

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

Agenda for Tuesday, July 5th, 2016

Call to Order 2:00 pm Harvey Government Center

Roll Call

- A. Review and Approval of Meeting Minutes
 - 1. For April 25th, 2016
- B. Discussion of NCP Operational Measures
 - 1. Overnight Maintenance Run-up Restrictions
 - 2. Pilot Information Brochure
- C. Discussion of NCP Preventive Land Use Measures
 - 1. Meeting with City of Key West Planning Department - June 14
 - 2. Development of Acoustical Building Requirement Plans
 - i. Ocean Walk (aka Sea Breeze) Apartments
 - ii. Catholic Charities Affordable Housing
 - 3. Avigation Easement for New Development
- D. Discussion of NIP Implementation
 - 1. Correspondence with Eligible Phase 1 Property Owners
 - 2. Meeting with KWBTs Board of Directors - July 6
- E. Other Reports:
 - 1. Noise Hotline and Contact Log
 - 2. Airport Noise Report
- F. Other Discussion
- G. Next meeting: November 1st, 2015

Meeting Schedule for 2016

February 2 nd	April 5 th
July 5 th	November 1 st

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".

**KWIA Ad-Hoc Committee on Noise
April 25th, 2016 Meeting Minutes**

Meeting called to order by Commissioner Kolhage at 10:00 A.M.

ROLL CALL:

Committee Members in Attendance:

Commissioner Danny Kolhage
Marlene Durazo
Harvey Wolney
Nick Pontecorvo
Peter Horton
Norma Faraldo

Staff and Guests in Attendance:

Don DeGraw, Monroe County Director of Airports
Deborah Lagos, DML & Associates
Steve Vecchi, THC
Tom Nelson, KWBTS
Al Romano, KWBTS
Gloria Balbuntin, KWBTS
Jessica Steinbach, KWBTS
Ray Blazevic
John McMahan
Gayle Glover
M. Susan Butler

A quorum was present. Commissioner Kolhage chaired the meeting.

Welcome New Members

1. Peter Horton, representing the Community, replacing Kay Miller
2. Norma Faraldo, Alternate representing the community, replacing Tina Mazzorana

Review and Approval of Meeting Minutes for the February 2nd, 2016 Ad Hoc Committee Meetings

Commissioner Kolhage asked if there were any comments or corrections to the February 2nd minutes. Marlene Durazo made a motion to approve the minutes Harvey Wolney seconded the motion. The minutes were approved as presented.

KWIA Ad-Hoc Committee on Noise April 25th, 2016 Meeting Minutes

Discussion of NCP Operational Measures

The second draft of the Pilot Information hand-out was reviewed and discussed.

The second bullet has been deleted and the language of the second bullet has been revised to say, "Please avoid direct overflight of multi-family residential buildings that are in close proximity to the airport."

Deborah will check the Boeing website to make sure the language is consistent with the Pilot Information hand-out.

The area to be avoided by helicopters needs to be made more obvious.

Peter Horton commented that the North and South Approach looked much better than the previous "Garrison Bight Approach" and "Casa Marina Approach" which turned out to be disasters, generating a lot of complaints.

Deborah will make these changes to the Pilot Information hand-out and submit it to the FAA for review and comment.

The recent changes to the helicopter routes were discussed. Susan Butler expressed that she experiences both helicopter and airplane noise.

Discussion of NCP Implementation Plan

Deborah turned the discussion over to Steve Vecchi to discuss recent events. Steve reviewed the latest FAA requirement to conduct eligibility testing. At KWBTs the following categories were identified and samples of each were tested:

1. Studio,
2. 1-Bedroom,
3. 2-Bedroom,
4. 3-Bedroom,
5. Units with new ductless HVAC system,
6. Units with window & door replacements, and
7. Units with new ductless HVAC system and window and door replacements.

Property Eligibility Summaries for KWBTs and the three (3) Single-family Homes were distributed. The summaries indicated that all seven (7) categories tested eligible for the NIP, along with all three (3) of the single-family homes. Deborah, Steve, and Alan Hass (Acoustical Engineer) met with the FAA ADO on April 19th to review these results, and the FAA is in complete agreement that all 206 units at KWBTs are eligible to participate in the NIP, along with the three (3) single-family homes. This is great news!

KWIA Ad-Hoc Committee on Noise April 25th, 2016 Meeting Minutes

The summary also indicates the types of acoustical treatment that will be made to each category of condo unit at KWBTS.

Additional milestones were discussed, as shown on the Phase 1 Master Schedule in the agenda package. Highlights include:

- Grant Application for Design Development (June 2016),
- Design Development (October 2016 through January 2017),
- Bid Opening (May 2017)
- Grant Application for Construction of KWBTS Building B and SF homes (June 2017)
- Contract Award and Product Procurement (October through December 2017),
- Construction of KWBTS Building B and SF homes (January through May 2018).

Other Reports

Noise Hotline and Contact Log

There were some calls about helicopters in February, but none since then, so it seems like that has been resolved.

There were also one or two calls about sea planes flying over KWBTS.

Mr. Haverty called a number of times regarding departures on Runway 27.

Airport Noise Report

Nothing discussed.

Any Other Discussion

There is a vacancy on the Ad-Hoc Committee because Robert Padron has resigned. Deborah mentioned that Robert Gold has expressed interest in the past. Tom Nelson has been nominated by KWBTS. Marlene Durazo made a motion to nominate Tom Nelson; Peter Horton seconded the motion. The motion was approved unanimously. Commissioner Kolhage will take this to the BOCC.

Marlene Durazo mentioned there was an extensive article in the Citizen regarding the development of the Sea Breeze Apartments, which is proposed near Ocean Walk Apartments. Peter Horton indicated that Ocean Walk is constructed right up to the airport's fence line. He indicated that 25 years ago he wrote a letter to the developer (Sonny McCoy) discouraging the construction of Ocean Walk and Las Salinas Condominiums. Even though the construction occurred, the buildings seem to have been well constructed, as far as noise is concerned. It is anticipated that the

KWIA Ad-Hoc Committee on Noise
April 25th, 2016 Meeting Minutes

County and/or the Airport will have an opportunity to comment on the proposed construction, and if so, will recommend that the construction be allowed as long as appropriate noise attenuation is incorporated into the design and construction. The new buildings will not be eligible for FAA-funded noise insulation.

Don met with the owners of Ocean Walk and received a tour of the proposed site. The proposed site is in an existing parking lot. Don informed the owners that they must submit a Form 7460 to the FAA to determine if there is a height restriction on the buildings because of its proximity to the airport.

Don will send a letter to the City of Key West asking that the airport be included in the future planning activities associated with this development.

Steve Vecchi suggested that he and Deborah could develop guidelines to assist the developer in achieving the appropriate noise attenuation.

Don indicated that he will set up another meeting with the City so he and Deborah can talk to them again about incorporating airport noise attenuation requirements in their updated Land Development Regulation (LDR).

Marlene Durazo moved to adjourn the meeting. Peter Horton seconded the motion. The meeting adjourned at approximately 10:47 am.



Deborah Lagos <deborah.murphy.lagos@gmail.com>

Fwd: Noise complaint

1 message

DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>
To: Deborah Lagos <deborah.murphy.lagos@gmail.com>

Tue, May 24, 2016 at 10:52 AM

FYI

Sent from my iPhone

Begin forwarded message:

From: Mercado-Pedro <Mercado-Pedro@MonroeCounty-FL.Gov>
Date: May 24, 2016 at 09:49:48 EDT
To: DeGraw-Donald <DeGraw-Donald@MonroeCounty-FL.Gov>
Subject: Noise complaint

Don, just spoke to Karen Balkany, the attorney with the noise complaint client. She says that her client is complaining that for the last year there has been engine run up noise at night, after 11:30 at night and before 6:00 in the morning. Her client says that it sounds like they're doing maintenance work on aircraft. I told her that it's possible that a plane may land or take off between those hours but that I did not believe that any maintenance work was taking place. I told her that to the best of my knowledge the FBO does not have anyone working out there at night. I told her that from time to time we have to do airport maintenance work at night after the aircraft have quit flying but that would not generate aircraft type noise. Anyway, just want to confirm what I believe. We don't have any aircraft maintenance going on after 11 at night that would involve turning up the engine, do we?

Description:
Description:
Description: City-
County-LocalGovt

Pedro Mercado
Assistant County Attorney
1111 12th Street, Suite 408
Key West, FL 33040
[\(305\) 292-3470](tel:(305)292-3470)
[\(305\) 292-3516](tel:(305)292-3516) (fax)



Deborah Lagos <deborah.murphy.lagos@gmail.com>

Noise NCP study

5 messages

DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>
To: Mercado-Pedro <Mercado-Pedro@monroecounty-fl.gov>
Cc: Deborah Lagos <deborah.murphy.lagos@gmail.com>

Thu, May 26, 2016 at 7:57 AM

Pedro,

Please see the run up section, does the airport have the ability to prosecute violators?

DD

Don DeGraw

Director of Airports

Key West International Airport & The Florida Keys Marathon International Airport

Key West Office (305) 809-5210

Marathon Office (305) 289-6060

Cell Phone (305) 393-7742

Please note that Florida has a broad public records law and that any communication with the County could be considered a public record. If you do not wish for your email address to become a public record, use the telephone or some other method of conveying your message.

 DOC007.pdf
52K

Mercado-Pedro <Mercado-Pedro@monroecounty-fl.gov>
To: DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>
Cc: Deborah Lagos <deborah.murphy.lagos@gmail.com>

Thu, May 26, 2016 at 8:33 AM

I do believe we have the authority to regulate run-ups but I will double check FAA regs.

Sent from my iPhone

[Quoted text hidden]

<DOC007.pdf>

Currently, there is a natural vegetative buffer in place around much of KWIA. This buffer consists of naturally occurring and intentionally planted mangrove trees along the border of airport property.

Sponsor's Recommendation: Barriers and acoustical shielding are not recommended for inclusion in this NCP.

8.2.1 Ground Power Units

Another source of ground level noise at an airport is the aircraft Auxiliary Power Units (APUs) that continue to operate while the aircraft is on the ground. These APUs allow the aircraft avionics and air conditioning to remain operational while the aircraft is being serviced for an outbound flight. The APU consists of a small turbine engine, usually mounted in the tail of the aircraft. The alternative to running the APU is what is known as a Ground Power Unit (GPU). The GPU is usually a mobile cart operating a smaller engine operating either on diesel or Jet-A fuel, or an electric or electric hybrid powered motor. The GPU is usually noise insulated and provides a greater air emissions reduction than obtained by the use of the APU. The use of the GPU also provides a fuel savings when compared to running the APU.

There are GPUs available for use on the commercial ramp and USAir currently requires the use of one on every turn, time permitting. There is also a GPU unit available at the FBO, but most GA aircraft that would use a GPU remain at KWIA long enough that the aircraft is shut down completely.

Sponsor's Recommendation: The voluntary use of Ground Power Units by commercial and GA aircraft, when time and safety factors permit, is recommended for inclusion in this NCP.

8.2.2 Aircraft Run-Up Location

Aircraft preflight run-ups are another source of aircraft ground noise at KWIA. Monroe County Board of County Commissioners (BOCC) Resolution Number 191 – 1995 restricts the location of aircraft run-ups between the hours of 11:00 pm and 7:00 am local time. Run-up is defined in the Resolution as “advancing the r.p.m. of a prop aircraft’s engine or engines to the appropriate medium setting for the aircraft type as a final engine and systems test before full power takeoff.” Any violation of this Resolution may be prosecuted as a misdemeanor of the second degree as provided in §775.082 or §775.03, Florida Statutes. The BOCC adopted this Resolution on May 16, 1995.

The 11:00 pm through 7:00 am pre-flight run-up location is shown in **Figure 8-1**. While approximately 80 percent of the airport run-ups occur at the designated location between the hours of 11:00 pm and 7:00 am, the remaining aircraft still perform this activity at the taxiway end prior to entering the runway for departure. These occurrences, particularly at the Runway 09 end nearest to the Key West by the Sea condominium, result in instances of noise that the residents find disturbing. A greater use of the designated run-up location between the hours of 11:00 pm and 7:00 am would result in fewer noise issues, particularly with the early morning departures.

Between the hours of 7:00 am and 11:00 pm, all aircraft run-ups shall be made only at the ends of the parallel taxiway or near the runway ends behind the holding line markings so long as the same shall not interfere with operation of other aircraft.

Thu, May 26, 2016 at 8:43 AM

Deborah Lagos <deborah.murphy.lagos@gmail.com>
To: DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>
Cc: Mercado-Pedro <Mercado-Pedro@monroecounty-fl.gov>

Pedro and Don,

I seem to recall that when I researched this for the P150 Study, I found that the BOCC resolution was never codified in the municipal code. So..... I don't know if it is enforceable or not.

Deborah

Deborah Murphy Lagos & Associates, LLC
4635 Alisa Circle NE
Saint Petersburg, FL 33703
727.631.1553
deborah.murphy.lagos@gmail.com

[Quoted text hidden]

Mercado-Pedro <Mercado-Pedro@monroecounty-fl.gov> Thu, May 26, 2016 at 1:50 PM
To: Deborah Lagos <deborah.murphy.lagos@gmail.com>, DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>

OK, I've had a chance to look at this and we can institute/regulate noise abatement ground procedures without running afoul of FAA regulations. But, as Deborah has already pointed out, we have not codified (passed an ordinance) as detailed as the resolution and the resolution itself is not enforceable. In order to be enforceable a person has to have notice of the prohibited conduct. If we pass an ordinance, a person is presumptively placed on notice because you can easily find out what behavior is prohibited. Not so with resolutions. Resolutions are not published in any sort of easily searchable form and are not really published in a form that places the average person on notice of the conduct being regulated. They are only available on the clerks website and unless you work in the clerk's office or my office, good luck in finding a particular resolution. That creates a Due Process issue. Our current ordinance states:

Sec. 5-22. - Aircraft runups.

All aircraft runups shall be made only at the ends of the parallel taxiway or near the runway ends behind the holding line markings so long as the same shall not interfere with operation of other aircraft in and about either airport.

and is therefore not restrictive enough. If we amend the ordinance to mirror the resolution language then we could restrict the run-ups.



