee, Mayor

CITY AND COUNTY OF SAN FRANCISCO AIRPORT COMMISSION REPRESENTATIVE
John L. Martin, 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 OF SAN MATEO COUNTY (C/CAG)
AIRPORT LAND USE COMMITTEE (ALUC)
Vacant, ALUC Chairperson (Appointed)
Alternate: Vacant

TOWN OF ATHERTON
Elizabeth Lewis, Council Member/**Roundtable Vice-Chairperson**
Alternate: Bill Widmer, Council Member

CITY OF BELMONT
Douglas Kim , Council Member
Alternate: Vacant

CITY OF BRISBANE
Cliff Lentz, Council Member/**Roundtable Chairperson**
Alternate: Lori Liu, Council Member

CITY OF BURLINGAME
Ricardo Ortiz, Council Member
Alternate: Vacant

MEMBERSHIP ROSTER FEBRUARY 2016

CITY OF DALY CITY
Raymond Buenaventura, Mayor
Alternate: Vacant

CITY OF FOSTER CITY
Sam Hindi, Council Member
Alternate: Vacant

CITY OF HALF MOON BAY
Deborah Ruddock, Council Member
Alternate: Marina Fraser, Council Member

TOWN OF HILLSBOROUGH
Alvin Royse, Council Member
Alternate: Shawn Christianson, Council Member

CITY OF MENLO PARK
Peter Ohtaki, Council Member
Alternate: Vacant

CITY OF MILLBRAE
Ann Schneider, Council Member
Alternate: Vacant

CITY OF PACIFICA
Sue Digre, Council Member
Alternate: Vacant

TOWN OF PORTOLA VALLEY
Ann Wengert: Council Member
Alternate: Maryann Derwin, Council Member

CITY OF REDWOOD CITY
Janet Borgens, Council Member
Alternate: Vacant

CITY OF SAN BRUNO
Ken Ibarra, Council Member
Alternate: Rico Medina, Council Member

CITY OF SAN CARLOS
Matt Grocott: Council Member
Alternate: Bob Grassilli, Council Member

CITY OF SAN MATEO
David Lim, Council Member
Alternate: Vacant

CITY OF SOUTH SAN FRANCISCO
Mark Addiego, Council Member
Alternate: Pradeep Gupta, Council Member

TOWN OF WOODSIDE
Deborah Gordon, Mayor
Alternate: Vacant

ROUNDTABLE ADVISORY MEMBERS

AIRLINES/FLIGHT OPERATIONS
Captain James Abell, United Airlines
Glenn Morse, United Airlines

FEDERAL AVIATION ADMINISTRATION
Andy Richards, SFO Air Traffic Control Tower
Don Kirby, Northern California Terminal Radar Approach Control (NORCAL TRACON)
Tony DiBernardo, FAA District Manager – Sierra-Pacific District

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ROUNDTABLE STAFF/CONSULTANTS

James A. Castañeda, AICP, Roundtable Coordinator
Cynthia Gibbs, Roundtable Aviation Technical Consultant (BridgeNet International)
Harvey Hartman, Roundtable Aviation Technical Consultant (Hartman & Associates)

SAN FRANCISCO INTERNATIONAL AIRPORT NOISE ABATEMENT STAFF

Bert Ganoung, Noise Abatement Manager
David Ong, Noise Abatement Systems Manager
Ara Balian, Noise Abatement Specialist
John Hampel, Noise Abatement Specialist
Nastasja Gjorek, Noise Abatement Specialist
William Brown, Noise Abatement Specialist
Joyce Satow, Noise Abatement Office Administration Secretary

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February 3, 2016

TO: Roundtable Representatives, Alternatives, and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Review/Approval of Resolution 16-01: Designating Roundtable Meeting Dates, Time, and Place for Calendar Year 2016

RECOMMENDATION:

Adopt the attached Roundtable Resolution No. 16-01 that specifies the date, time, and place for holding Regular Meetings of the SFO Airport/Community Roundtable, as required by the Brown Act and the Roundtable Bylaws for calendar year 2016.

BACKGROUND:

California Government Code Section 54950 et seq., commonly known as the Ralph M. Brown Act (Open Meeting Law for local government bodies) and the adopted Roundtable Bylaws, as amended, require the Roundtable to establish the date, time, and place for holding its Regular Meetings. The amended Roundtable Bylaws state the following:

> "The Roundtable membership shall establish, by adopted resolution, the date, time and place for Regular Roundtable Meetings. Such resolution shall be adopted at the February Regular Meeting or at the first Regular Meeting held thereafter each year." (Roundtable Bylaws Article VI, Paragraph 1).

Special meetings, workshops, and other Roundtable related activities may be held as needed, in accordance with the relevant provisions in the Brown Act and the adopted Roundtable Bylaws.

DISCUSSION

The proposed dates are reflective of maintaining approximately five to six meetings per fiscal year. To elevate the four month summer gap between the June and October meeting, staff is proposing the addition of a mid-summer meeting in August in order to maintain continuity with Roundtable work programs. This will incur minimal impact to Roundtable budget and resources since the Roundtable budget has always maintained allocation for up to six meetings (not including subcommittee meetings). Regular Meetings for calendar year 2016 are to be held at 7:00pm on the first Wednesday of the following months: February, April,

June, August, October and December, and therefore with adoption of Roundtable Resolution 16-01, the Regular Meetings would be scheduled as follows:

- **February 3, 2016**
- **April 6, 2016**
- **June 1, 2016**
- **August 3, 2016**
- **October 5, 2016**
- **December 7, 2016**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2015												
2016												

The meetings will continue to be held at the David Chetcuti Community Room at 450 Poplar Street, Millbrae, CA. This does not preclude any additional meetings the Roundtable finds necessary.

ATTACHED:

1. Resolution 16-01

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Airport/Community Roundtable

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RESOLUTION No. 16-01

* *

A RESOLUTION PROVIDING FOR THE DAY, TIME, AND PLACE FOR HOLDING REGULAR MEETINGS OF THE SAN FRANCISCO INTERNATIONAL AIRPORT/COMMUNITY ROUNDTABLE FOR CALENDAR YEAR 2016

WHEREAS, the San Francisco International Airport/Community Roundtable (Roundtable) was established in 1981, via a Memorandum of Understanding (MOU), to serve as a public forum to address community noise issues related to aircraft operations at San Francisco International Airport, and

WHEREAS, Article VI, Paragraph I of the adopted Roundtable Bylaws, as amended, requires the Roundtable to establish, by resolution, the date, time, and place for Regular Roundtable Meetings and that such resolution shall be adopted at the February Regular Meeting or at the first Regular Meeting held thereafter, and

WHEREAS, the Regular Meetings of the Roundtable are held in accordance with the relevant provisions of the Ralph M. Brown Act, which requires the Roundtable to establish a regular day, time, and place for holding its Regular Meetings (California Government Code Section 54950 et seq.).

NOW, THEREFORE BE IT RESOLVED, that the Regular Meetings of the Roundtable shall be scheduled as follows: the first Wednesday of February, April, June, August, October, and December 2016, at 7:00 p.m. in the David Chetcuti Community Room at Millbrae City Hall, 450 Poplar Avenue, Millbrae, California. Special Meetings and workshops may be scheduled and held, as needed, in accordance with the relevant provisions in the Brown Act and the adopted Roundtable Bylaws.

* *

PASSED, APPROVED, AND ADOPTED ON FEBURARY 3, 2016.

Roundtable Chairperson

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CONSENT AGENDA

Regular Meeting # 299
February 3, 2016

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San Francisco International Airport

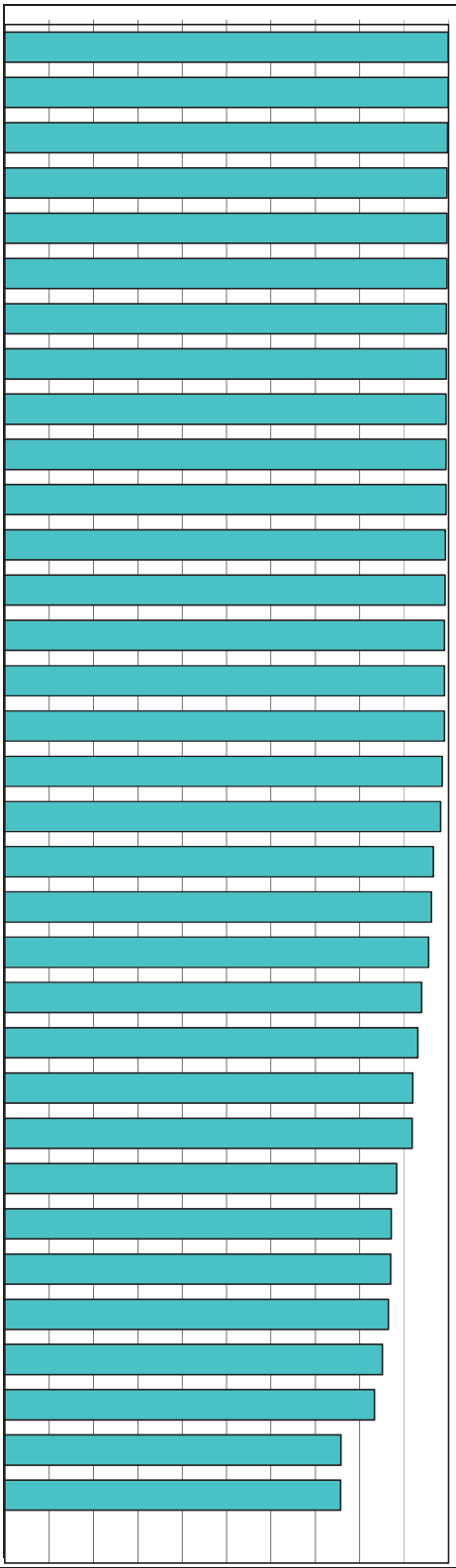
Airport Director's Report

Presented at the February 3, 2016
Airport Community Roundtable Meeting
SFO Aircraft Noise Abatement Office
September 2015

Monthly Noise Exceedance Report
San Francisco International Airport -- Director's Report
Period: **September 2015**

Airline		Noise Exceedances: Total Noise Exceedances	Total Operations per Month	Exceedances per 1,000 Operations	Score
SkyWest	SKW	13	6,142	2	9.99
Frontier	FFT	1	357	3	9.99
Virgin America	VRD	18	2,905	6	9.98
Compass	CPZ	11	1,106	10	9.96
Delta	DAL	19	1,883	10	9.96
Air France	AFR	1	96	10	9.96
Alaska	ASA	14	1,013	14	9.95
Southwest	SWA	37	2,493	15	9.95
American Airlines	AAL	44	2,683	16	9.94
British Airways	BAW	2	118	17	9.94
Swiss	SWR	1	59	17	9.94
Virgin Atlantic	VIR	2	103	19	9.93
Air Canada	ACA	15	661	23	9.92
WestJet	WJA	3	120	25	9.91
JetBlue	JBU	23	885	26	9.91
United	UAL	261	9,714	27	9.90
Aeromexico	AMX	6	149	40	9.86
KLM Royal Dutch Airlines	KLM	3	60	50	9.82
FedEx	FDX	8	83	96	9.65
Copa Airlines	CMP	3	28	107	9.62
Avianca	TAI	11	87	126	9.55
Atlas Air	GTI	15	89	169	9.40
Nippon Cargo Airlines	NCA	10	52	192	9.31
Singapore Airlines	SIA	27	120	225	9.19
Hawaiian Airlines	HAL	27	118	229	9.18
Air New Zealand	ANZ	19	58	328	8.83
Japan Airlines	JAL	22	61	361	8.71
Cathay Pacific	CPA	52	143	364	8.70
China Airlines	CAL	37	98	378	8.65
Philippines	PAL	25	60	417	8.51
EVA Air	EVA	62	133	466	8.33
Korean Air	KAL	82	121	678	7.57
Asiana Airlines	AAR	53	78	679	7.57
Kalitta Air	CKS	67	24	2,792	0.00
TOTAL		**994**	**31,900**	**7,936**	

Noise Exceedance Quality Rating



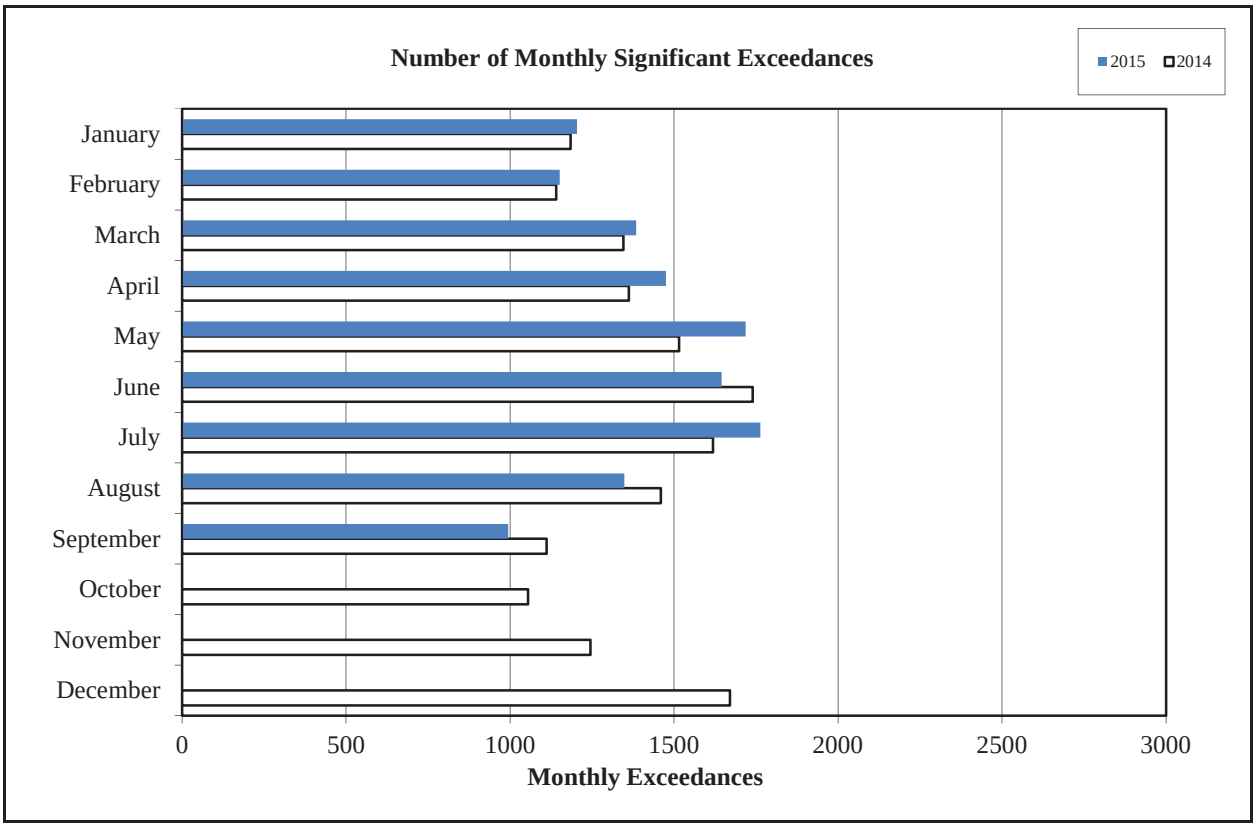
Source: SFO Noise Abatement Office

Historical Significant Exceedances Report
San Francisco International Airport -- Director's Report
Period: **September 2015**

