

**Key West International Airport
Ad-hoc Committee on Airport Noise**

Agenda for Tuesday, October 2nd, 2012

Call to Order 2:00 pm Harvey Government Center

Roll Call

- A. Review and Approval of Meeting Minutes
 - 1. For August 7th, 2012
- B. Discussion of Part 150 Study Update -
 - 1. Role of the FAA and the Part 150 Process
 - 2. Sections 1 and 2 Comments
 - 3. Forecast of Operations
- C. Other Reports:
 - 1. Noise Hotline and Contact Log
 - 2. Airport Noise Report
- D. Any Other Discussion
- E. Next meeting: December 4th, 2012

2012 Schedule of Meetings

February 14 th	April 3 rd	June 5 th
August 7 th	October 2 nd	December 4 th

ADA ASSISTANCE: If you are a person with a disability who needs special accommodations in order to participate in this proceeding, please contact the County Administrator's Office, by phoning (305) 292-4441, between the hours of 8:30 a.m. - 5:00 p.m., no later than five (5) calendar days prior to the scheduled meeting; if you are hearing or voice impaired, call "711".

Meeting called to order by Sonny Knowles at 2:00 PM.

ROLL CALL:

Committee Members in Attendance:

Dan McMahon
Sonny Knowles
Robert Padron
Dr. Julie Ann Floyd
Marlene Durazo
Marvin Hunt
Harvey Wolney

Staff and Guests in Attendance:

Peter Horton, KWIA.
Deborah Lagos, URS Corp.
Dan Botto, URS Corp.
R. L. Blazevic, Resident
Ashley Monnier, NASKW
Danny Kolhage, Monroe County Clerk of the Court
T.J. Turnbull, representing A&J Menendez

Quorum was present

Commissioner Wigington (Committee Chair) and Kay Miller (Committee Vice-Chair) were not in attendance. Sonny Knowles and Dr. Floyd operated as temporary chair.

A discussion was held regarding the open alternate position on the committee. Peter Horton mentioned that Dr. Floyd had previously indicated she had someone who would be interested in the position. Sonny Knowles asked if the position was a noise taker or noise maker. Deborah Lagos informed the committee that the position is a noise maker. Peter Horton believed the person was an incoming station chief for Southwest Airlines, but is also heavily involved on the general aviation side of things. Dr. Floyd mentioned that Adam Rossman would be interested, but he is currently working for Air Tran and is based out of Orlando, Florida. Sonny Knowles inquired about Nikali Pontecorvo. Dr. Floyd remarked that he had shown

interest. Sonny asked that Dr. Floyd nominate Mr. Pontecorvo, which she obliged, and Sonny seconded the nomination. Peter Horton said if there are no objections he will pass this name on to the Commissioner to put on the agenda.

Review and Approval of Meeting Minutes for the June 5, 2012 Ad Hoc Committee Meeting

Dr. Floyd asked if everyone had a chance to review the meeting minutes from June 5, 2012 and if there were any revisions or corrections. Marlene Durazo mentioned changing the comma to a period in the first sentence of the last paragraph on page 2. Dan Botto said this will be done before the final goes out. Sonny Knowles motioned that the minutes be accepted with the proposed revision. Dan McMahon seconded the motion and the motion passed.

Discussion of Part 150 Study Update

Dr. Floyd began the discussion of the Part 150 Study Update.

Role of the FAA

Dan Botto discussed the role of the FAA in the Part 150 Study and process. A handout describing this role and the process was provided to the Committee at the behest of the FAA, and will be provided at each meeting. The Committee was reminded that the FAA does not automatically approve all recommended measures of the Part 150 Study.

Dan explained that the FAA also does not approve the NEMs, they strictly determine if the NEMs are in compliance with the Part 150 requirements, and will issue a Notice of Compliance in the Federal Register. They will make sure that URS and the Airport are following the rules and regulations that govern the Part 150 Process and that the public was included; additionally, they will provide guidance and instruction as to items that were not covered or covered improperly.

Dan further mentioned that the approval role of the FAA occurs during the Noise Compatibility Program [NCP] where recommendations are made for operational and/or land use mitigation measures, like the NIP. That is where the FAA will approve or disprove based on the Part 150 requirements.

Sonny Knowles asked what kind of timeframe we are looking at. Dan Botto said we expect to have the noise contours to the committee by the first meeting of 2013. Peter Horton reminded the committee that we would still like to have the US Navy radar data for flight tracks and fleet mix data. Ms. Ashley Monnier of NASKW said she would try to get the data to us as soon as possible.

Dan Botto also explained that the sections of the NEM are going to the FAA for initial review prior to being provided to the committee. Sonny Knowles asks if this is a good or bad thing. Deborah Lagos said this is mostly a good thing because the FAA is not seeing the entire document for the first time when they do their final review and there will not be any unexpected comments when we get to the final review. Furthermore, the project will be getting FAA input throughout the program. The only negative may be the extra level of review may slow the progress early on, but it should reduce the time needed for the final review.

Section 1 and 2 of the NEM Documentation

Dan Botto explained that each member of the committee and the other attendees have a copy of Sections 1 and 2 of the NEM documentation. He explained that these sections have been through an initial FAA review and are now provided to the committee and attendees for review and comment. Dan explained that any comments by those reading would be incorporated into the next version of the document.

Mr. Blazevic explained the reason for the issue for the parcel indicated in Figure 1-4 is that it is zoned residential, but the property is listed as environmentally sensitive. He asked why doesn't the local government purchase the property. Dan Botto explained that purchase of this property was recommended and approved in the 1999 Part 150. Mr. Blazevic also mentioned that the location of a public access boat ramp immediately adjacent to the property has limited interest in developing the property, and has led to the property being used as a catch all for parking and dumping. Peter Horton explained that initially a local politician had shown interest in turning the property into a public park, but public parks require money for maintenance and furthermore may become gathering places for less than desirable activities within a residential area.

Peter Horton also discussed the vacant property indicated in Figure 1-3. He explained that this property was 10 acres, but 9 of the acres are protected land. He indicated that the airport had been trying to get money from the FAA to purchase this property but the asking price had been too high prior to just recently. The FAA had approved this purchase and the offer had been made, but the seller's bank had to withdraw because it had not cleared the foreclosure. Peter further explained that only one acre of the property could be considered upland instead of wetland, but the airport's thought was to use the one upland acre as mitigation, and put the remaining 9 acres into a perpetual conservation easement as the rest of the mangroves surrounding the airport; to be used for mitigation for later projects. The initial project to be mitigated using the one acre would be a string of general aviation hangers on the already scarified property along the south side of the runway and to the west of the existing overflow parking.

Mr. Blazevic asked if the airport owned the property out to Roosevelt Blvd. on the east end of the airport. Dan Botto explained that the airport property extends to Roosevelt Blvd on that end.

Peter Horton explained that the 1999 Part 150 included 6 recommendations and the airport has currently performed 4 of the recommendations. The purchase of property was not actively pursued because it was felt that the Noise Insulation Program (NIP) would give the airport and the FAA a better return on the investment. The airport provided noise insulation on approximately 300 homes with approximately \$20 million in funding from the FAA.

Mr. Blazevic and Peter Horton explained that the owner of the property at the east end of the airport wanted to put a 40 place RV park and a single family residence on the property.

Dr. Floyd mentioned that the report also contains an analysis and synopsis of the calls to the Noise Hotline. Dr. Floyd felt that it was important that the people that do call in know that their voices are heard and considered. Dan Botto mentioned that the number of complaints have been dropping on an annual basis. Dr. Floyd mentioned that the phone number for the hotline is not well known and Peter Horton mentioned that we have not advertised the number in a few years.

Marlene Durazo said that she would call when the aircraft were to the west of the centerline and would fly too close to Key West by the Sea. Peter Horton mentioned that with the airlines using the 737 and the regional jet, aircraft are more likely to be on a long stable straight in approach and have less noise than other approaches, including the Garrison Bight approach.

[Unknown] asks why the number of noise complaints has been dropping. Peter Horton explained that it could be trying to get Linda Avenue involved and the reduction of flights due to the use of larger aircraft. Deborah Lagos said that the Linda Avenue calls would have ended when Linda Ave was included in the NIP in 2008. Further, the large number of complaints in 2009 were from KWBTs trying to be included in the NIP. The number may have dropped due to the request by the FAA to update the Part 150 prior to any additional NIP activity.

Dr. Floyd would like the noise hotline number to be advertised so the local population would be reminded that the hotline is available.

Sonny Knowles asked the residents of KWBTs if they felt the aircraft overflew the property and if they felt they got noise and soot from the aircraft. Marlene Durazo and Harvey Wolney felt that yes they do experience this.

Peter Horton felt that the best way to provide the NIP to KWBTs would be to have the radar data from the Navy to prove aircraft are flying over and closer to KWBTs than previously thought or modeled. Peter Horton then showed the figures provided by URS with the existing radar data currently being used for modeling purposes. Dan Botto then went on to explain that the previous modeling had aircraft turning from a perpendicular path from the runway but the radar data shows that there are many flights that come from the east that approach along the south side of the island then turn perpendicular to the runway before turning to the runway heading.

Dan Botto explained that the maps provided for this meeting were a further refinement of the density plot maps provided in the June meeting. These maps show the radar data as actual flight tracks. These tracks indicate that currently aircraft pretty much fly over the entire island. Dan Botto also explained that

there is an article in the current batch of Noise Reports that discusses how the new RNAV flight procedures are causing an increase in noise complaints because these procedures are focusing the noise on a very defined path instead of the usual spread of flight tracks. It is possible that the current spread at Key West may actually reduce noise by spreading flights over a large area.

Dan Botto also mentions that the radar data indicates a much greater number of flights approaching the airport along the south side of the island than previously thought. Dan discussed the fact that the previous Part 150 had no departures maintaining runway heading when departing runway 09. It appears that flights to Miami maintain runway heading past NASKW instead of turning north prior to NASKW. How this will affect the noise contours is unclear, but it will certainly change the contours and will make the INM model more accurate. Peter Horton said that the ATR currently flying to Miami will be replaced by the EMB135. Deborah Lagos said we may have to interview American Eagle to determine if their flight procedures will change with the new aircraft.

Dr. Floyd asked that when we look at these tracks, we should understand that the figures are not 3-d, and that even though the west end of the island is as covered with tracks as near the airport, the aircraft are much higher and are therefore less noisy to those on the ground.

Dan Botto explained to Ashley Monnier, the NASKW representative, that we would still prefer the Navy radar data because it provided almost full coverage of the flights, whereas the radar data we are currently using only contains about 60 percent of the known activity. This data, known as ASDI, only contains the flights on filed flight plans or flying IFR into or out of the airport. Sonny Knowles asks if the data contains any VFR flights and Dan Botto explains that it records only IFR and filed flight plans. We would like to use the Navy data because it provides an even more accurate picture of the airport activity.

Dan explained some of the features the committee is seeing in the radar data, including runway ends and flight tracks that do not complete.

Other Reports

Hotline & Contact Log

Dan Botto reported that the hotline had three calls over the last two months; all from Ms. Lorek.

Dan Botto also reported there were five calls on the contact log, three regarding inclusion in the NIP, one to replace a broken window on an insulated door and one asking for a call back.

Airport Noise Report

Dan Botto discussed the article on page 20 of the agenda package about a new study being undertaken to study the effects of aircraft noise on sleep. Deborah Lagos said that currently sleep disturbance studies are provided strictly for informational purposes at airports; this study may lead to additional noise analysis for environmental studies at airports.

Dan Botto mentioned the article on page 26 and 30 of the agenda package indicate that due to the ongoing discussion regarding the Program Guidance Letter concerning noise insulation programs has resulted in only 5 AIP Noise grants being issued so far this year.

Dan Botto said that on pg 32 of the agenda package is the article discussing the increased noise due to the RNAV flight procedures. Sonny Knowles explained that they went to the RNAV procedures to save time and fuel.

Dan Botto noted that on page 35, the California state budget includes money for the Airport Land Use Commissions. This committee had previously discussed that California was going to cut these.

Other

Mr. Blazevic asked about the differences between the military and the FAA noise models. Dan Botto explained that the models may have differences in the computations but the noise data is shared between the models.

Marlene Durazo asked if the F-35 would be based at NASKW. Ashley Monnier said that any information regarding the future alternatives of NASKW is available in

the Draft Executive Summary for the NASKW Environmental Impact Statement, and there are regularly scheduled meetings for questions.

Temporary Chair Dr. Floyd stated that the next meeting would be on October 2nd.

Meeting adjourned at 3:00 PM.

PART 150 PROCESS

NOISE EXPOSURE MAPS

Existing Noise Exposure Map



Future Noise Exposure Map



Public Review

Noise Exposure Maps Report



FAA Review / Comments

FAA Notice of Noise Exposure Map Conformance

NOISE COMPATIBILITY PROGRAM

Operational Noise Abatement Alternatives



Land Use Noise Mitigation Alternatives



Public Review

Program Management Alternatives



**Implementation Plan / Noise Benefit Analysis /
Cost Estimate / Roles & Responsibilities**



Preliminary Noise Compatibility Program Report



FAA Review

Final Noise Compatibility Program Report



Public Hearing



FAA Review - 180 Days

FAA Record of Approval



The Role of the FAA in the Part 150 Process:

Noise Exposure Maps

- Indicates whether they are in compliance with applicable requirements,
- Publishes notice of compliance in the Federal Register, including where and when the maps and related documentation are available for public inspection.

Noise Compatibility Program

The FAA conducts an evaluation of each of the measures (operational, land use, and program management) included in the noise compatibility program and, based on that evaluation, either approves or disapproves each of the measures in the program. The evaluation includes consideration of proposed measures to determine whether they—

- May create an undue burden on interstate or foreign commerce (including unjust discrimination);
- Are reasonably consistent with obtaining the goal of reducing existing noncompatible land uses and preventing the introduction of additional noncompatible land uses;
- Include the use of new or modified flight procedures to control the operation of aircraft for purposes of noise control, or affect flight procedures in any way;
- The evaluation may also include an evaluation of those proposed measures to determine whether they may adversely affect the exercise of the authority and responsibilities of the Administrator under the Federal Aviation Act of 1958, as amended.

The Administrator approves programs under this part, if –

- Program measures to be implemented would not create an undue burden on interstate or foreign commerce and are reasonable consistent with achieving the goals of reducing existing noncompatible land uses around the airport and of preventing the introduction of additional noncompatible land uses;
- The program provides for revision if made necessary by the revision of the noise map;
- Those aspects of programs relating to the use of flight procedures for noise control can be implemented within the period covered by the program and WITHOUT –
 - Reducing the level of aviation safety provided;
 - Derogating the requisite level of protection for aircraft, their occupants, and persons and property on the ground
 - Adversely affecting the efficient use and management of the Navigable Airspace and Air Traffic Control Systems; or
 - Adversely affecting any other powers and responsibilities of the Administrator prescribed by law or any other program, standard, or requirement established in accordance with law.

Source: .Title 14 cfr part 150.

**Key West International Airport
Noise Hotline Log**

Date of call	Time of call	Caller	Contact information	Date rec'd	Message	Response	Date
9/9/2012	12:45 PM	Marlene Durazo	KWBTS, 296-2094	9/11/2012	A jet just came screaming in shaking the windows and doors.		
9/10/2011	12:24 PM	Marlene Durazo	KWBTS, 296-2094	9/11/2012	A jet came screaming in really close to KWBTS and loud noise.		
9/10/2011	2:15 PM	Marlene Durazo	KWBTS, 296-2094	9/11/2012	A jet taking off to the West was screaming by very close to KWBTS and making a lot of noise.		

