# LAX/COMMUNITY NOISE ROUNDTABLE

## Recap of the Regular Meeting of November 14, 2012

**Roundtable Members Present**

Denny Schneider, Chairman, Westchester Neighbors Association
Carl Jacobson, Vice Chairman, City of El Segundo
Blake LaMar, City of Palos Verdes Estates
Matt Waters, Staff, City of Rancho Palos Verdes
Chad Molnar, City of Los Angeles – CD11
Yvonne Bedford, Ladera Heights Civic Association
John Bailey, Southeast Torrance Homeowners' Association
Martin Rubin, North Westdale Neighborhood Association
Steve May and Rolan Morel, Federal Aviation Administration
Michael Feldman, LAWA

**LAWA and Consultant Staff**

Scott Tatro, LAWA
David Chan, LAWA
Bob Holden, LAWA
Gene Reindel, HMMH
Adrian Jones, Roundtable Facilitator

**Guess Speaker**
Belur (Shankar) Shirvashankara, Boeing

A quorum of the members was present.

**1. Welcome/Review of the Meeting Format**

Roundtable Back-up Facilitator Mr. Adrian Jones welcomed everyone to the meeting and reviewed the meeting format. Mr. Jones indicated that Mr. Alverson was on vacation and would return for the January 2013 meeting.

**2. Call to order**

Roundtable Chairman Denny Schneider called the meeting to order at 7:03 pm PDT in the Samuel Greenberg Boardroom at LAX.

**3. Comments from the Public**

There were no people wishing make public comment, so Chairman Schneider closed the public comment period.

**4. Work Program Item C2 – Presentation on "Flight Demonstrators for Quieter Boeing Airplanes"**

Mr. Belur (Shankar) Shirvashankara of Boeing presented information about Boeing's Quiet Technology Demonstrator programs (Numbers 1 and 2) and the 2012 and 2013 ecoDemonstrator programs. Mr. Shirvashankara also described some of the technological features of Boeing's new 787 Dreamliner aircraft which improve fuel efficiency, reduce noise, and enhance passenger comfort. Shankar also pointed out some of the noise reducing features that have been incorporated into Boeing's next generation 737 aircraft (737Max) and the new 747-8 aircraft. The bullets below provide a general summary of Shankar's presentation:

- Boeing initiated the Quiet Technology Demonstrator 1 (QTD1) program in 2001. The Quiet Technology Demonstrator 2 (QTD2) program commenced in 2005. Unlike earlier Boeing quiet technology initiatives that consisted primarily of wind tunnel tests and static engine tests, the QTD1 and QTD2 programs involved flight testing. Flight tests were performed at an airfield in Montana owned by the Boeing Company. The platform for the QTD1 program was the Boeing 777 aircraft. The platforms for QTD2 program included the 747-8 aircraft and an early prototype of the 787 aircraft.

- The QTD1 and QTD2 programs evaluated a number of quiet engine and quiet airframe technologies, some of which have been incorporated into the design of the 787 Dreamliner and the 747-8 aircraft. Quiet aircraft technologies evaluated during the QTD1 and QTD2 programs include core chevrons, fan chevrons, quieter landing gear, one-piece acoustic inlet barrels, and jointless liner + lip liner.

- The 787 Dreamliner was designed to be fuel efficient, quiet, and comfortable for passengers. Boeing conducted numerous surveys with passengers and developed the cabin with passenger comfort in mind.

- Unique design features of the 787 Dreamliner include larger windows and additional humidity and pressure inside the cabin. The interior of the 787 is also more spacious than comparable aircraft, the ceiling in the galley is 9 feet high, and luggage bins are larger and easier to access than on other aircraft. The use of composites throughout the aircraft and innovative air flow and humidity systems within the aircraft allow the aircraft to be pressurized to 6,000 feet (the average aircraft cabin is pressurized to 8,000 feet).