San Francisco International Airport

Month	Number of Monthly Significant Exceedances 2011	2012	2013	2014	2015	Change from Last Year
January	1,580	1,378	1,428	1,184	1,204	**20**
February	1,429	1,581	1,176	1,141	1,151	**10**
March	1,681	1,703	1,671	1,345	1,384	**39**
April	1,900	1,870	1,910*	1,362	1,475	**113**
May	2,024	1,912	1,859*	1,515	1,718	**203**
June	1,947	2,355	1,915	1,740	1,645	**-95**
July	2,017	2,621	1,647	1,619	1,763***	**144**
August	1,847	1,823	1,638**	1,460	1,348	**-112**
September	1,609	1,464	1,352	1,111	994	**-117**
October	1,572	1,689	1,277	1,055		**0**
November	1,575	1,421	1,262	1,245		**0**
December	1,447	1,439	1,160	1,670		**0**
Annual Total	20,628	21,256	18,295	16,447	12,682	
Year to Date Trend	**20,628**	**21,256**	**18,295**	**16,447**	**12,682**	**205**

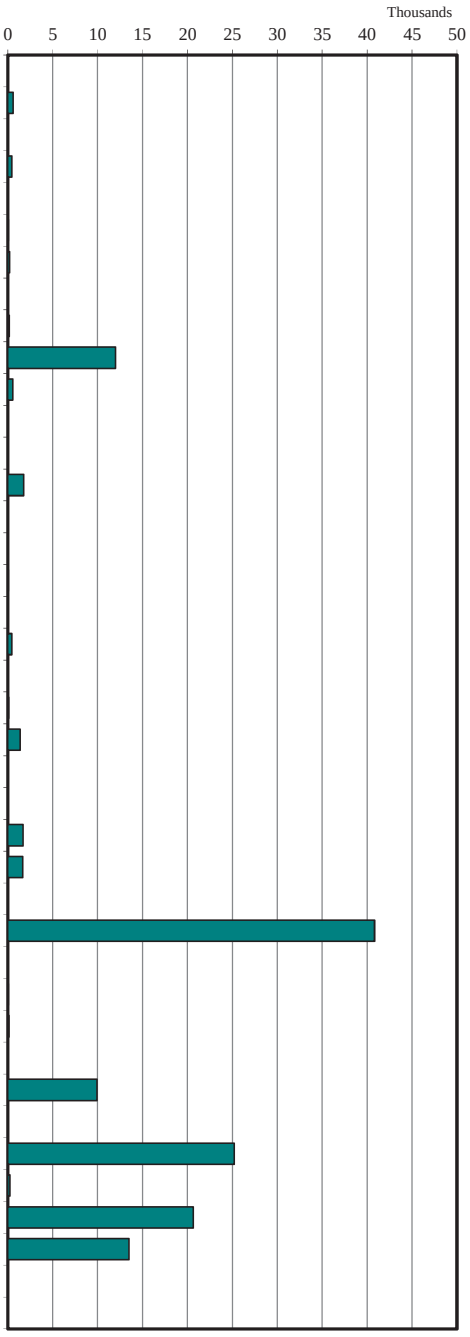
* Revised with correct amount of exceedance - 8/5/13
** No data available from Site 7, August 1-26
***No data available from Site 2 starting July 17



Monthly Calls by Community

Source: Airport Noise Monitoring System

Community	Total Complaints	Total Number of Callers
Roundtable Communities		
Atherton	2	2
Brisbane	584	14
Burlingame	13	8
Daly City	433	5
Foster city	5	4
Half Moon Bay	59	3
Menlo Park	196	24
Millbrae	8	6
Pacifica	159	12
Portola Valley	11,974	30
Redwood City	544	16
San Bruno	2	2
San Carlos	4	2
San Francisco	1,764	15
San Mateo	16	6
South San Francisco	24	10
Woodside	52	10
Other Communities		
Aptos	425	9
Berkeley	1	1
Boulder Creek	65	9
Capitola	1,358	28
Carmel Valley	1	1
El Cerrito	3	1
Felton	1,700	5
Los Altos	1,650	72
Los Altos Hills	29	4
Los Gatos	40,811	188
Milpitas	1	1
Morgan Hill	58	1
Mountain View	130	9
Oakland	2	2
Palo Alto	9,896	207
San Jose	1	1
Santa Cruz	25,193	137
Saratoga	236	13
Scotts Valley	20,621	101
Soquel	13,484	108
Sunnyvale	1	1
Walnut Creek	4	2
	131,509	**1,070**

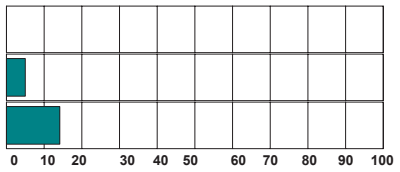


Monthly Noise Complaint Summary Map September 2015

Caller Location and Amount of Complaints

Monthly Nighttime Power Runups Report (85-06-AOB)
San Francisco International Airport -- Director's Report
Period : **September 2015**
Time of Day : From 10 pm through 7 am

Airline	Code	Number of Runups	Runups Per 1,000 Departures	Percentage of Runups
FLEXJET	LXJ	1	15.9	5%
UNITED	UAL	6	1.2	27%
American Airlines	AAL	15	11.1	68%
Total		**22**		



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 power settings tested range from idle to full power and may vary in duration.

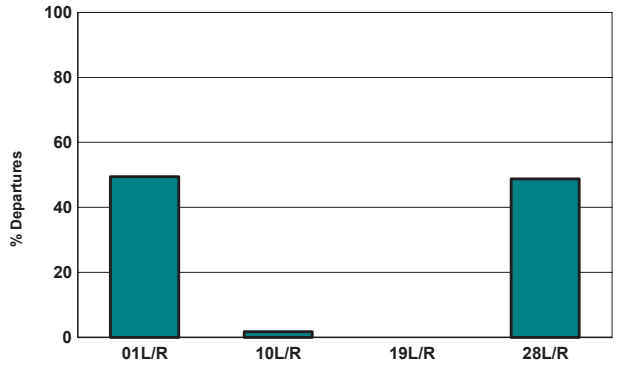
Late Night Preferential Runway Use Report
San Francisco International Airport -- Director's Report
Period: September 2015
Time of Day: Late Night (1 am to 6 am)

Runway Utilization (1 am to 6 am)

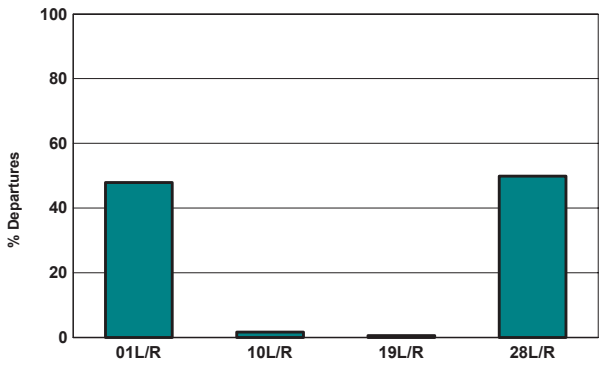
Monthly Jet Departures

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
01L/R	99	72	114	178	206	259	303	302	247	-	-	-	1,780
10L/R	5	22	6	17	1	-	-	2	9	-	-	-	62
19L/R	-	22	-	-	-	-	-	-	-	-	-	-	22
28L/R	81	82	181	226	262	269	270	240	244	-	-	-	1,855
Total	**185**	**198**	**301**	**421**	**469**	**528**	**573**	**544**	**500**	**-**	**-**	**-**	**3,719**
01L/R	54%	36%	38%	42%	44%	49%	53%	56%	49%	0%	0%	0%	48%
10L/R	3%	11%	2%	4%	0%	0%	0%	0%	2%	0%	0%	0%	2%
19L/R	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
28L/R	44%	41%	60%	54%	56%	51%	47%	44%	49%	0%	0%	0%	50%

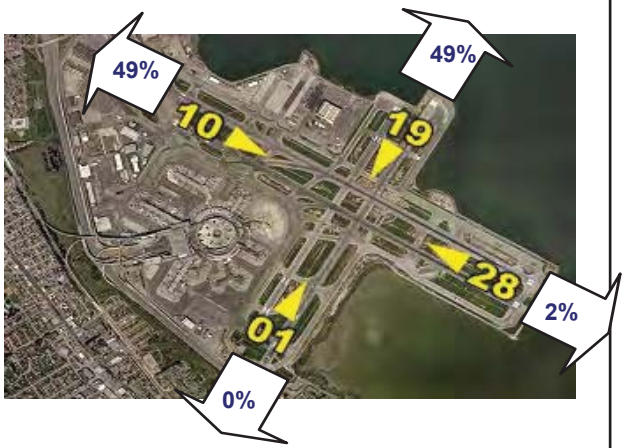
Current Month (1 am to 6 am)



Year-to-Date (1am to 6 am)

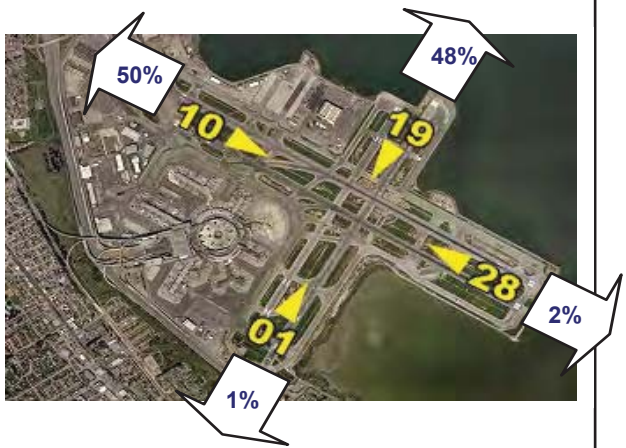


Current Month (1 am to 6 am)



Numbers rounded to nearest whole percentages

Year-to-Date (1am to 6am)



Numbers rounded to nearest whole percentages

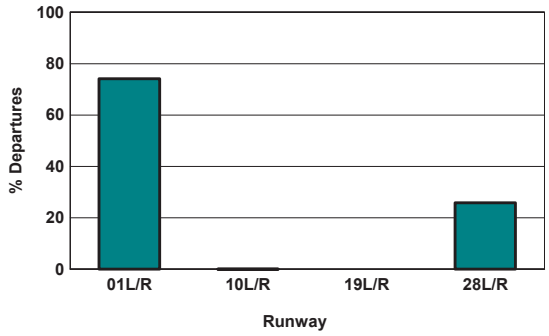
Air Carrier Runway Use Summary Report
San Francisco International Airport -- Director's Report
Period: September 2015
Time of Day : All Hours

Runway Utilization (All Hours)

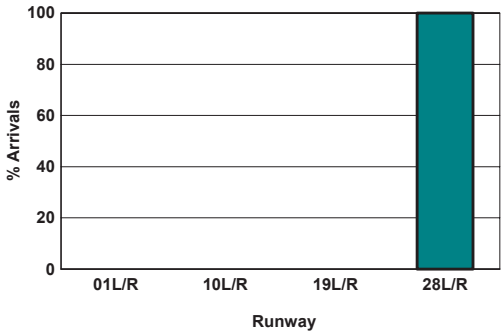
Source: Airport Noise Monitoring System

	Runway Utilization				Total
	01L/R	*10L/R*	*19L/R*	*28L/R*	
Total Monthly Operations					
Departures	12,255	10	0	4,266	16,531
Arrivals	0	0	0	16,545	16,545
Percentage Utilization					
Departures	74.1%	0.1%	0.0%	25.8%	100%
Arrivals	0.0%	0.0%	0.0%	100.0%	100%

Departures (All Hours)



Arrivals (All Hours)