Key West International Airport Contact Log

Date of call	Caller	Contact information	Subject	Response	Date
8/9/2012	Pam Sands	904-704-1064	I'm a home owner, a new home owner in the area of the KWIA and I do have concerns that maybe some or all of my windows have not been provided by you folks because of the noise that we experience. This actually affects two homes, one of which was inherited recently.		
8/9/2012	Pam Sands	904-704-1064	I am calling Deborah Murphy. This is in reference to the noise project at the Key West Airport or for the community that surrounds it. I have property on Airport and Venetian and the noise is significant and I understand that there are mitigation windows and things of that nature to mitigate the noise. Please call me ASAP.		
8/9/2012	Pam Sands	904-704-1064	I'm calling in reference to the property adjacent to the Airport in Key West and the noise project. If you would please call me ASAP I would appreciate it.		
8/9/2012	Pam Sands	904-704-1064	I believe this is the 4th message I have left. This is in reference to property on Airport Blvd and Venetian Dr in Key West next to the airport. I have been calling over a series of days and I'm most anxious to talk with you and hope to hear from you soon.		
8/15/2012	Pam Sands	904-704-1064	I believe this is my 5th call. I am trying to talk with someone in reference to my property on Airport Blvd and Venetian Dr. This is related to the noise project. I would like very much to hear from someone ASAP on the number I have already given you. I would appreciate a call back ASAP.	DTB-Left message 8-17-12 @ 1103	
9/5/2012	Pam Sands	904-704-1064	I have recently acquired 2 properties. They are at 1631 Venetian Dr and 3017 Airport Blvd in Key West, FL. The reason for my call is I need some help determining what manufacturer you used for the two properties in so far as the doors and windows and so forth. I need that pretty quickly because on Venetian we are doing some work and we would like to match what is already there. I also need to know the ratings on the windows. Are they 150, 180 mph, what are they? In addition to that property on Venetian it appears that there were some installation issues that I wonder if you could help us with. On the Airport property there seems to be doors and windows that may not be the quality that you had intended. I've been making calls back and forth with Mr. Botto but we keep missing one another. I'm hoping I can get a call tomorrow morning.	DTB-Spoke with Mrs. Sands on 9-07-2012 and agreed to get her some additional information. Left message for her on 9-11-2012 with the information.	

Airport Noise Report



A weekly update on litigation, regulations, and technological developments

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FAA

FAA ISSUES STATEMENT AFFIRMING ENERGY, ENVIRONMENTAL POLICY FOR CIVIL AVIATION

A statement affirming an energy and environmental policy for U.S. civil aviation as it transitions to the more efficient satellite-based Next Generation Air Transportation System (NextGen) was issued by the Federal Aviation Administration on July 23.

The underpinning for the policy statement is the 2004 Aviation and the Environment Report to Congress spearheaded by the PARTNER research consortium, Lourdes Maurice, executive director of FAA's Office of Environment and Energy, told ANR. She said the the policy statement has benefitted "from much input and discussion with stakeholders over the last few years."

The policy specifies that "the overarching environmental performance goal for NextGen is environmental protection that allows sustained aviation growth."

Five environmental issues that significantly influence the capacity and flexibility of the national aviation system are identified in the statement: aircraft noise, air quality, climate, energy, and water quality.

"Major strides in lessening environmental effects of aviation have been made
(Continued on p. 83)

Sound Insulation

FAA DRAFT PGL REQUIRES AIRPORTS TO MEET ELIGIBILITY REQUIREMENTS BY OCT. 1, 2015

[In its July 23 Airport Law Alert No. 15, the law firm Kaplan Kirsch & Rockwell provided the following update on FAA's Draft Program Guidance Letter specifying criteria airports must meet to be eligible for Airport Improvement Program funding for their sound insulation programs.]

In April 2012, the FAA circulated for limited review Program Guidance Letter 12-xx: AIP Eligibility and Justification Requirements for Noise Insulation Projects. The Draft PGL includes replacement language for Section 812 (Noise Insulation Projects) in FAA Order 5100.38C, Airport Improvement Program Handbook.

The Draft PGL and new Section 812 prescribe a two-part eligibility requirement for sound insulation projects: 1) the structure must be located in the day-night average (DNL) 65 decibel (dB) noise contour, and 2) the existing interior noise level must be above 45 dB with the windows closed.

The *Draft PGL* reaffirmed that structures must have been built prior to October 1, 1998, to be eligible.

The Draft PGL also identifies a process for reviewing noise insulation programs
(Continued on p. 84)

In This Issue...

Policy ... FAA issues a statement affirming its energy and environmental policy as it transitions to NextGen. The statement acknowledges that aircraft noise continues to be the public's primary objection to near-term aviation growth - p. 82

Sound Insulation ... FAA's Draft PGL on AIP funding would require airports to meet two-part eligibility requirement by Oct. 1, 2015, Law Alert explains - p. 82

Philadelphia Int'l ... FAA approves most of airport's Part 150 program - p. 84

Palm Beach Int'l ... FAA approves near-term airport improvement projects but gives only conditional approval to runway extensions in light of revised forecast - p. 84

News Briefs ... City of Dania Beach, FL, approves a war chest of \$850,000 to fund lawsuits in federal, state court challenging runway extension at Ft. Lauderdale-Hollywood Int'l - p. 85

Policy, from p. 82

over the past several decades,” the statement notes. “However, aircraft noise continues to be the public’s primary objection to near term aviation growth. Aircraft emissions contribute to air quality-related health effects, as do emissions from all combustion processes, and are causing heightened concerns locally and globally.

“The potential effects of aircraft emissions on the climate of our planet may pose the most serious long term environmental consequences facing aviation. Noise and emissions will be the principal environmental constraints on the capacity and flexibility of the national aviation system unless they are effectively managed and mitigated.

“It is important to build on current efforts and develop new strategies as the system is transformed with NextGen. In addition, energy supply, its cost, and the relationship between the burning of fossil fuels and climate change are driving increased emphasis on the need for energy conservation and sustainable alternative fuels. Finally, the nation’s water quality requires continued protection from potential contamination from airport-related discharges.

“These combined environmental and energy challenges must be successfully managed and mitigated for NextGen to realize its full potential and for the U.S. to meet the aviation transportation needs of the 21st century,” FAA explains in the introduction to its policy statement.

Noise Goal

The statement defines the following goal for aircraft noise: Reduce the number of people exposed to significant noise around U.S. airports in absolute terms, notwithstanding aviation growth, and provide additional measures to protect public health and welfare and our national resources.

“The number of people in the U.S. exposed to significant aircraft noise since 1975 has dropped by 90 percent, an impressive reduction primarily due to reductions in aircraft source noise and phase outs of Stage 1 and 2 aircraft over 75,000 pounds,” the statement notes. “Yet noise remains a predominant aviation environmental concern of the public, one of the principal environmental obstacles to expanding airport and airspace capacity, and the one that has used the most mitigation resources – including funding from the Airport Improvement Program (AIP) and Passenger Facility Charges (PFC).”

“The persistence of significant levels of aircraft noise in communities around airports is the major impact, but not the only one. There are increasing concerns in areas of moderate noise exposure and public complaints from suburban and rural areas where ambient noise is lower. At noise exposure levels below those involving health and welfare concerns, there are also sensitivities with respect to national resources such as national parks.

“While techniques and tools for measuring and modeling noise exposure provide a reliable means of assessing the levels of aircraft noise to which people are exposed, focused re-

search could improve our scientific knowledge base on the extent of impacts and appropriate mitigation below historically-defined significant noise levels.”

The FAA also explains in its policy statement that there is a need for “continued and enhanced exploration for the most effective means to address residual aircraft noise impacts that cannot be reduced through technologies, to guide capital investments in noise mitigation such as sound insulation, to encourage adequate land use planning, and to support other methods [of mitigation].”

FAA said it also is supporting studies “to investigate the need, cost and trade-offs, and the technological feasibility of more stringent noise standards.”

In August 2011, FAA issued a document called “Destination 2025,” which outlined the long-term, strategic vision for the agency for the next 15 years.

That document, which is available on FAA’s website, sets a performance metric for 2018 of keeping the U.S. population exposed to significant aircraft noise around airports to less than 300,000 people.

Maurice told ANR that projections for the number of people around airports exposed to significant aircraft noise levels exceed that number if FAA takes no action to further reduce aircraft noise

Guiding Principles

The policy statement defines two main guiding principles: (1) to limit and reduce future aviation environmental impacts to levels that protect public health and welfare and (2) to ensure energy availability and sustainability.

FAA said it will implement “a strategic Environmental Management System (EMS) approach” to provide a foundation for improving the integration of environmental and energy assessment and performance into the planning, decision-making, and operation of the national aviation system.

But the policy statement does not provide much explanation of what an EMS is. It notes that the NextGen EMS approach, which features collaboration across stakeholders, “is a strategic concept that requires development, maturation, and a robust implementation plan.”

FAA’s Maurice explained that the agency has been working on a NextGen EMS system for some time. “The implementation is not in an instant – it is rather an evolving process.”

FAA said its NextGen environmental and energy policy is intended to be a living document. The agency plans to periodically review the goals, targets, and strategies set in the policy based on better scientific knowledge, changing environmental protection and energy needs, and improved technological and operational capabilities.

The policy statement is available at <http://www.gpo.gov/fdsys/pkg/FR-2012-07-23/pdf/2012-15908.pdf>

*Philadelphia Int'l***FAA ANNOUNCES APPROVAL OF MOST OF PHL PART 150 PROGRAM**

On July 23, the Federal Aviation Administration announced its approval of most of the 22 proposed noise mitigation measures for Philadelphia International Airport's Part 150 airport noise compatibility program.

Outright approval was granted for five specific program measures:

- Engine run-up restrictions;
- Support of local municipalities in comprehensive planning strategies to reduce non-compatible land use;
- Establish a noise abatement advisory committee;
- Continue to develop the responsibilities of the Philadelphia International Airport Noise Office; and
- Update the Noise Exposure Maps (NEMs) and Noise Compatibility Program (NCP).

FAA approved an additional 15 program measures conditionally, contingent on adherence to safety, design, and regulatory standards "or other conditions as determined necessary by FAA or airport operators."

These measures included:

- Use of noise abatement departure flight tracks; continuation and expansion of the nighttime runway use program;
- Develop and implement a Fly Quiet Program;
- Encourage noise attenuating standards in airport development;
- Continue the residential sound insulation program; develop and implement a purchase assurance program and a voluntary acquisition program; develop and implement a Fort Mifflin sound insulation program; sound insulate educational facilities and places of worship;
- Enhance the airport's existing noise monitoring and flight tracking system by acquiring a multilateration system; install additional permanent noise monitors; and
- Continue to develop an informal community awareness program; improve and upgrade web-based noise information.

FAA did not approve two proposed measures: (1) supporting the creation and use of Area Navigation (RNAV) and Required Navigation Performance (RNP) and (2) supporting the development of Continuous Descent Approaches (CDA).

These two measures were disapproved for the purposes of Part 150 "because they do not have a measureable noise benefit to sensitive land uses within the Day-Night Level (DNL) 65 decibel noise contour. The airport can pursue or implement the measures outside of the Part 150 program," FAA said.

For further information on FAA's approval of Philadelphia International's Part 150 Program, contact Susan McDonald in FAA's Harrisburg Airports District Office; tel: 717-730-2841; e-mail: susan.mcdonald@faa.gov.

PGL, from p. 82

that are currently underway, and specifically requires all programs to meet the two-part eligibility requirement beginning October 1, 2015.

On May 31, 2012, Airports Council International – North America submitted comments to the FAA on the Draft PGL. ACI-NA took issue with the FAA's assertion that the two-part eligibility test has always been in effect, and argued that the AIP Handbook does not impose this requirement and that the FAA itself admitted that it had not imposed this test for every sound insulation program.

ACI-NA also advised that airports might face legal exposure under the False Claims Act or other authorities if the FAA states or implies that airport sponsors have been using AIP grant funds impermissibly. ACI-NA stated that airports almost certainly will face opposition from communities expecting that all dwellings within the DNL 65 dB would be eligible to receive sound insulation.

[Asked when FAA will issue the PGL, an FAA spokeswoman told ANR, "We have been working for several months on the program guidance letter to clarify existing rules regarding AIP-funded sound insulation programs. We are working with airports and consulting communities to address their comments and concerns."]

*Palm Beach Int'l***FAA APPROVES NEAR-TERM BUT NOT LONG-TERM DEVELOPMENT**

The Federal Aviation Administration on July 16 issued its Record of Decision (ROD) approving the Near-Term Airfield Improvement Project (AIP) at Palm Beach International Airport but not the Long-Term AIP, which involves runway extensions.

The ROD gives the airport approval to proceed with the components of the Near-term AIP, which consists of general aviation facility development, widening of a taxiway, and acquisition of 13.2 acres of property.

However, the FAA determined, and the airport concurred, that the Long-Term AIP is not ripe for final approval at this time and, therefore, the extension of Runway 10R/28R was granted only conditional approval in the ROD. This conditional approval does not grant the airport the federal approvals needed to construct the runway extension at this time.

Updated forecast data following the economic turnaround in 2008 indicated to both the FAA and the airport that the runway extension would not be needed by the 2013 time-frame originally contemplated. On Jan. 26, 2010, the airport asked FAA to approve only the Near-Term portion of its airport expansion plan.

The Near-Term AIP would not result in any significant environmental impacts, FAA said.

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The final EIS concluded that, when compared with the No-Action Alternative, non-airport land exposed to noise levels of DNL 65 dBA or higher would decrease by 10.1 acres in the year 2015 under the Near-Term AIP; there would be 30 less housing units and 75 fewer people exposed to DNL 65 dBA or greater noise levels; and there would be no incompatible land uses exposed to DNL 65 dBA or greater where the change in exposure from the No-Action Alternative would be DNL 1.5 dBA or greater.

Therefore, FAA said, there would be no significant noise impacts as a result of the Near-Term AIP and mitigation measures are not warranted.

The Long-Term AIP involves:

- Relocating and expanding Runway 10R/28L 100 feet south of its existing location to a length of 8,000 feet and a width of 150 feet. This would increase the Runway centerline separation distance from 700 feet to 800 feet from the centerline of Runway 10L/28R; and
- Shortening the southeast end of Runway 14/32 by 3,412 feet and extending the northwest end by 480 feet. The total adjusted length of the runway would change from 6,932 feet to 4,000 feet, with standard Runway Safety Areas beyond both ends of the runway.

For further information, contact Allan Nagy, and environmental program specialist in FAA's Orlando Airports District office; tel: (407) 812-6331.

In Brief...

Dania Beach Approves Funds for Lawsuits

Dania Beach, FL, City Commissioners on July 24 voted to allocate \$850,000 in reserve funds to fight lawsuits recently filed in federal and state court seeking to block the expansion of the south runway at Ft. Lauderdale-Hollywood International Airport.

The lawsuits challenge the U.S. Army Corps of Engineer's permit for filling the wetlands where the extended runway will be located (24 ANR 62).

An historic settlement agreement between the city and the airport proprietor, Broward County, FL, which would have ended 20 years of litigation over the runway extension, fell apart in May after the FAA refused to fund a novel provision of the agreement that would have provided cash payments to homeowners in the 65 dB DNL contour.

After voiding the agreement, Dania Beach immediately filed its two lawsuits against the Corps.

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

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ACRP

SOLE NOISE PROJECT IN 2013 WILL FOCUS ON HELICOPTER NOISE MODELING GUIDANCE

The Airport Cooperative Research Program's Fiscal Year 2013 Research Program was just announced and it includes only one noise project: a \$250,000 research effort to develop guidance on helicopter noise modeling.

A solicitation seeking the nomination of experts to serve on the panels that will guide the individual ACRP 2013 projects was issued on Aug. 1 by the Transportation Research Board, which manages the ACRP Program for the Federal Aviation Administration.

Nominations must be submitted by Sept. 21. The ACRP announcement, which describes how to submit nominations and includes a link to the list of projects selected for the 2013 Research Program, is available at <http://www.trb.org/Main/Blurbs/167597.aspx>

The selection of an ACRP project addressing helicopter noise recognizes that helicopters are the source of a growing noise problem in metropolitan areas.

Under strong pressure from New York Sen. Charles Schumer (D), the Federal

(Continued on p. 87)

Los Angeles Int'l Airport

COMMENT SOUGHT ON OPTIONS TO MAKE LAX NORTH FIELD SAFER, MORE EFFICIENT

On July 27, Los Angeles World Airports (LAWA) issued for public comment the Draft Environmental Impact Report on nine options for improving the safety and efficiency of Los Angeles International Airport's North Field, including several options for separating the two north runways to allow more efficient handling of supersized jets such as the Airbus A380.

"The future development of LAX requires a holistic approach that will address both the needs of an aging airport infrastructure and relationships with its neighbors," said Los Angeles World Airports Executive Director Gina Marie Lindsey.