- Quiet engine technologies that were incorporated in the design of the 787 Dreamliner include fan chevrons, one-piece acoustic inlet barrels, and jointless liner + lip liner. The engines on the 787 Dreamliner (Rolls Royce or GE NX) have a higher by-pass ratio (11) than other aircraft in the U.S. fleet which translates into a quieter and more fuel efficient engine.

- Mr. Shirvashankara presented a chart that showed the departure/takeoff noise footprint for the 787 Dreamliner compared to other aircraft including the 767-300ER

and A330-200. The 85 dBA contour for the 787 Dreamliner is substantially smaller than the 85 dBA contours associated with other aircraft. Mr. Shirvashankara stated that the 787 Dreamliner is 20 dB quieter than ICAO's Chapter 4 certification standard.

- Mr. Shirvashankara presented several slides regarding the new 747-8 aircraft which also incorporates quiet aircraft technologies evaluated during the QTD1 and QTD2 programs. The 747-8 is slightly larger than the 747-400 but has newer engines and a different wing design. The takeoff noise footprint for the 747-8 aircraft is about 30% smaller than the takeoff noise footprint for the 747-400.

- Boeing Company launched its ecoDemonstrator program in 2012. The ecoDemonstrator program is the third quiet technology demonstrator program (QTD3), however, the ecoDemonstrator program also emphasizes technologies that improve fuel efficiency and reduce emissions. The overarching purpose of the ecoDemonstrator program is to accelerate implementation of technologies that reduce aircraft noise, improve fuel efficiency, and reduce greenhouse gas emissions and air pollution. The ecoDemonstrator program also highlights the use of advanced materials (including composites) in aircraft design and is evaluating the feasibility of using biofuels and blended fuels.

- Boeing has partnered with industry, suppliers, and the government to ensure the success of the ecoDemonstrator program. Boeing has worked very closely with the FAA's Continuous Lower Energy, Emissions and Noise (CLEEN) team on several technology demonstrator projects.

- Technologies being evaluated as part of the ecoDemonstrator program include variable area fan nozzles, adaptive trailing edge designs, and regenerative fuel cells. Boeing has also studied noise level reductions associated with modifying the glide slope from 3 degree to 3.5 degree.

Member Michael Feldman asked Mr. Shirvashankara to estimate the average time to market for the various quiet aircraft technologies evaluated in the QTD1, QTD2, and ecoDemonstrator programs. Mr. Shirvashankara stated that most of the technologies described in his presentation took about 5 years to go from design into production. Mr. Shirvashankara noted that the purpose of flight-testing these technologies (i.e., testing these technologies on actual flights rather than running static engine tests on the ground) is to accelerate the adoption of these technologies and to shorten the time to market.

Inglewood Councilman Mike Stevens asked Mr. Shirvashankara to tell him the altitude at which the 787 Dreamliner is the most efficient in terms of noise (i.e., the quietest). Referring to the presentation slide depicting the noise footprint for the 787 Dreamliner, Councilman Stevens also asked if specific arrival and departure procedures at LAX would affect noise levels generated by the 787 Dreamliner. Mr. Shirvashankara explained that the engines on the 787 Dreamliner are most efficient during cruise altitudes, however noise levels generated by the 787 Dreamliner during approach and takeoff are lower than noise levels generated by other aircraft in the U.S. fleet. Mr. Shirvashankara then explained the process used by ICAO to certify aircraft engine noise levels and described the locations where noise level measurements are taken during the aircraft engine certification process. Mr. Shirvashankara added that noise levels generated by 787 Dreamliner operations will vary

somewhat airport to airport based on local conditions and specific arrival and departure procedures.

Chairman Schneider said he is interested in the 3.5 degree glideslope and was wondering if other aircraft can fly this modified glideslope. Mr. Shirvashankara replied that all aircraft can fly the 3.5 glideslope but it is up to the FAA to determine and set the standard glideslope for each airport.

Member Martin Rubin asked how Boeing accounts for variable conditions while conducting noise tests. Mr. Shirvashankara said that Boeing followed specific guidelines as contained in the ICAO and FAA noise certification documents.