Percentage Departure Utilization

Numbers rounded to nearest whole percentages

Percentage Arrival Utilization

Numbers rounded to nearest whole percentages

REGULAR AGENDA

Regular Meeting # 299
February 3, 2016

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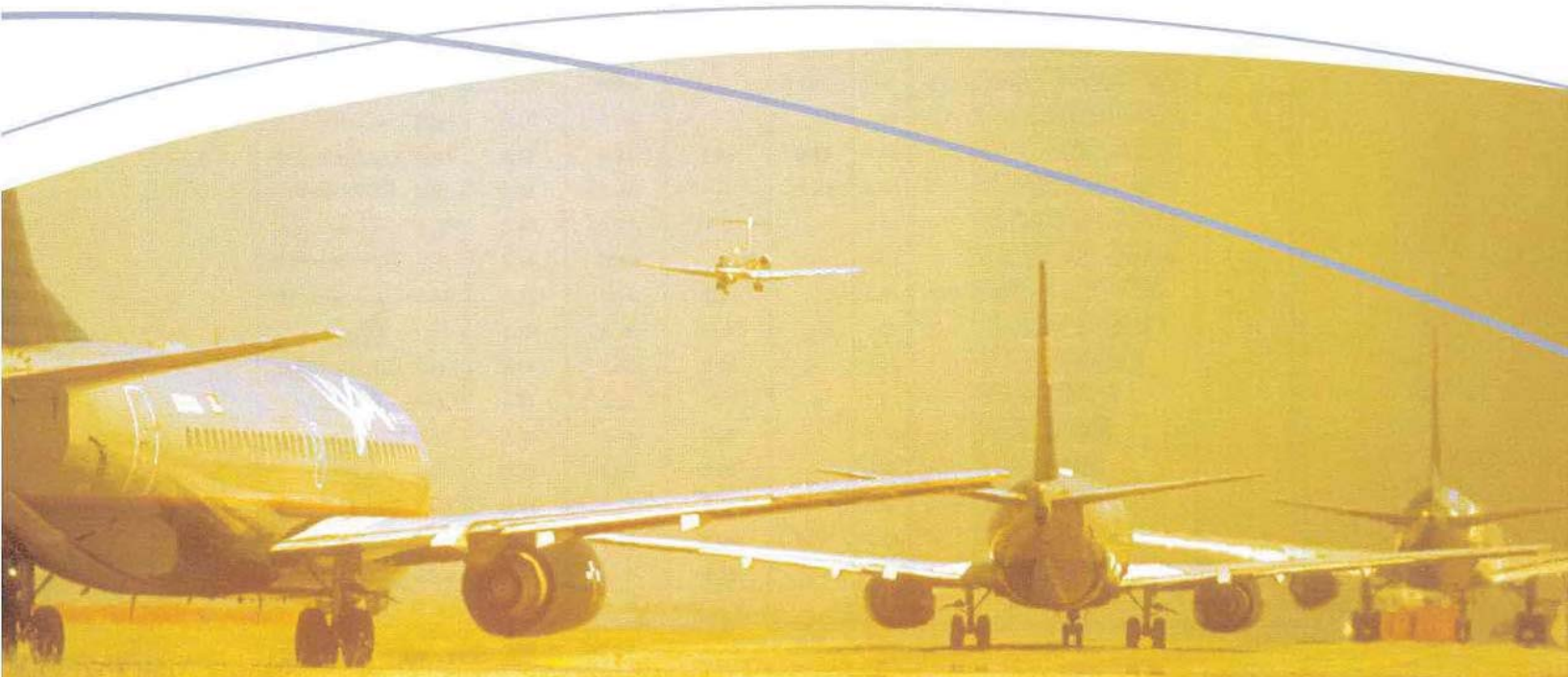
San Francisco International Airport

Fly Quiet Report

Presented at the February 3, 2016
Airport Community Roundtable Meeting
SFO Aircraft Noise Abatement Office
Fourth Quarter 2015



Fly Quiet Program

San Francisco International Airport's Fly Quiet Program is an Airport Community Roundtable initiative implemented by the Aircraft Noise Abatement Office. Its purpose is to encourage individual airlines to operate as quietly as possible at SFO. The program promotes a participatory approach in complying with noise abatement procedures and objectives by grading an airline's performance and by making the scores available to the public via newsletters, publications, and public meetings.

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

Program Goals

The overall goal of the Fly Quiet Program is to influence airlines to operate as quietly as possible in the San Francisco Bay Area. A successful Fly Quiet Program can be expected to reduce both single event and total noise levels around the airport.

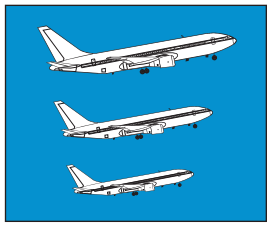
Program Reports

Fly Quiet reports communicate results in a clear, understandable format on a scale of 0-10, zero being poor and ten being good. This allows for an easy comparison between airlines over time. Individual airline scores are computed and reports are generated each quarter. These quantitative scores allow airline management and flight personnel to measure exactly how they stand compared to other operators and how their proactive involvement can positively reduce noise in the Bay Area.

Program Elements

Currently the Fly Quiet Program rates jets and regional jets on six elements : the overall noise quality of each airline's fleet operating at SFO, an evaluation of single overflight noise level exceedences, a measure of how well each airline complies with the preferred nighttime noise abatement runways, assessment of airline performance to the Gap and Shoreline Departures, and over the bay approaches to runways 28L and 28R.

SFO's Fly Quiet Ratings



Fleet Noise Quality

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

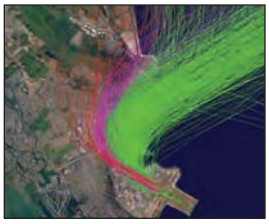
Noise Exceedance

Eliminating high-level noise events is a long-standing goal of the Airport and the Airport Community Roundtable. As a result the Airport has established single event maximum noise level limits at each noise-monitoring site. These thresholds were set to identify aircraft producing noise levels higher than are typical for the majority of the operations.

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. Noise exceedances are logged by the exact operation along with the aircraft type and airline name.

Nighttime Preferential Runway Use

SFO's Nighttime Preferential Runway Use program was developed in 1988. Although the program cannot be used 100% of the time because of winds, weather, and other operational factors, the Airport, the Community Roundtable, the FAA, and the Airlines have all worked together to maximize its use when conditions permit. The program is voluntary; compliance is at the discretion of the pilot in command. The main focus of this program is to maximize flights over water and minimize flights over land and populated areas between 1:00 a.m. and 6:00 a.m. Fortunately, because airport activity levels are lower late at night, it is feasible to use over-water departure procedures more frequently than would be possible during the day. Reducing nighttime noise—especially sleep disturbance— is a key goal of SFO's aircraft noise abatement program.



Shoreline Departure Quality

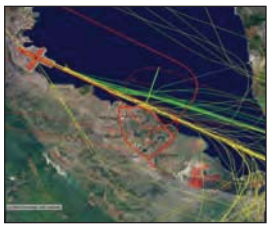
Aircraft departing SFO using Runways 28L and 28R are also considered by the Fly Quiet grading system whenever they use the Shoreline Departure Procedure. This predominately VFR (visual flight rules) departure steers aircraft to the northeast shortly after takeoff in an attempt to keep aircraft and aircraft noise away from the residential communities located to the northwest of SFO. By keeping aircraft east of Highway 101 the majority of the overflights will be experienced by industrial and business parks instead of residential areas.

In order to evaluate each airline's performance when flying a Shoreline Departure, a corridor was established using Interstate 101 (green colored flight tracks) as a reference point. The corridor runs north along 101, beginning approximately one-mile north-northwest of the end of Runways 28L and 28R and continuing up into the City of Brisbane. Departures west of 101 are scored marginal or poor depending on their location.

Gap Departure Quality

Aircraft departing SFO using Runways 28L and 28R frequently depart straight out using a procedure known as the Gap Departure. This procedure directs air traffic to fly a route that takes them over the area northwest of the airport over the cities of South San Francisco, San Bruno, Daly City, and Pacifica. In an attempt to mitigate noise in this specific area, the Gap Departure Quality Rating has been included as a category in the Fly Quiet Program.

Since "higher is quieter", aircraft altitudes are recorded along the departure route. Scores are assigned at specified points or gates set approximately one mile apart, with the higher aircraft receiving higher scores.



Foster City Arrival Quality

The Arrival Quality Rating is the latest addition to the Fly Quiet Program. In an effort to further reduce nighttime noise in neighboring communities, this rating is designed to maximize over-bay approaches to Runways 28 between 11:00 p.m. and 6:00 a.m. Airlines arriving to Runways 28 during these hours are assessed based on which approach flight path was used. Over-the-bay approaches are rated good (green colored flight tracks), versus over-the-communities which are rated poor.

Revised date: 5/15/09

Airline Fly Quiet Summary Report - 4th Quarter 2015

October 1 to December 31, 2015

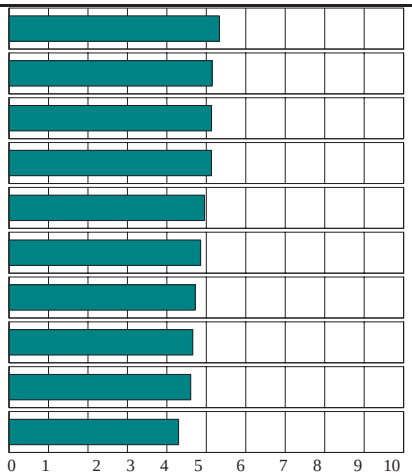
Airline		Fleet Noise Quality	Noise Exceedance	Nighttime Runway Use	Departures: Shoreline	Departures: Gap	Arrivals: Foster City	Final Score	Airline Fly Quiet Rating
AIR CHINA	CCA	10.00	10.00	-	-	8.01	-	9.34	
中国南方航空 CHINA SOUTHERN AIRLINES	CSN	9.50	10.00	-	-	7.76	-	9.09	
Lufthansa	DLH	9.14	9.81	-	7.50	6.35	-	8.20	
ANA	ANA	7.15	10.00	-	-	7.28	-	8.14	
Compass Airlines	CPZ	10.00	9.90	-	10.00	6.03	4.76	8.14	
AIRFRANCE	AFR	7.24	9.98	-	-	7.06	-	8.09	
Scandinavian Airlines	SAS	8.08	10.00	-	-	6.07	-	8.05	
AIR CANADA	ACA	5.40	9.81	-	9.69	7.67	7.22	7.96	
NCA Nippon Cargo Airlines	NCA	10.00	8.44	-	-	6.31	6.58	7.83	
SkyWest AIRLINES	SKW	10.00	9.98	5.19	9.50	6.54	5.56	7.80	
suncountry airlines	SCX	5.82	9.95	6.67	10.00	6.75	7.50	7.78	
AIR NEW ZEALAND	ANZ	6.84	10.00	-	-	6.02	-	7.62	
ABX AIR	ABX	4.87	10.00	-	-	-	-	7.44	
SWISS	SWR	8.17	9.80	-	-	4.09	-	7.35	
Virgin america	VRD	5.02	9.93	6.67	9.70	5.91	6.89	7.35	
DELTA	DAL	6.11	9.92	4.20	8.55	7.12	7.78	7.28	
FRONTIER AIRLINES	FFT	5.62	9.93	2.67	9.78	6.65	8.21	7.14	
Southwest	SWA	5.70	9.89	3.22	9.57	6.61	7.24	7.04	
AIR INDIA	AIC	7.15	8.29	-	-	7.60	5.00	7.01	
Alaska Airlines	ASA	5.20	9.89	6.00	9.33	6.46	4.97	6.98	
KLM Royal Dutch Airlines	KLM	3.89	10.00	-	8.00	5.88	-	6.94	
中國東方航空 CHINA EASTERN	CES	4.72	9.98	-	-	5.71	-	6.80	
jetBlue	JBU	4.81	9.86	3.97	7.74	6.67	7.76	6.80	
WESTJET	WJA	5.82	10.00	-	6.67	4.58	-	6.77	
TURKISH AIRLINES	THY	7.15	10.00	-	-	3.15	-	6.76	
virgin atlantic	VIR	7.70	9.93	-	5.00	4.21	-	6.71	
American Airlines	AAL	5.20	9.86	3.56	8.24	5.21	7.95	6.67	
								6.64	SFO AVERAGE
UNITED	UAL	5.62	9.84	3.84	7.54	5.27	7.00	6.52	
HAWAIIAN AIRLINES	HAL	4.05	9.48	-	-	5.89	-	6.47	
FedEx.	FDX	3.84	9.64	-	7.14	3.67	7.54	6.37	
Avianca	TAI	5.04	9.23	3.33	-	8.61	5.60	6.36	
AEROMEXICO	AMX	5.82	9.81	3.81	-	6.96	5.00	6.28	
Emirates	UAE	10.00	10.00	-	1.25	3.54	-	6.20	
Philippines	PAL	7.27	7.81	-	-	3.41	-	6.16	
ATLAS AIR	GTI	4.87	9.03	3.33	5.00	7.06	6.20	5.92	
JAPAN AIRLINES	JAL	7.15	8.16	0.48	-	6.80	-	5.65	
CATHAY PACIFIC	CPA	7.15	8.02	0.21	-	7.09	5.00	5.49	
KOREAN AIR	KAL	9.16	6.80	0.70	-	5.56	5.00	5.44	

Airline Fly Quiet Summary Report - 4th Quarter 2015

October 1 to December 31, 2015

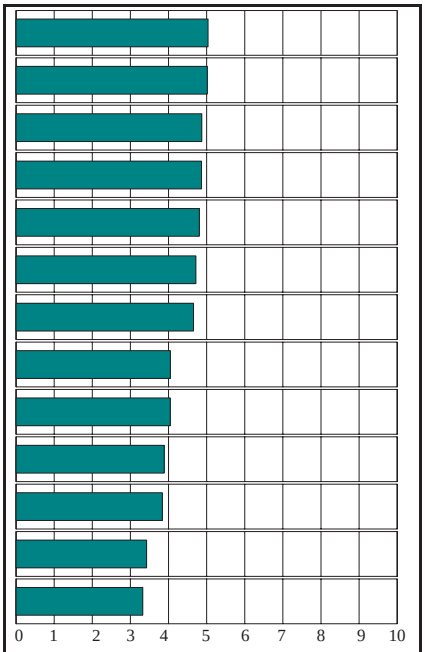
Airline		Fleet Noise Quality	Noise Exceedance	Nighttime Runway Use	Departures: Shoreline	Departures: Gap	Arrivals: Foster City	Final Score
Aer Lingus	EIN	4.05	9.97	-	-	1.98	-	5.33
EVA AIR	EVA	6.73	8.11	0.00	-	5.06	5.83	5.15
ETIHAD	ETD	7.15	8.99	0.00	-	4.53	5.00	5.13
SINGAPORE AIRLINES	SIA	7.15	8.69	0.31	-	4.38	-	5.13
CHINA AIRLINES	CAL	5.61	8.20	0.00	-	5.97	5.00	4.96
CopaAirlines	CMP	5.82	9.54	0.00	5.56	3.36	-	4.86
BRITISH AIRWAYS	BAW	5.62	9.78	0.00	-	3.48	-	4.72
KALITTA AIR	CKS	3.32	5.87	3.94	3.46	1.35	10.00	4.66
ASIANA AIRLINES	AAR	4.66	5.43	0.73	-	6.96	5.25	4.60
QANTAS	QFA	3.43	0.00	-	-	9.46	-	4.30
SFO Average		6.45	9.12	2.62	7.58	5.79	6.39	6.64