"We have two choices: either prepare now by creating a long-term plan to continue the modernization, or limp along with an airfield designed for 1960s-era aircraft and leave the planning and improvements for others to deal with in the future, after natural demand arrives and airport facilities at LAX will be both insufficient and, in some cases, near the end of their useful life."

A coalition of business and labor leaders in the Los Angeles area, called the Coalition to Fix LAX, said it supports separating the north runways but not the most costly option, under which the inboard north runway would be moved 340

(Continued on p. 87)

In This Issue...

ACRP... Only one noise study will be undertaken in the ACRP's FY 2013 Research Program, which was just announced. It will develop peer-reviewed technical guidance for predicting helicopter noise. TRB is seeking experts to sit on a panel that will be formed to guide the project - p. 86

Los Angeles Int'l... LAWA seeks comment on nine options for improving the safety and efficiency of its North Field, including separating the two north runways to allow better handling of supersized jets - p. 86

Sound Insulation... PARTNER is investigating the possible use of ventilated windows in airport sound insulation programs to improve indoor air quality and energy efficiency. A Purdue study finds that the ventilation method used in SIPs today – the use of exhaust fans in bathrooms and kitchens – cannot maintain acceptable indoor air quality throughout the day - p. 88

ACRP, from p. 86

Aviation Administration in July issued a rule making mandatory an existing voluntary off-shore helicopter route designed to reduce noise impact on communities off the North Shore of Long Island, NY (24 ANR 74).

California lawmakers are pressing FAA to limit operations of helicopters over Los Angeles that are sparking noise complaints there (24 ANR 62).

Residents in the wealthy community of McLean, VA, outside of Washington, DC, met with local, state, and FAA officials on July 26 to once-again register complaints about helicopter operations over their community.

The goal of the new ACRP helicopter noise project is to evaluate and document the existing integrated helicopter noise modeling technique based on INM Version 7.0c, and to prepare a peer-reviewed technical guidance document.

“This review of the current noise modeling capabilities and limitations in INM will help develop technical recommendations for future improvements of helicopter noise modeling in FAA’s Aviation Environmental Design Tool (AEDT),” ACRP explained in its summary of Project 02-44 “Guidance for Helicopter Community Noise Prediction.”

“The FAA Integrated Noise Model (INM) is currently the agency’s required tool for NEPA related studies and FAR Part 150 studies. The Heliport Noise Model Version 2.2 was recently incorporated into INM Version 7.0 with a helicopter noise database collected through both FAA and manufacturer certification measurements,” the summary states.

“Currently, the FAA is incorporating INM, along with emission calculation methodologies, into the Aviation Environmental Design Tool (AEDT). The fixed-wing aircraft noise prediction techniques employed in INM/AEDT rely on the widely accepted methodologies described in documents such as SAE International’s SAE-AIR-1845 and the European Civil Aviation Conference’s Doc 29 (ECAC Doc29).

“However, in contrast to guidance related to fixed-wing aircraft, there is no peer-reviewed guidance document describing an integrated modeling technique for the prediction of helicopter noise suitable for flight track assessment, optimal design, and land use planning.”

LAX, from p. 86

feet to the south and LAX terminals 1, 2, and 3 would be demolished.

Meanwhile, the Alliance for a Regional Solution to Airport Congestion (ARSAC), a community group opposed to expanding LAX, issued a statement reaffirming its opposition to moving the north runway 350 feet closer to the communities of Westchester and Playa del Rey, which is another option under consideration.

“Moving Runway 24 Right closer to homes and businesses is unsafe, unnecessary, unacceptable and probably illegal under the Stipulated Settlement Agreement” LAWA

entered into with parties who opposed the Master Plan, ARSAC said.

“We will vigorously fight efforts to move the runway to the north, especially when there are better alternatives available to increase safety, security and passenger convenience that would not require destroying homes and businesses in Westchester/Playa del Rey.

“Furthermore, any movement of the runway to the north will permanently alter flight patterns over Southern California, newly exposing millions of residents to aircraft noise, pollution and safety issues who have not been impacted by LAX operations in the past. If necessary, we will go back to court to protect our communities and to force LAX to reconsider other runway configurations which do not move aircraft closer to Westchester/Playa del Rey.”

No Preferred Option Selected Yet

At this point, LAWA has not defined its preferred option for making the North Field runways safer and more efficient. That is expected to occur next year when the Final EIR is issued.

LAWA spent six years preparing the Draft EIR and said it sought to maximize community input. LAWA formed and met 24 times with an advisory committee comprised of representatives from the cities of Culver City, El Segundo, and Inglewood, Los Angeles County, and ARSAC.

The Federal Aviation Administration contends that LAX’s north runways need greater separation and an additional centerline taxiway to reduce the risk of collisions between departing and arriving aircraft.

Reports by aviation consulting groups in 2007 recommending moving LAX’s northernmost runway 340 feet to the north so that the airport could accommodate larger aircraft. Subsequent to those reports, the National Aeronautics and Space Administration (NASA) concluded that greater runway separation would make the North Airfield safer but the risk of aircraft collision was so low that the change would not be consequential.

The public comment period on the Draft EIR on LAX Specific Plan Amendment Study (SPAS) ends on Oct. 10. LAWA plans to hold three public hearings on the proposals in late August. The Draft EIR can be viewed online at <http://www.laxspas.org/>.

The Draft EIR identifies and evaluates potential alternatives to certain LAX Master Plan elements referred to as “Yellow Light Projects” because the Los Angeles City Council required these elements to undergo further studies when it passed the LAX Master Plan in 2004.

The SPAS Draft EIR evaluated alternatives at an activity level of 78.9 million annual passengers, the same level as the City Council-approved LAX Master Plan.

According to airport officials, the majority of environmental impacts presented in the SPAS Draft EIR result from the forecasted growth in regional population and development, coupled with an expected increase in the number of passengers using LAX. Consequently, the majority of the im-

pacts are expected to occur whether LAX does nothing or implements the remaining LAX Master Plan Yellow Light Projects.

The Draft EIR concludes that, under all alternatives, there will be significant, unavoidable impact in noise, air quality, and greenhouse gas emissions.

LAWA said that the eventual completion of the LAX Specific Plan Amendment Study will allow the airport to complete modernization of its runway and taxiway system; to redevelop the passenger terminal area; to improve vehicular and public transit access to the airport; to enhance passenger safety and security; and to ensure LAX will be capable of handling the forecasted growth in air travel demand.

Sound Insulation

PARTNER STUDYING USE OF VENTILATED WINDOWS FOR SIPS

The PARTNER research consortium is investigating whether it is possible to use “ventilated windows” in airport sound insulation programs to improve indoor air quality and energy efficiency.

“Ventilated windows hold great promise for conserving energy in buildings owing to their suitability for energy exchange. They also improve indoor air quality (IAQ) because fresh outdoor air is introduced indoors by a supply fan, and indoor contaminants are expelled outdoors via a separate exhaust fan,” researchers at the Ray W. Herrick Laboratories at the Purdue University School of Mechanical Engineering, concluded in the final report on their study for PARTNER.

Ventilated windows come in two types: (1) dual air flow, which allow air to pass through them via small slots; and (2) supply air flow, which involves the use of a small fan inset in the window to force air through.

No ventilated windows are used currently in airport sound insulation programs because where air goes through these windows, so does noise.

FAA said it has not yet investigated whether the noise-reduction performance of ventilated windows could be improved sufficiently through the use of indirect air-flow paths and placement of sound absorption materials and baffles.

The Purdue study concluded that both supply-airflow windows and dual-airflow windows can maintain acceptable indoor air quality throughout the day; whereas the use of exhaust fans in bathrooms and kitchens – the ventilation method used currently in airport residential sound insulation programs – cannot.

“Many airport authorities have implemented a sound insulation program for residences located within the Community Noise Equivalent Level contour of 65 dBA. The effectiveness of this approach is ensured by sealing building envelopes. Increased sound insulation generally improves thermal insulation and lowers energy demand,” a summary of the project explains.

“However, this traditional method of noise mitigation has a side effect: it degrades indoor air quality because most of these buildings obtain their fresh air through infiltration. With reduced infiltration, contaminant concentration and humidity increases. High humidity leads to a higher risk of condensation that, in turn, can lead to other IAQ problems such mold and bacteria growth. Although IAQ problems may be mitigated by using a mechanical ventilation system, such an action increases construction costs and subsequent energy use.”

PARTNER Project 26, “Sound Transmission Indoors – Integrated Windows,” was undertaken to investigate the environmental performance of windows because the windows in a residential building are often considered the weakest link in the sound insulation program.

The Purdue researchers also concluded from their study, done using numerical models and simulations, that dual air flow windows can achieve greater energy savings in the heating season than in the cooling season.

Study Will Help FAA Update Guidance

The Purdue study will be used to help the FAA update its sound insulation program guidance, which does not address thermal and energy efficiency.

“The main goal of residential noise insulation programs is to reduce the impact of aircraft noise. Understandably, the treatments and products used in them reflect this primary goal of noise reduction, and the energy efficiency and IAQ of residential buildings are treated as secondary concerns. The problems of increased energy use and degraded IAQ resulting from noise reduction treatments are often left to program consultants to resolve in cooperation with local building officials. No further guidelines are provided for the important issues of IAQ and energy efficiency,” the Purdue study notes.

“The heavy emphasis on sound insulation and the secondary consideration of energy and IAQ have led to design solutions that are segmented and poorly integrated. The most obvious example of this situation is that many FAA-funded noise insulation projects recommend the use of ducted air conditioning systems as the preferred method for insuring that the indoor environment remains comfortable for residents and occupants while doors and windows are kept closed, thus increasing energy use.

“The problems with this approach are significant. First, ducted air ventilation systems are expensive to install, especially in retrofit situations. The quantity of resources required for these installations is often extensive. The costs of these ventilation systems typically represent 35%–50% of the total project expenditures for sound insulation treatments.

“Second, energy use after installing these ducted air ventilation systems is usually greater than the energy used prior to the installation of the sound insulation treatments. This situation becomes even more severe when air conditioning systems are installed in buildings where none previously existed.

“Third, since air conditioning is the preferred solution to the IAQ issue, there is often inadequate design consideration given to alternative solutions that may be less energy inten-

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sive and resource dependent.

“The incompatibility of this solution is apparent when one considers that the windows and doors used in the program need to meet increasingly rigorous energy code requirements. The irony of insuring energy efficiency for one component of the sound insulation treatments (the windows) while creating increased energy usage for another component of the treatments (air quality) is striking, and it underscores the need for more holistic solutions to sound insulation.”

Follow-on research is recommended in the Purdue study, which is available at the PARTNER website
<http://web.mit.edu/aeroastro/partner/projects/project26.html>

Pathway Must Be Indirect and Baffled

“The issue for the window industry has always been where there is a pathway for air infiltration, noise infiltration will follow,” Alan Peterson of St. Cloud Window, Inc. in Sauk Rapids, MN, told ANR. St. Cloud provides acoustical windows for airport sound insulation programs.

“Any pathway for fresh air must be indirect and baffled if the unit is to achieve a meaningful level of attenuation ... but even indirect venting must be applied judiciously,” he stressed.

However, St. Cloud has been successful in improving the noise reduction of a vented window through the use of its patented “trickle vent,” which is formed from PVC tubing in two convoluted paths. “One or more expansion chambers are provided at turns or directional changes within the tubing which reduce or eliminate noise transmission through the vent,” the patent explains.

The trickle vent was used in a horizontal sliding window for a 24-story condo in Brooklyn, NY, exposed to noise exceeded 100 dB from traffic on the Manhattan bridge. The trickle vent achieved the desired noise infiltration of Sound Transmission Class rating of STC 56.

Asked to comment on the use of ventilated windows in airport sound insulation programs, one consultant offered the following questions and comments:

- How much extra cost is involved in the manufacture and sale of the ventilated windows versus following the current practice of installing kitchen/bathroom fans for improved air flow/quality?
- Can the ventilated windows get clogged (i.e. spider webs, insect carcasses, etc.)? Do they require cleaning? Will the homeowner maintain the window for optimal performance? If not, the air quality of the dwelling will suffer.

“The climate could play a large role in indoor air quality for these types of windows,” he told ANR.

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NASA

NASA NEEDS FEWER AERONAUTICS PROJECTS, MORE FLIGHT RESEARCH, NRC REPORT SAYS

At a time when the National Aeronautics and Space Administration's aeronautics funding is at an historic low, the agency needs to restart its highly successful flight research program rather than devote most of its efforts to small-scale research, a new report from the National Research Council (NRC) concludes.

To accomplish this, the NRC urged NASA to phase out lower-priority aeronautics activities and select two to five projects with the greatest potential.

The report examines case studies in three areas – environmentally responsible aviation such as highly fuel-efficient aircraft, supersonics, and hypersonics – as examples of programs where NASA already possesses the core research to make significant progress, provided the agency can allocate resources for the flight research phase.

The committee that prepared the NRC report did not make a specific recommendation for a focus project for environmentally responsible aviation because it did not have the data required to do so.

However, it cited the Blended Wing Body that is being flight-tested with small-
(Continued on p. 91)

NASA

AIRCRAFT WITH ENGINES ON TOP OF WINGS MAY BE FUTURE OF COMMERCIAL AVIATION

[Following is an excerpt from a NASA news feature by Jim Banke of NASA's Aeronautics Research Mission Directorate on the Advanced Model for Extreme Lift and Improved Aeroacoustics (AMELIA) project.]

With its pair of jet engines riding on top, it looks like an airplane that has its wings bolted on upside down. But this innovative 1/11th-scale model recently tested by NASA in a California wind tunnel might represent the future of commercial aviation.

Nicknamed AMELIA – an acronym for Advanced Model for Extreme Lift and Improved Aeroacoustics – the 2,500-pound aluminum and steel model was meant to test, for the first time together, three aircraft design features that usually cause conflicts with each other.

“We know we can do short take-off and landing. We know we can do cruise efficient aircraft. And we know ways to reduce aircraft noise. The question was can we do all three at the same time?” said Michael Rogers, NASA's technical lead for the Efficient Aerodynamic Subproject at the Ames Research Center in California.

(Continued on p. 92)

In This Issue...

NASA ... The National Research Council issues a report urging NASA to restart its aeronautics flight research program and to focus on only two to five aeronautics projects with the greatest potential. The report provides guidance to NASA on how to proceed in the development of environmentally responsible, supersonic, and hypersonic aircraft. Because flight research has been neglected in recent years, NASA should ensure that each of its aeronautics programs has a defined path to in-flight testing, the report says - p. 90

... Aircraft with engines on top of their wings may be the future of commercial aviation, NASA explains in an update on its Advanced Model for Extreme Lift and Improved Aeroacoustics (AMELIA) aircraft - p. 90

... A modified Boeing Blended Wing Body research aircraft, which also has engines on top of the body, flies for the first time - p. 92

NASA, from p. 90

scale models and the AMELIA (Advanced Model for Extreme Lift and Improved Aeroacoustics) configuration that has been tested with a small-scale model in the NASA Ames wind tunnel (see related stories in this issue) as projects that could be selected based on results to date and future promise.

“If NASA determines that progress in Environmentally Responsible Aviation is a priority, then the agency could collaborate with the Department of Defense (DOD), the Federal Aviation Administration, other government agencies, and industry on a subsonic experimental aircraft that would integrate multiple advanced aerodynamic, structural, and engine technologies,” the NRC recommended.

“The most effective approach would be to ensure that the flight test program, while integrating multiple technologies, is also planned so as to test single objectives for each test. With a view to maximizing effectiveness, as these collaborations are carried out, the distribution of research results and data cannot be limited to industry and academia and should be understandable, presentable, and accessible to a broad audience.”

The NRC report said that if NASA determines that progress in supersonics is a priority, “then given the progress in low-boom technology that has been demonstrated over the past decade and in light of this research challenge being the principal remaining barrier to routine supersonic operations, NASA together with the FAA could proceed immediately with an integrated technology experimental aircraft program to validate low-boom acoustic ground signatures and establish a set of quantitative criteria for the sonic boom footprint over land.”

“If NASA determines that progress in supersonics is a priority, and recognizing that engine technology and propulsion integration remain the next critical investment barrier to progress in this field, the NASA together with DOD could develop a robust technology maturation and flight validation program with key partners for fielding a product variable cycle engine and the integrated propulsion systems for supersonic flight.”