Pedro Mercado
Assistant County Attorney
1111 12th Street, Suite 408
Key West, FL 33040
(305) 292-3470

(305) 292-3516 (fax)



KEY WEST INTERNATIONAL AIRPORT

3491 S. Roosevelt Boulevard

Key West, Florida 33040

(305) 809-5210 Director's Office

AIRPORT MANAGER'S Operational Directive Bulletin – 2016/03

TO: American Airlines (American Eagle/Envoy), Delta (Delta Connection/DGS),
Silver Airways, Federal Express, Signature Flight Support (FBO)
DATE: May 29, 2016
SUBJECT: **Overnight Aircraft Maintenance Run-Up Restriction**

The Key West International Airport (EYW) strives to prevent and mitigate airport noise in the Key West community. This effort allows our neighbors to benefit from positive mitigation measures taken and operational restrictions imposed, thus allowing the airport to be fully functional and also allowing the local community to enjoy a comfortable quality of life.

In keeping with the objectives for the Airport's Noise Compatibility Program, the airport is imposing the following restriction effective immediately.

- **No aircraft "maintenance run-ups" are permitted between the hours of 11:00 P.M. (2300) and 7:00 A.M. (0700), without prior permission from Airport Operations.**

Airport Operations will review all requests for overnight run-ups and may on a case by case basis approve such requests if it is determined that a critical operational need exists. Under no circumstances shall "normal" maintenance run-ups be approved, nor should they be requested.

Thank you for your attention in this matter.

Don DeGraw
Director of Airports

KEY WEST INTERNATIONAL AIRPORT—EYW

VOLUNTARY NOISE ABATEMENT PROCEDURES

Curfew

- Please observe the voluntary curfew on aircraft activity between 11:00 pm and 7:00am local time.

Ground Power Units (GPUs)

- When time and safety permit, please use available GPUs in place of on-board Auxiliary Power Units (APUs).

Arrival and Departure Procedures

When weather, time, safety, and aircraft performance permit:

- Please avoid direct overflight of multi-family residential buildings that are in close proximity to the airport.
- Aircraft departing VFR on Runway 27, please maintain runway heading until reaching the airport boundary.
- Aircraft arriving VFR on Runway 09, please coordinate with ATC to use a variety of flight paths during daylight hours when on approach.
- Departing jet aircraft please use NBAA noise abatement departure procedure or airline-approved noise abatement departure procedure.
- Propeller aircraft please use propeller and power adjustments, as safety allows.

Air Tour and Aerial Advertising Flights

- Please avoid direct overflight of Key West by the Sea and Las Brisas Condominiums and Riviera Shores Neighborhood.

Aircraft Engine Run-ups

- Between the hours of 11:00 pm and 7:00 am local time, aircraft engine run-ups must be conducted at the designated location as shown below. **Run-up is defined as “advancing the r.p.m. of a prop aircraft’s engine or engines to the appropriate medium setting for the aircraft type as a final engine and systems test before full power takeoff.”**
- Between the hours of 7:00 am and 11:00 pm local time, aircraft engine run-ups shall be made only at the ends of the parallel taxiway or near the runway ends behind the holding line markings so long as the same shall not interfere with operation of other aircraft.



Helicopters

- When time and safety allow, please depart to and arrive from the south (toward the ocean) to avoid low overflights of noise-sensitive residential areas (e.g. Riviera Shores) directly north of the airport.

KEY WEST INTERNATIONAL AIRPORT — EYW

VOLUNTARY NOISE ABATEMENT PROCEDURES

DRAPER





KEY WEST INTERNATIONAL AIRPORT

3491 S. Roosevelt Boulevard

Key West, Florida 33040

(305)809-5200 / Fax (305)292-3578

May 11, 2016

Thaddeus L. Cohen, Planning Director
Planning Department
P.O. Box 1409
3140 Flagler Avenue
Key West, Florida 33041-1409

Dear Mr. Cohen:

I write this letter regarding the proposed new construction adjacent to the Key West International Airport on the NE airport property line. Ocean Walk Apartments has proposed new construction in the complex which could impact and be impacted by the operational aspects of the airport (see Attachment A for location).

The airport would like to ensure that all relevant aeronautical matters related to the proposed project are addressed in the City's planning process which would include but not be limited to the following issues: noise, airspace, environmental, security and future development.

The airport requests to be notified of all matters, meetings and submittals and be considered an interested party as the proposed development process proceeds forward.

Thank you for your consideration and attention in this matter.

Best regards,

A handwritten signature in blue ink that reads "Don DeGraw". The signature is fluid and cursive.

Don DeGraw
Director of Airports

Cc: Pedro Mercado, Airport Attorney



Deborah Lagos <deborah.murphy.lagos@gmail.com>

Regarding: 2700 Flagler Avenue- Catholic Charities Minor Development Plan

11 messages

Melissa Paul-Leto <mleto@cityofkeywest-fl.gov>

Mon, Jun 20, 2016 at 3:51 PM

To: "deborah.murphy.lagos@gmail.com" <deborah.murphy.lagos@gmail.com>

Good afternoon,

Thank you for meeting with the Planning Department regarding airport noise planning. I have attached a proposed Minor Development Plan for 2700 Flagler Avenue. This item will be going to the July Planning board for review. As this development plan is within the airport noise zone, I would like you to review the plans and send me any necessary comments.

Respectfully,

Melissa Paul-Leto

Planner Analyst

The City of Key West Planning Department

P.O. Box 1409

3140 Flagler Avenue

Key West , Florida 33041

<http://www.cityofkeywest-fl.gov/>

305-809-3724

**2700-2707 Flagler - MDP -Landscape Waiver-rev3.10.2016.pdf**

4823K

Deborah Lagos <deborah.murphy.lagos@gmail.com>

Thu, Jun 23, 2016 at 11:08 AM

To: Melissa Paul-Leto <mleto@cityofkeywest-fl.gov>

Cc: DeGraw-Donald <DeGraw-Donald@monroecounty-fl.gov>, Pedro Mercado <mercado-pedro@monroecounty-fl.gov>, pwright@cityofkeywest-fl.gov

Bcc: Steve Vecchi <svecchi@thcinc.net>, Richard Sun <rsun@thesungroup.net>

Hello Melissa,

Thank you again for the opportunity to review the Catholic Charities Minor Development Plan for 2700 Flagler.

Since the City of Key West currently has no land development regulations regarding development within the airport's DNL 65 dB noise contour, we consulted the Florida Building Code and found the following in the 2014 Florida Building Code Chapter 31 Special Construction.

SECTION 3114 AIRPORT NOISE

3114.1 Airport noise study guidelines.

The Aviation Safety and Noise Abatement Act of 1979 14 CFR Part 150 (US Department of Transportation) including revisions through January 2005 and hereby adopted as a guideline for establishing airport noise control. When required by a local government by local ordinance to provide noise attenuation in a new structure or addition to an existing structure near an airport in the area of the local government, the applicant must provide either:

1. A testing certificate from an accredited noise testing lab that a new structure or addition to existing structure built to the submitted engineering plans will achieve an average minimum dBA reduction equal to or greater than the reduction required,
2. An engineering judgment signed and sealed by an engineer licensed in the State of Florida that the structure or addition built to the submitted engineering plans will achieve an average minimum dBA reduction equal to or greater than the reduction required, or
3. Plans using the standards contained in "Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations" prepared for the Department of the Navy by Wyle Research and Consulting, Arlington, Virginia, April 2005 on file with the Florida Building Commission.

Based on the above, Monroe County requests that the following language be included in the approval of the Minor Development Plan:

The Applicant confirms that the buildings have been / will be designed and constructed with measures to achieve an average outdoor-to-indoor noise level reduction (NLR) of at least 25 dB due to their proximity to the Airport and their location within the DNL 65 dB noise contour of the 2013 Existing Condition Noise Exposure Map that was accepted by the Federal Aviation Administration on December 19, 2013. Pursuant to this requirement, the final building plans shall incorporate architectural products, materials, and design methods specifically used to minimize the transmission of exterior noise to the building interior. The design shall be in conformance with current Key West International Airport's Noise Insulation Program (NIP) acoustic modification guidelines.

To assist the Applicant in this process, based on a preliminary review of the proposed design documents, Monroe County will provide an "Acoustic Design Recommendations" document that will provide suggested design strategies to comply with said noise level reduction requirements. This document will include minimum window and door Sound Transmission Class (STC) requirements, general acoustic product information, product manufacturer information and any recommended design treatments. Prior to building permit submittal, the City of Key West will provide an independent review of the final proposed set of building plans and specifications to ensure adequacy and conformance with the "Acoustic Design Recommendations" document.

As an alternate approach to the process described above, the Applicant may utilize one of the following two (2) options to meet the requirement of an average outdoor-to-indoor NLR of a minimum of 25 decibels:

1. Prior to construction, the Applicant will provide the City of Key West a professional judgment signed and sealed by an acoustical engineer licensed in the State of Florida verifying that the final submitted engineering plans will achieve an average outdoor-to-indoor noise level reduction (NLR) of 25 dB or greater.
2. Upon completion of construction, the Applicant will provide the City of Key West a testing certificate from an accredited noise testing lab verifying that the buildings meet an average outdoor-to-indoor noise level reduction (NLR) of 25 dB or greater.

In addition to the above, Monroe County / Key West International Airport would also require the Property Owner to convey an Avigation Easement to Monroe County. The existing buildings on the Catholic Charities property at 2700 Flagler are potentially eligible to participate in the NIP at some future date, so they would be excluded from this easement.

If you agree to include this language in the approval, we will need more detailed construction plans/information in order to develop our "Acoustic Design Recommendations" document. Because the buildings are modular in nature, are hoping this information is easily obtainable.

We would like to include this language in the Ocean Walk Apartment approval as well.

Best Regards,
Deborah

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4635 Alisa Circle NE
Saint Petersburg, FL 33703
727.631.1553
deborah.murphy.lagos@gmail.com

WILLIAM P. HORN
ARCHITECT, P.A.

915 EAST 1ST ST.
KEY WEST,
FLORIDA
33901

TEL: (305) 296-8022
FAX: (305) 296-4003

LICENSE NO.
AR 930946

MICHELLE PLANNING & DESIGN



CATHOLIC CHARITIES
HOUSING PROJECT
2700 FLAGLER AVENUE
KEY WEST, FL

SEAL

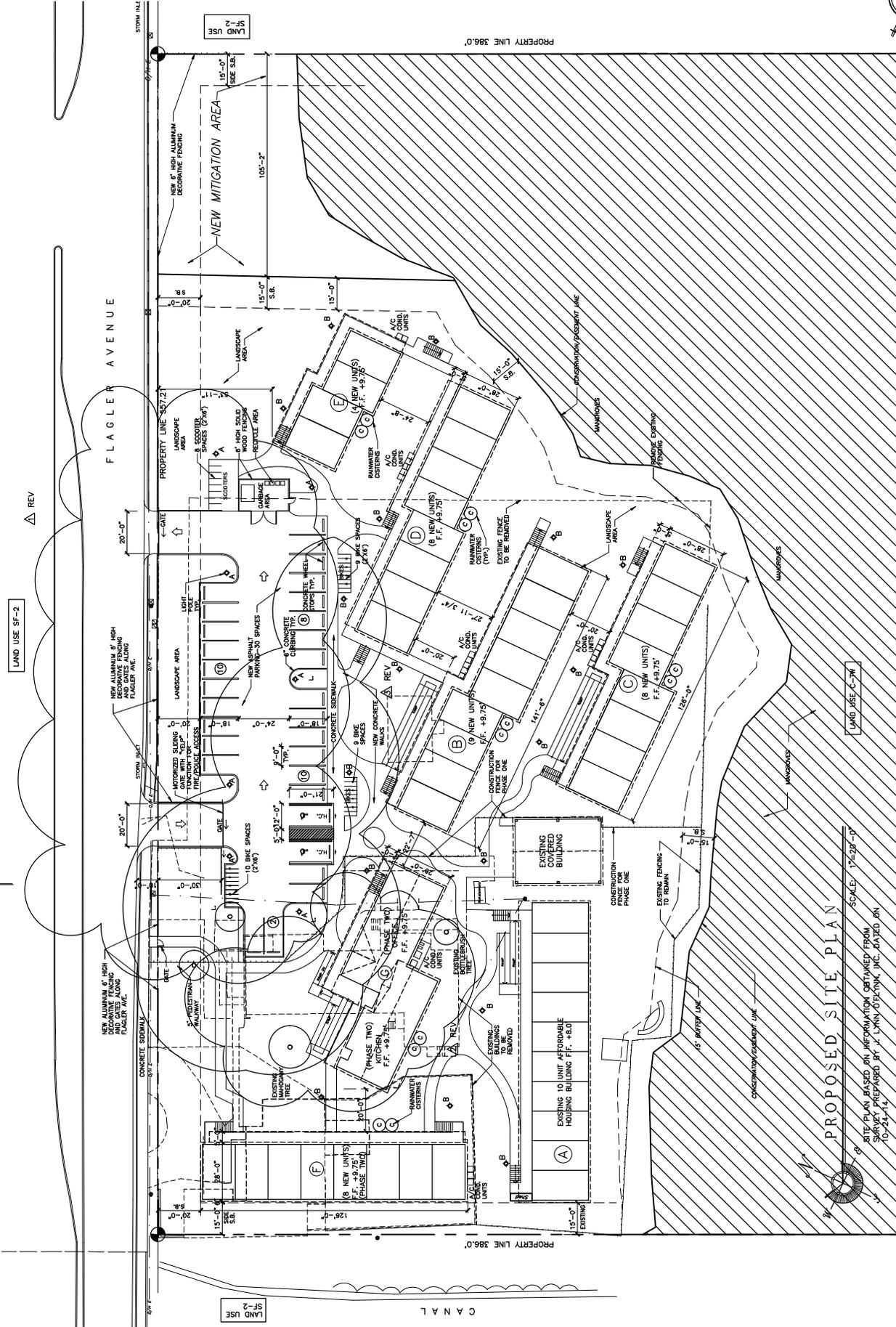
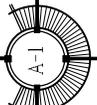
THIS PLAN HAS BEEN PREPARED BY
NOTES OR OTHERWISE
WITHOUT WRITTEN
CONSENT OF
WILLIAM P. HORN

DATE
08-15-14 BFAS
08-29-14 BFAS REV.
07-17-15 DRC
01-15-16 PL BD
03-02-16 PL BD REV

REVISIONS
A 10-20-15 DRC REV.
B 01-27-16 PL BD REV.
C 03-02-16 PL BD REV.