Airline Fly Quiet Rating



Airline		Nationwide Fleet Noise Quality Rating	San Francisco Average Daily Jet Operations	San Francisco Score	Fleet Noise Quality Rating
AIR CHINA	CCA	3.46	1	10.00	
NCA Nippon Cargo Airlines	NCA	3.90	1	10.00	
Emirates	UAE	7.89	1	10.00	
SkyWest Airlines	SKW	10.00	109	10.00	
Compass Airlines	CPZ	10.00	14	10.00	
中国南方航空 China Southern Airlines	CSN	5.64	1	9.50	
KOREAN AIR	KAL	4.05	2	9.16	
Lufthansa	DLH	6.09	2	9.14	
SWISS	SWR	5.17	1	8.17	
Scandinavian Airlines	SAS	4.96	1	8.08	
virgin atlantic	VIR	5.84	2	7.70	
Philippines	PAL	5.09	1	7.27	
AIRFRANCE	AFR	5.49	1	7.24	
ANA	ANA	5.43	1	7.15	
CATHAY PACIFIC	CPA	4.18	2	7.15	
ETIHAD	ETD	0.00	1	7.15	
JAPAN AIRLINES	JAL	4.20	1	7.15	
SINGAPORE AIRLINES	SIA	5.93	2	7.15	
TURKISH AIRLINES	THY	6.80	1	7.15	
AIR INDIA	AIC	4.77	0	7.15	
AIR NEW ZEALAND	ANZ	4.00	1	6.84	
EVA AIR	EVA	5.05	2	6.73	
				6.45	SFO AVERAGE
DELTA	DAL	4.92	34	6.11	
AEROMEXICO	AMX	5.54	3	5.82	
CopaAirlines	CMP	6.46	1	5.82	
suncountry airlines	SCX	5.82	2	5.82	
WESTJET	WJA	5.82	0	5.82	
Southwest	SWA	5.70	41	5.70	
BRITISH AIRWAYS	BAW	4.34	2	5.62	
UNITED	UAL	5.83	157	5.62	
FRONTIER AIRLINES	FFT	6.41	7	5.62	
CHINA AIRLINES	CAL	3.62	2	5.61	
AIR CANADA	ACA	6.75	8	5.40	
Alaska Airlines	ASA	5.10	16	5.20	
American Airlines	AAL	3.94	45	5.20	

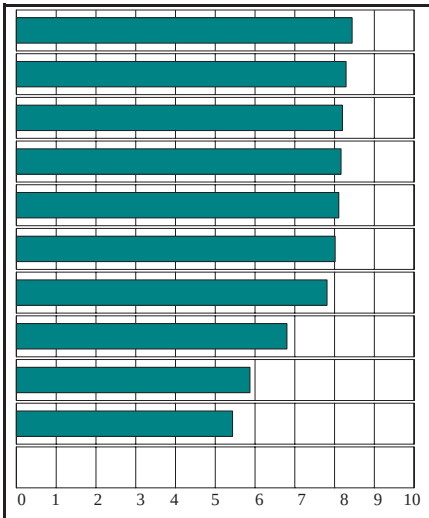
Airline		Nationwide Fleet Noise Quality Rating	San Francisco Average Daily Jet Operations	San Francisco Score	Fleet Noise Quality Rating
Avianca	TAI	5.18	2	5.04	
Virgin America	VRD	5.31	51	5.02	
ABX Air	ABX	1.52	0	4.87	
Atlas Air	GTI	0.93	1	4.87	
jetBlue	JBU	6.13	16	4.81	
China Eastern	CES	4.63	1	4.72	
Asiana Airlines	AAR	3.93	2	4.66	
Aer Lingus	EIN	4.05	1	4.05	
Hawaiian Airlines	HAL	6.21	2	4.05	
KLM Royal Dutch Airlines	KLM	4.67	1	3.89	
FedEx	FDX	2.80	1	3.84	
Qantas	QFA	3.47	0	3.43	
Kalitta Air	CKS	0.60	0	3.32	
AVERAGE		**4.95**	**11**	**6.45**	



Airline		Noise Exceedances				Noise Exceedance Quality Rating
		Total Noise Exceedances	*Total Quarterly Operations*	*Exceedances per 1000 Operations*	***Score***	
ABX AIR	ABX	0	8	0	***10.00***	
ANA	ANA	0	185	0	***10.00***	
AIR NEW ZEALAND	ANZ	0	199	0	***10.00***	
AIR CHINA	CCA	0	183	0	***10.00***	
中国南方航空 CHINA SOUTHERN AIRLINES	CSN	0	184	0	***10.00***	
KLM Royal Dutch Airlines	KLM	0	184	0	***10.00***	
Scandinavian Airlines	SAS	0	177	0	***10.00***	
TURKISH AIRLINES	THY	0	185	0	***10.00***	
Emirates	UAE	0	184	0	***10.00***	
WESTJET	WJA	0	51	0	***10.00***	
SkyWest Airlines	SKW	89	20,136	4	***9.98***	
AIRFRANCE	AFR	1	185	5	***9.98***	
中國東方航空 CHINA EASTERN	CES	1	185	5	***9.98***	
Aer Lingus	EIN	1	140	7	***9.97***	
suncountry airlines	SCX	4	393	10	***9.95***	
FRONTIER AIRLINES	FFT	20	1,326	15	***9.93***	
Virgin America	VRD	150	9,473	16	***9.93***	
virgin atlantic	VIR	5	297	17	***9.93***	
DELTA	DAL	105	6,219	17	***9.92***	
Compass Airlines	CPZ	54	2,519	21	***9.90***	
Alaska Airlines	ASA	72	3,034	24	***9.89***	
Southwest / jetBlue	SWA	196	7,604	26	***9.89***	
	JBU	92	2,899	32	***9.86***	
American Airlines	AAL	267	8,287	32	***9.86***	
UNITED	UAL	1,056	28,815	37	***9.84***	
AIR CANADA	ACA	61	1,463	42	***9.81***	
AEROMEXICO	AMX	21	503	42	***9.81***	
Lufthansa	DLH	14	325	43	***9.81***	
SWISS	SWR	8	179	45	***9.80***	
BRITISH AIRWAYS	BAW	18	359	50	***9.78***	
FedEx	FDX	21	260	81	***9.64***	
CopaAirlines	CMP	19	185	103	***9.54***	
HAWAIIAN AIRLINES	HAL	43	368	117	***9.48***	
Avianca	TAI	51	296	172	***9.23***	
					9.12	SFO AVERAGE
ATLAS AIR	GTI	58	266	218	***9.03***	
ETIHAD	ETD	42	184	228	***8.99***	
SINGAPORE AIRLINES	SIA	108	366	295	***8.69***	

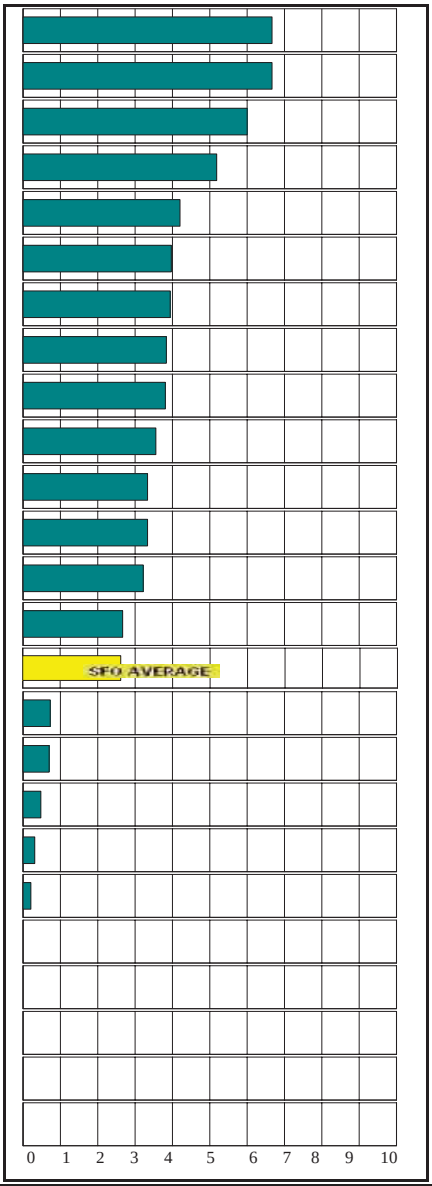
Airline	Noise Exceedances: *Total Noise Exceedances*	*Total Quarterly Operations*	*Exceedances per 1000 Operations*	***Score***
NCA	48	137	350	***8.44***
AIC	10	26	385	***8.29***
CAL	120	296	405	***8.20***
JAL	76	184	413	***8.16***
EVA	176	413	426	***8.11***
CPA	200	448	446	***8.02***
PAL	99	201	493	***7.81***
KAL	259	360	719	***6.80***
CKS	52	56	929	***5.87***
AAR	340	331	1027	***5.43***
QFA	36	16	2250	***0.00***

Noise Exceedance Quality Rating



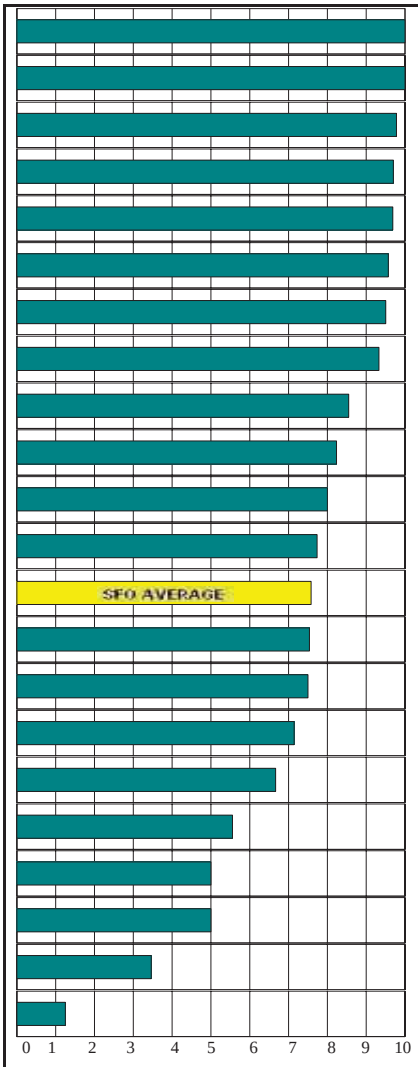
TOTAL	**3,993**	**100,274**		
SFO AVERAGE			**199**	**9.12**

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***	
SUN COUNTRY AIRLINES	SCX	**3**	33%	33%	33%	0%	***6.67***	
VIRGIN AMERICA	VRD	**8**	38%	25%	38%	0%	***6.67***	
ALASKA AIRLINES	ASA	**5**	40%	20%	20%	20%	***6.00***	
SKYWEST AIRLINES	SKW	**27**	22%	11%	67%	0%	***5.19***	
DELTA	DAL	**23**	4%	17%	78%	0%	***4.20***	
JETBLUE	JBU	**42**	7%	10%	79%	5%	***3.97***	
KALITTA AIR	CKS	**22**	5%	50%	5%	41%	***3.94***	
UNITED	UAL	**225**	8%	4%	81%	6%	***3.84***	
AEROMEXICO	AMX	**7**	14%	0%	71%	14%	***3.81***	
AMERICAN AIRLINES	AAL	**270**	3%	7%	86%	5%	***3.56***	
ATLAS AIR	GTI	**1**	0%	0%	100%	0%	***3.33***	
AVIANCA	TAI	**49**	4%	0%	88%	8%	***3.33***	
SOUTHWEST	SWA	**200**	1%	1%	92%	7%	***3.22***	
FRONTIER AIRLINES	FFT	**5**	0%	0%	80%	20%	***2.67***	
							2.62	SFO AVERAGE
ASIANA AIRLINES	AAR	**55**	7%	0%	0%	93%	***0.73***	
KOREAN AIR	KAL	**86**	7%	0%	0%	93%	***0.70***	
JAPAN AIRLINES	JAL	**42**	2%	0%	7%	90%	***0.48***	
SINGAPORE AIRLINES	SIA	**32**	3%	0%	0%	97%	***0.31***	
CATHAY PACIFIC	CPA	**48**	2%	0%	0%	98%	***0.21***	
BRITISH AIRWAYS	BAW	**1**	0%	0%	0%	100%	***0.00***	
CHINA AIRLINES	CAL	**31**	0%	0%	0%	100%	***0.00***	
COPA AIRLINES	CMP	**5**	0%	0%	0%	100%	***0.00***	
ETIHAD	ETD	**1**	0%	0%	0%	100%	***0.00***	
EVA AIR	EVA	**49**	0%	0%	0%	100%	***0.00***	



TOTAL	**1,237**					
SFO AVERAGE		**8%**	**7%**	**38%**	**46%**	**2.62**

Airline		Shoreline Departures					Shoreline Departure Rating
		Total	Successful	Marginal	Poor	Score	
Compass Airlines	CPZ	25	100%	0%	0%	*10.00*	
suncountry airlines	SCX	20	100%	0%	0%	*10.00*	
FRONTIER AIRLINES	FFT	23	96%	4%	0%	*9.78*	
Virgin america	VRD	167	94%	6%	0%	*9.70*	
AIR CANADA	ACA	48	94%	6%	0%	*9.69*	
Southwest	SWA	70	93%	6%	1%	*9.57*	
SkyWest AIRLINES	SKW	363	91%	8%	1%	*9.50*	
Alaska Airlines	ASA	67	90%	7%	3%	*9.33*	
DELTA	DAL	169	73%	25%	2%	*8.55*	
American Airlines	AAL	238	68%	28%	4%	*8.24*	
KLM Royal Dutch Airlines	KLM	5	60%	40%	0%	*8.00*	
jetBlue	JBU	53	57%	42%	2%	*7.74*	
						7.58	SFO AVERAGE
UNITED	UAL	593	61%	29%	10%	*7.54*	
Lufthansa	DLH	4	50%	50%	0%	*7.50*	
FedEx	FDX	7	43%	57%	0%	*7.14*	
WESTJET	WJA	3	67%	0%	33%	*6.67*	
CopaAirlines	CMP	9	22%	67%	11%	*5.56*	
ATLAS AIR	GTI	1	0%	100%	0%	*5.00*	
virgin atlantic	VIR	1	0%	100%	0%	*5.00*	
KALITTA AIR	CKS	13	8%	54%	38%	*3.46*	
Emirates	UAE	4	0%	25%	75%	*1.25*	
TOTAL		**1,883**					
SFO AVERAGE			**60%**	**31%**	**9%**	**7.58**	