If NASA determines that progress in hypersonics research is a priority, the NRC report said the agency could reform the Hypersonics project “with the specific goal of development and demonstration of the technologies for a hypersonic vehicle within 25 years to enable point-to-point flights from any point on Earth to any other point in a few hours. NASA could coordinate development plans with the Defense Advanced Research Projects Agency and other DOD organizations in order to make the program affordable and enhance its development.”

Flight Research Has Been Neglected

Because flight research is a vital tool for aeronautics and has been neglected in recent years, NASA should ensure that each of the aeronautics programs it chooses to focus on has a defined path to in-flight testing and that funding will be avail-

able to complete the in-flight research portion of the project in a timely manner, the NRC said. It also urged improved communication and collaboration with key stakeholders in government and industry.

“NASA has the ability to make substantial contributions to aeronautics in the United States for civil, commercial and military projects,” explained Wesley Harris, Charles Stark Draper Professor of Aeronautics and Astronautics and associate provost at the Massachusetts Institute of Technology, Cambridge, and chair of the committee that wrote the report.

“NASA has made major contributions to aeronautics in recent years, such as helping create the vibrant American unmanned aerial vehicle industry in the 1990s. Unfortunately, there has been no flagship mission to inspire the next generation, and current small-scale research projects that don’t take flight do not attract much attention.”

NASA’s aeronautics program lacks the resources to accomplish the 51 high-priority goals it was urged to pursue in the most recent Research Council decadal survey, the report notes. It said that, given current budget pressures, NASA appears to be avoiding investments in flight research due to the costs and risks.

“The loss of flight research capabilities – which are a vital tool for developing technology, proving and calibrating other research, and convincing industry, regulators, and the public that new inventions in aeronautics are effective and safe – has hindered progress throughout NASA’s aeronautics program. Restoring flight research and accelerating progress will require strategic direction from NASA headquarters, careful leadership, and tough decisions. It also will require NASA to cull its lower-priority aeronautics activities in order to free up funds,” the NRC explained.

The NRC said that, in addition to the overwhelming amount of small-scale aeronautics projects at the agency, its report found that NASA has initiated many projects with no clear road map for how they would eventually be tested in the environment in which they would operate.

Therefore, the report recommended, once the agency determines its top two to five projects, each should be given a defined path to flight testing that includes details of the vehicle to be used for flight research and ensures that funding will be available for this research stage.

To further enhance the NASA’s aeronautics progress in the current budget environment, the report emphasizes the need for collaboration with other governments, other U.S. agencies, and commercial companies engaged in aeronautics research.

“NASA should aggressively pursue collaboration and develop a formal process for regularly soliciting input from outside groups to assure its flight research programs are relevant to national needs,” the NRC said.

The NRC study was sponsored by NASA.

The NRC, along with the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine make up the National Academies. They are private, nonprofit institutions that provide science, technology, and health pol-

icy advice under a congressional charter.

The Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering.

The NRC report, "Recapturing NASA's Aeronautics Flight Research Capabilities, is available on-line at http://www.nap.edu/catalog.php?record_id=13384

AMELIA, from p. 90

Airplanes designed to take off and land in shorter distances usually have more powerful engines, which are noisy, or wing shapes that make them ideal for creating a lot of lift but not for efficiently cruising at altitude without sacrificing speed or fuel.

On the other hand, wings designed to allow an aircraft to fly efficiently through the air – at high speed and with less resistance – usually require longer runways for take-offs and landings, which would prevent them from being able to fly into and out of smaller airports that have shorter runways.

Measurements of the air flow and noise taken during the wind tunnel tests seem to hint that AMELIA's design does offer a potential solution, but the test's true value is that information gathered with the model will help engineers craft new airplanes in the future.

"What these tests really did for us was to generate data for an aircraft configuration that won't necessarily be flying, but will certainly look quite a bit different than what we're seeing now or have seen in the past," said Clif Horne, a NASA acoustics engineer at Ames.

AMELIA was designed as a 100 passenger, regional airliner that we might see in the 2025 or so timeframe, while also achieving goals NASA has set for a next generation aircraft in areas such as fuel efficiency and noise reduction.

Much of this work, including AMELIA, is part of the Fundamental Aeronautics Program operated by the agency's Aeronautics Research Mission Directorate.

Among AMELIA's unique features that were the focus of much attention is something called circulation control. This is where high pressure air is redirected from the jet engines and released through tiny slots that run most of the length of the wing's front and back edges.

As the expelled air passes over the wing and the flaps it creates extra lift through its interaction with the air already moving over the wing that is created by the airplane's forward momentum.

"With the help of that blowing you're creating additional lift that helps you get off the ground at much slower speeds and land with much steeper descent angles, while also helping to confine noise within the airport boundary," Rogers said.

In partnership with NASA, AMELIA was designed, built and tested by the California Polytechnic State University in San Luis Obispo, Calif., through a \$4.75 million NASA Research Agreement.

"We wanted to identify game changing technologies for the aircraft industry, determine how well our current tools could model these technologies, and then come up with a wind tunnel experiment to validate those tools and improve our predictive capabilities," said David Marshall, an associate professor with Cal Poly's aerospace engineering department

Marshall served as the principal investigator of the project, which was named in honor of Amelia Earhart, who in 1936 visited the Cal Poly Aeronautical Engineering Department campus to check on the rebuilding of a pair of Boeing P-12 Army pursuit planes.

AMELIA involved as many as 30 students, from summer interns to graduate students writing their masters' theses.

Two students in particular – Jonathan Lichtwardt and Eric Paciano – were instrumental in the project and were recognized with a "High Potential Award" presented by Jaiwon Shin, NASA's associate administrator for the Aeronautics Research Mission Directorate in Washington, D.C.

Results of the tests with AMELIA will be released to the aeronautical community as the data reduction continues. A small subset of data is expected to be available in June, and a series of technical papers will be presented at a major conference in January 2013, after which a final NASA report is expected to be published.

Aircraft

MODIFIED BOEING BLENDED WING AIRCRAFT FLIES FOR FIRST TIME

A modified Boeing Blended Wing Body research aircraft – that Boeing and the National Aeronautics and Space Administration believe offers the potential over the long-term of significantly greater fuel efficiency and noise reduction – flew for the first time Aug. 7 at NASA's Dryden Flight Research Center at Edwards Air Force Base in California.

The remotely piloted aircraft, designated the X-48C, took off at 7:56 a.m. Pacific Daylight Time and climbed to an altitude of 5,500 feet before landing nine minutes later.

The X-48C is a scale model of a heavy-lift, subsonic vehicle that forgoes the conventional tube-and-wing airplane design in favor of a triangular aircraft that effectively merges the vehicle's wing and body, Boeing explained.

Boeing and NASA's Aeronautics Research Mission Directorate are funding X-48 technology demonstration research. The effort supports NASA's Environmentally Responsible Aviation project, which has goals to reduce fuel burn, emissions and noise of future aircraft.

"Working with NASA, we are very pleased to enter into the next flight-test phase of our work to explore and validate the aerodynamic characteristics and efficiencies of the Blended Wing Body concept," said Bob Liebeck, a Boeing Senior Technical Fellow and the company's BWB program manager.

"In our earlier flight testing of the X-48B, we proved that

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a BWB aircraft can be controlled as effectively as a conventional tube-and-wing aircraft during takeoffs and landings and other low-speed segments of the flight regime,” Liebeck said. “With the X-48C, we will be evaluating the impact of noise shielding concepts on low-speed flight characteristics.”

The X-48C is a modified version of the X-48B aircraft, which flew 92 times at NASA Dryden between 2007 and 2010. The X-48C is configured with two 89-pound thrust turbojet engines, instead of three 50-pound thrust engines on the B-model; and wingtip winglets have been relocated inboard next to the engines on the C-model, effectively turning them into twin tails. The aft deck also was extended about 2 feet at the rear.

“We are thrilled to get back in the air to start collecting data in this low-noise configuration,” said Heather Maliska, NASA Dryden’s X-48C project manager.

The modified test vehicle was designed by Boeing and built by Cranfield Aerospace Ltd., in the United Kingdom, in accordance with Boeing requirements.

Boeing said that while it “continuously explores and applies innovative technologies at its own expense to enhance its current and next-generation products, the X-48C flight-test research is an example of how the company also is looking much farther into the future at revolutionary concepts that offer even greater breakthroughs in the science of flight.”

“Boeing has been a leader in technology and aerospace for almost 100 years. Our employees work to solve big challenges and create complex, highly capable systems, from today’s 787 Dreamliner airplane and P-8A Poseidon multi-mission military aircraft to the X-48C, which explores ideas for future advances. Every day our team is building on our legacy of groundbreaking technical achievements that have improved life for people worldwide,” said John Tracy, Boeing chief technology officer and senior vice president of Engineering, Operations & Technology.

Engineers from Boeing Research & Technology, the company’s central research, technology and innovation organization, will be working closely with NASA engineers during flight tests of the X-48C, which are expected to continue throughout 2012. As handling qualities of the X-48C will be different than those of the X-48B, the project team developed flight control software modifications, including flight control limiters to keep the airplane flying within a safe flight envelope.

With a 21-foot wingspan, the 500-pound aircraft is an 8.5 percent scale model of a heavy-lift, subsonic airplane with a 240-foot wingspan that possibly could be developed in the next 15 to 20 years for military applications such as aerial refueling and cargo missions. The X-48C has an estimated top speed of about 140 miles per hour, with a maximum altitude of 10,000 feet. The X-48C project team consists of Boeing, NASA, Cranfield Aerospace, and the U.S. Air Force Research Laboratory.

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 24, Number 24

August 17, 2012

Seattle-Tacoma Int'l

DRAFT EA ON 'GREENER SKIES' INITIATIVE ISSUED; NO SIGNIFICANT NOISE IMPACTS

There are no significant noise or other environmental impacts associated with the Federal Aviation Administration's "Greener Skies over Seattle" initiative, according to the Draft Environmental Assessment of the project, which has been released for public comment.

Under the "Greener Skies" partnership, Boeing, the FAA, the Port of Seattle, and Alaska Airlines combined their expertise to develop Required Navigation Performance (RNP) procedures, new Standard Terminal Arrival (STAR) procedures, and Optimized Profile Descents for aircraft arriving from the northwest and southwest into Sea-Tac.

These advanced satellite-based navigation procedures were designed to cut fuel use, emissions, and noise and to demonstrate that NextGen navigation procedures can be seamlessly integrated into complex airspace (24 ANR 70).

In the FAA's Draft EA on the Greener Skies initiative, noise impact was examined for three years (2014, 2018, and 2023) using the FAA's Noise Impact Routing System (NIRS) noise model. The results of the modeling showed that:

(Continued on p. 95)

East Hampton Airport

TOWN ASKS FOR REPORT ON WHETHER NOISE DATA JUSTIFIES HELICOPTER RESTRICTION

The East Hampton Town Council wants to know within the next three to six months if noise data being collected at the East Hampton Airport this year justify a restriction on helicopter operations at the airport.

In a resolution passed Aug. 9, the Town Council directed the airport manager and CY Consultants through their sub-consultant Harris Miller Miller & Hanson Inc. (HMMH) to assess and evaluate data that are being collected on noise and operations at the Airport and to prepare a report "setting forth their conclusions on whether the data can justify a restriction on operations by helicopters at the Airport and, if so, what restriction would be most effective in light of the available data."

Last fall, East Hampton became the first airport proprietor in the United States to consider imposing a mandatory nighttime noise restriction on helicopter operations under the Federal Aviation Administration's Part 161 Regulations on Notice and Approval of Airport Noise and Access Restrictions (23 ANR 181).

Because helicopters are designated as Stage 2 aircraft, FAA approval of a helicopter noise restriction would not be required under the Part 161 regulations. For

(Continued on p. 95)

In This Issue...

Seattle-Tacoma Int'l ... No significant noise impact will result from incorporating NextGen RNP approach procedures into Sea-Tac airspace, FAA's Draft EA on the project concludes - p. 94

East Hampton Airport ... Town wants to determine in next three-to-six months whether noise data justify helicopter restriction - p. 94

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NextGen ... FAA is not moving fast enough to deploy Metroplex Initiative, FAA Inspector General tells Congress in audit report - p. 96

News Briefs ... MASSPORT is the winner of 2012 Randy Jones Award for Excellence in Airport Noise Mitigation ... Philadelphia Int'l Part 150 program was updated because of runway extension, airspace redesign ... Senior Design Manager sought for sound insulation program at Ft. Lauderdale Int'l - p. 96

Sea-Tac, from p. 94

- None of the 3.1 million people in the study area would be exposed to an increase in noise exposure that exceeds FAA's criterion for significant noise impact (a 1.5 dB or greater increase in the 65 dB DNL or greater contour) or FAA's other criteria for notable noise changes (either a 3 dB or greater change in DNL from 60 to 65 dB, or a 5 dB or greater change in DNL from 45 to 60 dB) for any of the study years examined;

- In each of the study years, there are residents exposed to noise greater than DNL 45 who will experience slight increases in exposure due to the changes in approach procedures but others will experience slight decreases in noise, none of them greater than plus or minus 1 dB. Those who will experience slight decreases in noise impact outnumber those who will experience slight increase by more than two to one;

- For each of the study years, there are population centroids about three miles from runway ends that will be newly exposed to DNL values greater than 65 dB DNL as a result of the new approach procedures. However, these increases are "extremely small and not likely even to be noticed" (between 0.1 – 0.2 dB), FAA said.

In terms of emissions reductions, the Greener Skies approach procedures are expected to reduce daily fuel usage by approximately 30,000 pounds, representing a decrease of 1.0 to 1.14 percent compared to the No Action Alternative for the 2014 and 2018 study years.

FAA said that these reductions are not large for airport operations as a whole because no changes are being proposed for arrivals from the east side of Sea-Tac nor are any changes proposed for departures.

However, FAA said the new arrival tracks do provide large individual benefits, reducing fuel burn as much as 30 to 32 percent on the new HAWKZ STAR entering the Seattle airspace from the southwest.

FAA is seeking public comment on the Draft EA. Sept. 14 is the deadline for submitting comments. Details on how to submit comments are available at the "Greener Skies" website (www.greener skies sea.com); click on "Public Outreach."

Environmental Review**FAA GIVES CATEX TO RNAV PROCEDURES AT DULLES, REAGAN**

Proposed satellite-based Area Navigation (RNAV) approach and arrival procedures at Washington Reagan National and Dulles International airports were given a Categorical Exclusion (CATEX) from environmental review by the Federal Aviation Administration, the agency announced Aug. 15.

A CATEX designation means that the FAA is not required to conduct a formal public hearing or a formal public comment period prior to implementing the procedures.

FAA said that the review process it used, which was not specified, indicated that neither project would adversely impact the environment.

The FAA will implement one RNAV standard terminal arrival route (STAR) procedures, one conventional STAR procedures and two RNAV standard instrument departure (SID) procedures at Dulles International.

At Reagan National Airport, FAA will implement two RNAV STAR procedures and one conventional arrival procedure. The non-RNAV arrival procedure will accommodate non-RNAV aircraft into the DC metropolitan area from the west.

Why did FAA issue a Draft EA for RNP arrival procedures at Seattle-Tacoma International Airport (see story above) and give CATEX's to RNAV procedures at Dulles and Reagan National? The difference is that the proposed RNP procedures at Sea-Tac substantially change the airspace whereas the proposed procedures at Dulles and National involve only minor changes to current flight paths and still keep aircraft over the Potomac River corridor.

CATEX Language in FAA Reauthorization

In related news, FAA attorneys are still working with the White House Council on Environmental Quality (CEQ) in an effort to determine how best to comply with a provision of the FAA reauthorization bill, which is now law, that requires the FAA Administrator to give at CATEX from environmental review to RNAV/RNP procedures if they would "*result in measureable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace.*"

The FAA and CEQ are still trying to determine how to best calculate "measureable reductions" of noise, CO₂, and fuel "on a per flight basis" in a way that complies with the National Environmental Policy Act (NEPA).

The phrase "on a per flight basis" denies FAA the ability to aggregate noise impact, making it much more difficult to deny a CATEX.

East Hampton, from p. 94

Stage 2 aircraft, the Part 161 regulations require only that airport proprietors prepare an analysis of the anticipated costs and benefits of the proposed restriction and provide proper public notice.