DRAWN BY
EHA
JW

PROJECT NUMBER
1323



CATHOLIC CHARITIES
HOUSING PROJECT
2700 FLAGLER AVENUE
KEY WEST, FLORIDA

PROPOSED SITE PLAN
SCALE: 1/4"=20'-0"

SITE PLAN BASED ON INFORMATION OBTAINED FROM
SURVEY PREPARED BY J. LARRY STEINKE, INC. DATED ON
10-24-13

Prepared By and Return To:

AVIGATION EASEMENT Key West International Airport

THIS EASEMENT AGREEMENT is entered into this ____ day of _____, 20____, by “**CARROLL COLEMAN AND HIS SUCCESSORS OF THE DIOCESE OF MIAMI**”, hereinafter referred to as “the Property Owner,” in favor of the **MONROE COUNTY BOARD OF COUNTY COMMISSIONERS**, a body politic and corporate, hereinafter referred to as “BOCC.”

RECITALS:

- A. The Property Owner is the fee simple titleholder to certain real property (“the Property”) located in Monroe County, Florida, more particularly described as follows:

Alternate Key: 1065617 Parcel ID: 00065090-000000
KW NO 29 A PARCEL OF LAND LYING SE OF FLAGLER AVE 4.93AC
G66-160 OR19-275 OR34-16 OR321-476/478 OR729-732D/C

also identified as street addresses:

2700 - 2706 FLAGLER AVE KEY WEST

- B. The BOCC is the owner and operator of Key West International Airport (“the Airport”).
- C. Pursuant to the City of Key West Planning Board Resolution No. **TBD** and 14 CFR, Part 150, the Property Owner on behalf of the Property Owner and its heirs, assigns and all successors in interest, confirms that the thirty-seven (37) Single Room Occupancy apartments and the building containing the office, meeting rooms, and commissary kitchen have been designed and will be constructed with measures to achieve outdoor-to-indoor noise level reduction (NLR) of at least 25 dB due to their proximity to the Airport and their location within the DNL 65 dB noise contour of the 2013 Existing Condition Noise Exposure Map that was accepted by the Federal Aviation Administration on December 19, 2013.
- D. The Property Owner fully understands that in accordance with the current Federal Aviation Administration policy (FAA Order 5100.38, *Airport Improvement Program Handbook*), structures built on the Property after December 19, 2013, are not, and will never be, eligible for participation in the Airport’s Noise Insulation Program.
- E. The Property Owner fully understands that in accordance with the Airport’s *14 CFR, Part 150 Noise Compatibility Program*, approved by the Federal Aviation
-

Administration on March 12, 2015, the ten-unit affordable housing building existing on the Property prior to December 19, 2013, may be eligible for participation in the Airport's Noise Insulation Program.

- F. It is the purpose of this Avigation Easement Agreement to grant to the BOCC a perpetual avigation easement, on terms as hereinafter set forth.

NOW THEREFORE, for and in consideration of the sum of Ten Dollars and other valuable considerations, the receipt and adequacy of which is hereby acknowledged by both parties, and in consideration and incorporation into this Avigation Easement of the recitals set forth above, the Property Owner and the BOCC agree as follows:

1. The Property Owner on behalf of the Property Owner and its heirs, assigns and all successors in interest, does hereby grant, bargain, sell and convey to the BOCC, its successors and assigns, a perpetual avigation easement over the Property. The use of the Avigation Easement shall include the right to generate and emit noise, and to cause other effects as may be associated with the operation of aircraft over or in the vicinity of the Property. This Avigation Easement shall apply to all such aircraft activity at the Airport, present or future, in whatever form or type, during operation at, on, to or from the Airport, and it being the intent of the parties that all such Airport activity shall be deemed to be included within the purview of this Avigation Easement.
2. This Avigation Easement shall be perpetual in nature and shall bind and run with the title to the Property and shall run to the benefit of the BOCC or its successor in interest as owner and operator of the Airport.
3. The Property Owner on behalf of the Property Owner, its heirs, assigns and successors in interest, does hereby release the BOCC, and any and all related parties of the BOCC, including but not limited to BOCC members, officers, managers, agents, servants, employees and lessees, from any and all claims, demands, damages, debts, liabilities, costs, attorney's fees or causes of action of every kind or nature for which the Property Owner or its heirs, assigns, or successors currently have, have in the past possessed, or will in the future possess, as a result of Airport operations or aircraft activities and noise levels related to or generated by Airport activity, or may hereafter have as a result of use of this Avigation Easement, including but not limited to damage to the above-mentioned property or contiguous property due to noise, and other effects of the operation of the Airport or of aircraft landing or taking off at the Airport.
4. This Avigation Easement expressly excludes and reserves to the Property Owner and to the Property Owner's heirs, assigns and successors in interest, claims, demands, damages, debts, liabilities, costs, attorneys' or expert's fee, or causes of action for physical damage or personal injury caused by any aircraft or part of any aircraft using the easement that does identifiable physical damage to the Property or injury to a person on the Property by coming into direct physical contact with the Property or the person on the Property.

5. Should either party hereto or any of their successors or assigns in interest retain counsel to enforce any of the provisions herein or protect its interest in any matter arising under this Agreement, or to recover damages by reason of any alleged breach of any provision of this Agreement, the prevailing party shall be entitled to all costs, damages and expenses incurred including, but not limited to, attorney's fees and costs incurred in connection therewith, including appellate action.
6. No provision of this Agreement is to be interpreted for or against any party because that party or that party's legal representative drafted such provision. This agreement shall be interpreted and construed according to the laws of the State of Florida.
7. No breach of any provision of this Agreement may be waived unless in writing. Waiver of any one breach of any provision of this Agreement shall not be deemed to be a waiver of any other breach of the same or any other provision of this Agreement. This Agreement may be amended only by written instrument executed by the parties in interest at the time of the modification. In the event that any one or more covenant, condition or provision contained herein is held invalid, void or illegal by any court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall in no way affect, impair or invalidate any other provision hereof so long as the remaining provisions do not materially alter the rights and obligations of the parties. If such condition, covenant or other provision shall be deemed invalid due to this scope or breadth, such covenant, condition or other provision shall be deemed valid to the extent of the scope or breadth permitted by law.
8. In the event the Airport shall be subdivided into more than one parcel, or the Airport or a portion thereof becomes subject to operation, management or administration by a party in addition to or in lieu of the BOCC, then and in that event the parties agree that same shall not terminate or otherwise affect this Agreement so long as a portion of the Airport continues to operate for standard airport flight purposes, and that any such successor in interest to the BOCC shall be entitled to all of the benefits running to the BOCC hereunder.
9. This Avigation Easement also includes all things that may be alleged to be incident to or resulting from the use and enjoyment of this Easement, including, but not limited to, the BOCC's continuing right to prevent, prohibit, clear, and keep clear from the airspace above the Property any buildings, portions of buildings, structures or improvements of any kind, and of trees, vegetation, or other objects that may cause interference with aircraft navigation and or operations at the Airport, including the right to remove or demolish those portions of such buildings, structures, trees, vegetation, or other objects which extend into the airspace and, in the judgment of the BOCC, may cause interference with aircraft navigation and/or operations at the Airport, and, at the discretion of the BOCC, the right to mark and light, or cause or require to be marked and lighted, as obstructions or hazards to air navigation or aircraft operations, any and all buildings, structures, or other improvements, and trees, vegetation, or other objects, which extend into the airspace above the Property. This Avigation

Easement also includes the BOCC's right of ingress to, passage within, and egress from the Property and, to remove any building, structure, other improvement, tree or vegetation (or portion thereof) which extends into the airspace in violation of this Section 9, or to install such lighting, or marking of any such improvement or vegetation as permitted by this Section 9; and for all other purposes described in this Section 9 at reasonable times and after reasonable notice.

10. As used in this Avigation Easement, the term "aircraft" shall mean any and all types of aircraft, whether now in existence or hereafter manufactured and developed, to include, but not be limited to, jet aircraft, propeller drawn aircraft, aircraft powered by other means, civil aircraft, military aircraft, commercial aircraft, helicopters and all types of aircraft or vehicles now in existence or hereafter developed for the purpose of transporting persons or property through the air, by whomever owned or operated.
11. As used in this Avigation Easement, the term "airspace" shall mean the entire area above those certain imaginary planes over the ground surface of the Property that are within the Federal Aviation Regulations (FAR) Part 77, and any and all successor revisions or regulations by the Federal Aviation Administration, any successor agency, or any other agency of the federal, state or local government of the United States exercising comparable authority.
12. In furtherance of this Avigation Easement, and rights herein granted, Property Owner(s), and the heirs, administrators, executors, lessees, tenants, guests, permittees, agents, successors, and assigns of Property Owner(s), hereby covenants at all times hereafter, that it/they will not take any action, cause or allow any electronic or other transmissions or emissions, construct or grow any obstruction, or discharge any fumes, dust or smoke on the Subject Property which would conflict or interfere with or infringe on the BOCC's rights herein granted, or to otherwise impair the usability or function of the Airport.

This Easement Agreement is executed as of the date first above written.

Witnesses:

MONROE COUNTY
BOARD OF COUNTY COMMISSIONERS

By: _____
Mayor

"PROPERTY OWNER"

"PROPERTY OWNER"

STATE OF FLORIDA
COUNTY OF MONROE

The foregoing instrument was acknowledged before me this _____ day of _____,
20__ by _____ as Mayor of the
Monroe County Board of County Commissioners, a body politic and corporate.

Notary Public
My Commission Expires:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____,
20__ by _____
Property Owner(s)

Notary Public
My Commission Expires:

My Commission Expires:

KWBTS Special Board Meeting July 6, 2016, 3pm

NIP Agenda Items

Steve Vecchi (NIP Project Manager)

Richard Sun (NIP Principal Architect)

Deborah Murphy Lagos (Key West International Airport Noise Program Coordinator)

1. Review of Accelerated KWBTS NIP Implementation Plan (elimination of 2 years)

FAA Grant Issuance (FY 2016-17)	October 1, 2016
Design Process (Buildings A, B, C & 3 SF)	October - February, 2017
Bid Process (Building B & 3 SF)	March - May, 2017
FAA Grant Issuance (FY 2017-18)	October 1, 2017
Design Review Process (Building C)	October - December 2017
Construction (Building B & 3 SF)	January 2018 - May 2018
Bid Process (Building C)	February - April 2018
FAA Grant Issuance (FY 2018-19)	October 1, 2018
Design Review (Building A)	October - December 2018
Construction (Building C)	January 2019 - May 2019
Bid Process (Building A)	February - April, 2019
FAA Grant Issuance (FY 2019-20)	October 1, 2019
Phase 2 Property Survey & Noise Testing	October - November 2019
Phase 2 Property Design	December 2019 - March 2020
Construction (Building A)	January 2020 - May 2020
Bid Process (Phase 2)	February - April, 2020

2. Review of NIP Property Owner Requirements

- NIP meeting attendance
- Property site scheduling and access for all required visits
- Design document review, selections & approval
- Sign/notarize NIP legal documents

3. Review of Property Owner Communication Options

- Traditional communication method
- Assignment of legal representative – power of attorney
- Designation of personal representative

4. Preliminary Review of Acoustic Products

- Aluminum acoustic DH windows (*manufacturers, colors, glazing options*)
- Acoustic prime doors (*manufacturers, style options*)
- Acoustic sliding patio doors (*manufacturers, colors, glazing options*)
- Ductless HVAC Split System (*manufacturers*)

5. Partially Infilled Kitchen Prime Doors – NIP Treatment Limitations

- To qualify for new acoustic prime door, property owner will be responsible for remove the infill portion of the door (in kitchen area) to expose original door frame
- NIP will not provide any exterior treatment on partially-infilled Kitchen prime doors that will remain in this condition

6. Ductless HVAC Soffit Enclosure Preview

- Millwork soffit sample
- Has the ability to accept crown molding, if existing

7. Preliminary Review of Construction Phasing – Building B

- Construction “Phase” will contain 12 units – floor 1-6

Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 11

April 1, 2016

Standards

REVISED ISO STANDARD PUTS PRESSURE ON FAA TO UPDATE AIRCRAFT NOISE POLICY

On March 9, the International Organization for Standardization (ISO) – an independent, non-governmental organization of 162 national standards bodies – published a revision of ISO Standard 1996-1 on measurement and assessment of environmental noise.

The product of a five-year effort by a technical committee of international environmental noise experts, the revised standard contradicts the FAA's technical rationale for its decades old aircraft noise policy and puts pressure on the agency to revise its policy, which can no longer be defended as scientifically valid.

FAA's noise policy rests on a 1992 Federal Interagency Committee on Noise (FICON) dose/response curve derived from a synthesis of studies done in 1978, which predicts that 12.3 percent of the population will be highly annoyed with aircraft noise at a noise exposure level of 65 DNL.

The revised ISO 1996-1 standard includes a new dose/response curve based on more recent research, which predicts that 28 percent of the population – more than

(Continued on p. 43)

ACRP

REPORT PROVIDES GUIDANCE ON MEASURING INTERIOR NOISE LEVEL REDUCTION IN HOMES

On March 29, the Transportation Research Board issued a long-awaited report that will provide guidance to airport sound insulation program managers and acoustical consultants on selecting methods for measuring noise level reduction inside dwellings.

Airport Cooperative Research Program Report 152: *Evaluating Methods for Determining Interior Noise Levels Used in Airport Sound Insulation Programs* includes a decision matrix for selecting an appropriate acoustical testing method for interior noise level testing and also provides suggested best practices for various measurement techniques based on the results of the research done in the study.

“Airports often undertake noise insulation programs to reduce impacts on homes within existing or forecast noise contours. Various methods for measuring noise level reduction are used to ensure that acoustical treatments meet the FAA's noise reduction requirements. Yet the measurement of noise level reduction within a home is a complex process. Measurement results are affected by many factors, including instrument error, location of the sound source and microphone, ambient noise, and meteorological conditions,” Joseph Navarrete, TRB Staff Officer, ex-

(Continued on p. 44)

In This Issue...

Standards ... A revised ISO standard on measurement and assessment of environmental noise puts FAA under strong pressure to update its over 30-year-old aircraft noise policy. The revision to ISO 1996-1 includes an updated dose/response curve predicting that 28 percent of the population – more than twice that predicted in the dose/response curve FAA relies on – will be highly annoyed by aircraft noise at a level of 65 DNL - p. 42

Sound Insulation ... A long-awaited ACRP report provides guidance to sound insulation program managers and consultants on selecting the best method for measuring noise level reduction inside dwellings - p. 42

Policy ... FAA issues a final policy defining the process and procedures that local political jurisdictions must follow when filing petitions under the AAIA opposing airport and runway projects at new locations or major runway extensions - p. 44

Standards, from p. 42

twice that predicted by the FICON curve – will be highly annoyed by aircraft noise at the same noise exposure level: 65 DNL.

FAA's aircraft noise policy is based on the assumptions that the level of aircraft noise is the sole cause of annoyance and that all communities respond identically to aircraft noise in terms of annoyance.