Gap Departure Climb Rating - 4th Quarter 2015

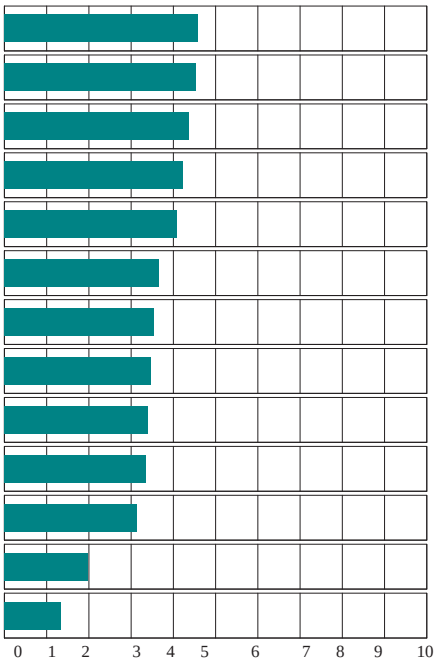
October 1 to December 31, 2015

Airline		Gap Departures		Gap Departure Quality Rating
		Total	Score	
QANTAS	QFA	7	9.46	
Avianca	TAI	9	8.61	
AIR CHINA	CCA	88	8.01	
中国南方航空 CHINA SOUTHERN AIRLINES	CSN	88	7.76	
AIR CANADA	ACA	22	7.67	
AIR INDIA	AIC	12	7.60	
ANA	ANA	87	7.28	
DELTA	DAL	132	7.12	
CATHAY PACIFIC	CPA	216	7.09	
AIRFRANCE	AFR	85	7.06	
ATLAS AIR	GTI	34	7.06	
AEROMEXICO	AMX	23	6.96	
ASIANA AIRLINES	AAR	156	6.96	
JAPAN AIRLINES	JAL	75	6.80	
suncountry airlines	SCX	5	6.75	
jetBlue	JBU	65	6.67	
FRONTIER AIRLINES	FFT	25	6.65	
Southwest	SWA	251	6.61	
SkyWest AIRLINES	SKW	453	6.54	
Alaska Airlines	ASA	66	6.46	
Lufthansa	DLH	156	6.35	
NCA Nippon Cargo Airlines	NCA	63	6.31	
SAS Scandinavian Airlines	SAS	85	6.07	
Compass Airlines	CPZ	81	6.03	
AIR NEW ZEALAND	ANZ	99	6.02	
CHINA AIRLINES	CAL	143	5.97	
Virgin america	VRD	310	5.91	
HAWAIIAN AIRLINES	HAL	28	5.89	
KLM Royal Dutch Airlines	KLM	20	5.88	
			5.79	SFO AVERAGE
中国東方航空 CHINA EASTERN	CES	88	5.71	
KOREAN AIR	KAL	168	5.56	
UNITED	UAL	2695	5.27	
American Airlines	AAL	285	5.21	
EVA AIR	EVA	198	5.06	

Gap Departure Climb Rating - 4th Quarter 2015

October 1 to December 31, 2015

Airline		Gap Departures		Gap Departure Quality Rating
		Total	Score	
WESTJET	WJA	3	*4.58*	
ETIHAD	ETD	85	*4.53*	
SINGAPORE AIRLINES	SIA	175	*4.38*	
virgin atlantic	VIR	105	*4.21*	
SWISS	SWR	85	*4.09*	
FedEx	FDX	15	*3.67*	
Emirates	UAE	85	*3.54*	
BRITISH AIRWAYS	BAW	164	*3.48*	
Philippines	PAL	99	*3.41*	
CopaAirlines	CMP	83	*3.36*	
TURKISH AIRLINES	THY	89	*3.15*	
Aer Lingus	EIN	67	*1.98*	
KALITTA AIR	CKS	13	*1.35*	

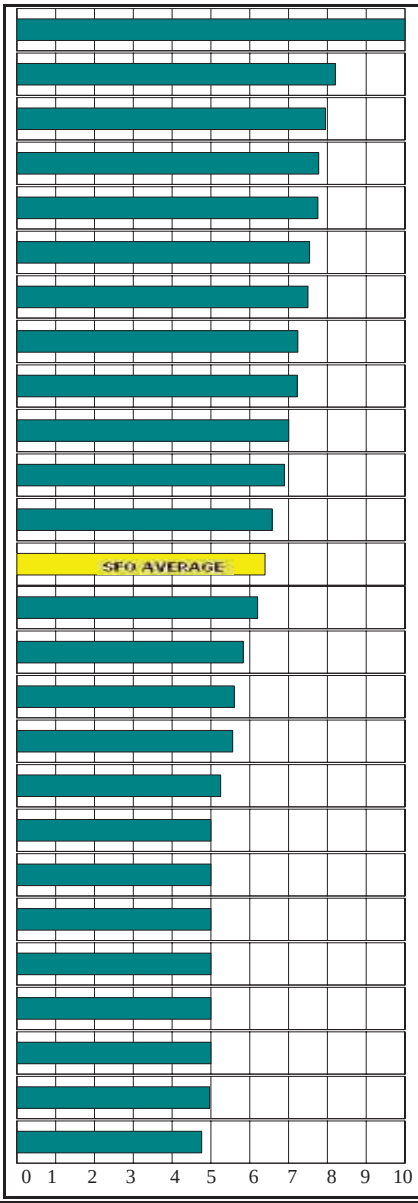


TOTAL	**7386**	
SFO Average		**5.79**

Foster City Arrival Rating - 4th Quarter 2015

October 1 to December 31,2015

Airline		Foster City Arrivals					Foster City Arrival Rating
		Total	*Successful*	*Marginal*	*Poor*	*Score*	
KALITTA AIR	CKS	**1**	100%	0%	0%	***10.00***	
FRONTIER AIRLINES	FFT	**53**	64%	36%	0%	***8.21***	
American Airlines	AAL	**432**	59%	40%	0%	***7.95***	
DELTA	DAL	**225**	56%	44%	0%	***7.78***	
jetBlue	JBU	**234**	55%	45%	0%	***7.76***	
FedEx	FDX	**59**	51%	49%	0%	***7.54***	
suncountry airlines	SCX	**12**	50%	50%	0%	***7.50***	
Southwest	SWA	**163**	47%	52%	2%	***7.24***	
AIR CANADA	ACA	**63**	44%	56%	0%	***7.22***	
UNITED	UAL	**1,080**	42%	57%	2%	***7.00***	
virgin america	VRD	**132**	39%	59%	2%	***6.89***	
NCA Nippon Cargo Airlines	NCA	**38**	32%	68%	0%	***6.58***	
						6.39	SFO AVERAGE
ATLAS AIR	GTI	**54**	24%	76%	0%	***6.20***	
EVA AIR	EVA	**6**	17%	83%	0%	***5.83***	
Avianca	TAI	**83**	12%	88%	0%	***5.60***	
SkyWest	SKW	**98**	16%	79%	5%	***5.56***	
ASIANA AIRLINES	AAR	**60**	5%	95%	0%	***5.25***	
AIR INDIA	AIC	**2**	0%	100%	0%	***5.00***	
AEROMEXICO	AMX	**6**	0%	100%	0%	***5.00***	
CHINA AIRLINES	CAL	**4**	0%	100%	0%	***5.00***	
CATHAY PACIFIC	CPA	**1**	0%	100%	0%	***5.00***	
ETIHAD	ETD	**5**	0%	100%	0%	***5.00***	
KOREAN AIR	KAL	**83**	0%	100%	0%	***5.00***	
Alaska Airlines	ASA	**148**	2%	95%	3%	***4.97***	
Compass Airlines	CPZ	**21**	0%	95%	5%	***4.76***	
TOTAL		**3,063**					
SFO AVERAGE			**29%**	**71%**	**1%**	**6.39**	



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January 28, 2016

TO: Roundtable Representatives and Alternates

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Consideration of amending the Roundtable's Memorandum of Understanding and Bylaws to allow the City of Palo Alto to be a voting member

---

At the request of the Roundtable chairperson, the item of considering the City of Palo Alto to join the Roundtable as a member is being brought forth for consideration. Due to the ongoing noise impacts and recent FAA initiative to address noise issues in the Bay Area, it was felt appropriate to reintroduce the item for discussion and possibly amending the Roundtable's documents to allow membership to occur.

BACKGROUND

Up until the spring of 1997, the Roundtable had been limited to the original nine cities since the establishment of the Roundtable in 1981- Brisbane, Daly City, South San Francisco, San Bruno, Pacifica, Millbrae, Burlingame, Hillsborough and Foster City. Due to a growing number of complaints in the southern San Mateo County communities in the mid-1990s, cities within that region became more active in participating on the Roundtable, and actively request membership. Beginning in December 1995, the Roundtable started granting provisional non-voting membership to cities in the south county. The cities of Palo Alto and Los Altos in Santa Clara County at this time expressed interest in also becoming voting members. In April 1997, the Roundtable amended the Memorandum of Understanding (MOU) to allow any city within San Mateo County membership, with no provisions to offer membership to other counties or any cities located in other counties. At that time, the cities of Atherton, Belmont, Half Moon Bay, Menlo Park, Portola Valley, Redwood City, San Mateo, and Woodside formally requested voting membership as a result of the adopted amendment to the MOU.

In September 1997, the City of Palo Alto requested voting membership on the Roundtable. At the January 7, 1998 Regular Meeting, the Roundtable considered the request, but did not take a vote to grant the City of Palo Alto voting membership, which required an amendment to the MOU to allow it. The Roundtable felt it was more appropriate to discuss aircraft noise issues beyond San Mateo County in regional forum, such as the Association of Bay Area Government's (ABAG) Regional Airport Planning Committee (RAPC).

At the Roundtable's regular meeting on October 1, 2014, the Roundtable considered another request from the City of Palo Alto to join the Roundtable. The membership voted not to grant membership, but to adopt recommendations provided by a subcommittee that encouraged ongoing participation at Roundtable meetings, participate at a regional level with RAPC, and assist the City of Palo Alto and County of Santa Clara to create a Roundtable organization in Santa Clara County.

AMENDMENT PROCEDURE

1. Approval by the Roundtable Members

In order to include the City of Palo Alto's request, the Roundtable must amend language in both the MOU and Bylaws to add a non-San Mateo County city. Per Article V of the Roundtable's MOU, a motion to include the City of Palo Alto must be made by a Roundtable member, seconded, and approved by at least two-thirds of the current 23 voting membership seats (15 affirmative votes), which also include vacant seated members. If less than two-thirds of the Roundtable member are present and/or approve in the affirmative, the proposal fails.

The language in the MOU and Bylaws to consider could include the following (changes in bold):

> MOU page 7, Article III, Section 4 edits:
>
> "Additional Voting Membership – Other incorporated towns and/or cities located within San Mateo County**, and the City of Palo Alto,** may request voting membership on the San Francisco International Airport/Community Roundtable by adopting a resolution"
>
> Bylaws page 5, Article III, Section 9 edits:
>
> "Any city or town in San Mateo County**, and the City of Palo Alto,** that is not a member of the Roundtable may request membership on the Roundtable in accordance with the membership procedure contained in the most current version of the MOU."

2. Approval by Current Member Cities

Once approved by the Roundtable members, the proposed MOU amendment must be considered and approved by at least two-thirds of the respective councils/boards of the Roundtable member agencies/bodies by a majority vote of each of those bodies. If at least two-thirds of the current 23 member agencies/bodies approve (15 affirmative) the proposed amendment, the amendment becomes effective. If less than two-thirds of the member agencies/bodies approve the proposed MOU amendment, the proposal fails.

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February 3, 2016

TO: Roundtable Representatives, Alternatives, and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Consideration of allowing Supporting Cities Liaisons on the Roundtable

---

In response to the increased participation by communities outside of the Roundtable's membership area due to ongoing aircraft noise impacts in their respective cities, the Chair of the Roundtable is requesting the Roundtable consider allowing liaisons from those cities to serve formally with the Roundtable during discussions at Regular Meetings. While Roundtable meetings have always been open to any member of the public and encourages all to participate, allowing Supporting City Liaisons for non-Roundtable member cities outside of the County of San Mateo and City and County of San Francisco would provide additional recognition of communities (through a representative) to participate at meetings to provide input and feedback from their constituent.

POTENTIAL PARTICIPATION PROCESS

Cities who are not Roundtable members interested in participating with a liaison would make a formal request to the Roundtable Chair, and the Roundtable will act on accepting said city. Supporting City Liaisons would sit and be recognized along with the other Roundtable members and discuss items. If an agenda item or action requires a vote, Supporting City Liaisons would not be able to vote. Supporting City Liaisons will also not be included in determining a quorum, as that will remain a majority of voting Roundtable members.

SUGGESTED ROUNDTABLE ACTION

In order to formalize the Supporting Cities Liaisons as a regular fixture at Roundtable meetings, the Roundtable should amend the Article III of the Roundtable Bylaws to include language allowing such. A motion will need to be made, seconded, and majority vote in the affirmative received. Recommended wording for the amendment as item 13 under Article III is below:

> "Any city or town not in San Mateo County may request to be allowed to participate with an appointed representative as a Supporting City Liaison. A formal request will be acted on by the Roundtable to accept the city as supporting City, and will be recognized and allowed to participate with the Roundtable Members. Supporting City Liaisons will not hold a voting chair, nor be counted towards a quorum."

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February 3, 2016

TO: Roundtable Representatives, Alternatives, and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Consideration of resolution regarding the FAA Initiative to Address Noise Concerns

---

At the request of the Roundtable Chair, staff has prepared a resolution in response to the recent FAA Initiative to Address Aircraft Noise in the Bay Area. To solidify the Roundtable's support as a stakeholder during the forthcoming initiative, the resolution declares the group's ongoing mission in addressing aircraft noise. Also attached is a sample resolution that Roundtable members are encourage to present to their council bodies for consideration of adoption.