However, the Town's resolution noted that East Hampton "cannot lawfully impose a restriction on helicopters at the Airport without first conducting a study that demonstrates the existence of a noise problem and it is important to analyze the [noise] data before the Town Board can make a thoughtful and reasonable decision on whether to impose a restriction on the use of the Airport."

On July 6, the Federal Aviation Administration issued a final rule making mandatory an existing voluntary off-shore

helicopter route designed to reduce noise impact on communities on the North Shore of Long Island, NY (24 ANR 74). However, the rule does not cover routes helicopters that take inland to airports and other landing areas from the over-water route.

NextGen

FAA NOT MOVING FAST ENOUGH ON DEPLOYMENT OF NEXTGEN

The Federal Aviation Administration is not moving fast enough to deploy NextGen, especially in key areas such as the FAA's Metroplex initiative, airport surface operations, and data communications, the agency's Inspector General (IG) told Congress in an Aug. 1 audit report.

The IG's audit assessed how well the FAA acted on 32 recommendations for accelerating NextGen's deployment that were made in September 2009 by an RTCA task force of government-industry representatives established at the FAA's request.

The Chairmen and Ranking Members of the House Committee on Transportation and Infrastructure and its Subcommittee on Aviation asked the FAA IG to review FAA's actions to address the task force's recommendations.

"While FAA has focused on one of the most critical recommendations – metroplex airspace – it missed milestones at the first two sites due to unresolved staffing issues and lack of a project plan. The expected completion date for all metroplex sites is now 15 months later than FAA's earlier, more aggressive plans," the IG told Congress in the audit report.

The goal of FAA's Metroplex initiative is to improve the flow of air traffic into and out of congested metropolitan areas that are served by several airports. Metroplex initiatives are underway or planned in 21 metropolitan areas across the country.

The IG audit report said that aviation industry representatives are concerned that the Metroplex effort "may not deliver all planned/desired benefits since FAA has focused only on near-term airspace and procedure improvements rather than maximizing new technologies and advanced procedures [such as RNP] as recommended by the task force."

The IG also told Congress that FAA has not yet resolved many of the barriers that will impede the implementation of the task force recommendations, including working across diverse agency lines of businesses, updating policies, streamlining the process for implementing new flight procedures, applying environmental regulations, upgrading controller automation tools, and training controllers on new advanced procedures.

The IG made several recommendations for improving FAA's ability to implement the RTCA task force recommendations, including:

- Commit to a plan with milestones for the more integrated and sophisticated metroplex capabilities as envisioned

by airspace users and the task force;

- Evaluate combining the metroplex study and design team processes to accelerate the completion of FAA's metroplex initiative;
- Adequately document and prioritize projects identified by metroplex teams that have the potential for significant benefits, but are not included in metroplex;
- Develop a comprehensive RNAV/RNP controller training program on applying new metroplex advanced procedures in a mixed-equipage environment; and
- Establish a formal process for reporting barriers identified by metroplex teams (i.e., policies, procedures, operational approval processes, training, criteria, and equipage and technology issues) and put in place a mechanism to ensure they are adequately resolved.

FAA Office of Inspector General Audit Report No. AV-2012-167, "Challenges with Implementing Near-Term NextGen Capabilities at Congested Airports Could Delay Benefits" is available online at <http://www.oig.dot.gov/library-item/5873>

In Brief...

MASSPORT Wins Randy Jones Award

The Massachusetts Port Authority (Massport) is the winner of the 2012 Randy Jones Award for Excellence in Airport Noise Mitigation.

On Aug. 15, the Planning Committee for the American Association of Airport Executives (AAAE) Airport Noise Mitigation Symposium announced the award, which is given annually to recognize an individual or organization that has made a significant contribution to the airport noise mitigation industry.

"Massport has led noise mitigation efforts that predated most other programs in the U.S. Since 1984 they have insulated over 11,000 housing units and 37 schools in communities surrounding Boston's Logan International Airport (BOS). The Massport program at BOS has also pioneered numerous innovative techniques in sound insulation thereby securing its reputation as an industry leader in noise mitigation," the Committee said.

The Randy Jones Award will be presented at the 12th Annual AAEE Airport Noise Mitigation Symposium during the awards luncheon on Monday, Oct. 1, at the Hyatt Regency Buffalo/Hotel and Conference Center in Buffalo, NY.

For further information on the Randy Jones Award, contact Alan Hass, managing director, Landrum & Brown, at ahass@landrum-brown.com. Additional information on the Airport Noise Mitigation Symposium may be found at www.noise-mitigation-symposium.com.

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Philadelphia Part 150 Update

FAA announced its approval of an update to the Part 150 Program Airport Noise Compatibility Program for Philadelphia International Airport on July 23 (24 ANR 84).

Asked why the Part 150 program was updated, airport officials responded: "The PHL Noise Compatibility Plan (NCP) was updated because of the extension of Runway 17/35 and the FAA's New York, New Jersey and Philadelphia Airspace Redesign Project and we are grateful for the significant amount of stakeholder involvement in the development of the program.

"Area residents, local elected officials and government planning agencies worked with the FAA, our airlines and airport staff on the review of existing measures and provided input as to new measures.

"Our first NCP, approved in 2003, provided a good framework for our noise abatement program and this update continues our commitment to be a good neighbor to surrounding communities.

"As with many airports, many of our noise sensitive communities lay outside of the 65 dB DNL contour and several of the measures we proposed were designed to minimize noise exposure regionally. Although the FAA did not approve those measures under the auspices of Part 150, we still plan to consider them as part of our overall noise reduction strategy."

Senior Design Manager Sought

The Jones Payne Group, Inc., a national architecture and project management firm is seeking qualified candidates for a Senior Design Manager with experience in airport sound insulation projects. The Senior Design Manager will coordinate with consultants, contractors, manufacturers and regulatory agencies, and be directly responsible for the development and production of contract documents, including plans, specifications, details and cost estimates for up to 400 residential units per year over a 5-year period in Fort Lauderdale, Florida.

Requirements:

- Minimum of 5 years' experience in a similar position on similar projects;
- Proficiency in use of AutoCAD;
- Professional or Associate Degree in architecture, engineering or project management a plus.

Salary commensurate with experience. Please send cover letter and resume to jobs@jonespayne.com. Phone calls will not be accepted.

We are an Equal Opportunity Employer. Women, minorities, disabled and veterans are encouraged to apply.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

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Sound Insulation

FAA ISSUES GUIDANCE LIMITING STRUCTURES THAT ARE ELIGIBLE FOR SOUND INSULATION

[On Aug. 17, FAA issued Program Guidance Letter (PGL) 12-09, AIP Eligibility and Justification Requirements for Noise Insulation Projects.

Following is a summary of the PGL prepared by C&S Companies, Harris Miller Miller & Hanson Inc., and Kaplan Kirsch Rockwell LLP. It also is available on their websites.]

FAA Program Guidance Letter (PGL) 12-09 imposes a new “two-step” eligibility requirement for Airport Improvement Program (AIP) funded noise insulation projects, including requiring that structures must have a noise level equal to or greater than 45 dB Day-Night Average Sound Level (DNL) prior to insulation. The PGL describes the two-step eligibility requirement as follows:

The structure must be located within the 65 dB DNL contour.
The interior noise level must be 45 dB or greater.

(Continued on p. 99)

Sound Insulation

PGL APPLIES EQUALLY TO SOUND INSULATION PROGRAMS FUNDED WITH PFC REVENUE

All the requirements defined in FAA’s Program Guidance Letter on the eligibility of airport sound insulation programs for Airport Improvement Program (AIP) grant funding also apply equally to airport sound insulation programs funded by Passenger Facility Charge (PFC) revenue.

Since 2000, the PFC program has funded nearly \$2 billion in airport noise mitigation efforts, including more than \$1.4 billion specifically for sound insulation, according to FAA. Since 1982, AIP grants have provided nearly \$5.7 billion noise mitigation activities, including \$3.2 billion for sound insulation.

So, of the total \$7.7 billion in AIP grants and PFC revenue estimated to have been spent on airport noise mitigation projects to date, an estimated \$4.6 billion – over half – has gone to fund airport sound insulation programs.

FAA maintains that it was not directed by the Obama Administration or Congress to cut spending on airport sound insulation programs and that its recent guidance was only being issued to clarify existing and long-standing policy.

The agency said it “was made aware that the existing guidance was not being

(Continued on p. 102)

In This Issue...

Sound Insulation ... FAA issues a Program Guidance Letter to make clear to airports and agency staff that houses, schools, and other structures must meet two requirements (be located in an airport’s 65 dB DNL contour *and* have an interior noise level of 45 dB or greater) in order to be eligible for sound insulation funded by AIP grants or PFC revenue - p. 98

The PGL provides a three-year transition period for airports to meet the two-step eligibility requirement.

FAA says it is only reconfirming existing policy but AAAE asserts the agency is making new policy.

A summary of the provisions of the PGL is provided by C&S Companies, HMMH Inc., and Kaplan Kirsch & Rockwell.

They also discuss in detail areas of the PGL that they believe need additional definition and clarification by FAA.

PGL, from p. 98

This two-step requirement represents a major deviation for many program policies and practices as implemented over the last three decades. Most programs have not included an interior noise level eligibility criterion.

(The metric required for use in California is the Community Noise Equivalent Level (CNEL); not DNL. However, because the metrics are quite similar, DNL will be used throughout for the purpose of describing both metrics in this fact sheet).

Details of the Two-Step Eligibility Requirement

The two-step eligibility requirement comes with a number of implementation procedures requirements, which will challenge many airports with residential sound insulation programs.

Acoustical Testing Requirements

To implement the two-step requirement for noise insulation projects, airports will now be required to conduct pre-construction acoustical testing in 10 to 30 percent of each “category” of home within a program phase. Windows must be closed during the testing, measurements must be taken in all habitable spaces, and the average of the measurements must be 45 dB or greater in order for the category of home to qualify for the full package of sound insulation treatments.

Lesser Sound Package for Some Homes

An incidental number of homes (not to exceed 10 percent of eligible homes in a phase or 20 homes total in a phase) may receive a lesser noise reduction package for neighborhood equity purposes, even if interior noise levels do not exceed the criteria.

Ventilation System Option

Installation of a continuous positive ventilation system only will be eligible for homes that do not have an existing ventilation system even if the interior noise levels are below 45 dB.

Three-Year Transition Period

Recognizing that the two-step requirement has not been in use at all airports, the PGL includes a transition period to allow continued insulation of homes with noise levels below 45 dB DNL for the following types of programs:

- Residential programs that had construction in federal fiscal year (FY) 2010 or 2011 and planned for FYs 2012, 2013, or 2014;

- New residential programs that will begin construction in FY 2012; and
- School or public-building projects either under construction or procurement for construction that were completed prior to the PGL’s publication.

FAA will permit ongoing programs that have already been contracted to complete the sound insulation as planned. Airport sponsors are required to submit to the ADO a plan no later than September 14, 2012. That plan must include the program’s policy manual, list of structures to be treated, year the structures were constructed, location on the noise exposure map, and certification that federal procurement policies will be met.

The ADO will either concur with the plan or require that the airport sponsor revise and resubmit the plan. There is no time-frame defined for the FAA’s review of the plan. Sound insulation treatment of all of the structures approved by FAA in the plan must be completed by September 30, 2015, and the program must be in compliance with all federal procurement requirements. Any costs to redesign projects to comply with the PGL are ineligible for federal participation.

Notification of Residents

The PGL obligates airport sponsors to explain the two-step requirement and the phasing strategy of the program to all residents located in the DNL 65 dB contour and to inform them that final determination on eligibility for treatment will be made after acoustic testing is completed. It also requires sponsors to explain the noise contour update process and that residences may fall out of the DNL 65 dB contour during future updates.

Applicability to Different Sources of Revenue

The PGL explains that its two-step requirement is applicable directly to the use of AIP funds for sound insulation. Because the ability to use Passenger Facility Charges (PFC) for noise projects is conditioned on the eligibility to use AIP funds, FAA is affecting the ability to use PFC and AIP funds. The PGL, with the inclusion of the following excerpt, also creates questions regarding whether expenditure of airport revenue would be permissible: “Sound insulating structures that are not adversely affected by aircraft noise would not be considered a capital or operating expense of the airport.”

The PGL explicitly states that it is leaving untouched past guidance that allowed funding for sound insulation required by environmental approval documents. However, the PGL warns that sound insulation may no longer be eligible for homes that are not exposed to the noise levels above the two-step requirement thresholds without special agency concurrence.

Major Implications of the PGL for Airport Sponsors

- Airports may be unable to use federal AIP or PFC funds to provide sound insulation to homes that have previously been eligible. This limits one of the significant tools airports have to address community concerns about noise impacts. Some promised insulation projects may not be carried out due to the change in guidance.

- Implementation of noise projects will become uneven in neighborhoods with certain classes of homes eligible, while others are ineligible. This may create serious communications challenges and a potential loss of goodwill.

- To date, most programs have not used acoustical testing results to disqualify homes. Going forward, airport sponsors will need to ensure testing protocols result in reliable and accurate interior noise level determinations since homes will be disqualified from the Program as a result of the acoustical testing.

- FAA's requirements regarding the number of homes that must or can be tested will involve changes to many airports' current sound insulation programs. The changes are likely to result in public communication, administration, and funding challenges.

The implementation of the new PGL will likely be complicated and may add significant administrative costs to sound insulation programs.

Please contact the following if you have any questions: Michael Hotaling of C&S Companies (tel: 619-857-5357; www.cscos.com), Gene Reindel of HMMH (tel: 916-368-0707; www.hmmh.com), or John Putnam at Kaplan Kirsch & Rockwell (tel: 303-825-7000; www.kaplankirsch.com).

Areas Where Additional FAA Guidance Is Needed

[C&S Companies, HMMH, and Kaplan Kirsch also defined for ANR the following areas where they believe FAA needs to issue additional clarification on its PGL]

The Federal Aviation Administration (FAA) released Program Guidance Letter 12-09, AIP Eligibility and Justification Requirements for Noise Insulation Projects (PGL) on August 17, 2012, and stated the reason for the PGL is to "reconfirm the two-step requirement for AIP eligibility for residential and other noise projects."

There are several items where additional clarification from FAA would prove beneficial as airport sponsors sort out the implications of the PGL and muster the resources to adapt their programs to comply with it.

1) The discussion supporting the use of the 45 decibel (dB) interior Day-Night Average Sound Level (DNL) step in the two-step process is confusing and ambiguous.

FAA states that the original AIP Handbook set the "design objective for noise insulation projects" at an interior noise level at 50 dB "when the project is completed" and later versions lowered it to 45 dB. This statement itself implies that 45 dB is an arbitrary standard, which is okay as long as it is a treatment design goal rather than an eligibility criteria.

FAA points to a number of background documents including the Federal Register notice from January 26, 1981 (which is not readily available) to support the criterion. However, the PGL explicitly sets the qualifying criteria as equal to or greater than 45 dB. If 45 dB is the design objective and, by inference in the PGL, a compatible interior noise level, then why would a structure with pre-construction noise levels at 45 dB be eligible for treatment?

2) The PGL states that 45 dB is the "design objective" and partially quotes Note 1 to Table 1 in Appendix A of 14 CFR Part 150, which in its entirety states:

"Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems."

Assuming the NLR of 25 dB applies to structures located in the DNL 65 dB contour and the NLR of 30 dB applies to those in the DNL 70 dB contour, then it seems the design objective for compatibility is actually 40 dB (i.e., $65 - 25 = 40$). This would then suggest that any structure with an interior noise level greater than 40 dB is incompatible with respect to Part 150. What is the appropriate standard to be used for eligibility of funding?

3) In support of a "target interior noise level of 45 dB", footnote number 2 to the PGL states, "The design objective of a residential noise insulation project generally should be to achieve the requisite NLR when the project is completed. (This is mathematically equivalent to achieving a DNL of 45 dB in all habitable rooms.) – FAA Order 5100.38C, Paragraph 812b (1). This is mathematically equivalent to achieving a DNL of 4 [sic] dB because, application of 25 dB NLR to the 70 yearly DNL range in Table 1, Appendix A, Part 150, and application of 30 dB NLR to the 75 yearly DNL, both result in interior noise levels of 45 yearly DNL."