The new ISO standard recognizes that rates of annoyance can be affected not only by aircraft noise level but also by non-acoustic factors, such as concerns about the effects of aircraft operations and expansion on neighborhood amenities and property values and fear of crashes, among others.

The revised standard introduces a new community annoyance calculation, the Community Tolerance Level (CTL), which accounts for the aggregate effect of all non-acoustic factors on annoyance judgments as well as noise exposure level.

"A CTL value is an estimate of DNL value at which half of a community describes itself as highly annoyed by transportation noise exposure," Sanford Fidell, of Fidell Associates, who is among a handful of acoustical experts who developed the CTL, explained in an article ("A Review of US Aircraft Noise Regulatory Policy") published last fall in *Acoustics Today*.

He said that the range of CTL values (L_{ct}) measured in 44 communities extends over 30 dB (from roughly 55 dB L_{ct} to 85 dB L_{ct}). Fidell presented a figure in his article showing that the distribution of tolerance for aircraft noise exposure among communities is "log normal."

"A few communities are highly tolerant of aircraft noise exposure, but most are relatively intolerant," he explained.

"Predictions of community response to aircraft noise exposure that fail to take the shape of this distribution into account, such as those that apply only to a hypothetical community of average tolerance for aircraft noise [like the 1992 FICON dose/response curve does] are likely to be appreciably in error in most communities. Thus, regulatory policy that ignores empirically verifiable differences across communities in tolerance for noise exposure [such as FAA's current policy] cannot have a uniform effect nationwide," Fidell wrote.

FAA Can't Ignore the New Standard

At the recent UC Davis Aviation Symposium in Palm Springs, Fidell – who is one of the architects of the revised ISO standard and a sharp critic of FAA's current noise policy – discussed the FAA's options for addressing the new standard.

"FAA can't simply ignore an international technical consensus standard," he told the conference. "Somehow, FAA will eventually have to accommodate the new ISO standard. No one knows when or how FAA will do this but FAA has limited options."

At one extreme, he explained, FAA could try to argue that

the ISO standard is irrelevant to its noise policy; that the new information has no bearing on the policy. To do that, FAA would have to repudiate the rationale it developed in 1979 to establish a single system for measuring aircraft noise that has a highly reliable relationship between level of noise exposure and level of annoyance.

The agency would have to revisit its Part 150 regulations and renounce the findings of the 1992 FICON report with its dose/response curve, and would have to argue that its noise policy is based wholly on political and economic consequences and that its land use guidelines are still appropriate, Fidell said.

Such an approach would have serious risks and invite a court to find FAA's policies arbitrary and capricious and having no technical or scientific basis and thus not suitable for National Environmental Policy Act analysis, he contended. This approach also would put the FAA in the position of openly thwarting the will of Congress, which the agency is not likely to do, Fidell added.

At the opposite extreme, he said, the FAA could acknowledge the new scientific information in the ISO standard and declare that 55 DNL is the new 65 DNL.

65 DNL is the point on the 1992 FICON curve where 13.2 percent of the population is highly annoyed by aircraft noise and FAA considers significant noise impact to begin. The point at which the same percentage of people are highly annoyed on the new ISO curve is 55 DNL.

So, if the FAA wants to continue to define significant noise impact as the noise exposure level at which 13.2 percent of the population is highly annoyed, it would have to make a 10 dB downward shift and adopt 55 DNL as the new threshold of significant noise impact.

That, of course, would have significant implications for land use planning, noise mitigation, and airport expansion projects and would likely make hundreds of thousands, if not millions, of additional homes nationwide eligible for airport sound insulation programs.

Fidell said that because the consequences of these two extreme positions that FAA could take in addressing the new ISO standard are so unpalatable, the FAA will likely explore intermediate positions.

"FAA could rethink the concept of land use compatibility," he said. Instead of finding that land use is either compatible or not compatible or that there is significant noise impact or not, the FAA could search for some intermediate positions, he said, suggesting that there could be gradations of land use compatibility with airports.

In a response to a question from the audience regarding how FAA might update its noise policy, Fidell said he does not believe that the matter will be settled "on a purely technical basis" but will depend on who wins the presidential election, who will be appointed FAA administrator, "and how many jurisdictions make a political fuss."

Acoustical expert Paul Schomer of Schomer & Associates, who also participated in the revision of ISO 1996-1 and the development of CTL, told ANR that he doubted anything

would change soon in terms of FAA's noise policy.

FAA has ignored correction factors in the current ANSI standard and the former ISO standard intended to improve the accuracy of prediction of community reaction to noise, he said, adding, "And if you're from Congress and you ask the FAA [about updating its noise policy], they have a new research program that will provide the answers in three years. For 50 years I've been waiting for the three years to end. These people understand their priorities and job requirements, and they are truly excellent and masterful at doing their job."

ISO 1996-1:2016, *Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures*, can be purchased in final form from ISO at

http://www.iso.org/iso/home/search.htm?qt=ISO+1996-1&published=on&active_tab=standards&sort_by=rel

An American National Standards Institute (ANSI) version of the standard, S12.954, is being updated to synchronize with the now-final ISO version.

ACRP, from p. 42

plained in a Foreword to the report.

He said the issuance of FAA's Program Guidance Letter 12-09, *Eligibility and Justification Requirements for Noise Insulation Projects* in 2012 resulted in the need to re-examine the methods used to determine whether existing interior noise levels are greater or less than 45 dB, the level required to qualify for federal funding for sound insulation projects.

"Although the criteria for the design of dwelling modifications are fairly well defined, there is limited measurement guidance for confirming a dwelling's eligibility, which can result in inconsistencies when implementing airport sound insulation programs. Research was needed to gain a better understanding of the factors that lead to differences among measurement methods and to understand and minimize inaccuracies in estimating interior noise levels," Navarette wrote.

The research on which the report is based complements the results of ACRP Report 89: *Guidelines for Airport Sound Insulation Programs* and was undertaken to assess the accuracy and validity of various noise level reduction measurement procedures currently used in airport noise insulation programs. Acoustical field measurements were made at 10 homes near San Diego International Airport and nine homes near Boston Logan International Airport.

Seven measurement methods were tested:

- Outdoor ground-level artificial sound source (loudspeaker);
 - Outdoor elevated artificial source (loudspeaker);
 - Indoor artificial sound source (loudspeaker);
 - Aircraft flyover: fixed microphone;
 - Aircraft flyover: moving microphone;
 - Architectural survey and noise reduction calculations;
- and

- Acoustic intensity measurements, exterior loudspeaker and interior intensity.

The research findings showed that the aircraft flyover and exterior loudspeaker methods provided the best results in terms of interior noise level measurement.

"Sound intensity and indoor speaker methods show promise for future measurements, but additional research and standardization of the measurements is necessary. Acoustical calculations generally provide accurate results; however, it is possible to miss flanking paths (sound leaks) during the field survey that would result in overstatement of the noise level reduction," the report noted.

The report was prepared by Randy Waldeck of CSDA Design Group in San Francisco in cooperation with Paul Schomer of Schomer & Associates in Champaign, IL, and Jack Freytag of Freytag & Associates in San Rafael, CA.

The report can be downloaded at <http://www.trb.org/main/blurbs/174142.aspx>

FAA

FAA ISSUES POLICY ON PETITIONS OPPOSING AIRPORT PROJECTS

On March 30, the Federal Aviation Administration issued in the *Federal Register* a final policy defining the process and procedures that local political jurisdictions must follow when filing petitions with the agency opposing airport and runway projects at new locations or major runway extensions.

The guidance clarifies what must be done to petition the Secretary of Transportation under 49 USC 47106(c)(1)(A)(ii) of the Airport and Airways Improvement Act of 1982 (AAIA).

The AAIA imposes certain conditions on airport sponsors that must be met in order for airport projects to be eligible for Airport Improvement Program (AIP) grant funding.

Section 47106(c)(1)(A)(ii) of the AAIA allows the Secretary of Transportation to approve an application for AIP funding of an airport development project involving the location of an airport or runway or a major runway extension only if the sponsor certifies that the airport management board has voting representation from the communities in which the project is located or has advised the communities that they have the right to petition the Secretary about a proposed project.

Although the provision has been in effect since 1992, FAA did not receive the first petition under this provision until 2010 and has only received a small number of petitions since then. But the Associate Administrator for FAA's Office of Airports believes that it would be helpful to provide the public with more guidance on the provision.

Term 'Community' Defined

The statute states that "communities" have a right to petition the Secretary of Transportation concerning a proposed

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airport project but it does not define the term “community.”

FAA has defined the term to mean “a jurisdictional authority,” that is, a political subdivision of a state such as a town, township, city, or county that represents the interests of the community at large. The agency said that water districts and school districts do not fall under this definition.

FAA notes in its final policy that, in order to file a petition under this section of the AAIA, the airport project must be located in the community. “If land is disturbed in the community, then the project is considered to be located in that community,” FAA explained.

The agency noted that the courts also have provided instruction on when a project is located in a community. In *City of Bridgeton v. FAA*, 212 F. 3d 448 (8th Cir. 2000), the court determined that a community in which there was no construction and no significant noise impact could not challenge the failure to notify it that it could petition the Secretary.

“Thus, outside the construction context, a project may be located in a community only if the project will have a significant impact on the community. For example, where a project will cause a significant noise impact on a community, the project is located in that community. If the project does not create a significant impact in the community, the community will have no right to petition the Secretary,” FAA’s final policy explains.

To determine significant noise impact, FAA will use the significance criteria in environmental order 1050.1F.

The significance threshold for noise and land use compatibility in FAA Order 1050.1F is that the action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.

FAA makes clear in its final policy that Section 47106(c)(1)(A)(ii) of the AAIA applies only to filing petitions regarding:

- Approval of an airport at a location where no airport exists;
- Approval of the site of a new or relocated runway where a runway does not currently exist, and;
- Approval of a major runway extension that creates a significant impact to an affected environmental resource (including noise) or one that permanently removes a relocated threshold. FAA does not consider the removal of a dislocated runway threshold to be a runway extension.

FAA’s final policy requires that community petitions challenging airport or runway projects at new locations and major runway extensions must be submitted within 30 days after the FAA gives notice that the sponsor has presented evidence that the requirements of Section 47106(c)(1)(A)(ii) have been fulfilled.

FAA’s final rule can be downloaded at <https://www.federalregister.gov/articles/2016/03/30>. Scroll down to “Federal Aviation Administration.”

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 12

April 8, 2016

NoCal Metroplex Project

COMMITTEE OF ELECTED OFFICIALS FORMED TO FIND REGIONAL SOLUTION FOR NOISE

On April 4, three northern California congressional representatives announced the formation of a Select Committee of 12 elected representatives from three counties and eight city and town governments in the San Francisco Bay Area who will work to find a regional solution to the noise problems caused by extensive airspace changes made under FAA's Northern California Metroplex project.

The Select Committee on South Bay Arrivals – announced by CA Reps. Anna G. Eshoo (D), Sam Farr (D) and Jackie Speier (D) – will accept public input, review FAA proposals, and make recommendations on issues identified in an initiative FAA agreed to undertake last year to explore ways to reduce the noise impact of its Metroplex project.

Members of the Select Committee represent the highest levels of these local governments: county supervisors, town and city mayors and city council members.

Rep. Eshoo called the establishment of the Select Committee “a critical step to address airplane noise that is plaguing our constituents.”

(Continued on p. 47)

Legislation

MENG URGES COMMITTEE TO INCLUDE NOISE MEASURES IN DOT SPENDING BILL

U.S. Rep. Grace Meng (D-NY) said March 31 that she has called on a key congressional committee that controls funding for the Department of Transportation to do everything in its power to help combat increased airplane noise over Queens and to develop better technology to estimate aircraft noise and emissions.

In a letter to the Chair and Ranking Member of the House Appropriations Subcommittee on Transportation, Housing and Urban Development, and Related Agencies (THUD), Meng urged the panel to include specific noise mitigation measures in its annual spending bill.

Meng's letter asks for increased funding for FAA programs that address aircraft noise. Her request also asks for increased community involvement in determining flight paths, regulations and guidance for quieter airplanes, and lowering the 65 dB DNL threshold used by FAA to determine significant noise impact.

“Increased airplane noise continues to bombard Queens,” said Meng. “Our borough needs relief, and including these provisions in this year's spending bill would be a major step in getting us there. I respectfully ask the Committee to make these anti-noise measures part of this important legislation.”

(Continued on p. 47)

In This Issue...

NoCal Metroplex ... Three members of Congress representing the San Francisco Bay Area announce the formation of a Select Committee of local elected officials who will work to find a regional solution to the aircraft noise problems caused by the implementation of FAA's NoCal Metroplex project last year - p. 46

Legislation ... Rep. Grace Meng (D-NY) urges the House committee that controls FAA's budget to include aircraft noise mitigation measures in DOT funding bill - p. 46

NASA ... Langley teams that worked on Environmentally Responsible Aviation (ERA) project, which ends this year, receive Associate Administrator Award - p. 47

News Briefs ... San Diego Int'l Airport has an opening for an Airport Noise Mitigation Specialist ... FAA announces its approval of noise exposure maps for Ontario Int'l Airport - p. 49

NoCal Metroplex, from p. 46

“New flight paths implemented by the FAA have generated an alarming increase in noise impacts across my entire Congressional District. Large, small, urban, and rural communities have been affected, and the majority of noise complaints in my District involve arrivals at SFO. The Select Committee on South Bay Arrivals will work with the public and the FAA to expedite solutions to this problem.

“Importantly, the Select Committee will have representation from the three Congressional Districts and the three affected counties. This is a regional problem, which calls for regional solutions. Simply shifting noise from one community to another is not an option.”

Eshoo said last year that she hoped the regional approach that she and her congressional colleagues in the San Francisco Bay Area are taking to address NextGen noise impact could serve as a model for other metropolitan areas in the country facing similar airspace redesign noise problems.

Regarding the NoCal Metroplex project, Rep. Farr said, “As the FAA implemented the new NextGen flight plans, it became increasingly clear there was not enough local input into how these flight plans would affect our region. The Select Committee will finally give those impacted local communities a voice in the process as we look for ways to remove airplane noise from all of our homes and neighborhoods.”

Said Rep. Speier, “The recent increase in aircraft noise has created an intolerable environment for many communities. I expect the FAA to work with the appointees on both committees to mitigate the intense increase in aircraft noise that is making it unbearable for many of my constituents.”

The new Select Committee, which will work in conjunction with the SFO Airport/Community Roundtable, will focus on arrival issues that primarily impact the South Bay Region.