ATTACHED:

1. Roundtable Resolution 16-02
2. Sample Roundtable City Resolution of Support

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RESOLUTION No. 16-02

* *

A RESOLUTION SUPPORTING THE FEDERAL AVIATION ADMINISTRATION INITIATIVE TO ADDRESS AIRCRAFT NOISE CONCERNS IN SAN MATEO COUNTY

WHEREAS, the San Francisco International Airport/Community Roundtable (Roundtable) was established in 1981, via a Memorandum of Understanding (MOU), to serve as a public forum to address community noise issues related to aircraft operations at San Francisco International Airport, and

WHEREAS, the communities around San Francisco International Airport (SFO) have continually voiced concern regarding the increase in aircraft noise from operations at San Francisco International Airport; and

WHEREAS, the Roundtable and San Mateo County communities have supported efforts to work with the FAA, the Airport, and the airline industry to reduce aircraft noise in the surrounding communities; and

WHEREAS, the Roundtable and San Mateo County communities have developed timely recommendations to the FAA, the Airport, and the airline industry to implement actions to mitigate noise; and

WHEREAS, the FAA developed the Initiative to Address Noise Concerns which was released in November 2015; and

WHEREAS, as a Stakeholder in the Bay Area, the Roundtable has requested a seat at the table to review the FAA procedures implemented in November 2014 as part of the Northern California Metroplex through the Initiative process; and

WHEREAS, the Roundtable is looking forward to a meaningful and productive collaboration with the FAA, communities around SFO, and elected officials to provide real noise abatement mitigation to the Bay Area.

NOW, THEREFORE BE IT RESOLVED, that the Roundtable requests that the FAA leadership follow up with community meetings to explain in detail the FAA's plan to address the FAA Initiative.

NOW, THEREFORE BE IT RESOLVED, that the Roundtable members requests that the FAA listen and study the ideas submitted by the communities during this process and show commitment to developing some real solutions.

* *

PASSED, APPROVED, AND ADOPTED ON FEBURARY 3, 2016.

Roundtable Chairperson

RESOLUTION NO. _____

A RESOLUTION OF THE CITY OF _____
SUPPORTING THE FEDERAL AVIATION ADMINISTRATIONS INITIATIVE TO ADDRESS AIRCRAFT NOISE CONCERNS IN SAN MATEO COUNTY

WHEREAS, the communities around San Francisco International Airport have continually voiced concern regarding the increase in aircraft noise from operations at San Francisco International Airport; and

WHEREAS, the San Francisco International Airport/Community Roundtable (Roundtable) was established in 1981, via a Memorandum of Understanding (MOU), to serve as a public forum to address community noise issues related to aircraft operations at San Francisco International Airport, and

WHEREAS, the communities have supported efforts to work with the FAA, the Airport, and the airline industry to reduce aircraft noise in the surrounding communities; and

WHEREAS, the communities, through organizations such as the Roundtable, have developed timely recommendations to the FAA, the Airport, and the airline industry to implement actions to mitigate noise; and

WHEREAS, the FAA developed the *Initiative to Address Noise Concerns* which was released in November 2015; and

WHEREAS, as a Stakeholder in the Bay Area, the Roundtable has requested a seat at the table to review the FAA procedures implemented in November 2014 as part of the Northern California Metroplex through the *Initiative* process; and

WHEREAS, the City of _____, is looking forward to a meaningful and productive collaboration with the FAA, Roundtable, and elected officials to provide real noise abatement mitigation to the Bay Area.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of _____ requests that the FAA leadership follow up with community meetings to explain in detail the FAA's plan to address the FAA *Initiative*.

BE IT FURTHER RESOLVED that the City Council of the City of _____ requests that the FAA listen and study the ideas submitted by the communities during this process and show commitment to developing some real solutions.

_____
Mayor

I hereby certify that the foregoing Resolution No. _____ was duly and regularly adopted at a regular meeting of the _____ City Council on _____, by the following vote:

AYES:
NOES:
Absent:

_____
City Clerk

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February 3, 2016

TO: Roundtable Representatives, Alternatives, and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Consideration of creating an online petition for public support of the FAA Initiative to Address Noise Concerns

---

At the request of the Roundtable Chair, staff has prepared a public online petition in support of the recent FAA Initiative to Address Aircraft Noise in the Bay Area. This would allow members of the public to show their support as a stakeholder in the community to encourage meaningful engagement from the FAA to investigate increasing noise issues in the Bay Area.

If the Roundtable considers supporting releasing an online petition, below is a sample:

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DATE: January 25, 2016

TO: James Castañeda
County of San Mateo

FROM: Cindy Gibbs
BridgeNet International

SUBJECT: Subcommittee Summaries, Departures and Arrivals Technical Working Groups January 7, 2016 Meetings

---

Subcommittee Meeting Information

The departure and arrival technical working group meetings were held on January 7, 2016 at San Francisco International Airport. The purpose of the subcommittees are to serve as a technical working group that are a forum for stakeholders to deal with specific issues in greater detail. Members will learn about specific issues of concern in the counties of San Mateo and San Francisco.

Departures Technical Working Group

Members Present

Cliff Lentz	City of Brisbane
Mark Addiego	City of South San Francisco
Sue Digre	City of Pacifica
Ken Ibarra	City of San Bruno

Staff Present

James Castañeda	Roundtable Coordinator, County of San Mateo
Cindy Gibbs	Roundtable Technical Consultant, BridgeNet International
Harvey Hartmann	Roundtable Technical Consultant
Bert Ganoung	Airport Noise Abatement Office, San Francisco International Airport

Kathleen Wentworth	Deputy District Director, Congresswoman Jackie Speier

Public Present

Peter Graves	City of Brisbane

Meeting Summary

The technical working group discussed items related to departure operations primarily at SFO and secondarily at Oakland International Airport, OAK. SFO and OAK departures share a common way point that a large number of aircraft fly to when departing for destinations to the south such as Los Angeles, San Diego, and Phoenix.

The primary takeaways from the meeting included working with the airport and FAA to encourage use of long-standing noise abatement procedures that are part of the standard operating procedures at NorCal TRACON as well as suggest noise abatement procedures be included as part of TRACON's noise abatement procedures standard operating procedures. Noise abatement procedures that are standard operating procedures at NorCal TRACON are used when air traffic allows.

For the departures working group, there were five items to follow up, analyze, or request to be implemented at NorCal TRACON. For the purposes of this working group, nighttime is defined as midnight – 5:00 am for departures; these are typically the hours of reduced operations that allow for certain noise abatement procedures that aren't feasible during periods of higher traffic.

Short term items were identified as deliverables that could see improvements or implementation within six months; long term deliverables were identified as items that required between six – 18 months to implement.

Item	Deliverable	Short Term	Long Term
Create modified NIGHT procedure on existing departure plates	NIGHT procedure that flies up the Bay over the Golden Gate bridge from aircraft departing Runway 10L or 10R via vector headings from TRACON.	X	
Create 050 Departure from Runway 1	Nighttime noise abatement procedure on Runway 01L for aircraft to fly a 050 heading; implemented via charted procedure or vector headings from TRACON.	X	
Opposite direction departures hold for east arrivals	ATC will ask aircraft if they're willing to hold for up to 5 minutes for a Runway 10 departure instead of Runway 28 during nighttime hours.	X	
Analyze/research reduced offshore aircraft routing	Analyze increased dispersion of aircraft more offshore than over Pacifica. Determine ability of aircraft to fly a route offshore or compatible land uses.	X	
SSTIK waypoint usage increase	Increase SSTIK waypoint use to 70% during the day and 100% during nighttime hours.	X	

Arrivals Technical Working Group

Members Present

Cliff Lentz	City of Brisbane
Elizabeth Lewis	Town of Atherton
Peter Ohtaki	City of Menlo Park

Staff Present

James Castañeda	Roundtable Coordinator, County of San Mateo
Cindy Gibbs	Roundtable Technical Consultant, BridgeNet International
Harvey Hartmann	Roundtable Technical Consultant
Bert Ganoung	Airport Noise Abatement Office, San Francisco International Airport
Kathleen Wentworth	Deputy District Director, Congresswoman Jackie Speier

Public Present

Meeting Summary

The technical working group discussed items related to arrival operations at SFO. The primary takeaways from the meeting included working with the airport and FAA to encourage use of long-standing noise abatement procedures that are part of the standard operating procedures at NorCal TRACON as well as suggest noise abatement procedures be included as part of TRACON's noise abatement procedures standard operating procedures. Noise abatement procedures that are standard operating procedures at NorCal TRACON are used when air traffic allows.

For the arrivals working group, there were seven items to follow up, analyze, or request to be implemented at NorCal TRACON. For the purposes of this working group, nighttime is defined as 10:00 pm – 6:00 am for arrivals; these are typically the hours of reduced operations that allow for certain noise abatement procedures that aren't feasible during periods of higher traffic.

Short term items were identified as deliverables that could see improvements or implementation within six months; long term deliverables were identified as items that required between six – 18 months to implement.

Roundtable technical staff and SFO Airport Noise Abatement Office staff will be conducting follow up meetings and analysis on each of the items listed.

Item	Deliverable	Short Term	Long Term
Charted Visual	Charted visual to provide precise guidance in VFR conditions for arrival operations		X
Move Menlo intersection east	Determine if there is a location to the east of the existing Menlo intersection, analysis required.		X
Connect STARS to ILS	Eliminate vector between end of STAR and beginning of ILS for arrival procedures via RNP procedure from MENLO to the runway end.		X
Encourage "Descend Via" language	Reduce stair step throttling during descent.	X	
Pt. Reyes Arrival arc increase	Ensure Pt. Reyes arrivals aren't concentrated and create/vector with a fuller arc.	X	
SERFR & BIGSUR Arrivals	Use BIGSUR arrival initially between the hours of 2200-0500 instead of SERFR	X	
Pt Reyes late night arrivals	Reduce Pt Reyes arrivals after 2300, use down the bay		X

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February 1, 2016

TO: Roundtable members and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: REVISED/UPDATED- Proposed Roundtable Budget for FY 2015-2016

At the December 2, 2015 regular Roundtable meeting, the Roundtable directed staff to provide additional clarification on the proposed budget spreadsheet attached to the service report. Attached is a revised spreadsheet that now includes actual expenses incurred and reconciles with the unused fund balance from prior years. Also attached is the updated staff memorandum from September 29, 2015 that discusses in detail the proposed budget for Fiscal Year 2015-2016.

UPDATED VERSION
An earlier version of this memo, revised spreadsheet and September 29, 2015 memo attachment was sent as part of the packet. Please disregard those with this version, as this version corrects an unreadable "2015-2016" proposed allocations column in the revised *Expense and Proposed Budget FY 2015-2016* spreadsheet that appeared darken in some printed packets, and 2) errors/typos contained within the September 29, 2015 memo that did not reconcile with the new spreadsheet. We apologize for any confusion.

ATTACHED:

1. Service Performance Report and Proposed Roundtable Budget for FY 2014-2015, dated September 29, 2015 (*updated February 1, 2016*).
2. Expense & Proposed Budget FY 2015-2016 spreadsheet (*updated February 1, 2016*).

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September 29, 2015
(Updated February 1, 2016)

TO: Roundtable members and Interested Persons

FROM: James A. Castañeda, AICP, Roundtable Coordinator

SUBJECT: Service Performance Report and Proposed Roundtable Budget for FY 2014-2015

Staff has prepared a draft Roundtable Budget for the current FY 2015-2016 for the Roundtable to review and consider at the October 7, 2015 Regular Meeting.

On September 28, 2015, the Work Program Subcommittee reviewed and discussed the draft budget, and recommending the Roundtable consider and adopt the budget contained within this memorandum.

As part of preparing the draft budget, staff also has prepared a brief review of the work and services provided by staff during the previous fiscal year, as well as an overview of the expenditures incurred during that time.

COUNTY SERVICE REPORT

BACKGROUND

On July 1, 2012, the City and County of San Francisco and the County of San Mateo entered into a three year agreement to provide coordinating services for the SFO Airport/Community Roundtable ("Roundtable") in their role to identify noise impacts and reduction measures. The agreement contract required the following from the County of San Mateo:

- Planner (half-time position) as Program Coordinator
- Retain qualified technical consultant for technical support
- Administrative Support to the Program Coordinator
- Roundtable Media Program, Media Support and Website Content
- Provide operating needs of the Roundtable (postage, photocopying, office equipment/supplies, website support, etc.)

San Mateo County ("County") is compensated for the aforementioned requirements from the Roundtable Trust Fund, which the funding is contributed partially from the City and County of San Francisco Airport Commission ("SFO") and the Roundtable membership's annual dues.

As part of this agreement, the County is to provide a report to SFO that generally describes the work performed for the Roundtable by County staff. That report is as follows:

SERVICE DETIALS

A. Planner (half-time position) - Program Coordinator

Per the established agreement, San Mateo County assigns a Planner from the Planning & Building Department to act as Program Coordinator at a half-time (20 hours/week, or 1,040 hours annually) position. The typical assigned Coordinator tasks performed and completed in FY 2014-2015 by the Coordinator include (but not limited) to the following:

- Maintain communications with Airport staff regarding Roundtable agenda items, Work Program items, noise complaints, monthly noise reports, quarterly reports, and related items.
- Retain and manage a technical consultant to provide technical support to the Roundtable (BridgeNet International).
- Coordinate, review, and approve the work products and monthly billing per the scopes of work of the technical consultant.
- Directs/assigns administrative assistance work to available County Planning & Building administrative staff when needed.
- Administrative support to Roundtable including preparation of materials for agenda items, annual draft budget, meeting summaries, and preparation and distribution of monthly agenda packets.
- Attend all Regular Roundtable Meetings, workshops and subcommittee meetings.
- Update website as necessary.

In addition to the listed tasks necessary for typical Roundtable operations, the following tasks have also have either been completed or ongoing:

- Implementation of an "eNews" email distribution general Roundtable announcements and aircraft noise related news and information
- Modernization of meeting packet presentation and distribution

B. Retain qualified technical consultant for technical support

This effort was conducted and completed in September 2012. On October 3, 2012, the Roundtable accepted a three-year agreement with BridgeNet International, who began technical support services to the Roundtable November 2012. Their service to the Roundtable will continue through June 30, 2016 in order to maintain service through recent high priority assignments, and to start the next technical support contract at the beginning of the fiscal year. Staff will circulate a Request for Proposal to review and evaluate potential qualified technical consultants prior to this date.

C. Administrative Support to the Program Coordinator

As part of the County service structure, the Program Coordinator has utilized County Planning administrative staff to assist the Roundtable when necessary.