Questions related to this interpretation are:

a) Table 3 of the new paragraph 812 states, “The ADO should not normally consider sound insulation projects for residences, schools, hospitals, places of worship, auditoriums, and concert halls within a DNL 75 dB or greater noise contour since these uses are never compatible in these noise contours.” If these uses are never compatible, why is the 30 dB NLR applied to the DNL 75 dB contour?

b) Why is there no calculation shown for homes located in the DNL 65 dB contour?

4) The sponsor is required to conduct interior acoustic testing in a cross-section of each category of home in order to determine eligibility with respect to the 45 dB criterion. How many homes in a category must be equal to or greater than 45 dB in order for the category to qualify?

5) The testing requirements limit sponsors to no more than 30% of the homes in a specific category. But, sponsors may test additional homes (without any stated limit) if requested by a homeowner for reasons that include “. . . the resident believes that their residence will test differently than others.” In those categories that are disqualified from treatment, sponsors could wind up testing 100% of those homes to satisfy homeowner objections. If individual homes within the disqualified category exceed 45 dB, will they be eligible for the full package of treatment?

6) The neighborhood equity provision of the new paragraph 812 allows for the inclusion of “. . . a few residences that do not meet the interior noise level requirements [that] are scattered among residences that do meet the interior noise level criteria . . .” This provision limits the use of federal funding to a number of residences that are less than 10% of the residences in the neighborhood and in no case more than 20 residences total. The allowable treatments are limited to a secondary package of weather-stripping, caulking, storm doors, or ventilation systems.

Questions of clarity with respect to this provision include:

a) What is FAA’s definition of the term “neighborhood?”

b) Acknowledging that FAA cannot require an avigation easement in exchange for treatment, can the agency provide any guidance to airport sponsors in convincing these homeowners to grant the same avigation easement that their neighbors who receive the full package are asked to grant?

c) Are airport sponsors excused from the requirement to demonstrate that the treatments will achieve the 5 dB Noise Level Reduction (NLR) goal for homes that receive the secondary package?

d) If more than 10% or 20 total residences in the “neighborhood” do not meet the interior noise level criteria, then does that mean this secondary package cannot be offered? If it still can be offered, can FAA offer any guidance on how to choose the 10% or 20 total residences to avoid the “confusion” described in this section?

e) According to this criteria, “Where there are more than 10 percent or 20 residences proposed for neighborhood equity packages, the cost of this work must be funded with other nonfederal, sources of funds.” Item 10 in the PGL memorandum expressly prohibits the use of AIP grants, PFC funds or airport revenue for homes that do not qualify under the “two-step requirement”. Is there another source of funding FAA envisions to pay for the costs of treating these homes?

7) The PGL creates multiple design package scenarios:

a) The full package of windows, doors, ceiling insulation, weather-stripping, caulking and ventilation system (homes that are greater than 45 dB) and possible subsets of this package for each category of home deemed eligible.

b) A secondary package of weather-stripping, caulking, storm doors, or ventilation system (for “incidental” homes at or below 45 dB).

c) Ventilation systems only for homes without existing central ventilation systems even if they test below 45 dB.

Most programs achieve a streamlined level of efficiency, from design through construction and close out, by defining a typical package of treatments for all homes. Have the additional administrative costs associated with creating and managing multiple design package scenarios been considered?

8) Table 2 states that “Long standing agency policy is that an airport sponsor must use the 1992 guidance to establish the existing interior noise levels to determine whether or not the building qualifies for sound insulation using AIP.”

Currently, on FAA’s web site, the agency positions the entire 1992 document as Advisory Circular 150/5000-9A (AC). Yet, the actual AC was just the document announcing the availability of the guidelines. The guidelines are self-described as a “handbook” and do not state an interior noise level qualification criteria.

Questions regarding the guidelines include:

a) Will the forthcoming guidelines update, which is currently being prepared through the Airports Cooperative Research Program, include the two-step process?

b) Are airport sponsors obligated to conduct noise testing based only on aircraft over flights as described in the guide-

lines in lieu of the common current practice of using an artificial noise source?

9) Sponsors must demonstrate that a treatment package will achieve the 5 dB NLR improvement goal. What direction will FAA provide to sponsors for demonstrating this and what will happen when it has been demonstrated that the NLR goal will be met in a structure, but for some reason post-construction testing shows that it did not?

10) The restriction on sound insulating only the habitable areas creates another challenge for airports.

In many programs, windows located in spaces like bathrooms, utility rooms, etc. were replaced with aesthetically equivalent non-acoustic windows for visual consistency. In addition and occasionally, a non-habitable area, if left untreated, can result in a habitable space not meeting the design objectives. Now, homeowners will have several new windows and the occasional old window sandwiched in between. A more complex situation involves treating a condominium building where specific requirements often exist to maintain consistent exterior aesthetics. How can airport sponsors comply with both FAA's directive and satisfy the aesthetic demands of homeowners and the requirements of condominium associations?

11) FAA has fixed the deadline for the submission of an airport sponsor's ongoing program "Initial Report" at 30 days after the publication of the PGL, which winds up being Friday, September 14, 2012 (because the 30th day falls on a Sunday). Some of the questions related to this submission are:

a) Are the testing reports required to be submitted with the Initial Report those for homes that have already been constructed prior to the PGL's release or for homes anticipated to be completed during the transition years of 2013, 2014, and 2015?

b) What guidance will FAA be able to give to airport sponsors on anticipated funding in federal fiscal years 2013, 2014 and 2015? It is difficult for an airport sponsor to accurately develop a list of homes expected to be treated during the transition period without knowing how much funding will be allocated.

c) How long will the review of the Initial Report take? Since time is of the essence and ADOs must concur with the submittal, an expedited review and revision cycle will be crucial to the successful completion of the transition period.

12) Attachment 2 states that redesign cost to conform to the PGL are ineligible. What does "redesign" mean? It could be a significant effort to adjust specific program policies and implementation methodology to comply with the "two-step

requirement" in the PGL, which could be a significant burden for some airport sponsors to absorb without federal funding.

PGL, from p. 98

consistently applied and, therefore, determined it was necessary to reiterate and clarify the requirements."

But others, speaking on background, contend it is likely that issuance of the PGL was politically motivated and that the PGL is a deliberate effort to redirect federal funding away from sound insulation programs. The PGL was issued at a time when the Obama Administration is under strong pressure to cut federal agency spending.

Few comments on the new PGL by aviation trade groups have been issued at this point and it is unclear whether FAA will be sued over the guidance. Also, still to come, is finding out how airport neighbors will respond when told their homes no longer qualify for sound insulation treatments.

The American Association of Airport Executives (AAAE) asserted that the PGL represents a change in FAA policy, not a simple clarification as the agency contends.

"Overall, AAAE feels that this PGL is not a clarification of an existing FAA policy but demonstrates a change to an existing FAA policy. Throughout our interactions with FAA on this issue, we made it clear that this is a matter that would better be handled through the rulemaking process. The FAA maintained that no changes were being made to the policy and the PGL was only being released to clarify any confusion going forward," Natalie Johnston, AAAE's director of Regulatory Affairs, wrote in an Aug. 17 AAAE Regulatory Alert.

She added that it "is discouraging to see that the FAA did not address our concern for [acoustical] testing being done with windows open in some regions."

The PGL requires that all acoustical testing be done with windows closed.

Subscriber Comments

ANR solicited comments on the PGL from subscribers. Following are those received by deadline. Additional comments will be reported as they become available.

King County Int'l Airport

Sharyn Parker, Noise Officer and Sound Insulation Program Manager for King County International Airport in Seattle, said "KCIA has complied with the 2005 AIP Handbook mandate for the two-step noise testing protocol to qualify homes with an interior noise level of 45 dB or greater.

"KCIA's entire sound insulation program was designed and managed consistent with these noise testing requirements and KCIA has successfully communicated this approach to residents within the Noise Mitigation Boundary.

"To be sure, it is a different 'discipline' from what the A&E firms that competed for our project management contract explained when we were first establishing our program.

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However, two videos, direct mailing to homeowners, outreach to non-English speaking population, and a user-friendly Homeowner's Handbook explained the two-step noise testing approach and it has been accepted by local residents."

Asked how many homes in the 65 dB DNL contour qualified for sound insulation under the two-step eligibility requirement, Parker replied: "Not all homes have been noise tested within the 65 dB DNL because not all homeowners have responded to direct mail requests for testing. Currently, the qualification rate for residences in the 65 dB DNL is 22%. KCIA is conducting door-to-door canvassing in order to speak personally with every homeowner despite their lack of response to numerous contacts.

The Jones Payne Group

Michael Payne, President of The Jones Payne Group, wrote: "We feel there are numerous technical and administrative issues raised by PGL 12-09 pertaining to acoustical testing, eligibility criterion, and treatment methods and policies that require clarification.

"We request that the FAA define the process by which questions and issues can be addressed to ensure that concerns can be handled in an efficient manner with information being distributed to all parties impacted by the PGL."

Mayor of Bridgeton, MO

Bridgeton, MO, Mayor Conrad Bower told ANR that he was very opposed to FAA making determinations about what houses qualify for sound insulation on a house-by-house basis. Such decisions should be made on a neighborhood basis, he stressed. And, he questioned how accurate acoustical measurements would be when used on a house-by-house basis.

Bridgeton is located near Lambert-St. Louis International Airport.

[FAA Program Guidance Letter 12-09 is available at FAA's web site at http://www.faa.gov/airports/aip/guidance_letters/media/pgl_12_09_NoiseInsulation.pdf]

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

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August 31, 2012

Sound Insulation

BY MID-SEPT. FAA WILL PUBLISH ANSWERS ON ITS WEB PAGE TO QUESTIONS ON NEW PGL

By mid-September, the Federal Aviation Administration will publish on its web site answers to questions the agency is receiving on its new Program Guidance Letter (PGL) on airport sound insulation program funding eligibility, which was issued on Aug. 17 (24 ANR 98).

The PGL requires homes and other structures to meet a 45 dB interior noise level criterion in addition to being in the 65 dB DNL contour in order to be eligible for funding with Airport Improvement Program (AIP) grants or Passenger Facility Charge (PFC) revenue.

The public can subscribe to the FAA Office of Airports' web page to receive notices regarding when the agency updates the page with the questions it has received on the PGL and its answers to them.

To subscribe, click on http://www.faa.gov/airports/news_information/news/ and hit "Subscribe" by the green check mark under the page heading and following instructions.

Airports and others should submit any questions regarding the PGL to the ap-
(Continued on p. 105)

Charlotte-Douglas Int'l

FIFTH RUNWAY WILL BE ADDED TO ALLOW LONGER FLIGHTS, REDUCE NOISE IMPACT

A new 12,000-foot runway will be added at Charlotte Douglas International Airport to allow non-stop departures to the Pacific Rim and deeper into Europe and to mitigate noise impact.

Environmental studies on the \$160 million project are planned to begin in 2013 and, depending on their outcome, runway construction could begin in 2014, Aviation Director Jerry Orr told the Charlotte City Council Aug. 27 in announcing the new runway.

It will be the airport's fifth and longest runway and its fourth parallel runway.

Orr told the City Council that the new runway would be a "noise abatement runway."

In January, 48 residents in the path of the airport's fourth runway, which opened in early 2010, filed lawsuits in Mecklenberg County, NC, Superior Court against the City of Charlotte claiming that aircraft noise has decreased the value of their homes and constitutes an unlawful taking (24 ANR 1).

The fourth runway – the airport's western-most parallel – was planned to handle

(Continued on p. 106)

In This Issue...

Sound Insulation ... FAA will provide answers on its web page by mid-September to questions being submitted about its new PGL on SIP funding eligibility. Questions should be submitted to ADOs or regional offices - p. 104

... FAA awards \$7 m. AIP grant to fund Reno-Tahoe International SIP - p. 107

Charlotte-Douglas Int'l ... New fifth runway announced; will help mitigate noise impact - p. 104

San Francisco Int'l ... Winners of Fly Quiet Program awards announced - p. 105

Waterbury-Oxford Airport ... FAA awards airport \$1.5 million grant to fund home buyouts, relocation of homeowners near airport - p. 106

JFK Int'l ... NY Rep. Carolyn McCarthy wants FAA, PANYNJ to sign a memorandum of understanding delineating their respective responsibilities for mitigating noise impact - p. 106

PGL, from p. 104

propriate FAA Airports District Office (ADO) or Regional Office (in regions without ADOs).

There is a publicly available listing of FAA Airports Division offices on the web at http://www.faa.gov/airports/news_information/contact_info/regional/.

C&S Companies, which manages airport sound insulation programs, the acoustical consulting firm Harris Miller Miller & Hanson Inc., and the law firm Kaplan Kirsch & Rockwell defined for ANR 12 areas of the PGL where they believe additional FAA guidance and clarification is required (24 ANR 100).

FAA Needs to Consider Airports Individually

The FAA's new PGL poses a problem for airports in warm climates, such as California, where many residents live year-round with their windows open. The PGL requires that acoustical testing to determine if a house meets the 45 dB DNL interior noise level criterion be done with windows closed.

Dan Frazee, director of Airport Noise Mitigation for San Diego International Airport, told ANR, "I hope that FAA Headquarters and the ADO regions will take the time to further clarify the PGL in a timely manner and look at each ongoing program individually to understand how profound differences in housing stock and climatology will affect each program's future.

"This is especially important to San Diego International Airport where a large segment of homes have no existing ventilation system and rely on open windows for air circulation."

Clarification of King County Int'l Data

King County International Airport – which has already complied with the 45 dB interior noise level criterion requirement in FAA's new PGL – asked ANR to clarify data reported in the Aug. 24 issue regarding the number of homes in the airport's high noise contours that met the 45 dB or greater interior noise level funding eligibility requirement.

The airport provided the following, more detailed data:

- For the 65 dB DNL contour, the qualification rate was 24.3 percent (136 homes were tested and 33 met the interior noise level criterion);
 - For the 66 dB DNL contour, the qualification rate was 28.2 percent (163 homes were tested and 46 met the interior noise level criterion);
 - For the 67 dB DNL contour, the qualification rate was 53.8 percent (26 homes were tested and 14 met the interior noise level criterion);
 - For the 68 dB DNL contour, the qualification rate was 70.4 percent (27 homes were tested and 19 met the interior noise level criterion).
- The qualification rate for the entire 65-68 dB DNL contour was 44.2 percent.

FAA agreed in 2005 to pre-qualify all residences in KCIA's 69-74 dB DNL noise contours (approximately 327 homes) based on sample noise testing. Thus, the house-by-house noise testing was done only in the 65-68 dB DNL contours.

San Francisco Int'l**HORIZON, MESA, EMIRATES WIN SFO FLY QUIET PROGRAM AWARDS**

Horizon Air, Mesa Airlines, and Emirates Airline are the winners of the San Francisco International Airport's Fly Quiet Program awards for 2010-2011.

Horizon Air, an Alaska Air Group member, won the Quietest Overall Airline award again after taking it two years ago. Horizon Air utilized a fleet of CRJ-700s and Dash 8 aircraft during the grading period.

The Most Improved Award for 2010-2011 went to Mesa Airlines dba US Airways Express, which operated a fleet of CRJ-900 aircraft. Mesa no longer serves SFO as US Air upgraded the service to A310 aircraft and has since withdrawn that service.

Emirates Airlines is the winner of San Francisco International Airport's Fly Quiet Program's Jon C. Long 'Chairperson's Award' for 2010-2011.

"Over the past year, the Emirates Flight Operations team has met with SFO Aircraft Noise Abatement Office (SFO ANAO) staff numerous times in an effort to improve their performance and the results are definitely above and beyond mere program participation," said Jeffrey Gee, SFO Community Roundtable Chair of the SFO 'Fly Quiet' Program.

"Emirates has worked diligently with the SFO ANAO to improve its overall Fly Quiet scores and hence we are pleased to present the airline with our prestigious Jon C. Long Fly Quiet annual 'Chairperson's Award'."

"Conscious of flying a 'heavy' aircraft on the ultra-long haul route between Dubai and San Francisco – the Boeing 777-300 Extended Range – Emirates was determined to limit noise emissions and achieve overall operational excellence," the airline said Aug. 23.

Emirates said its Flight Operations worked with SFO to analyze hundreds of flights to determine actual aircraft climb profiles, the use of certain Standard Instrument Departures, and wind gradient encounters – all major causes of noise – in order to identify the best flight paths and minimize noise impacts.