The SFO Roundtable will accept public input, review FAA proposals, and make recommendations on issues identified in the FAA’s Initiative with a focus on SFO departures as well as arrivals that primarily impact the SFO Roundtable geographical area.

SFO and the FAA will offer technical assistance to both the Select Committee and the SFO Roundtable as needed and will work with both the Committee and the SFO Roundtable on the FAA’s Initiative.

Each of the three Congressional Districts has four appointees on the Select Committee. A full roster of the Select Committee Members and Alternates is available at: <http://eshoo.house.gov/wp-content/uploads/2016/04/Select-Committee-Members.pdf>

In addition to the Counties of Santa Clara, Santa Cruz, and San Mateo, the Select Committee also includes elected officials of the cities of Saratoga, Santa Cruz, Capitola, South San Francisco, Foster City, and East Palo Alto and the towns of Portola Valley and Los Altos Hills.

Update of FAA Initiative

The California congressional representatives also released an update of FAA’s “Initiative to Address Northern California Noise Concerns Santa Cruz/Santa Clara/San Mateo/San Francisco Counties,” which includes completed milestones in FAA’s three-phase plan to explore modifications to flight path changes made under its NoCal Metroplex project.

The updated Initiative is at <http://eshoo.house.gov/wp-content/uploads/2016/04/FAANorCalInitiativeUpdate03042016.pdf>

FAA agreed last July to undertake the Initiative, which will evaluate potential short- and long-term options to address noise complaints that skyrocketed in coastal communities south of San Francisco International Airport following the introduction of new NextGen flight paths in March 2015 under the NoCal Metroplex Project (27 ANR 103).

Asked how long it will take FAA to complete its Initiative, Ian Gregor, Public Affairs Manager for FAA’s Pacific Division, told ANR, “The FAA plans to work closely with the Select Committee to identify and prioritize measures that we will further explore. We will be better able to identify time-tables after we receive and analyze recommendations from the Committee. The FAA plans to release the feasibility determination document for Phase One of the noise Initiative by the end of April.”

Phase One of FAA’s Initiative involves conducting a detailed analysis of the feasibility and overall fly-ability of potential modifications of airspace changes to reduce their noise impact, including speed/altitude adjustments, airspace changes, and possibility of moving existing waypoints. An assessment of impacts to operations at the surrounding airports and associated procedures also will be completed as will coordination with the local stakeholders.

The update to FAA’s Initiative shows that a feasibility determination has already been completed on many of the revisions to airspace changes proposed earlier by various community groups and elected officials. However, the update does not note whether those suggested changes were deemed feasible or not.

During the second phase of its Initiative, FAA will consider any amendments and/or new procedures “that are determined to be initially feasible, flyable, and operationally acceptable from a safety point of view” and conduct formal environmental and safety reviews.

During phase three of the Initiative, FAA said it will “implement procedures; conduct any required airspace changes and additional negotiated actions, as needed.”

Legislation, from p. 46

Meng’s specific appropriation request includes:

- \$1.5 million - Airport Technology Research Noise Programs.

Meng is asking the committee to spend \$1.5 million to continue and expand noise research programs so that noise

annoyance and sleep disturbance in communities around airports can be accurately measured. Expanding the breadth and depth of this area of data-collection would help to better understand where exactly noise annoyance reaches, and it can expand the data-collection to more than the few communities in which noise is currently being measured.

The \$1.5 million request is double than the amount in the President's budget request.

- More than \$16 million - Research, Engineering, and Development - Environment and Energy Program.

Meng is requesting \$16,074,000 for the Energy and Environment Program, which studies noise impacts on social welfare and health, develops technologies to better estimate noise and emissions, and explores metrics for community exposure to aircraft noise. The request is over a million dollars more than the President's budget request.

Meng also asked the panel to include language in the bill that would:

- Prohibit funds from being used to implement flight paths that were approved through a categorical exclusion (CatEx), which allows a shorter environmental review process that does not take the community's concerns into account. If included, the language would increase community involvement in the development of flight patterns.

- Prohibit funds from being used for flight patterns that result in a noise level above 55 DNL (the current cap is 65 DNL). If included, the language would require the FAA to lower acceptable noise levels to 55 DNL.

- Require the FAA to develop regulations and guidance for the creation of a new, quieter stage 5 airplane noise standard, which is consistent with the latest international standards.

- Require the FAA to review how noise is measured, and propose updates and alternatives that better reflect actual noise levels. If included, the language would create a more accurate assessment of the impacts of aircraft noise.

Awards

NASA HONORS LANGLEY TEAM THAT WORKED ON ERA PROJECT

Jaiwon Shin, NASA's Associate Administrator for the Aeronautics Research Mission Directorate (ARMD), presented an Associate Administrator Award on March 28 to the Environmentally Responsible Aviation project team during a visit to NASA's Langley Research Center in Hampton, VA.

Shin and George Finelli, director of NASA Langley's Aeronautics Research Directorate, presented the award during a town hall meeting.

The award went not only to the project itself, but also to Project Manager Fay Collier and the project's integrated technology demonstration (ITD) teams, five of which were based at NASA Langley.

The ERA project, which began in 2009 and will end this

year, looked at the feasibility, benefits, and technical risk of vehicle concepts and technologies designed to reduce aviation's impact on the environment.

The Associate Administrator Award goes to NASA employees, contractors and students or interns who distinguish themselves, either individually or as part of a group, through their overall approach to their work and the results they achieved during the award year.

In addition to awarding the ERA team members, Shin credited them for playing an important role in the significant uptick in the ARMD's slice of NASA's fiscal year 2017 proposed budget.

"I can not emphasize enough how important your contribution has been," Shin said. If the budget is passed intact, NASA's Aeronautics Research Mission Directorate will receive more than \$790 million in funding, up from \$640 million in the 2016 budget.

"In all of my NASA aeronautics career," he said, "I have not seen this kind of positive budget."

Shin called the ERA project "the locomotive" that allowed ARMD to argue for both the increased budget and the initiation of an X-plane program, which is part of NASA's New Aviation Horizons Initiative, introduced in the FY2017 budget.

The ITD teams were responsible for the following elements of the ERA project:

- The Flight Test of the Active Flow Separation and Engineering Surfaces Technologies on the Boeing 757 ecoDemonstrator Team developed vertical-tail flow-control activation concepts and surface-coating applications on wing leading edges to substantially reduce insect residue, with follow-on flight demonstrations in the Boeing 757 ecoDemonstrator.

- The Damage Arresting Composites Demonstration Team validated and confirmed the weight-reduction and damage-arresting properties of the new aircraft structures concept known as the Pultruded Rod Stitched Efficient Unitized Structure, or PRSEUS.

- The Flap Edge and Langley Gear Noise Reduction Flight Experiment Team developed pioneering computation simulations to accurately predict and abate noise from fullscale aircraft flap edges and landing gear noise during landings, including a series of validating flight tests, ensuring immediate industry interest in modifying current landing-gear acoustics.

- The Ultra-High Bypass Engine Integration for a Hybrid Wing Body Team successfully completed testing of innovative airframe and engine integration designs involving nacelle flow, ejector performance and a turbine-performance simulator.

- To explore solutions that together can simultaneously meet mid-term metrics for reductions in aircraft noise, emissions and fuel burn, the Systems Analysis Team designed and analyzed advanced vehicle concepts across a suite of thirteen next-generation commercial transport vehicles that incorporated a breadth of airframe and propulsion technologies.

ANR EDITORIAL ADVISORY BOARD

In Brief...

San Diego Int'l Seeks Noise Mitigation Specialist

The San Diego County Regional Airport Authority has an opening for an Airport Noise Mitigation Specialist at San Diego International Airport.

The Airport Noise Mitigation Specialist position is an entry-level professional technical position in the Noise Specialist series with a salary range of \$51,894 - \$77,841.

Under immediate supervision, the position entails learning to operate a computerized aircraft noise and flight track monitoring system, integrated noise model program and geographic information system to evaluate aircraft noise and operations and related impacts on residents and the public; investigating and responding to community complaints regarding aircraft noise; developing and maintaining a database for community noise complaints; monitoring compliance with airport use regulations and time-of-day restrictions; evaluating performance of and troubleshooting aircraft monitoring system, remote noise monitoring stations, computer equipment and other devices used in monitoring aircraft noise and flight tracks; and performing related duties as assigned.

MINIMUM QUALIFICATIONS: A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from a four-year college or university with a major in aviation management, business administration, environmental science, or a related field; and at least two years of experience in data collection and public communication, or an equivalent combination of training and experience. Knowledge of aircraft flight characteristics and aircraft operations required. Experience must have been obtained within the last ten years.

Experience in noise abatement or aviation acoustics is highly desirable.

A California Class C driver's license and the ability to maintain insurability under the Authority's vehicle insurance policy.

Candidates must apply online: <http://www.san.org/Careers/Job-Openings>

FAA Accepts Ontario Noise Maps

The FAA announced on April 6 that noise exposure maps submitted by Los Angeles International Airports (LAWA) for Ontario International Airport meet applicable federal requirements.

For further information, contact Victor Globa, an Environmental Protection Specialist in FAA's Los Angeles Airports District Office; tel: (310) 725-3637.

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AIRPORT NOISE REPORT

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Published 44 times a year at 43978 Urbancrest Ct., Ashburn, Va. 20147; Phone: (703) 729-4867; FAX: (703) 729-4528.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 13

April 15, 2016

Legislation

SENATE APPROVES AMENDMENT CREATING FAA AIRSPACE MGMT ADVISORY COMMITTEE

On April 11, the U.S. Senate unanimously approved an amendment to the Federal Aviation Administration Reauthorization Act that would require the FAA to create an Airspace Management Advisory Committee to review and report to Congress on the agency's process for developing proposals that impact airspace changes.

Sens. Jeff Flake (R-AZ) and John McCain (R-AZ) offered the amendment, which is almost identical to legislation they introduced on Feb. 25 – the Airspace Management Advisory Committee Act of 2016 (S. 2585) – reported earlier in ANR (28 ANR 26).

However, there are some differences between H.R. 2585 and Amendment No. 3526 to the FAA reauthorization bill, which the Senate is still considering:

- The amendment would add representatives of air traffic controllers and general aviation (including business aviation, fixed wing aircraft, and rotorcraft) to the membership of the FAA Airspace Management Advisory Committee.

(Continued on p. 51)

Technology

GEO-MAPPING PRESENTS NOISE DATA IN A WAY PUBLIC CAN EASILY UNDERSTAND

Geo-mapping is a tool that airports and local governments can use to better analyze aircraft noise data and present it to the public in a format that is easy to understand, according to Stephen Willer, Business Development lead at Esri, a supplier of GIS software and geodatabase management applications based in Redlands, CA.

Esri has developed software (GeoEvent extension) that allows airports to ingest real-time flight tracking data provided by FlightAware and integrate it into their geographical information (GIS) systems, Willer told participants at the recent UC Davis Aviation Symposium in Palm Springs, CA.

The Esri software can filter specific information relevant to noise impact from the “firehose” of data coming through the FlightAware data feed.

Used in almost every industry, GIS systems allow users to visualize, analyze, and interpret data to understand relationships, patterns, and trends.

GIS systems allow airports to visualize the “big picture” in terms of noise impact, Willer said. Flight tracking data can be laid over street maps showing census block level data; aircraft flying below a certain level can be identified; geofences can be erected to provide alerts when aircraft fly in a specific area; the relationship

(Continued on p. 52)

In This Issue...

Legislation ... The Senate approves an amendment to the FAA Reauthorization Act that would require FAA to form an Airspace Management Advisory Committee to review proposed revisions to FAA regulations, policies, or guidance pertaining to airspace changes - p. 50

... Sen. Elizabeth Warren (D-MA) introduces the FAA Community Accountability Act to give communities a voice in FAA decisions on NextGen flight paths. It is a companion measure to a House bill - p. 51

Technology ... Geo-mapping is a tool airports can use to present noise data to the public in an easily understood format - p. 50

NASA ... ‘BOSCO’ technology is advancing NASA’s goal of developing quieter supersonic aircraft - p. 52

News Briefs ... ASCENT Advisory Committee to meet in Washington, DC, area to discuss research - p. 53

Legislation, from p. 50

S. 2585 would only require that air carriers (passenger and cargo), airports of various sizes and types, and State aviation officials be represented on the committee.

- The amendment would give the FAA 180 days to establish the Committee, while S. 2585 would give the FAA only 100 days to do so.

- S. 2585 would require the Committee to assess the extent to which there is consultation – or lack of consultation – between FAA and “airports, communities, and State and local governments” regarding changes in FAA’s regulations, policies, or guidance pertaining to airspace.

The amendment would add “aircraft operators” to the list of entities the FAA consults regarding such changes.

Both the amendment and S. 2585 would require the Committee to assess the extent to which there is consultation on airspace regulations, policies, and guidance between and among FAA’s Air Traffic Organization, its Office of Airports, the Flight Standards Service, the Office of NextGen, and the FAA’s Office of Energy and Environment.

- Finally, while S. 2585 would amend to Section 213(c) of the FAA Modernization and Reform Act of 2012 (Acceleration of NextGen Technologies) to establish the Committee, the amendment to the FAA reauthorization bill would not.

Duties of the Committee

The amendment to the Senate’s FAA reauthorization bill and S. 2585 specify four duties of the Airspace Management Advisory Committee:

- To conduct a review of the practices and procedures of the FAA for developing proposals with respect to changes in regulations, policies, or guidance of the FAA relating to airspace that affects airport operations, airport capacity, the environment, or communities in the vicinity of airports;

- To recommend revisions to such practices and procedures to improve communications and coordination between FAA offices and others;

- To conduct a review of the management by FAA of systems and information used to evaluate data relating to obstructions to air navigation or navigational facilities under part 77 of title 14, Code of Federal Regulations; and

- To make recommendations to ensure that the data relating to obstructions to air navigation or navigational facilities is publicly accessible and streamlined .

FAA Coordination with Stakeholders

In announcing the Senate’s approval of their amendment, Sens. Flake and McCain said, “Specifically, the committee would look at how the FAA coordinates both internally within the agency and externally with stakeholders on the proposals. The amendment stems from the FAA’s failure to engage with communities and airports before altering flight paths at Phoenix Sky Harbor Airport.

“While I continue to support efforts to improve the safety and efficiency of the national airspace system, the creation of

an airspace management advisory committee will be critical in evaluating how the FAA is working with relevant stakeholders and consulting communities in the vicinity of airports when carrying out airspace changes,” said Sen. Flake.