**5. Work Program Item A2 – Update on the LAX FAR Part 161 Study**

Mr. Gene Reindel of Harris Miller Miller & Hanson (HMMH) briefed Roundtable members regarding the status of the LAX FAR Part 161 Study. HMMH and LAWA have finalized the public draft of the FAR Part 161 application and conducted the final public workshop for the Part 161 study on November 13, 2012. Mr. Reindel stated that the 45-day public review period for the study began on November 1, 2012 and will close on December 17, 2012. The bullets below provide a summary of Mr. Reindel's presentation.

- Title 14, Part 161 of the Code of Federal Regulations specifies the procedures that airport operators must follow in order to implement a noise or access restriction affecting most types of civilian jet aircraft. Airport operators wishing to implement a noise or access restriction must conduct a variety of technical analyses including a benefit/cost analysis and must prepare a FAR Part 161 application for submittal to the FAA. The FAA must approve the airport operator's FAR Part 161 study/application and associated technical studies and must approve the proposed restriction before it can be implemented by the airport operator.

- To be approved by the FAA, the proposed noise or access restriction must meet six statutory conditions:

    - Is reasonable, nonarbitrary and nondiscriminatory
    - Will not create an unreasonable burden on interstate or foreign commerce
    - Will maintain safe and efficient use of navigable airspace
    - Will not conflict with any existing federal statute or regulation
    - Does not create an unreasonable burden on the national aviation system
    - Was the subject of adequate public notice and opportunity for public comment

- LAWA conducted the LAX Part 161 study to reduce the occurrence and frequency of awakenings for residents in the environs of LAX between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations. LAWA has committed to pursue implementation of this noise restriction in several agreements and public initiatives including LAX/Community Noise Roundtable Work Program Item A2, Master Plan Mitigation Measure MM-N-5, the Stipulated Settlement Agreement, and the Community Benefits Agreement.

- Mr. Reindel described the FAR Part 161 study process which includes six primary steps. The first step is defining the noise problem. Mr. Reindel defined Over-Ocean

Operations, Westerly Operations, and Easterly Operations and explained that the the noise problem being addressed by the LAX Part 161 study is non-conforming east departures between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations. Mr. Reindel stated that on average there are 65 "non-conforming" aircraft departures per year and these departures translate to thousands of nighttime awakenings for residents in the vicinity of LAX.

- Once the noise problem is defined the proposed restriction must be identified. Mr. Reindel stated that proposed restrictions must specify exemptions for certain operations including life flights and military flights. Mr. Reindel added that in the past decade there have been no east departures by "exempt" operations between midnight and 6:30 a.m. when the airport has been in Over-Ocean Operations or Westerly Operations.

- The third step in the FAR Part 161 process is to prepare aircraft operations forecasts for two time periods and for two scenarios – with and without the proposed restriction. The forecasts for LAX were prepared for 2013 and 2018, were determined to be consistent with the FAA's Terminal Area Forecast (TAF) and have been approved by the FAA. Mr. Reindel stated that projected activity levels at LAX will be the same with or without the proposed restriction on east departures since the proposed restriction only effects a small number of flights per year and operators of "non-conforming" flights have several options to comply with the proposed restriction beyond canceling the flights.

- The fourth step in the FAR Part 161 process is determining the benefits and costs of the proposed restriction. Mr. Reindel noted that LAWA has taken a very conservative approach to calculating the costs associated with the proposed restriction and that the cost estimates represent the upper bound of potential costs to the operators of non-conforming flights. Mr. Reindel stated that the benefits associated with the proposed access restriction include reduced fuel burn, reduced air pollution and greenhouse gas emissions, and fewer nighttime awakenings. The proposed restriction also addresses an environmental justice issue since approximately 60% of the residents that experience nighttime awakenings associated with non-conforming easterly departures are minorities and/or low income.