D. Roundtable Media Program, Media Support and Website Content

During the course of the current fiscal year, staff has maintained and updated the Roundtable's website where necessary with agendas, minutes, published reports, and other relevant information. Staff has created an e-mail distribution to lists to cities and other interested parties for important noise impact announcements. Earlier this summer, staff implemented an "eNews" distribution designed to give periodic updates, news and information to Roundtable members and interested parties between meetings and other events. Staff will continue explore other media opportunities with resources available.

E. Provide operating needs of the Roundtable (postage, photocopying, office equipment/supplies, website support, etc.)

County staff over the course of the current fiscal year has provided all materials necessary for the Roundtable's operations. This includes expenses incurred related to the Fly Quiet Awards expenses, meeting supplies, as well as independent data services and storage.

BUDGET EXPENDTURES FY 2014-2015

A. Income

In the previous fiscal year, all excepted sources of funding with the exceptions of three cities were received (staff is following up with those outstanding dues). This included contributions from SFO, Roundtable member cities, County of San Mateo and C/CAG Airport Land Use Committee. A remaining balance of $118,122 from FY 2013-2014 was carried over as a result of the allocated contingencies funds being utilized. Total funded balance in FY 2014-2015 was $248,372.

As a result of the large surplus due to unused contingency funds and other allocations, SFO requested that staff evaluate options to reduce the surplus. Staff elected to collect half of SFO contributions for FY 2014-2015 only, resulting in a total contribution of $110,000. All other contributions remained at half of the normal dues as practiced since FY 2011-2012 on a year-by-year temporary basis.

B. Expenditures

At the end of FY 2014-2015, the Roundtable Trust Fund incurred approximately $168,491 in expenditures.

The expenditures included the allocated staff and consulting support cost of $163,528, which did not exceed allocated amounts as set from the adopted FY2014-2015 budget.

Roundtable administration/operational costs accounts for $1,490 of the allocated $4,300. Postage and printing did not meet or exceed the allocation, as no additional meetings were required, but also staff reduced cost by limiting printing of packets in black and white, limiting printed distribution, and encouraging use of the electronic version of the meeting packets. Website allocations were utilized to renew the Roundtable's domain, as well as pay the annual dues for webhosting. A total of $633 was used for general supplies, equipment exclusive for Roundtable's use, mileage reimbursements, FlyQuiet Awards trophies, and meeting supplies.

During FY 2014-2015, allocations were established to allow the Roundtable coordinator and interested Roundtable members to attend the UC Davis Noise Symposium. This year, the Roundtable Chair and Vice-Chair attended the meeting, and funds were allocated for such. The Roundtable coordinator was not in attendance.

Starting with the adoption of the budget for FY 2012-2013, contingency funds were allocated in order to cover unanticipated costs associated with additional work required of the technical consultants or other expenses not originally accounted for with the adoption of the budget during the course of the upcoming fiscal year. During the FY 2014-2015, staff utilized funds from the General contingency to purchase a new projector to use at subcommittee meetings. No funds were utilized from the Aviation Consultant Contingency. All unused amounts will roll over as additional funds for FY 2015-2016.

PROPOSED FY 2015-2016 BUDGET

BACKGROUND

The Roundtable is funded by its membership. The annual membership contributions are maintained in a Roundtable Trust Fund. The County of San Mateo Planning and Building Department, on behalf of the Roundtable, administer the fund. All Roundtable expenses, such as staff support, technical support consultant contracts, office supplies/equipment, mailing/photocopying costs, etc. are paid from that Fund. Any monies that are not spent each year (Roundtable Fund Balance) are added as revenue to the budget for the following fiscal year. All staff support and professional consultant services are provided to the Roundtable through the County of San Mateo Planning and Building Department. The amounts for these support services are shown as budgeted expenditures in the annual Roundtable budget.

BUDGET DISCUSSION

The expected funding sources for the FY 2015-2016 include the following: 1) the San Francisco Airport Commission, 2) Roundtable member cities (18 cities), 3) the County of San Mateo, and 4) the City/County Association of Governments of San Mateo County (C/CAG), for a representative of the C/CAG Airport Land Use Commission (ALUC), and 5) the estimated Roundtable fund balance from FY 2012-2013.

In the summer for 2015, SFO and the County agreed on a new three year contract to provide the same services agreed upon with the 2012-2015 contract. As part of this new contract, the amounts contributed by SFO were reduced from $220,000 per year, to $175,000 in light of the Roundtable's large unallocated year-to-year surplus. SFO has supported the Roundtable through fiscally difficult years allowing for the Roundtable to temporarily reduce member cities' dues in order to provide financial relief to encourage ongoing participation. For FY 2015-2016, the Work Program Subcommittee is recommending that the dues remain at the temporary 50% dues for member cities, the County of San Mateo, and C/CAG. The contributions are as follows:

San Francisco Int'l Airport:	$175,000
Member Cities (18 cities):	$750
County of San Mateo:	$6,000
C/CAG:	$750

Expected Funding Sources

A. Annual Funding from the San Francisco Airport Commission

The Commission's contribution for FY 2014-2015 is $175,000.

B. Annual Funding from Other Roundtable Members

The annual funding amounts from the other Roundtable members (18 cities, the County of San Mateo, and C/CAG for the C/CAG Airport Land Use Committee (ALUC)) will be at the original normal fees, resulting in the following dues: Cities - $750 each; County - $6,000, and C/CAG - $750.

C. Roundtable Fund Balance from the Prior Fiscal Year

The Roundtable fund balance from the previous fiscal year (FY 2014-2015) is $79,881. This is the balance after closeout of all prior contract obligations from that fiscal year, as well as contingencies funds that were not utilized.

Potential Funding Allocations for FY 2015-2016

A. Staff and Consultant Support Services - $183,000

Funding for staff support to the Roundtable will consist of the following:

1. **Roundtable Coordinator ($113,000)**. This amount represents a reimbursement to the County of San Mateo to provide half-time Planner support to the Roundtable. This fee is the half-time loaded wage rate for a Planner III provided from the county that includes all administrative support to the coordinator to conduct meetings and Roundtable business. This amount is unchanged from FY 2014-2015.

2. **Roundtable Aviation Consultant for Technical Support ($70,000)**. This is not to exceed contract amount to provide the Roundtable with Aviation Technical Support. This amount is unchanged from FY 2014-2015.

B. Roundtable Administration/Operations - $3,500

1. **Postage/Photocopying ($1,500)**. This amount represents a reimbursement to the County of San Mateo for costs associated with reproduction of meeting materials and postage. This amount is considerate of electronic distribution of materials to offset costs when possible. This amount is lowered from the allocated amount from FY 2014-2015, as cost for publication has been lower than expected. The proposed reduction still allows for packets for additional meetings the Roundtable may elect to have as necessary.

2. **Website ($200)**. This amount represents a reimbursement to the County of San Mateo for costs associated with paying website hosting dues and renewal of domain registration. Maintenance of the website will be performed by the Roundtable Coordinator. This amount is unchanged from FY 2014-2015.

3. **Data Storage and Conference Services ($800)**. This amount represents a reimbursement to the County of San Mateo for the cost associated with maintaining all of the Roundtable's files and archives to Internet based storage. In the last year, the need for online conference services has risen due to expanding subcommittee meeting services for remote members. As a result, this amount is an increase of $400 from FY 2014-2015 in order to offer expanded remote meeting services to members.

4. **Supplies/Equipment ($1,000)**. This amount represents a reimbursement to the County of San Mateo to provide supplies and equipment to the Roundtable Coordinator and administrative support staff when needed, as well as supplies used during meetings, including the FlyQuiet Awards in the spring. This amount is a reduction from FY 2014-2015.

C. Projects, Programs, and Additional Allocations - $10,850

For FY 2014-2015, the Roundtable allocated additional funds to cover expenses associated with attendance at noise conferences, TRACON field trips, and subscription to aircraft noise publications. With the Roundtable's 35th Anniversary occurring in 2016, funds are also proposed for allocation to hold a special event as in the past for the 25th and 30th Anniversary's.

1. **Noise Conference Attendance, Coordinator ($3,000)**. This amount represents a reimbursement to the Coordinator for attendance to Aircraft Noise related conferences such as the annual UC Davis Noise Symposium held in the spring, National Organization to Insure a sound Control Environment (N.O.I.S.E.) legislative summit, and/or other aircraft noise related conferences that would be beneficial to the Roundtable. This amount is unchanged from FY 2014-2015.

2. **Additional Noise Conferences Attendees ($4,000).** This amount represents the cost associated with additional Roundtable member attendance to Aircraft Noise related conferences such as the annual UC Davis Noise Symposium held in the spring, National Organization to Insure a sound Control Environment (N.O.I.S.E.) legislative summit, and/or other aircraft noise related conferences that would be beneficial to the Roundtable. Estimated cost per person is $2,000 and allows for up to two members to attend one conference. This amount is unchanged from FY 2014-2015.

3. **TRACON Field Trip ($1,500).** This amount represents the estimated cost associated with providing transportation and lunch to members for a field trip to the NorCal TRACON facility, normally in conjunction with the Oakland Noise Forum. This amount is unchanged from FY 2014-2015.

4. **Airport Noise Report newsletter subscription ($850).** This amount represents the annual subscription dues for the Roundtable to receive the Airport Noise Report to help keep Roundtable staff and members informed of news related to aircraft noise. This amount is unchanged from FY 2014-2015.

5. **LAX Roundtable Attendance, Coordinator ($1,000).** This amount represents a reimbursement to the Coordinator to attend an LAX Roundtable meeting. In the past, the Roundtable has sent the Coordinator to observe their practices and exchange information with their staff. This item was introduced last year as part of the adopted Work Program for FY 2014-2015. This amount is unchanged from FY 2014-2015

6. **Join National Organization to Insure A Sound Control Environment ($0).** This amount represents the cost associated with membership with National Organization to Insure a sound Control Environment (N.O.I.S.E.). While funds were allocated in FY 2014-2015 to joining pending investigation, allocations were not utilized to participate in that fiscal year. The Work Program Subcommittee recommended as part of the proposed Work Plan for FY 2015-2016 for staff to continue to investigate the benefits of the Roundtable's participation with the organization, and present to the Roundtable at a future date for their consideration. At this time the amount allocated is zero until the Roundtable has committed to participation with organization.

7. **Roundtable 35th Anniversary Event ($1,000).** On June 1, 2016, the Roundtable will celebrate its 35th year since its first meeting held on June 1, 1981. The Roundtable has traditionally celebrated landmark years, such as the 25th and 30th anniversaries, during the June regular meeting by honoring the accomplishments and diligent work the Roundtable has done over the years. The event normally includes guest speakers and other commemorative activities. The proposed allocation covers food and beverages to be provided, any associated venue cost, as well as publication materials to be distributed at the event.

D. Contingency Funds - $40,000

This amount will be reserved as a contingency for any unforeseen costs associated with any work that is unanticipated/out-of-scope for Roundtable staff and Aviation consultants for Technical Support. The total estimated amount is $40,000, which is split equally between a contingency for the Aviation Consultant and a General Contingency. This amount is unchanged from FY 2014-2015.

Attachments:
Revised Expense Report and Proposed FY 2015-2016 Budget (*February 1, 2016*)

SFO Airport/Community Roundtable - Expsense Report & Proposed Budget FY 2015-2016

Updated February 1, 2016

A EXPECTED FUNDING

FUND SOURCE	2012-2013 EXPECTED	2012-2013 RECEIVED	2013-2014 EXPECTED	2013-2014 RECEIVED	2014-2015 EXPECTED	2014-2015 RECEIVED	2015-2016 EXPECTED
1 San Francisco Airport Commission	*$222,000*	$220,000	*$220,000*	$220,000	*$220,000*	$110,000	$175,000
2 Roundtable Member Cities (18 Cities)	*$13,500*	$13,500	*$13,500*	$13,500	*$13,500*	$13,500	$13,500
3 County of San Mateo	*$6,000*	$6,000	*$6,000*	$6,000	*$6,000*	$6,000	$6,000
4 C/CAG Airport Land Use Committee	*$750*	$750	*$750*	$750	*$750*	$750	$750
5 Unused Fund Balance from Previous Year	*$2,124*	$2,124	*$69,457*	$69,457	*$118,881*	$118,122	$79,881
TOTAL:	***$242,374***	**$242,374**	***$309,707***	**$309,707**	***$359,131***	**$248,372**	**$275,131**

B POTENTIAL FUNDING ALLOCATIONS

	2012-2013 ALLOCATED	2012-2013 EXPENDED	2013-2014 ALLOCATED	2013-2014 EXPENDED	2014-2015 ALLOCATED	2014-2015 EXPENDED	2015-2016 ALLOCATED
STAFF/CONSULTANT SUPPORT	***$190,016***	**$166,683**	***$183,000***	**$185,863**	***$183,000***	**$163,528**	**$183,000**
1 Count of San Mateo Cooridnation Services	*$120,016*	$120,016	*$113,000*	$113,000	*$113,000*	$113,000	$113,000
2 Roundtable Aviation Technical Consultant	*$70,000*	$46,667	*$70,000*	$72,863	*$70,000*	$50,528	$70,000
ADMINISTRATION / OPERATIONS	***$4,800***	**$4,120**	***$4,100***	**$2,988**	***$4,300***	**$1,490**	**$3,500**
1 Postage / Printing	*$3,500*	$2,984	*$2,500*	$1,616	*$2,500*	$529	$1,500
2 Website	*$200*	$0	*$200*	$152	*$200*	$83	$200
3 Data Storage & Conference Services	*$300*	$250	*$400*	$250	*$400*	$246	$800
4 Miscellaneous Office Expenses/Equipment	*$800*	$886	*$1,000*	$969	*$1,200*	$632	$1,000
PROJECTS, PROGRAMS, & ADDITIONAL ALLOCATIONS	***$0***	**$0**	***$15,350***	**$2,734**	***$15,350***	**$3,473**	**$10,850**
1 Noise Conferences Attendance, Cooridnator	*$0*	$0	*$2,000*	$1,255	*$3,000*	$0	$3,000
2 Noise Conferences Attendance, Members	*$0*	$0	*$12,000*	$0	*$4,000*	$2,333	$4,000
3 TRACON Field Trip(s)	*$0*	$0	*$500*	$629	*$1,500*	$0	$1,000
4 Airport Noise Report subscription	*$0*	$0	*$850*	$850	*$850*	$850	$850
5 N.O.I.S.E.					*$5,000*	$0	$0
6 LAX Roundtable Attendance, Cooridnator/Staff					*$1,000*	$290	$1,000
7 35th Roundtable Anniversary Event							$1,000
CONTINGENCY FUND	***$47,558***	**$2,114**	***$40,000***	**$0**	***$40,000***	**$0**	**$40,000**
1 Aviation Consultant Contingency	*$20,000*	$0	*$20,000*	$0	*$20,000*	$0	$20,000
2 General Contingncy	*$27,558*	$2,114	*$20,000*	$0	*$20,000*	$0	$20,000
EXPENSES SUBTOTAL	***$242,374***	**$172,917**	***$242,450***	**$191,585**	***$242,650***	**$168,491**	**$237,350**
UNCOMMITTED FUNDS / YEAR END BALANCE	PROJECTED ***$0***	ACTUAL **$69,457**	PROJECTED ***$67,257***	ACTUAL **$118,122**	PROJECTED ***$116,481***	ACTUAL **$79,881**	**PROJECTED $37,781**

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AIRPORT NOISE NEWS

Regular Meeting # 299
February 3, 2016

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Airport Noise Report

A weekly update on litigation, regulations, and technological developments

Volume 28, Number 2 January 15, 2016

Standards

FAA PROPOSES STAGE 5 AIRCRAFT NOISE STANDARDS FOR NEW AIRCRAFT DESIGNS

On Jan. 14, the Federal Aviation Administration proposed establishing more stringent Stage 5 U.S. aircraft noise standards that would apply only to persons submitting applications for new airplane type designs and would not require the phase out of noisier Stage 3 or Stage 4 aircraft.