Added Sen. McCain, “While modernizing flight paths is critical to enhancing safety for all travelers, our communities and airports deserve to have a seat at the table before the FAA implements changes.

“This amendment builds upon the language Senator Flake and I championed in the FAA Reauthorization bill that would address the concerns of impacted communities – like those around Phoenix Sky Harbor International Airport – by creating an airspace management advisory committee to review and improve the process surrounding airspace alterations.

“Senator Flake and I are committed to ensuring that impacted citizens in Phoenix and around the country have the opportunity to voice their concerns before any future changes go into effect.”

However, their amendment does not require that local governments that are not airport proprietors be represented on the FAA’s Airspace Management Advisory Committee.

Legislation

WARREN INTRODUCES SENATE COMPANION TO HOUSE NOISE BILL

On April 8, Sen. Elizabeth Warren (D-MA) introduced the FAA Community Accountability Act, to give local communities a voice in the Federal Aviation Administration’s decision-making process for NextGen flight paths.

The bill is the Senate companion to H.R. 3965, the FAA Community Accountability Act, introduced on Nov. 5, 2015, by Rep. Ruben Gallego (D-AZ).

The legislation will advance a number of policies to improve and strengthen community involvement, Warren said.

The bill would designate a Community Ombudsman to serve as an advocate for airport communities within the agency. It would end the presumption that flight paths implemented through the NextGen program may not follow pre-existing routes, even when these paths better reflect land use around the airport, and it would mandate that the FAA not bypass the environmental review process for new flight paths over the objections of local communities.

Warren’s bill also was filed as an amendment to the FAA reauthorization bill (H.R. 4441), which is stalled in the House and currently being debated on the Senate floor.

Additionally, Senator Warren filed an amendment to the FAA Reauthorization Act requiring the Government Accountability Office (GAO), in consultation with state and local governments and local resident advisory committees, to conduct a study of the FAA’s Next Generation Air Transportation System’s impact on the human environment in densely populated areas.

“There has been a significant increase in airplane noise in

communities near Logan Airport, and local residents deserve to have their concerns heard,” said Warren. “This bill will provide communities in Massachusetts and other affected states with a real voice in the FAA’s decision-making process, and will require the FAA to reconsider flight routes that are exposing residents to unacceptable levels of noise. “

The FAA Community Accountability Act would establish new procedures requiring the FAA to reconsider existing flight routes that are exposing residents to unacceptably high levels of aircraft flight noise.

Technology, from p. 50

between flight track density and the location of noise complaints is made clear; progress in airport sound insulation programs can be defined.

Maps help facilitate understanding, Willer explained. They provide insight that allows airports to do follow-up analysis; they put data out in a way that people can understand and has context.

Founded in 2005, FlightAware was the first company to offer free flight tracking services for both private and commercial air traffic and has become the most popular flight tracking service.

For further information on Esri’s GeoEven extension software, contact Willer at aero@asri.com

Consolidating Data at PHL

Greg Maxwell, Noise Abatement Manager for Philadelphia International Airport, also stressed the importance of presenting noise data in a way that is concise and easily understood by the public.

Maxwell is in the process of working to revamp the airport’s noise website for disseminating noise data to the public. There was some concern among airport officials that providing additional noise data would cause problems, he told the symposium, adding that he believes that using new tools to present noise data to the public adds value because they provide the public with the information it needs.

“When I communicate with the public, I’m trying to tell a story with the data,” he stressed. How you do that in a field like aviation, where there are many complex operational concepts, is what Maxwell focused on. “The idea is to use your data and present it in a way that people can understand and makes sense to them,” he explained.

Maxwell said that when he took over as noise manager at Philadelphia International, the noise office had 14 pages of data on aircraft operations, fleet mix, and runway use that it presented to the public.

“Not user friendly,” he said. “People get lost with pages of data.” Maxwell consolidated the 14 pages of data being distributed to the public into one page and urged other airports to do the same.

He also uses graphics to present complex ideas, such as east and west flow days, and to present monthly summary re-

ports on noise complaints, aircraft operations, and the Fly Quiet program.

Maxwell limits airline data to the top 10 airlines operating at PHL to more clearly show trends.

To help give the public a better way to understand the complexity of operating the airspace, Maxwell uses a picture library of aircraft types that shows aircraft sizes to scale.

It is a very powerful tool for explaining to the public that aircraft are of different weights and fly at different speeds and the challenges that poses to air traffic control, he said.

NASA

‘BOSCO’ TECH ADVANCING GOAL OF DEVELOPING QUIETER SST

NASA said April 13 that its goal of developing a quiet supersonic aircraft is another step closer following a pair of successful first flights in a series demonstrating patent-pending “Background Oriented Schlieren using Celestial Objects” (BOSCO) technology, which effectively uses the sun as a background in capturing unique, measurable images of shockwaves.

Improved image-processing technology makes it possible to capture hundreds of observations with each shockwave, benefiting engineers in their efforts to develop a supersonic aircraft that will produce a soft “thump” in place of a disruptive sonic boom, the agency said.

The tests, flown from NASA’s Armstrong Flight Research Center in Edwards, CA, build on other recent NASA tests to further the art of schlieren photography.

Schlieren is a technique that can make important invisible flow features visible. Although schlieren has been in use for over a century, recent research by NASA has enabled its application in flight and greatly enhanced the detail of the images that can be obtained.

In this case, NASA improved schlieren captured the visual data of shockwaves produced by a U.S. Air Force Test Pilot School’s T-38 aircraft traveling at supersonic speeds.

The data collected from the flights will help engineers determine the most sufficient method of designing and executing further tests in NASA’s research of shockwaves created by supersonic flight.

The overall goal of the schlieren imaging research is to develop a system to image the shock waves propagating from the bottom of the aircraft to the ground. This necessitates imaging a side view of the aircraft in near level flight.

Visualizing these complex flow patterns of shockwaves produced by a supersonic vehicle will allow NASA researchers to validate design tools used to develop the proposed Quiet Supersonic Technology (QueSST) research aircraft.

QueSST will be the first ever aircraft to demonstrate supersonic flight with the soft sonic “thump”, and could unlock the future to commercial supersonic flight over land.

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Open Rotor Propulsion

One of the green aviation technologies being studied at NASA's Ames Research Center in California's Silicon Valley is the contra-rotating open rotor propulsion system, which has two ultra-thin blades spinning in opposite directions on the same shaft, similar to the blades on a giant kitchen blender.

These contra-rotating blades rotate around the outside of a turbofan jet engine, like that commonly used in modern airliners. This unique design allows air to flow more efficiently through the turbofan blades to improve flight performance, reduce carbon emissions, and decrease blade rotation noise.

NASA said April 12 that for the past year, researchers at its Advanced Supercomputing (NAS) facility at Ames have produced first-of-a-kind simulations of sound produced by air – aeroacoustics – to reliably predict noise sources for contra-rotating open rotors.

Using computational fluid dynamics methods and the Pleiades super-computer, the NASA team verified the simulation accuracy and compared sound pressure level ranges with extensive wind tunnel test data from NASA's Glenn Research Center and General Electric. Their simulations and results matched closely with the wind tunnel test results for sounds produced by the rotating blades.

The analysis requires a massive amount of computing power and time. Currently, the NASA team is researching ways to speed up the simulation and analysis process and cut down on computing resources needed to design planes that are more Earth-friendly.

A video of the simulation is at

http://www.nas.nasa.gov/publications/articles/feature_openrotor_Kiris.html

In Brief...

ASCENT Advisory Committee Meeting

The Advisory Committee for FAA's ASCENT Center of Excellence for Alternative Jet Fuels and Environment will meet in the Washington, DC, area on April 26-28. The meeting is closed to the public.

ASCENT currently is working on nine aircraft noise projects, which are described at <http://ascent.aero>.

A coalition of 16 leading U.S. research universities and over 60 private sector stakeholders, ASCENT is lead by Washington State University and the Massachusetts Institute of Technology.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 14

April 22, 2016

Legislation

SENATE PASSES FAA REAUTHORIZATION BILL WITH NOISE PROVISIONS ADDED BY AZ SENS.

On a vote of 95-3, the U.S. Senate on April 19 approved the Federal Aviation Administration Reauthorization Act of 2016, which extends FAA programs through fiscal year 2017 and includes provisions added by Arizona's two Republican senators addressing the noise impact of NextGen airspace changes.

The bill now heads to the House of Representatives, which has been working on a companion FAA proposal – the Aviation Innovation, Reform and Reauthorization Act of 2016 (AIRR) – that stalled in the face of staunch opposition by Democrats and the National Business Aircraft Association to the heart of the bill, which would establish an independent corporation outside of the federal government to modernize the U.S. air traffic control system and provide air traffic services.

An important question left unanswered in the House bill is whether the FAA would have the authority to reject an airspace or policy change sought by the privatized ATC corporation for non-safety reasons, such as community or environmental noise impact (28 ANR 22).

(Continued on p. 55)

Special Report

INFOGRAPHICS APPROACH TO NOISE REPORTS MAKES COMPLEXITY EASY TO UNDERSTAND

[Following is an ANR Special Report by Gregory Maxwell, Aviation Noise Abatement Program Manager, Philadelphia International Airport.]

When I took over as the noise program manager at PHL in October of 2014, I had the opportunity to reshape the department including re-imagining the reports that are the backbone of how the department communicates internally to the airport executive team, FAA, and airline stakeholders about noise issues.

I felt the new reports should embrace the infographic approach to reporting data, which relies on a visual presentation of information – in the form of colored charts, graphs, or images accompanied by minimal text – to present an easily understood overview of complex subjects, such as aircraft noise mitigation and airport operations.

After examining several dozen airport noise reports and corporate reports from many companies across a broad spectrum of industries, I settled on a basic structure for the PHL Noise Program department reports, which provide monthly updates of our Fly Quiet Program, Noise Complaints, and Airfield Operations.

(Continued on p. 56)

In This Issue...

Legislation ... The Senate overwhelmingly approves and sends to the House an FAA reauthorization bill that includes measures to address NextGen noise impact but does not propose privatizing FAA air traffic services. House Transp. Committee Chair Bill Shuster (R-PA) says he will continue to push for privatization - p. 54

Special Report ... Infographics makes reports on complex topics such as aircraft noise and airport operations easy to understand - p. 54

Chicago O'Hare Int'l ... The O'Hare Noise Compatibility Commission will vote on May 6 on a revised nighttime runway rotation plan designed to spread noise impact over a wider area - p. 56

NextGen ... CA Sens. Barbara Boxer and Dianne Feinstein ask FAA Administrator Michael Huerta to "take all practicable steps" he can to reduce the noise impact of NextGen airspace changes made over their state - p. 57

Legislation, from p. 54

The Senate's strong bi-partisan approval of its FAA bill is signaling House Transportation and Infrastructure Committee Chairman Bill Shuster (R-PA) to drop his effort to privatize FAA's air traffic control services and pass an FAA bill before the agency's current authorization expires in July.

"We've given the House a good bi-partisan blueprint to follow and one that they ought to pass easily," said Sen. Bill Nelson (D-FL), Ranking Member of the Senate Commerce Committee. "Adding controversial measures could put the bill in jeopardy and result in a big loss for consumers and for the safety of the flying public."

But, in a short statement following Senate passage of its FAA reauthorization bill, Shuster seemed defiant: "We will take a look at the completed product, but in the House, we will continue to push forward with the AIRR Act. Transformational air traffic control reform is absolutely necessary to end the unacceptable status quo at the FAA and to ensure the future of America's aviation system. I look forward to working with the Senate to complete a final bill this Congress."

Airlines for America (A4A) President and CEO Nicholas Calio, one of the strongest advocates for a privatized U.S. ATC system, said he looked forward "to working with leaders in both the House and Senate to produce a final bill that delivers the critically important reforms to our nation's ATC system that airline customers deserve."

"We continue to believe that now is the time to take bold action to bring our nation's skies into the 21st Century and to reclaim the United States role as a leader in aviation technology and innovation – before we face a crisis."

But NBAA President and CEO Ed Bolen said, "It remains vital that the nation's airports and airspace continue to function in the public interest, rather than at the behest of a private entity. We want the U.S. to remain the world leader in aviation five, 10, and 25 years from now, without going down the risky path of turning over the air traffic system over to a combination of self-interested parties."

Noise Provisions

Sens. John McCain (R-AZ) and Jeff Flake (R-AZ) applauded the Senate's final passage of the Federal Aviation Administration Reauthorization Act, which includes two provisions they added to address community concerns about the noise impact of NextGen airspace changes being made at airports across the country.

Section 5002 of the Senate FAA reauthorization bill would require FAA, if asked by affected communities, to review certain new airspace procedures being implemented at airports to determine if they would have a significant effect on the "human environment" in the community in which the airport is located. If they did, the FAA would be required to consider the use of alternative flight paths (28 ANR 35).

The House FAA reauthorization bill includes a similar measure.

The Senate legislation also includes an amendment intro-

duced by Sens. Flake and McCain that would require the FAA to create an Airspace Management Advisory Committee to review and report to Congress on the agency's process for developing proposals that impact airspace changes (28 ANR 50).

Specifically, the committee would look at how the FAA coordinates both internally within the agency and externally with stakeholders on the proposals.

Both of the measures added by Sens. McCain and Flake stem from the FAA's failure to engage with communities and airports before altering flight paths at Phoenix Sky Harbor International Airport.

"The Senate's passage of this legislation represents an important step forward in making sure Phoenix residents impacted by flight path changes at Sky Harbor International Airport have the opportunity to make their voices heard," said Sen. McCain.

"I want to thank Senate Commerce, Science and Transportation Committee Chairman John Thune for including our measures that would require the FAA to mitigate the negative effects of flight path changes that have already been implemented, while providing impacted communities and airports a seat at the table before any future changes are made."

"I urge our colleagues in the House of Representatives to take up this bill so we can address the concerns of citizens in Phoenix and across the country who have been negatively impacted by these airspace changes."

The Senate FAA reauthorization bill also includes provisions (28 ANR 35) that would:

- Clarify when airports must supply noise map revisions to the FAA;
- Require FAA to track the use of existing performance based navigation procedures and other key NextGen operational improvements and to implement guidelines for including key stakeholders, such as airports, in the planning and implementation of NextGen improvements; and
- Ensure the continued availability of air routes used by air tour operators transiting over Lake Mead on their way to and from the Grand Canyon.

The House FAA reauthorization bill includes several noise-related provisions not included in the Senate bill (28 ANR 13).