- The fifth step in the FAR Part 161 process is to compare the proposed restriction to non-restrictive alternatives. Mr. Reindel noted that the LAWA noise office currently monitors, identifies, and contacts operators of each non-conforming departure operation and requests a response. Mr. Reindel added that LAWA has concluded that non-restrictive mechanisms to control easterly departures are insufficient and that a formal runway use restriction is the only feasible course of action to address the nighttime awakenings noise problem at LAX.

- FAR Part 161 studies require substantial public outreach and involvement programs. LAWA and the HMMH study team have: (1) given numerous briefings to interested parties including the LAX/Community Noise Roundtable and the Los Angeles Area Advisory Committee; (2) conducted multiple public workshops in November 2006 and November 2012; (3) developed handouts and FAQs; (4) developed a project website: www.laxpart161.com; (5) established a toll-free hotline: (866) 441-4664; (6) established a public docket; and (7) have provided

Spanish translators at all public forums and developed Spanish language translations of all print materials and the website.

- Mr. Reindel concluded his presentation by summarizing next steps which include finalizing study documentation following the close of the public comment period on December 17, 2012 and submittal of the final FAR Part 161 application to FAA Headquarters in January 2013.

Roundtable member Blake LaMar congratulated Mr. Reindel and LAWA staff present at the meeting for a job well done. Member LaMar stated the LAX Part 161 documentation is comprehensive and well thought out. Chairman Schneider agreed with member LaMar's comments regarding the LAX Part 161 documentation and requested that a Roundtable member make a motion to submit a letter to LAWA supporting the analysis and findings contained in the LAX Part 161 study. Member Blake LaMar made a motion to submit a letter to LAWA to express support for LAWA's efforts on the LAX FAR Part 161 Study. The motion was seconded by Member Martin Rubin and carried unanimously. LAWA staff member Scott Tatro stated that LAWA also welcomes comment letters from local agencies and neighborhood groups provided they are submitted before the close of the public comment period (December 17, 2012).

Roundtable member John Bailey asked what would happen if the FAA did not approve the LAX Part 161 application. He further asked if the airlines would voluntarily restrict easterly departures during Over-Ocean Operations and Westerly Operations. Chairman Schneider stated that the airlines that perform non-conforming departures will not voluntarily restrict easterly departures. Scott added that if the FAA does not approve the LAX Part 161 study, LAWA will likely continue with its non-restrictive initiatives to discourage non-conforming east departures.

Member Yvonne Bedford asked if the Roundtable should submit a letter to the FAA to encourage them to approve the LAX Part 161 application. Scott said that once LAWA has formally submitted the LAX Part 161 study to the FAA, the FAA is required to conduct a separate public involvement process. Scott advised the Roundtable to hold off on sending a comment letter directly to the FAA regarding the LAX Part 161 study until the FAA initiates their public comment period next year.

Information on the LAX FAR Part 161 project is available at http://www.laxpart161.com

## 6. Statistical Update on Aircraft Operations

LAWA staff member David Chan presented updated statistics for Roundtable Work Items A9 and A10. Mr. Chan's presentation is summarized below.

### Work Program Item A9: Departures on Runway 25L

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| **Description:** Aircraft departing from Runway 25L create noise disturbances to the communities south of LAX, especially during nighttime hours. |

David explained that Runway 25L is an "outboard" runway and is typically used by arriving aircraft while Runway 25R is an "inboard" runway and is typically used for departure

operations. He also explained that runway closure is a major factor in determining which runway the aircraft can use. For instance, if runway 25R is closed, then aircraft would need to take off on 25L thus causing the increase in 25L departures.

Looking at the statistics on an annual basis, the number of departures on Runway 25L peaked in 2007 and is a result of Runway 25R being closed for a few months during the construction of the center taxiway. During the most recent 13-month timeframe, 25L departures remained at a consistent level from month to month as closure activity was at a relatively low level with the exception of September 2012. During that month, there was an increased in runway closure activity on the south complex resulting in a slight increase in 25L departures and some shift of traffic to the north complex.