"Emirates believes that taking care of our passengers does not end when they disembark our aircraft or even when they exit out of the airport's terminal doors. As active members of the communities in the destinations we serve, we aim to be good citizens and take into consideration those living near our destination airports," said Captain Alan Stealey, Emirates Divisional Senior Vice President Flight Operations.

"Reducing our noise impact from our aircraft is a great

example of how Emirates can benefit the communities we serve. Recognition of our achievements in San Francisco is a great honor and we thank the airport for their role in supporting our efforts to reduce our noise impact around SFO.”

The Fly Quiet Program is led by San Francisco International Airport’s Aircraft Noise Abatement Office to ensure that flights operate as quietly as possible and to provide information about noise abatement to community residents.

The Chairperson’s award is named in honor of Jon C. Long who served as SFO’s noise officer from 2000-2003. Each year the Fly Quiet Awards are presented to the airlines that operated the quietest, exemplifying the program goals.

Waterbury-Oxford Airport

FAA AWARDS \$1.5 MILLION GRANT FOR BUYOUTS, RELOCATIONS

The Federal Aviation Administration has agreed to provide a \$1.5 million noise mitigation grant to Waterbury-Oxford Airport in Connecticut.

“For years, residents of the Triangle Hills area of Middlebury have been adversely impacted by the growth in air traffic in and out of the airport. This grant will help fund the acquisition of homes in the neighborhood and the relocation of residents adversely impacted by the airport’s growth,” CT Rep. Chris Murphy said.

“Though the FAA did not award the full \$5 million requested, I’m glad to see that they continue to be committed to this project,” said Murphy, who is a candidate for the U.S. Senate seat being vacated by Sen. Joseph Lieberman (I).

“For years, I have fought to secure funding for the residents of Triangle Hills – to ensure that those who want to relocate receive timely and fair compensation for their homes. This grant is a welcome continuation of the FAA’s promise to help affected homeowners in the neighborhood.”

Charlotte, from p. 104

mainly arrivals but the Federal Aviation Administration is using it more than had been anticipated.

Traffic from the fourth runway could be shifted to the new fifth runway, to its east, to reduce current impact on residents under its flight path, Orr said. The flight path of the new fifth runway has no homes under it. They were bought out by the airport years ago. All development in the flight path is compatible use, an airport spokeswoman told ANR.

Orr said no airlines serving Charlotte-Douglas International currently have plans to start non-stop flights to Asia or to add more flights to Europe.

US Airways is the dominant carrier at the airport and is seeking to merge with American Airlines, which is in bankruptcy and restructuring. If the merger is successful, US Airways has stated that it plans to add new flights at

Charlotte-Douglas.

Orr contends that, no matter how things change in the airline industry, Atlanta and Charlotte will always be the two largest hubs in the Southeast.

PANYNJ

MOU BETWEEN FAA, PANYNJ ON NOISE RESPONSIBILITIES SOUGHT

Rep. Carolyn McCarthy (D-NY) wants the Federal Aviation Administration and the Port Authority of New York and New Jersey to sign a memorandum of understanding delineating their respective responsibilities to mitigate aircraft noise.

Her goal is to bring FAA and PANYNJ officials together, hopefully by September, to work on the MOU, the congresswoman told an Aug. 27 meeting of the Town-Village Aircraft Safety and Noise Abatement Committee (TVASNAC), which is sponsored by the Town of Hempstead, Long Island, located near JFK International Airport.

On Aug. 3, Rep. McCarthy sent a letter to top officials at the FAA and Port Authority relating the concerns of some of her constituents about increasing airplane noise over their homes and the need for the agencies to work together on solutions.

Rep. McCarthy focused her request in the letter on the need – as also called for by TVASNAC Chair Kendall Lampkin and his fellow board members – for a “memorandum of understanding” between the FAA and the PA so that each agency’s respective roles and responsibilities in noise management and mitigation are made more clear and accountable:

“It is my understanding that at one TVASNAC meeting representatives from each the FAA and PANYNJ agreed to make public their respective responsibilities in mitigating aircraft noise. In order to address the confusion as to each entity’s jurisdiction with respect to reducing aircraft noise, I am asking that each agency commit to a memorandum of understanding on the issue. Such a memorandum will serve as a bilateral agreement between the FAA and PANYNJ and represent a formal starting point for residents and local elected officials alike to work with both entities in a manner that reduces noise pollution over the skies of Nassau County,” McCarthy wrote.”

“As a resident of Mineola, I, myself, can attest that the piercing blare of jet engines of commercial airlines is oppressive. I am determined to seek a solution on behalf of my constituency and I remain committed to attaining the cooperation of both the FAA and the PANYNJ in order to ensure that noise abatement is being given the attention it demands.”

McCarthy said she applauded the TVASNAC “for engaging in grass-roots tactics in order to restore peace and quiet to localities on Long Island” and has “working tirelessly at meetings with local leaders to determine the best course of

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action to help solve the issue of aircraft noise over Nassau County. Topics discussed at these meetings have ranged from runway distribution to potential 'Part 150' studies. The attendees are knowledgeable on the issues and steadfast in their pursuit of livable conditions in their communities."

Reno-Tahoe Int'l

FAA AWARDS RENO-TAHOE \$7 M GRANT FOR SOUND INSULATION PROGRAM

The Federal Aviation Administration awarded a \$7 million Airport Improvement Program (AIP) grant to Reno-Tahoe International Airport for its sound insulation program, Nevada Sen. Harry Reid (D) announced.

"This grant will give the airport an opportunity to directly assist Nevadans living nearby," Reid said Aug. 30. "I am pleased that the Reno-Tahoe Airport will be able to continue its stewardship to the community while maintaining its world-class service for the millions of travelers coming to Northern Nevada."

Jerry Hall, chairman of the Reno-Tahoe Airport Authority, added, "This is wonderful news for Reno-Tahoe International and our community. This grant will help us remain a good neighbor for years to come and brings the total number of homes sound insulated by the airport to 5,000 since 1994. This program improves the quality of life for residences in their affected neighborhoods as well as their home values. We truly appreciate the commitment that has been shown to our airport by Sen. Reid and the Nevada Congressional Delegation."

Since 1994, more than \$62 million has gone to treat 4,600 residences that have participated in the airport's sound insulation program. With an average per-home investment (design and construction) of \$14,000, approximately 470 residences are slated for construction in 2013.

In Brief...

Orlando Noise Maps Approved

FAA announced Aug. 22 that Noise Exposure Maps submitted by the Sanford (FL) Airport Authority for Orlando Sanford International Airport meet federal requirements.

For further information, contact Allan Nagy in FAA's Orlando Airports District Office; tel: (407) 812-6331.

AIRPORT NOISE REPORT

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AIP Grants

FAA AWARDS \$122.2 M IN AIP NOISE GRANTS IN AUGUST; \$118 M WILL FUND INSULATION

In August, the Federal Aviation Administration awarded \$122.2 million in AIP noise mitigation grants to 17 airports, with just over \$118 million of that going to 16 airports to fund their sound insulation programs.

Prior to August, the agency had awarded AIP noise mitigation grants to only four airports during FY 2012 (24 ANR 70). It appears that the FAA was waiting until after Aug. 17 when it issued its Program Guidance Letter on AIP funding eligibility for airport sound insulation programs to release the bulk of the FY 2012 AIP noise mitigation grants, most of which go to support airports sound insulation programs.

On Aug. 30 and 31, the agency issued AIP grants to fund sound insulation programs at 16 airports. Los Angeles International Airport received the highest total (\$25 million in two grants), followed by Ft. Lauderdale-Hollywood International Airport, which received a grant of \$20 million. Atlanta Hartsfield International and Milwaukee Gen. Mitchell International each got \$10 million grants to fund their residential sound insulation programs.

(Continued on p. 109)

Environmental Review

FAA TO BRIEF RTCA ADVISORY COMMITTEE ON NEXTGEN ENVIRONMENTAL REVIEW PROCESS

A background briefing on the environmental review process for NextGen capabilities and how legislation reauthorizing the FAA impacts this process will be presented by the Federal Aviation Administration's environmental office at an Oct. 4 meeting of the RTCA NextGen Advisory Committee (NAC).

Following the presentation, the committee will hold an open discussion on the topic.

The FAA Modernization and Reform Act of 2012 requires the FAA Administrator to give at Categorical Exclusion (CATEX) from environmental review to advanced aircraft navigation procedures (RNAV/RNP) if they would "result in measurable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace."

A CATEX designation means that the FAA is not required to conduct a formal public hearing or a formal public comment period prior to implementing the RNAV/RNP procedures.

(Continued on p. 110)

In This Issue...

AIP Noise Grants ... FAA awards \$122.2 million in AIP noise mitigation grants to 17 airports in August. Some \$118 million of that goes to 16 airports to fund their sound insulation programs. LAX gets the largest grant amount (\$25 million in two grants for insulation), followed by Ft. Lauderdale Int'l with a \$20 million grant for insulation - p. 108

Environmental Review ... FAA will brief the RTCA NextGen Advisory Committee on how the FAA Modernization and Reform Act of 2012 will impact the environmental review process for NextGen procedures - p. 108

Piedmont Triad Int'l ... Airport Board agrees to purchase noise monitoring system - p. 105

Research ... NSF funds a \$300,000 study at W&L University on fluid stream mixing at supersonic speeds that could help others find ways to reduce jet aircraft takeoff noise - p. 110

Grants, from p. 108

Only two of the noise mitigation grants (one to Akron-Canton International to fund a noise compatibility plan study and the other to Barnes Municipal to acquire land) were not awarded on the last two days of August. They were both announced on Aug. 13.

FY 2012 does not end until Sept. 30, so FAA could still issue additional AIP noise mitigation grants for the current fiscal year in the next several weeks.

Grant Awards

Following are the AIP grant awards for airport noise mitigation projects announced in August by FAA:

- Anchorage International Airport received a grant of \$8,206,520 for noise mitigation measures for residences within the 65-69 DNL contour;
- Anchorage International Airport also received a grant of \$843,750 to conduct a Part 150 noise compatibility plan study;
- Los Angeles International Airport received a grant of \$15 million for noise mitigation measures for residences within the LAX 65-69 DNL contour in the community of Inglewood;
- Los Angeles International Airport also received a grant of \$10 million for noise mitigation measures for residences within the LAX 65-69 DNL contour in Los Angeles County;
- San Diego International Airport received a grant of \$12,088,500 for noise mitigation measures for residences within the 65-69 DNL contour;
- Waterbury-Oxford Airport in Connecticut received a grant of \$1,772, 246 (\$272,245 in entitlement funding and \$1,500,001 in discretionary funding) to acquire land for noise compatibility within the 65-69 DNL contour;
- Ft. Lauderdale-Hollywood International Airport received a grant of \$20 million for noise mitigation measures for residences within the 65-69 DNL contour;
- Hartsfield-Jackson Atlanta International Airport received a grant of \$10 million for noise mitigation measures for residences within the 65-69 DNL contour;
- Chicago O'Hare International Airport received a grant of \$4.5 million for noise mitigation measures for an elementary school;
- Alexandria (LA) International Airport received a grant of \$3 million for noise mitigation measures for residences within the 70-74 DNL contour;
- Boston Logan International Airport received a grant of \$1,824,000 for noise mitigation measures for residences within the 65-69 DNL contour;
- Barnes Municipal Airport in Westfield, MA, received a grant of \$1,425,402 for noise mitigation measures for residences within the 70-74 DNL contour;
- Barnes Municipal Airport also received a grant of \$936,002 to acquire land in the 70-74 DNL contour for noise compatibility;
- Reno-Tahoe International Airport received a grant of \$7

million for noise mitigation measures for residences within the 65-69 DNL contour;

- Buffalo International Airport received a grant of \$5,759,666 for noise mitigation measures for residences within the 65-69 DNL contour [construction for 149 homes and design for 200 homes];
- Akron-Canton Regional Airport received a grant of \$698,185 to conduct a noise compatibility study;
- Laredo International Airport received a grant of \$1.2 million for noise mitigation measures for residences within the 65-69 DNL contour;
- San Antonio International Airport received a grant of \$4 million for noise mitigation measures for residences within the 65-69 DNL contour;
- King County International Airport received a grant of \$4 million for noise mitigation measures for residences within the 65-69 DNL contour;
- Milwaukee Gen. Mitchell International Airport received a grant of \$10 million for noise mitigation measures for residences within the 65-69 DNL contour (140 homes).

Piedmont Triad Int'l

AIRPORT BOARD AGREES TO BUY NOISE MONITORING SYSTEM

The governing board of Piedmont Triad International Airport in Greensboro, NC, home to a FedEx package sorting facility that opened in mid-2009, voted unanimously on Aug. 28 to purchase an aircraft noise monitoring system.

The three-part system consists of (1) noise monitors from Sanchez Industrial Design; (2) radar data from PASSUR; and (3) a Noise and Operations Integration and Reporting System from Harris Miller Miller & Hanson Inc.

The HMMH system includes the firm's InFlight and RealContours software, which will integrate the noise monitor and radar data and prepare reports.

HMMH's Flight Track Monitoring System (FTMS), InFLIGHT™, enables advanced visualization, analysis, and reporting of airport flight operations. The software allows airports to monitor compliance with noise abatement departure procedures, monitor runway usage, respond to noise issues in the surrounding communities, and assist in airspace analysis.

RealContours™ converts aircraft flight track data into Federal Aviation Administration's Integrated Noise Model (INM) input data, runs the INM, and provides the INM results based on the modeling of each individual flight track.

The Piedmont Triad Airport Authority Board agreed on Aug. 29 to sign the contract with HMMH.

The initial start-up cost for the system is \$31,500 and the first year's cost for service and support is \$34,000, the *High Point Enterprise* reported. The airport has not yet confirmed those figures.

Env. Review, from p. 108

The CATEX language was added to the FAA Modernization and Reform Act to avoid subjecting RNAV/RNP procedures to a fuller environmental review process, which could take months or even years to complete and delay the implementation of NextGen.

FAA attorneys have been working with the White House Council on Environmental Quality (CEQ) since the legislation was signed into law on Feb. 15 to determine how best to comply with the CATEX provision. Some are concerned that the requirement that reductions in fuel, CO₂, and noise be assessed “on a per flight basis” denies FAA the ability to aggregate noise impact, making it much more difficult to deny a CATEX to a NextGen performance-based navigation procedure. Also, what constitutes a “measureable” reduction in fuel, CO₂, or noise is not defined in the legislation.

These questions and concerns will have to be resolved by CEQ and FAA in order for the agency to comply with the legislation.

The noise impact of some RNAV/RNP procedures is already causing an increase in noise complaints at some airports where they have been employed and resulted in changes in departure and arrival paths. Denying the public an opportunity to comment on proposed NextGen procedures could result in heightened public opposition to them.

It is unclear if the CEQ and FAA have arrived at some agreement on how to comply with the CATEX language in the FAA legislation. Hopefully, the FAA will address that issue in its briefing to the NAC.

The NAC committee also plans to review and approve a recommendation for an executive-level set of metrics that capture the overall status of NextGen implementation and key city pairs that can be used for NextGen metrics as well as data sources for measuring NextGen fuel impacts.

New Chairman Taking Over

At the end of the NAC’s Oct. 4 meeting, Bill Ayer, chairman of Alaska Air Group, will take over as committee chairman, replacing Dave Barger, president and CEO of JetBlue, whose two-year tenure ends.

Ayer’s “leadership of the successful ‘Greener Skies over Seattle’ project reflects the existing benefits of NextGen and will serve him well as he leads the NAC in forging consensus recommendations and continuing to implement NextGen,” RTCA said in announcing Ayer’s appointment as NAC chair.

The NAC committee’s seventh meeting will be held at secured facilities at Wright Patterson Air Force base in Dayton, OH. It is open to the public but there is only limited space. Members of the public can present oral statements at the meeting with the permission of the chairman. Written statements can be presented to the committee at any time.

For further information on the NAC meeting, contact Andy Cebula, RTCA Secretariat; tel: (202) 330-0652.

RTCA, Inc. is a private, not-for-profit corporation that develops consensus-based recommendations regarding commu-

nications, navigation, surveillance, and air traffic management system issues. RTCA functions as a Federal Advisory Committee. Its recommendations are used by the FAA as the basis for policy, program, and regulatory decisions.

FAA RE&D Advisory Committee

In related news, the FAA’s Research, Engineering and Development Advisory Committee will meet on Sept. 26 in Washington, DC.