They would require the FAA to submit a report to Congress recommending revisions, if appropriate, to Part 150 land use compatibility guidelines; require FAA to notify and consult with airports and consider consultation with communities, before applying CatEx 1 and CatEx 2 provisions to NextGen Performance-based Navigation (PBN) procedures; improve community involvement in FAA Metroplex projects; and consider the feasibility of dispersal headings or other lateral track variations to address community noise concerns about new or revised area navigation procedures up to 6,000 feet above noise sensitive areas proposed by FAA if an airport operator, in consultation with affected communities, asks the agency to do so.

Special Report, from p. 54

The final product was a hybrid of all my research and my own creative ideas for how to best communicate the data.

I publicly debuted the new reports at the UC Davis Aviation Symposium in March and since that time have received inquiries and requests for the Excel templates from at least a dozen airports in the United States and Europe. It is exciting to see other airports embrace the concept and adopt the format for their use. I'm very interested to see how different airports use the templates and expand and improve them.

Because of this strong interest in the report templates I developed, ANR asked that I discuss my goals in developing them in greater detail.

Simplify Data

There were two primary principles that guided the design of my report templates: all the data had to fit onto a single page and it had to be understandable by many different audiences with varying understanding levels of aviation noise abatement.

Before I could start populating the new reporting template, I had to first simplify the data inputs that would drive the new reporting structure. For instance, before I started, PHL had nine different choices for describing the nature of complaints. This is the field that the airport uses to describe why a resident called.

In my nine years in the field of aviation noise management, I have probably handled tens of thousands of complaints and it occurred to me that there were really only three fundamental reasons that people call the noise abatement department: Planes are too noisy (Noise); planes are too low (Altitude); there are too many planes (Frequency). You could potentially add a fourth category: the plane didn't follow noise abatement (Off Course). Anything else can be categorized as "other," for arguments sake.

There seems to be a prevailing thought in the industry when it comes to collecting and managing data that the more categories you have, the better your data is. But I would argue the opposite; that having nine or 12 different complaint categories just dilutes the data. You can't simplify your reporting structure if the baseline data that feeds those reports is not well structured and contains too many data fields. Having 14 to 20 bars on a chart makes it hard to discern any real pattern in your data.

When constructing the individual reports, I went to great effort to simplify and streamline the display of data, keeping in mind the audience for each report. For example, in the operations report only the Top 10 operators and aircraft types are listed. This was a deliberate choice and reflects the fact that almost 99% of the total commercial airline operations at PHL are captured through this method.

I also grouped aircraft types into families again to simplify the display of data. The audience for the Operations Report isn't concerned about whether the aircraft was a 737-300 or 800 series. The individual models are similar enough that

it makes sense to group them together. This would not be the case if the report was displaying a noise fleet mix as there are discernable difference between the 737 Classic and 737NG series.

I also felt that it was important to pull out the key data points from the monthly reports to make them quickly accessible to the reader. So I created the info blocks on the left hand side of the reports that highlight this data and make it easy to reference and compare from month to month.

Finally, wherever possible I tried to use graphics to tell the story. When used appropriately, graphics are a powerful tool and they help draw the reader in. For example, when describing aircraft categories, I used silhouettes of aircraft to visualize the general size difference between a wide body jet, narrow body jet, regional jet and commuter turboprop. The silhouettes add context to the data and help people understand the differences between the types of aircraft.

To see examples of the monthly reports being produced by the PHL Noise Office, go to

<https://www.scribd.com/collections/16671795/PHL-Reports>

Chicago O'Hare Int'l

ONCC TO CONSIDER REVISED FLY QUIET ROTATION PLAN

The Chicago Department of Aviation (CSA) briefed the O'Hare Noise Compatibility Commission's Technical Committee at its April 19 meeting on a proposed revised six-month test of a Fly Quiet runway rotation plan for night operations at Chicago O'Hare International Airport.

The original version of the plan to rotate the use of O'Hare's runways at night to spread aircraft noise impact failed to win the two-thirds majority vote by the ONCC required to have the FAA conduct the test.

The revised nighttime rotation plan calls for 12 one-week periods that incorporate parallel and diagonal runways and six east flow and six west flow configurations, ONCC said in a statement issued following the meeting. It continues:

Before the presentation, ONCC Chair and Mount Prospect Mayor Arlene A. Juracek reminded the members that it was "important to do our homework" and engage in dialog, analyze the viewpoints and take a "regional approach" to mitigate aircraft noise.

The Commission is looking for a two thirds majority vote to change the status quo and pass the Fly Quiet rotation plan at its May 6 meeting. Once passed, the plan can be submitted with the "confidence of community consensus" to the Federal Aviation Administration for implementation by June or July.

At the Technical Committee briefing, CDA Consultant explained that the refined Fly Quiet rotation plan provided aircraft noise balance and runway use predictability, which he felt could be achieved because of the historical data of nighttime wind conditions.

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Calmer nighttime winds allow for a better balance of noise. The plan will avoid consecutive community impacts, provide a primary and secondary runway plan, monitor the weekly events and provide community outreach through a dedicated website.

The Fly Quiet website will provide a summary of the test plan, a weekly rotation schedule, runway usage updates and a community survey.

The CDA’s presentation on the Proposed Interim Fly Quiet Runway Rotation Plan can be downloaded at <http://www.oharenoise.org/noise-management/technical-committee/presentations/406-fly-quiet-rotation-plan-briefing/file>

Chicago Aviation Commissioner Ginger Evans proposed the nighttime runway rotation plan for O’Hare last July to reduce the noise impact caused by the O’Hare Modernization Program under which a major runway alignment to an east-west direction was made to improve capacity and safety and reduce delays at O’Hare.

She rejected the main goal of the community coalition Fair Allocation in Runways (FAiR), which is the preservation of diagonal runways at O’Hare slated for closure so they can be used to distribute traffic in a wider geographic area and over noise abatement corridors to the north-west of the airport. Evans insisted that the diagonal runways need to be shut down so that O’Hare can operate with a parallel runway system.

However, the nighttime runway rotation plan proposed by the CDA does include the use of diagonal runways until they are permanently closed. Once this occurs, the compatible land use corridor to the north-west could be utilized with other runways to the extent possible, the CDA said.

In Brief...

CA Senators Ask Huerta to Reduce NextGen Noise

In an April 12 letter, California Sens. Dianne Feinstein (D) and Barbara Boxer (D) asked FAA Administrator Michael Huerta “take all practicable steps” to address the noise impacts NextGen airspace initiatives on California communities.

“While we appreciate that this airspace modernization program is intended to benefit airlines and their customers, these benefits may not outweigh the serious noise concerns reported by many other Californians,” the senators told Huerta.

“... Given that the new California flight patterns were not designed to address specific safety issues and will actually result in a slight increase in greenhouse gas emissions per flight operation (according to the environmental reviews performed for both the Northern and Southern California systems), it would not seem appropriate to increase the noise burden on communities,” the senators wrote.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 15

April 29, 2016

Legislation

HOUSE BILL REQUIRES STUDY OF IMPACT OF NEXT-GEN FLIGHT PATHS ON HEALTH

The FAA Administrator would be required to enter into an agreement with a school of public health to conduct a study of the health impacts of tightly focused NextGen flight tracks under legislation introduced in the U.S. House of Representatives on April 27 by Rep. Stephen Lynch (D-MA) and 16 members of the House Quiet Skies Caucus.

The study required by the Airplane Impacts Mitigation (AIM) Act of 2016 (H.R. 5075) would examine the health impacts of NextGen flights on residents' health, including asthma exacerbation, sleep disturbance, stress, and elevated blood pressure.

The study would be limited to residents living partly or wholly within the land area underneath the flight paths most frequently used by aircraft flying, including during takeoff or landing, at an altitude lower than 10,000 feet.

"It will consider only those health impacts that manifest during the physical implementation of the NextGen RNAV program," Lynch explained.

(Continued on p. 59)

Legislation

SENATE APPROPRIATIONS COMMITTEE APPROVES \$16.4 B FY 2017 BUDGET FOR FAA

On April 21, the Senate Appropriations Committee approved legislation providing a fiscal year 2017 budget of \$16.4 billion for the Federal Aviation Administration.

That level of funding is \$131.6 million above the FY 2016 enacted level and \$512.5 million above President Obama's FY 2017 budget request for FAA.

The FY 2017 Transportation, Housing and Urban Development, and related (THUD) Appropriations Bill (S. 2844) – which now goes to the full Senate for consideration – also would provide:

- \$1 billion for implementation of FAA's Next Generation Air Transportation System (NextGen);
- \$176 million for FAA research, engineering, and development activities;
- \$3.75 billion for grant-in-aid to airports; and
- \$15 million for the FAA's Airport Cooperative Research Program (ACRP), which is managed by the Transportation Research Board.

The legislation also includes provisions that would:

(Continued on p. 60)

In This Issue...

Legislation ... House bill would require study of impact of NextGen focused flight paths on the health of people living under them, with focus on asthma exacerbation, sleep disturbance, stress, and elevated blood pressure. Study must be done in Boston, Chicago, NY, No. Cal., Phoenix, and three other metro areas - p. 58

... Senate Appropriations Committee approves FAA FY 2017 budget - p. 58

Manassas Reg. Airport ... City of Manassas, VA, approves AOPA-backed zoning amendment - p. 59

Heathrow ... Improved air ventilation is offered to 24 schools near airport - p. 60

NASA ... Agency launches initiative to entice more universities to work on six key aeronautics technical challenges - p. 60

News Briefs ... FAA advises public that RE&D Committee will meet in DC - p. 61

Legislation, from p. 58

The AIM Act mandates that the study will focus on residents in Boston, Chicago, New York, the Northern California Metroplex region, Phoenix, and up to three additional metropolitan areas that would be selected by the FAA Administrator and must contain at least one international airport.

“These five areas have noticed a distinct change in flight paths and sharp shifts in airplane noise as a result of the NextGen flight system,” Lynch explained.

“As residents of communities surrounding airports face increasing levels and durations of airplane noise, the AIM Act will examine the health impacts of airplane overflights on local communities,” Lynch said. His statement continues:

“The AIM Act will ensure that strong, independent research into the health impacts of prolonged exposure to airplane noise and emissions is available to inform FAA policies and decision-making going forward.

“With the adoption of the NextGen, GPS-based navigation system, hundreds of flights per day are guided with laser-like precision over a narrow flight path. While the RNAV procedures of the NextGen system can increase efficiency, the neighborhoods lying beneath flight paths can experience extended periods of aircraft noise and exposure to air pollutants, raising health implications and negatively impacting the quality of life for local families.

“The AIM Act will ensure that we take all airplane-related health impacts into consideration as Congress and the FAA review ways to improve flight path policies. Every day, I hear from families in Milton, Hull, South Boston, and other communities in the 8th District about the disproportionate burden of airplane traffic and the negative health and quality of life implications the noise and emissions have on their daily life,” said Congressman Lynch.

“Local communities need to be heard and our federal agencies must be held accountable. This study is an important step forward on the road to a healthier environment for the people who live and work near Logan Airport and other international airports around the country.”

Harvard Meets Criteria

The AIM Act stipulates that an institution of higher education would be eligible to conduct the study only if it:

- Has a school of public health that has participated in the FAA’s PARTNER Center of Excellence;
- Has a Center for Environmental Health that receives funding from the National Institute of Environmental Health Sciences;
- Is located in one of the study areas; and
- Applies to the FAA Administrator in a timely fashion.

Harvard’s School of Public Health meets those criteria and Rep. Lynch represents the Boston area.

The AIM Act would require the FAA Administrator – within 180 days of passage of the legislation – to enter into an agreement with an eligible institution of higher education to conduct the health effects study.

The study must be completed two years later and submitted to Congress within the following 60 days.

H.R. 5075 has 16 original cosponsors including Reps. Michael E. Capuano (D-MA), Katherine Clark (D-MA), Joe Crowley (D-NY), Keith Ellison (D-MN), Anna G. Eshoo (D-CA), Sam Farr (D-CA), Ruben Gallego (D-AZ), Alan Grayson (D-FL), Steve Israel (D-NY), Daniel Lipinski (D-IL), Grace Meng (D-NY), Eleanor Holmes Norton (DC), Mike Quigley (D-IL), Kathleen Rice (D-NY), Janice Schakowsky (D-IL), and Jackie Speier (D-CA).

Manassas Airport

MANASSAS APPROVES ZONING AMENDMENT BACKED BY AOPA

The City of Manassas, VA, recently approved a zoning amendment backed by the Airport Owners and Pilots Association (AOPA) that is designed to help prevent conflicts between airport users and homeowners.

The amendment puts in place noise mitigation requirements for a housing development being planned near fast-growing Manassas Regional Airport, located 30 miles south of Washington, DC.

“While we’d prefer not to see houses built so close to the airport, the zoning amendment will ensure that homebuyers are aware of the airport’s presence and that steps are taken to reduce noise in their homes,” said Adam Williams, AOPA manager of airport policy. “And that’s important for the long-term viability of Manassas Regional.”

Under the zoning amendment, acoustical treatments must be built into homes to ensure that noise levels in living spaces do not exceed an average of 45 decibels (DNL), and buyers must receive a disclosure statement indicating that the airport is located within one-half mile of the property and that the property could be subject to increasing noise levels from overflights and airport operations.

AOPA said that winning support for the amendment was a community effort. AOPA member Charles Schefer brought the issue to AOPA’s attention and mobilized pilots and airport neighbors to contact city leaders and take part in planning meetings.

“I think it’s critically important to recognize that airports are far more than just a place for aircraft to take off and land; they are economic engines that drive the surrounding region and communities they serve,” Schefer said, explaining why he believes it’s important to mobilize pilots, businesses, and neighbors on airport issues.

He noted that, according to a 2010 Virginia Department of Aviation study, Manassas Airport generates employment for more than 1,000 people and more than \$234 million in annual economic activity. But, he warned, “It’s equally important to recognize that not all types of land use are compatible.”

AOPA said that Schefer began his campaign for the zon-

ing restrictions by working with the local airport director, who also was concerned about the impact of a planned housing development on the airport. Schefer also contacted airport tenants and urged them to get in touch with the mayor and city council about the importance of protecting the airport. And he got in touch with AOPA, which also contacted the city council and planning commission.

The zoning amendment updates the existing Airport Impact Overlay District and establishes a new Airport Zoning District for city-owned airport land.

Further details are available at

<http://www.manassascity.org/2081/Airport-Zoning-Ordinance-and-Map-Update>

Heathrow

IMPROVED AIR VENTILATION OFFERED TO 24 LOCAL SCHOOLS

Some 24 local schools will be offered improved ventilation, as part of a new program launched by London Heathrow Airport on April 19.