David also pointed out that he noticed some aircraft were departing on 25L during the hours of 12 AM to 6:30 AM in September even though runway 25R was not closed, which prompted him to look into it further. He discovered that these are the new large aircraft particularly the A380 and the B747-800 that have expanded windspan, which prevented them from departing on 25R due to insufficient spacing between Runway 25R and Taxiway B. As result, these aircraft need to depart on 25L on the south complex. On the other hand, these aircraft can depart on the north complex off of 24L because adequate spacing is available between Runway 24L and Taxiway E.

David said it is challenging for the FAA to assign 25R departures for cargo and general aviation (GA) aircraft whose facilities are located south of the outboard runway (25L), especially during the daytime and evening hours when traffic volume is high, since these aircraft would need to cross two active runways. Despite this challenge, the FAA has managed to successfully assign more Cargo and GA aircraft on 25R than on 25L for departures as statistics have shown.

David asked FAA representative Rolan Morel if it is possible to minimize the number of aircraft departures on Runway 25L. Mr. Morel explained that airport traffic control tower (ATCT) personnel will assign aircraft to Runway 25R during periods of low traffic but noted that GA and Cargo aircraft that depart on Runway 25R must cross two active runways which is a safety concern due to the potential for runway incursions.

**Work Program Item A10: Turboprop Community Overflights**

**Description:** Turboprop aircraft departing to the west/southwest with destinations to the east overfly the Palos Verdes Peninsula and Torrance enroute to the Seal Beach VOR.

David stated that the annual statistic for turboprop overflights of the Peninsula shows a declining trend over the last decade with average daily overflights decreased from 53 in 2000 to 14 in 2011. Statistic for the past 13 months indicates turboprop overflights have remained relatively stable. Skywest has the most overflights over the Peninsula as it also has the most turboprop operations among the turboprop carriers at LAX.

Inglewood Councilman Mike Stevens asked if altitude restrictions in the vicinity of the PV Peninsula are the same for turboprop aircraft and jet aircraft. He also asked why there were so many turboprop overflights of the PV Peninsula compared to jet aircraft which remain offshore (i.e., are routed further to the south).

Mr. Chan replied that jets and turboprops cannot be on the same altitude since turboprops travel a lot slower than jets. He added that most turboprops are at an altitude between 7,000 and 9,000 feet MSL while jets are at a higher altitude range. He also said that turboprops follow specific procedures that direct them to overfly PV to head to eastern destinations.

Councilman Mike Stevens noted that in the vicinity of Inglewood it seems like turboprop aircraft are given free reign and don't adhere to the same procedures as jet aircraft. Mr. Stevens stated that turboprop aircraft routinely perform short turns over Inglewood when they are arriving from the north.

Chairman Schneider stated that the issue of short turns is being evaluated in connection with another Roundtable Work Program item (Item A8).

FAA Representative Rolan Morel noted that FAA ATCT must maintain separation between slower aircraft (turboprops) and faster aircraft (jets) in the vicinity of LAX. He added that turboprops are operating in the Class B airspace which requires constant coordination and communication with FAA air traffic controllers to ensure safe flight operations.

Mr. Tatro added that LAWA and the Roundtable have been working with the FAA for years to address turboprop and jet overflights of the PV Peninsula and that the results of these efforts have been a substantial reduction in the number of aircraft flying over the PV Peninsula.

Mr. Chan continued by noting that jet overflights over the Peninsula remain at a very low level, representing about two to three percent of all southbound jet departures. He added that most of these jets are at or above 13,000 ft when they fly over the Peninsula.

Roundtable Member Blake LaMar noted that there were 19 jet overflights of the PV Peninsula below 10,000 feet according to the chart on slide 14. Mr. LaMar stated that the 19 jet overflights below 10,000 feet are not visible on the flight track map that appears on slide 13. Mr. Chan replied that the flight track map on Slide 13 is illustrative and not a representation of the actual flight tracks flown by jet aircraft in the vicinity of the PV Peninsula.