The FAA action is intended to bring U.S. aircraft noise standards into harmony with International Civil Aviation Organization's Annex 16, Chapter 14 standards that became effective in July 2014.

Because ICAO standards are not technology forcing, the FAA's proposed Stage 5 aircraft noise standards – which are a cumulative 17 dB lower than Stage 3 standards at the three noise measuring points (flyover, lateral, and approach) and a cumulative 7 dB lower than Stage 4 standards – will be able to be met by aircraft manufacturers with no additional cost by the time the standards take effect:

• On Dec. 31, 2017, for large subsonic jet airplanes with a maximum certificated takeoff weight of 121,254 lbs. or greater and;

(Continued on p. 6)

Heathrow

UK AIRCRAFT NOISE POLICY RISKS HEALTH OF OVER ONE MILLION PEOPLE, AEF SAYS

In a report submitted to the British Parliament on Jan. 12, the UK Aviation Environmental Federation (AEF) asserted that the UK Government's aircraft noise policies are risking the health of over one million people in the UK.

AEF argued that "an urgent policy rethink" is needed ahead of upcoming decisions this year on runway expansion in the London area, principles governing NextGen flight path changes, and new regulations on night flights at Heathrow Airport.

The report, *Aircraft Noise and Public Health: the evidence is loud and clear*, contends that aircraft noise "can no longer be considered simply as an inconvenience to people's lives. Major studies have concluded that aircraft noise is negatively affecting people's health and quality of life."

Exposure to aircraft noise can lead to short-term responses such as sleep disturbance, annoyance, and impairment of learning in children, and long-term exposure is associated with increased risk of high blood pressure, heart disease, heart attack, stroke, dementia, and may contribute to long-term mental health issues, AEF said in a press releasing announcing its report. It continues:

(Continued on p. 6)

In This Issue…

Standards, from p. 5

• On Dec. 31, 2020, for smaller regional jets and propeller-driven aircraft with a maximum certificated takeoff weight less than 121,254 lbs.

April 13 is the deadline for submitting public comments on FAA's proposed Stage 5 rulemaking. Information on how to submit comments is included in the agency's *Federal Register* notice available at https://www.gpo.gov/fdsys/pkg/FR-2016-01-14/pdf/2015-32500.pdf

For technical questions concerning this action, contact Mehmet Marsan, Office of Environment and Energy (AEE–100), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267–7703; facsimile (202) 267–5594; email mehmet.marsan@faa.gov.

The FAA said it anticipates that by the time its proposed Stage 5 rule would become effective, "existing noise reduction technologies will allow subject airplanes to comply with these proposed requirements. Accordingly, the proposed rule would have minimal, if any, cost."

"Recently, there have been technological advances in the lower weight classes such as the geared turbofan engine and the development of quieter control surfaces. Given these recent technological advances in lighter airplanes, the FAA expects all manufacturers to be able meet the new standards by the December 31, 2020, date," FAA's notice states.

No Stage 3 or 4 Phase Out

The agency also stressed that the adoption of the Stage 5 noise standard for new airplane type designs "should not be interpreted as signaling the start of an action aimed at phasing out the existing noise standards that apply to the production or operation of current airplane models.

"There are no operational restrictions nor production cutoffs on the use of Stage 3 or Stage 4 airplanes in the United States. The adoption of the Stage 5 noise standard for new airplane type designs does not impact either of these existing noise standards that apply to the production or operation of current airplane models in the United States," FAA said.

However, legislation that would require the gradual phase out of Stage 3 aircraft by 2037 – the Silent Skies Act (H.R. 4171) – was reintroduced in the House in December (27 ANR 188) after failing to pass in the last session of Congress.

The FAA said that its understanding of the ICAO Chapter 14 noise standards that it is proposing to adopt as Stage 5 U.S. aircraft noise standards, require the following:

• An airplane's maximum flyover, lateral, and approach noise levels are each subtracted from the maximum permitted noise levels for Chapter 3 airplanes defined in Annex 16. The differences obtained are the noise limit margins which must be 17 EPNdB or greater when added together; and

• An airplane's maximum noise levels (flyover, lateral, and approach) have to be at least 1 EPNdB less than the maximum permitted noise levels for Chapter 3 airplanes.

UK, from p. 5

"In the UK, over one million people are exposed to aircraft noise above levels recommended for the protection of health, estimated in the report to cost £540 million ($779 million) each year.

"Around 460 schools are exposed to aircraft noise at levels around Heathrow that can impede memory and learning in children while around 600,000 people in the UK are exposed to average aircraft noise levels that risk regular sleep disturbance.

"Aircraft noise policy has not, however, been updated in line with this mounting evidence base, with some noise policies based on studies dating back to the early 1980s.

"The health burden is not just experienced close to airports. The current policy on flight path changes, for example, does not consider the evidence that sudden changes to aircraft noise exposure are likely to lead to much greater disruption for communities, which has implications for health."

The AEF report calls on the UK Government to act now and commit to developing targets to protect the public from the health impacts of aircraft noise and to review all policies in light of these targets. The report also calls for any future aviation policy decisions to assess the impact from aircraft noise on health.

Key aviation policy decisions upcoming in 2016 include:

• A decision on a new runway in the London area, which has already been pushed back due to environmental concerns, and aircraft noise related health costs have already been assessed at costing up to £3.7 billion ($5.3 billion);

• Principles and process of flightpath change decisions; and

• New night flights regulation (limiting the numbers of night flights) at Heathrow, Gatwick and Stansted.

The AEF said that new World Health Organization (WHO) guidelines are also likely to be published, which will provide further incentive for the UK Government to update its policy.

Gov't Delays Decision on Runway Expansion

In December, the UK Government announced that it has decided to delay its decision on where to expand runway capacity in the London area – by either adding a new runway or extended a runway at Heathrow or adding a new runway at Gatwick airport – until next summer so that it can conduct additional analysis of the environmental impacts of the three options.

"The case for aviation expansion is clear – but it's vitally important we get the decision right so that it will benefit generations to come," said UK Secretary of State for Transport Patrick McLoughlin.

"We will undertake more work on environmental impacts, including air quality, noise, and carbon.

We must develop the best possible package of measures to mitigate the impacts on local people."

The UK Government said that the next step "is to con-

tinue to develop the best possible package of measures to mitigate the impacts on local people and the environment. This will include a package for local communities to include compensation, maximizing local economic opportunities through new jobs and apprenticeships, and measures to tackle noise."

"More work will be done on environmental impacts. The government expects the airports to put forward ambitious solutions."

Decision Called Premature

The AEF, a national NGO campaigning on the environmental impacts of flying, said that the UK Government's decision in support of expansion runway capacity in southeast England is premature without knowing whether important environmental questions can be answered.

"Heathrow is one of the biggest sources of CO2 emissions in the UK and people living around the airport are already subject to aircraft noise and pollution levels that impair their health. Yet the Airports Commission failed to show, in two years of work, how a new runway could be compatible with key Government commitments on air pollution and climate change," AEF said.

With key environmental challenges remaining, the Government should not commit to a new runway until and unless environmental questions relating to noise, air quality, and climate can be answered, AEF asserted.

The UK Government's decision to conduct further analysis of the environmental impacts of adding runway capacity near London was likely influenced by a report issued last November by a Parliament Committee that held hearings on the environmental implications of the Airports Commission's recommendation to add a new runway at Heathrow.

Following its hearings, the House of Commons Environmental Audit Committee (EAC) called on the UK Government not to give Heathrow expansion the go-ahead unless it was ready to make a 'step change' in its approach to environmental mitigation.

The Committee's report said that the UK Government would need to demonstrate "a high degree of certainty that their own policies are robust enough to deliver the mitigations required" before giving approval for the airport expansion in southeast England.

AEF believes that the challenges of addressing the environmental impacts of a new runway at either Heathrow or Gatwick "cannot, in reality, be overcome." But Heathrow and Gatwick officials disagree.

Launched in 1975, AEF is the principal UK NGO campaigning exclusively on the environmental impacts of aviation and promoting a sustainable future for the sector.

Its new report can be downloaded at http://www.aef.org.uk/

NASA

NASA RESEARCH COULD SAVE U.S. AIRLINES OVER $250 BILLION

The nation's airlines could realize more than $250 billion dollars in savings in the near future thanks to green-related technologies developed and refined by NASA's aeronautics researchers during the past six years.

These new technologies, developed under the purview of NASA's Environmentally Responsible Aviation (ERA) project, could cut airline fuel use in half, pollution by 75 percent and noise to nearly one-eighth of today's levels, the agency said Jan. 6.

"If these technologies start finding their way into the airline fleet, our computer models show the economic impact could amount to $255 billion in operational savings between 2025 and 2050," said Jaiwon Shin, NASA's associate administrator for aeronautics research.

Created in 2009 and completed in 2015, ERA's mission was to explore and document the feasibility, benefits and technical risk of inventive vehicle concepts and enabling technologies that would reduce aviation's impact on the environment. Project researchers focused on eight major integrated technology demonstrations falling into three categories – airframe technology, propulsion technology and vehicle systems integration.

By the time ERA officially concluded its six-year run, NASA had invested more than $400 million, with another $250 million in-kind resources invested by industry partners who were involved in ERA from the start.

"It was challenging because we had a fixed window, a fixed budget, and all eight demonstrations needed to finish at the same time," said Fayette Collier, ERA project manager. "We then had to synthesize all the results and complete our analysis so we could tell the world what the impact would be. We really did quite well."

Following is a brief summary of each of the eight integrated technology demonstrations completed by the ERA researchers:

• Tiny embedded nozzles blowing air over the surface of an airplane's vertical tail fin showed that future aircraft could safely be designed with smaller tails, reducing weight and drag. This technology was tested using Boeing's ecoDemonstrator 757 flying laboratory. Also flown was a test of surface coatings designed to minimize drag caused by bug residue building up on the wing's leading edge.

• NASA developed a new process for stitching together large sections of lightweight composite materials to create damage-tolerant structures that could be used in building uniquely shaped future aircraft that weighed as much as 20 percent less than a similar all-metal aircraft.

• Teaming with the Air Force Research Laboratory and FlexSys Inc. of Ann Arbor, Michigan, NASA successfully tested a radical new morphing wing technology that allows an aircraft to seamlessly extend its flaps, leaving no drag-induc-

ing, noise-enhancing gaps for air to flow through. FlexSys and Aviation Partners of Seattle already have announced plans to commercialize this technology.

• NASA worked with General Electric to refine the design of the compressor stage of a turbine engine to improve its aerodynamic efficiency and, after testing, realized that future engines employing this technology could save 2.5 percent in fuel burn.

• The agency worked with Pratt & Whitney on the company's geared turbofan jet engine to mature an advanced fan design to improve propulsion efficiency and reduce noise. If introduced on the next-generation engine, the technology could reduce fuel burn by 15 percent and significantly reduce noise.

• NASA also worked with Pratt & Whitney on an improved design for a jet engine combustor, the chamber in which fuel is burned, in an attempt to reduce the amount of nitrogen oxides produced. While the goal was to reduce generated pollution by 75 percent, tests of the new design showed reductions closer to 80 percent.

• New design tools were developed to aid engineers in reducing noise from deployed wing flaps and landing gear during takeoffs and landings. Information from a successful wind-tunnel campaign, combined with baseline flight tests, were joined together for the first time to create computer-based simulations that could help mature future designs.

• Significant studies were performed on a hybrid wing body concept in which the wings join the fuselage in a continuous, seamless line and the jet engines are mounted on top of the airplane in the rear. Research included wind-tunnel runs to test how well the aircraft would operate at low speeds and to find the optimal engine placement, while also minimizing fuel burn and reducing noise.

As part of the closeout work for the ERA project, information and results regarding each of these technology demonstrations were categorized and stored for future access and use by the aerospace industry, and were discussed at the American Institute of Aeronautics and Astronautics SciTech Conference in San Diego the week of Jan. 4.

In Brief…

Noise Maps Approved

FAA announced Jan. 11 that noise exposure maps submitted for Westfield-Barnes Regional Airport and Burlington International Airport meet applicable federal requirements.

For further information, contact Richard Doucette, FAA, New England Region, Airports Division, 12 New England Executive Park, Burlington MA 01803.

No telephone number of email address was provided for Mr. Doucette.

AIRPORT NOISE REPORT

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San Francisco International Airport

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.

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

Center – See ARTCC.

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;00 PM – 9:59 PM) and nighttime (10 pm – 6:59 am) 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 thought there were ten. This results in a 4.77 and 10 decibel penalty

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.

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, Environ 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.

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.

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

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.

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.

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

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