The committee will discuss guidance for FAA’s R&D investments in the areas of air traffic services, airports, aircraft safety, human factors, and environment and energy.

For further information, contact Gloria Dunderman at FAA; tel: (202) 267-8937; e-mail: Gloria.dunderman@faa.gov

Research

STUDY ON FLUID STREAM MIXING COULD HELP CUT TAKEOFF NOISE

A \$300,000 National Science Foundation (NSF) grant will allow a Washington & Lee University researcher to continue his study into how two different fluid streams – fuel and air, for example – mix at supersonic speeds.

A potential application for the research is a reduction in the noise of jet engines on takeoff, since much of that noise is generated by the stream coming out of the back of the jet engine and mixing with the surrounding air.

While that would help reduce noise at civilian airports, it would also be of interest to the military.

“Once it’s in flight, a jet plane creates a lot of noise and the military is concerned that if someone knows the type of noise a certain plane makes, it’s very easy to track that plane,” Joel Kuehner, associate professor of physics and engineering at Washington & Lee explained in a Sept. 4 university news release.

Kuehner’s research uses a laser technique to measure how the temperature varies as the fluids go through the mixing region, from which he can infer how fuel might mix at supersonic speeds.

Unlike automobile engines where fuel is injected into a stream of stagnant air to achieve combustion, problems arise when the air moving is at supersonic speeds. “Once you get the flow going faster than the speed of sound, it’s not very receptive anymore to being measured,” Kuehner said. “But if we can understand how the two different fluid streams mix, then other people can take that information and maybe make better jet engines that run at supersonic speeds, or make better controls over sound generation in jet engines.”

Kuehner hopes to do for the jet engine what researchers did for the basic internal combustion engine in the 1950s and 1960s. “Car engines were horribly inefficient at that time and a lot of that inefficiency came from not understanding the mixing process. Some of the fuel was going out of the tail

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pipe because it never mixed, it never burned. So the hope is we can do something similar and make supersonic combustion more efficient. The military and aircraft manufacturers such as Boeing and Airbus would love a better understanding of this," he said.

Combustion Is Inefficient

He described the current process for fuel combustion in jet engines as both inefficient and ineffective. "As soon as you try to bring air into a jet engine faster than the speed of sound, you have to slow it down to subsonic speed so that you can mix it with the fuel, burn it, and then get it out the back of the engine. Then you have to reaccelerate to supersonic speeds again," he said. A better understanding of how this mixing works at supersonic speeds could mean that air would not need to be slowed down before it mixes with and burns the fuel.

While there is great interest in the potential of this type of research, Kuehner said that the U.S. military and the NSF had given up trying. "They didn't want to hear about it anymore," he said. "So we had to go a non-traditional route to get funding."

So Kuehner applied for and received a grant from the Thomas F. Jeffress and Kate Miller Jeffress Memorial Trust a few years ago which enabled him to prove that his technique works.

"We made several measurements that indicated how the temperature varied significantly with large fluctuations as the fluids go through the mixing region," he said. "The Jeffress Memorial Trust grant really set us up to go after the NSF grant. Hopefully, now we'll be able to say not just that we can make these measurements, but to actually make them, and once we can show our research is reliable it will be easier to get funding."

With the NSF grant, Kuehner aims to improve the laser technique and apply it to a wider range of conditions, showing how temperature fluctuates in the flow over a range from subsonic to faster than the speed of sound.

The NSF grant will fund three W&L students each summer for the next three years to work with Kuehner on the research. "It will have a great impact," he said, "and will allow us to expand experiments in the fluids lab as well as the fluids course. We'll have new equipment that will permit us to do a lot of different research, not just for this project but for other projects as well."

Kuehner joined Washington and Lee in 2004. He received his B.S. in mechanical engineering from Pennsylvania State University. He received his M.S. and Ph.D. in mechanical engineering from the University of Illinois at Urbana-Champaign.

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Litigation

PROPERTY RIGHTS GROUP LOSES OVERFLIGHT EASEMENT COMPENSATION CASE IN CALIF.

An overflight easement demanded by Humboldt County, CA, as a condition of permit approval does not *per se* constitute a taking for which property owners near Arcata/Eureka Airport in northern California are entitled to compensation, a Humboldt County, CA, Superior Court judge ruled Aug. 17.

The ruling will be appealed to the California Court of Appeals by The Pacific Legal Foundation (PLF), the conservative property rights group that represented the plaintiffs in the case, Scott and Lynn Powell, and has represented property owners in similar cases. This is the PLF's first loss on this issue.

The Powells were told by Humboldt County that they were required to dedicate an overflight easement on their property as a condition of receiving approval for an "after-the-fact" permit they needed for certain structures on their property, located in the airport's compatibility zone.

The PLF had argued successfully in two similar cases in California and Washington – where local governments also demanded that property owners sign an aviation easement as a condition of getting approval for a building permit – that such

(Continued on p. 113)

Flight Training

EMBRY-RIDDLE INSTALLS NOISE REDUCTION EXHAUST SYSTEM ON TRAINING AIRCRAFT

After an investment of \$250,000 and five years of research, Embry-Riddle Aeronautical University said Sept. 11 that it has found a way to address local residents' concerns about noise from its training aircraft.

The university has installed new noise reduction exhaust systems and is continuing to conduct research on new quieter propellers in its Daytona Beach campus fleet of Cessna 172 training aircraft.

"We've listened to our community and spent many hours trying to come up with solutions – serving on local noise committees, developing alternate procedures, producing noise abatement handouts and training videos – whatever it took to try to resolve this," said Ken Byrnes, chairman of flight operations at Embry-Riddle's Daytona Beach campus. "But it always came back to a mechanical solution."

After testing and analyzing a variety of airplane exhaust systems and experimental propellers for the past two years, Byrnes said his department got the best results with an exhaust system from Gomolzig Company in Germany and a resized

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demands were unconstitutional because they violated the U.S. Supreme Court's 1987 ruling in *Nollan v. California Coastal Commission*, which was further clarified in 1994 in *Dolan v. City of Tigard*.

The High Court held in *Nollan* that a county government could not impose a condition serving purposes that have no "essential nexus" with the identified problem, unless the county was willing to pay for the imposition of that condition.

The PFL asserted that there is no "essential nexus" between any concern Humboldt County might have with the Powells' building project and the air-safety purposes served by the overflight easement.

The requirement that the Powells sign an aviation easement as a condition of getting the building permit is an exaction-style taking that must be compensated, the PLF argued.

But Humboldt County Superior Court Judge Dale A. Reinholtsen said he does not believe that the Humboldt County easement condition is subject to the exaction-style takings test established in *Nollan/Dolan* for two reasons.

First, he said the easement itself has not been shown to be a taking.

Judge Reinholtsen held that the overflight easement sought by Humboldt County is not a taking because it does not meet the test defined by the California Court of Appeals in 1974 in *Aaron v. City of Los Angeles* for determining when airport operations result in a compensable taking.

Under the rule in *Aaron*, a taking occurs when the owner of property in the vicinity of the airport can show (1) a measureable reduction in market value resulting from the operation of the airport in such manner that the noise from aircraft using the airport causes a substantial interference with the use and enjoyment of the property, and (2) the interference is sufficiently direct and sufficiently peculiar that the owner, if uncompensated, would pay more than his proper share to the public undertaking."

The judge said the Powell's "submitted no evidence, and indeed make no argument" that the Humboldt County overflight easement constituted a taking under the *Aaron* test.

Second, the Judge said he is aware of only one context in which an imposition that is not itself a taking may violate the takings clause of the U.S. Constitution and that is the context of monetary exactions imposed on "an individual and discretionary basis."

But, in the Powells' case, the overflight easement was imposed by legislative enactment via the Airport Land Use Compatibility Plan and as part of the Humboldt County General Plan. It was not imposed by a discretionary act.

"Perhaps a court of appeal could extend *Nollan/Dolan* scrutiny to exactions that fall short of constitutionally recognized takings ... and presumably a court of appeal would have a much better picture of the policy reasons for doing so," Judge Reinholtsen wrote but added that he does not believe that doing so is his role.

Meriem Hubbard, a principal attorney in The Pacific Legal Foundation's Property Rights Practice group, told ANR that Judge Reinholtsen decided the case as though it were a physical takings case, which it was not. The judge did not understand the nature of the *Nollan/Dolan* analysis and the fact that it is an independent takings test, she said.

It is unclear how many local governments have ordinances similar to Humboldt County's that require property owners near airports to sign aviation easements in exchange for permits approvals but it is not thought to be rare.

Airports that require homeowners to sign aviation easements as a condition of receiving sound insulation are not a concern of the PLF because such property owners are receiving compensation for the easement in the form of sound insulation.

The case is *Scott Powell and Lynn Powell v. County of Humboldt* (Case No. CV110025).

Future

AIRBUS DESCRIBES ITS VISION OF SUSTAINABLE AVIATION IN 2050

On Sept. 6, Airbus released the latest installment of its vision for sustainable aviation in 2050 and beyond and, for the first time, it looks beyond aircraft design to how the aircraft is operated both on the ground and in the air in order to meet the expected growth in air travel in a sustainable way.

"Our engineers are continuously encouraged to think widely and come up with 'disruptive' ideas which will assist our industry in meeting the 2050 targets we have signed up to," explained Charles Champion, Executive Vice President Engineering at Airbus.

"These and the other tough environmental targets will only be met by a combination of investment in smarter aircraft design and optimizing the environment in which the aircraft operates. That is why our latest Future by Airbus Smarter Skies concepts focus on not just what we fly but how we may fly in 2050 and beyond."

Airbus said that already today, if the Air Traffic Management (ATM) system and technology on board the aircraft were optimized, its research suggests that flights in Europe and the U.S. could on average be around 13 minutes shorter, and flights in other parts of the world could be shorter too.

Assuming around 30 million flights per year, this would save around 9 million tons of excess fuel annually, which equates to over 28 million tons of avoidable CO2 emissions and a saving of 5 million hours of excess flight time, Airbus said. Add to this new aircraft design, alternative energy sources and new ways of flying and you could see even more significant improvements.

Smarter Skies Vision

The Future by Airbus concentrates on just that and the Smarter Skies vision consists of five concepts, which could

be implemented across all the stages of an aircraft's operation to reduce waste in the system (waste in time, waste in fuel, reduction of CO₂). These are:

- **Aircraft take-off in continuous 'eco-climb'**

Aircraft launched through assisted take-offs using renewably powered, propelled acceleration, allowing steeper climb from airports to minimize noise and reach efficient cruise altitudes quicker.

As space becomes a premium and mega-cities become a reality, this approach could also minimize land use, as shorter runways could be utilized.

- **Aircraft in free flight and formation along 'express skyways'**

Highly intelligent aircraft would be able to "self-organize" and select the most efficient and environmentally friendly routes ("free flight"), making the optimum use of prevailing weather and atmospheric conditions.

High frequency routes would also allow aircraft to benefit from flying in formation like birds during cruise bringing efficiency improvements due to drag reduction and lower energy use.

- **Low-noise, free-glide approaches and landings**

Aircraft allowed to take free glide approaches into airports that reduce emissions during the overall descent and reduce noise during the steeper approach as there is no need for engine thrust or air breaking.

These approaches would also reduce the landing speed earlier which would make shorter landing distances achievable (less runway needed).

- **Low emission ground operations**

On landing aircraft engines could be switched off sooner and runways cleared faster, ground handling emissions could be cut.

Technology could optimize an aircraft's landing position with enough accuracy for an autonomous renewably powered taxiing carriage to be ready, so aircraft could be transported away from runways quicker, which would optimize terminal space, and remove runway and gate limitations.

- **Powering future aircraft and infrastructure**

The use of sustainable biofuels and other potential alternative energy sources (such as electricity, hydrogen, solar etc) will be necessary to secure supply and further reduce aviation's environmental footprint in the long term. This will allow the extensive introduction of regionally sourced renewable energy close to airports, feeding both aircraft and infrastructure requirements sustainably.

Airbus said it is already working on a number of innovative solutions today to meet the challenges of sustainable aviation in the future, whether it be the development and use of alternative fuels; investment in aircraft design; or in supporting more efficient ATM.

"We know people want to fly more in the future and our forecasts support this. We also know that they don't want to fly at any cost," says Charles Champion. Our focus at Airbus is on meeting this continuous growth in demand, keeping the passenger, our customers and the environment at the centre of our thinking. The future of sustainable aviation is the sum of many parts and success will require collaboration amongst all the parties who are passionate about ensuring a successful prospect for aviation."

Embry-Riddle, from p. 112

propeller. The study and installation effort has involved more than a dozen faculty, staff, and students at the campus.

"We are the first large flight training organization in the nation to install a noise-reducing system in our fleet of Cessna 172 training aircraft," Byrnes said. The campus uses 41 of the planes to train students.

The new mufflers are making a difference, says Jason Kring, an assistant professor of human factors at Embry-Riddle who conducted before-and-after noise tests with a team of students.

"The regular Cessna makes 75 decibels of sound, roughly equivalent to the volume of a washing machine or a busy street," Kring said. "With the muffler installed, the sound was reduced to around 70 decibels, the same as normal conversation from a few feet away or the sound inside a passenger car."

The Daytona Beach campus averages 250 training flights a day.

"As one of the largest employers in Volusia County with over a half-billion dollar annual impact on the local economy," Byrnes said, "we're an integral part of the community and we're committed to being great neighbors."

Byrnes said his department is planning next to develop and install a quieter propeller in its training planes.

Technology

ADS-B INTEGRATED INTO PASSUR'S TRAFFIC MGMNT PLATFORM

PASSUR Aerospace, Inc. said in mid-August that it is integrating and displaying ADS-B (Automatic Dependent Surveillance - Broadcast) – the cornerstone of NextGen – into its PASSUR Integrated Traffic Management (PITM) platform.

"ADS-B in PASSUR supplements an extensive, existing array of surveillance technologies processed and integrated on the PASSUR suite of solutions, which are 'fused' to provide a seamless flight and airspace visualization capability based on PASSUR's independent surveillance network," the firm said.

"This announcement is another important step in our goal of creating a unified operational data platform to ensure that our customers' systems are being powered by a single source

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of accurate and complete operational information,” said Jim Barry, President and CEO of PASSUR Aerospace.

“This is a big deal – all flight and airspace tracking on a single, integrated, independent platform that is scalable worldwide,” said Tom White, Executive Vice President of Operations for PASSUR. “Customers want one-stop shopping, with integrated information and integrated solutions.”

PITM is a web-hosted integrated business intelligence platform that targets key constraints through the entire lifecycle of the flight, in order to optimize fuel costs and other financial metrics, carbon emissions, schedule integrity, and the passenger experience, PASSUR explained.

Venice Municipal Airport

\$7.1 MILLION AIP GRANT WILL HELP REHAB NOISE ABATEMENT RUNWAY

Venice (FL) Municipal Airport received a \$7.1 million Airport Improvement Program grant from the Federal Aviation Administration recently. It will help fund the rehabilitation of its noise abatement runway and the reconfiguration of a driving range and golf course adjacent to the airport.

The City of Venice and the Florida Department of Transportation will contribute an additional \$1.3 million to the runway project.

“This is a great project for the airport and community as a whole,” Airport Administrator Chris Rozansky, told the *Herald-Tribune*. When the runway project is finished in January 2013, more jets will use the noise abatement runway (Runway 4-22), which takes aircraft over the Gulf of Mexico rather than over surrounding neighborhoods.

The award of the FAA grant, mostly from the AIP Discretionary Account, was taken as a sign by city officials that their relationship with FAA is now on a better footing.

For the past six years, the airport has received no federal money because it did not have an updated and approved Airport Layout Plan and was engaged in a dispute with FAA over how the airport was managed and what it charged for leases.

The ALP was supposed to have been submitted to FAA for approval in 2006. However, the FAA refused the request of a previous City Council that homes in the Gulf Shores neighborhood near the airport be removed from the airport’s safety zone.

A compromise with FAA was reached last year with an ALP that calls for the airport to move its second runway farther from the Gulf Shores neighborhood, which would take 24 homes out of the safety zone.

The city has not yet applied for the estimated \$11 million it will cost to move the second runway.

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

Published 44 times a year at 43978 Urbancrest Ct., Ashburn, Va. 20147; Phone: (703) 729-4867; FAX: (703) 729-4528.
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