The complete presentation on the statistical update on aircraft operations can be found on the Roundtable webpage at http://www.lawa.org/LAXNoiseRoundTable.aspx.

**7. Aviation Noise News Update**

Adrian Jones reviewed several recent aviation noise news items for the Roundtable including:

- A news report regarding the FAA's newly adopted Stage 3 noise standards for new helicopter type designs. The Stage 3 noise standards for helicopters are (1) 3 EPNdB more stringent than Stage 2 standards for takeoff, (2) 4 EPNdB more stringent than Stage 2 standards for overflights, and (3) 1 EPNdB more stringent than Stage 2 standards on approach. FAA Representative Steve May informed Roundtable members that the FAA conducted an informational meeting with helicopter operators and other stakeholders in the Los Angeles region on October 29th. Mr. May indicated that the meeting was well attended and that some progress was made related to Los Angeles residents concerns with helicopter noise.

- A Government Accounting Office (GAO) presentation to the Senate Commerce, Science, and Transportation Committee regarding a recent GAO report regarding the FAA's enforcement of AIP Noise Grant Eligibility criteria. Inconsistencies in the FAA's program criteria for interior noise level assessments and the FAA's inability to uniformly enforce the accuracy of noise exposure maps are two areas of concern raised in the GAO's report.

- A news story regarding a recent presentation by the Deputy Director of the FAA's Office of Planning and Programming (Elliot Black) about Program Guidance Letter (PGL) 12-09 at the 12th Annual Airport Noise Mitigation Symposium in Buffalo. Mr. Black described some revisions that will be made to the PGL and indicated that he is conducting meetings with consultants and FAA staff in all FAA regions to explain the PGL and to identify and resolve any inconsistencies in the way FAA personnel are interpreting the PGL.

- A news story about a webinar conducted by the FAA to explain the FAA's new policy regarding access to and use of National Airspace System (NAS) data including use of Automated Radar Terminal System (ARTS) data by airport noise management offices.

To ensure adequate time for Roundtable member discussion, Mr. Jones did not present his slides regarding:

- A news story regarding a presentation at the 12th Annual Airport Noise Mitigation Symposium in Buffalo regarding the use of supplemental noise metrics to evaluate changes in noise exposure associated with the implementation of very precise RNAV GPS routes under NextGen.

- A news story regarding the FAA's new Categorical Exclusion (CATEX) provisions for performance based navigation (PBN) procedures as defined in the FAA Modernization and Reform Act of 2012.

The complete aviation noise news update can be found on the Roundtable webpage at http://www.lawa.org/LAXNoiseRoundTable.aspx.

**8. Roundtable Member Discussion**

FAA Representative Steve May updated the group on the status of the letter submitted by the Roundtable to the FAA with Roundtable recommendations related to the Optimization of Airspace and Procedures in the Metroplex (OAPM) process. Mr. May stated that Mr. Dennis Roberts who leads the FAA's Metroplex program out of Washington D.C. has been asked to take action on the letter submitted by the Roundtable. Mr. Roberts has agreed to attend the January 9, 2013 meeting of the Roundtable to brief members on the status of the OAPM for the Southern California Metroplex.

**9. Review of Roundtable Actions and Requests from Members**

Adrian Jones reviewed the Roundtable's action and request items during the meeting, which included:

**Formal Action Items**

The Roundtable decided to submit a letter to LAWA to express support and appreciation of LAWA's efforts on the LAX Part 161 Study to restrict nighttime non-conforming east departures when LAX is in Over-Ocean or Westerly Operations.

**Requests from Members**

Member Martin Rubin requested that the Roundtable discuss the departure delay issue between SMO and LAX at a future meeting.

## 10. Adjournment

Chairman Schneider noted that the next LAX Roundtable meeting is scheduled for Wednesday, January 9, 2013 and adjourned the meeting at 9:04 pm.