The offer will complement the airport's £4.8 million (\$6.9 million) Community Building Noise Insulation Scheme (CBNIS), completed last year, and the adobe building program to support outdoor learning spaces, both of which were celebrated at the launch of the ventilation program at a local nursery school.

The ventilation program will be phased in over the next three years and will be open to schools that received noise insulation including double-glazing and replacement windows through CBNIS.

That insulation has reduced noise by on average 6 dB in each classroom when the windows are closed, Heathrow officials said. Additional ventilation in these classrooms will allow schools to maintain the benefits of the insulation by keeping the windows shut, while being able to provide a more comfortable teaching environment.

The ventilation offer follows a pilot program run at two local schools that was completed in 2014.

While sound insulation can significantly reduce noise levels inside buildings, the benefits do not extend outside, the airport noted. To resolve this issue, Heathrow also is provided funding for schools under its flight paths to install "adobe" buildings, which are eco-friendly domes that provide noise respite from overhead aircraft while still retaining a feeling of being outside.

Five adobe buildings will be funded this year and Heathrow has committed to invest almost £1.8 million (\$2.6 million) for 21 adobe buildings.

"The multi-million pound investments Heathrow has and is still making in-classroom insulation and outdoor learning is an essential part of our efforts to become a better, quieter neighbour," said Matt Gorman, Heathrow's Director of Environment.

"We know many of these local students will be part of our airport team in the future, and we want to be able to provide them and their colleagues with a first-class learning environment. We look forward to working with our local schools in continuing to tackle noise and in maximizing the opportunities the airport can provide."

The ventilation program was offered as airport officials wait to see if Heathrow have been selected as the site for the addition of a new runway in the London area. Adequate noise mitigation is one of the main criteria in the UK Government's selection process for determining whether the new runway will be added at Heathrow or Gatwick airport.

Legislation, from p. 58

- Bar funds from being used by FAA to limit the ability of owners or operators of private aircraft from requesting that the agency block their aircraft registration number from display in FAA's Aircraft Situational Display to Industry data that is made available to the public. This would make it impossible for airport noise offices to identify private aircraft that violate airport noise rules.

- Bar funds appropriated by the Act from being used to change weight restrictions or prior permission rules in effect at Teterboro Airport that are intended to keep out larger, noisier aircraft.

The Senate Appropriations Committee also warned House Republicans that it will oppose their efforts to privatize the FAA's air traffic control services.

"Given the growing congressional opposition to removing the Air Traffic Organization from the FAA," the Senate Appropriations Committee said it "will prohibit funding for this purpose should there be an effort to bypass the will of Congress."

On a vote of 95-3, the full Senate on April 19 approved an FAA reauthorization bill that rejects the goal of Republicans on the House Transportation Committee to privatize the FAA's ATO (28 ANR 54).

The House Appropriations Committee is still preparing its THUD appropriations bill.

NASA

NASA DEBUTS INITIATIVE WHERE UNIVERSITIES TAKE THE LEAD

Confident that some of the solutions to future challenges in aviation are locked inside the minds of today's university students, NASA announced April 26 that it is debuting a new mechanism for working with academia to identify and inspire the next generation of aeronautical innovators.

The University Leadership Initiative will competitively award funds to teams led by universities who, working with their research partners, will develop solutions for technical

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challenges found in six research thrusts associated with safely growing the air transportation system, reducing fuel consumption and carbon emissions, and applying converging technologies to transform aviation.

The six research thrusts are:

- Safe, Efficient Growth in Global Operations
- Innovation in Commercial Supersonic Aircraft
- Ultra-Efficient Commercial Vehicles
- Transition to Low-Carbon Propulsion
- Real-Time System-Wide Safety Assurance
- Assured Autonomy for Aviation Transformation

“The most enticing part of this initiative is that university-led teams will independently define the technical challenges they want to work on, so long as they are in support of one of the six research thrusts,” said Richard Barhydt, deputy director of NASA’s Transformative Aeronautics Concepts Program.

The university teams also will lay out major milestones and conduct the research activities needed to achieve their technical challenges, Barhydt said.

To learn more about the initiative’s intent, scope and selection criteria, interested parties are invited to attend a virtual Applicant’s Workshop on Tuesday, May 3, 2016, from 12:30 – 3:00 p.m. EDT. Questions may be submitted in advance to hq-univpartnerships@mail.nasa.gov (those submitted by 5:00 p.m. EDT on Friday, April 29, will be addressed first).

For further information, go to <https://nari.arc.nasa.gov/uli>

In Brief...

FAA RE&D Committee Meeting

FAA issued a notice in the *Federal Register* on April 28 advising the public that its Research, Engineering & Development Advisory Committee will meet on May 26 from 9 a.m. to 4:30 p.m. in the Round Room (10th Floor) of FAA headquarters at 800 Independence Ave., SW, Washington, DC.

At the meeting, the RE&D Committee will offer guidance to FAA on its research and development investments in the areas of air traffic services, airports, aircraft safety, human factors, and environment and energy.

Attendance is open to the public but seating is limited. Members of the public may present oral statements at the meeting. Written statements can be submitted at any time.

For further information, contact Chinita Roundtree-Coleman at tel: (609) 485-7149 or e-mail at chinita.roundtree-coleman@faa.gov.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 16

May 6, 2016

Supersonic Aircraft

HONEYWELL COCKPIT DISPLAY LETS PILOTS SEE SONIC BOOMS BEFORE THEY HAPPEN

Honeywell Aerospace is working with NASA's Armstrong Flight Research Center to study the most effective way to visually inform pilots flying supersonic jets about sonic booms, a loud noise caused by aircraft traveling faster than the speed of sound.

Honeywell recently flight-tested new cockpit displays that help pilots see sonic booms before they happen so they can reroute and reduce the effects of aircraft noise over populated areas. By predicting sonic boom footprints, Honeywell said it will remove a key roadblock to speed up the introduction of supersonic travel and support one of NASA's goals to modernize flight.

Early in 2015, Honeywell was awarded a two-year contract as part of NASA's Commercial Supersonic Technology (CST) Project to aid in overcoming the issue of sonic booms as a roadblock to commercial supersonic flight. In their first year under the contract, Honeywell and NASA have designed and developed predictive software and display technology that has been successfully tested in flight over

(Continued on p. 63)

O'Hare Int'l Airport

CONGRESSIONAL REPS URGE CHICAGO TO RETAIN DIAGONALS TO SPREAD NOISE

Reps. Mike Quigley, Jan Schakowsky, and Tammy Duckworth urged Chicago Aviation Commissioner Ginger Evans in an April 22 letter to retain two diagonal runways at O'Hare international slated for demolition and use them for noise mitigation.

Their letter was sent at the urging of the grass-roots community coalition Fair Allocation in Runways (FAiR), which has been fighting to block the Chicago Department of Aviation from demolishing the two diagonal runways, which Evans insists would be unsafe to operate in the parallel runway system the airport has moved to under the O'Hare Modernization Plan (OMP).

In a proposed nighttime runway rotation plan for O'Hare, Evans agreed to use the diagonal runways until they are permanently closed.

"For over two years, our constituents have been subjected to around the clock aircraft noise that resulted from new flight patterns established by the O'Hare Modernization Plan, Reps. Quigley, Schakowsky, and Duckworth told Evans.

"Until the Chicago Department of Aviation and its FAA and airline partners

(Continued on p. 65)

In This Issue...

SSTs ... Honeywell flight tests new cockpit display that helps pilots see sonic booms before they occur so they can reduce booms or reroute their aircraft over populated areas - p. 62

... NASA says history is about to repeat itself as the agency is poised to begin a new era of X-plane flights. Work has begun on the QueSST (Quiet Supersonic Technology) demonstration aircraft - p. 63

Chicago O'Hare Int'l ... Illinois Reps. Mike Quigley, Jan Schakowsky, and Tammy Duckworth urge Chicago Aviation Commissioner Ginger Evans to retain two diagonal runways slated for closure and use them in Fly Quiet Program to spread night noise impact - p. 62

Research ... The FAA's ASCENT Center of Excellence is undertaking a multi-year project on the relationship between aircraft noise exposure and cardiovascular health - p. 64

SST, from p. 62

commercial airspace.

“NASA is committed to making supersonic flight over land a reality, and key to achieving this is to reduce the impact of sonic booms,” said Bob Witwer, vice president of Advanced Technology at Honeywell Aerospace.

“Using the Honeywell User Experience design concept, our engineering team has tackled how to intuitively inform pilots about upcoming terrain, weather and more – now we are helping pilots predict and visualize noise to tackle sonic booms.”

“Important to our progress in reducing the sonic boom impact over land is to have a predictive sonic boom display in supersonic aircraft cockpits that ensures our future quiet supersonic aircraft remain below acceptable noise levels,” said Brett Pauer, NASA CST subproject manager at Armstrong Flight Research Center.

“We have partnered with avionics companies like Honeywell to translate our NASA algorithms into an integrated avionics system that is tested and evaluated by pilots.”

Honeywell’s predictive software and displays for supersonic jets are in ongoing development and testing with NASA. The conceptual designs used under NASA’s Commercial Supersonic Technology Project are tied to Honeywell’s Interactive Navigation (INAV) technology.

INAV is the aerospace industry’s first system providing the simultaneous display of traffic, terrain, airspace, airways, airports and navigation aids. INAV software is designed to allow easy addition of new display formats to existing cockpits, and the predictive software for sonic booms takes full advantage of this feature, allowing it to be effortlessly incorporated into existing and future airplanes.

Already in use on Honeywell Primus Epic integrated cockpits on Dassault, Gulfstream, Pilatus and Beechcraft aircraft, INAV will help make the next generation of supersonic flight a reality, Honeywell said.

NASA

NASA POISED TO BEGIN NEW ERA OF X-PLANE RESEARCH FLIGHTS

History is about to repeat itself, NASA’s Aeronautics Research Mission Directorate said in a recent news release.

Following are excerpts from that release:

There have been periods of time during the past seven decades – some busier than others – when the nation’s best minds in aviation designed, built and flew a series of experimental airplanes to test the latest fanciful and practical ideas related to flight.

Short wings. Long wings. Delta-shaped wings. Forward swept wings. Scissor wings. Big tails. No tails. High speed. Low speed. Jet propulsion. Rocket propulsion. Even nuclear propulsion – although that technology was never actually

flown.

Individually each of these pioneering aircraft has its own story of triumph and setback – even tragedy. Each was made by different companies and operated by a different mix of government organizations for a myriad of purposes.

Together they are known as X-planes – or X-vehicles, since some were missiles or spacecraft – and the very mention of them prompts a warm feeling and a touch of nostalgia among aviation enthusiasts worldwide.

“They certainly are all interesting in their own way. Each one of them has a unique place in aviation that helps them make their mark in history,” said Bill Barry, NASA’s chief historian. “And they are really cool.”

And now, NASA’s aeronautical innovators once again are preparing to put in the sky an array of new experimental aircraft, each intended to carry on the legacy of demonstrating advanced technologies that will push back the frontiers of aviation.

Goals include showcasing how airliners can burn half the fuel and generate 75 percent less pollution during each flight as compared to now, while also being much quieter than today’s jets – perhaps even when flying supersonic.

NASA’s renewed emphasis on X-planes is called, “New Aviation Horizons,” an initiative announced in February as part of the President’s budget for the fiscal year that begins Oct. 1, 2016. The plan is to design, build and fly the series of X-planes during the next 10 years as a means to accelerate the adoption of advanced green aviation technologies by industry.

“If we can build some of these X-planes and demonstrate some of these technologies, we expect that will make it much easier and faster for U.S. industry to pick them up and roll them out into the marketplace” said Ed Waggoner, NASA’s Integrated Aviation Systems Program director.

It’s something NASA has known how to do going way back to the days of its predecessor organization, the National Advisory Committee for Aeronautics (NACA), and the very first X-plane, fittingly called the X-1, a project the NACA worked on with the then newly formed U.S. Air Force.

Built by Bell Aircraft, the X-1 was the first plane to fly faster than the speed of sound, thus breaking the “sound barrier,” a popular but fundamentally misleading term that spoke more to the romantic notion of the challenges of high speed flight than an insurmountable physical wall in the sky.

Three-Legged Stool

... But in this age of high-speed computers capable of generating sophisticated simulations, and with the availability of world-class wind tunnels to test high-fidelity models, why still the need to fly something like an X-plane?

“It’s a valid question,” Waggoner said.

The answer has to do with what Waggoner describes as the necessity of a “three legged stool” when it comes to aviation research.

One leg represents computational capabilities. This involves the high-speed super computers that can model the

physics of air flowing over an object – be it a wing, a rudder or a full airplane – that exists only in the ones and zeros of a simulation.

A second leg represents experimental methods. This is where scientists put what is most often a scale model of an object or part of an object – be it a wing, a rudder or an airplane – in a wind tunnel to take measurements of air flowing over the object.

Measurements taken in the wind tunnel can help improve the computer model, and the computer model can help inform improvements to the airplane design, which can then be tested again in the wind tunnel.

“Each of these is great on its own and each helps the other, but each also can introduce errors into the inferences that might be made based on the results,” Waggoner said. “So the third leg of the stool is to go out and actually fly the design.”

Whether it’s flying an X-plane or a full-scale prototype of a new aircraft, the data recorded in actual flight can then be applied to validate and improve the computational and experimental methods used in developing the design in the first place.

“Now you’ve got three different ways to look at the same problem,” Waggoner said. “It’s only through doing all that together that we will ever get to the point where we’ve lowered the risk enough to completely trust what our numbers are telling us.”

‘Que’ the Supersonic Technology

Although it may not wind up being the first of the New Aviation Horizons X-planes to actually fly as part of the three-legged stool of research, design work already has begun on QueSST, short for Quiet Supersonic Technology

A preliminary design contract was awarded in February to a team led by Lockheed Martin. If schedule and congressional funding holds, this new supersonic X-plane could fly in the 2020 timeframe.

QueSST aims to fix something the X-1 first introduced to the flying world nearly 70 years ago – the publicly annoying loud sonic boom.

Recent research has shown it is possible for a supersonic airplane to be shaped in such a way that the shock waves it forms when flying faster than the speed of sound generate a sonic boom so quiet it hardly will be noticed by the public, if at all.

The resulting sonic “boom” has variously been described as like distant thunder, the sound of your neighbor forcefully shutting his car door outside while you are inside, or as the thump of a “supersonic” heartbeat.

“We know the concept is going to work, but now the best way to continue our research is to demonstrate the capability to the public with an X-plane,” said Peter Coen, NASA’s supersonic project manager.

It is hoped data gathered from flying QueSST will help the Federal Aviation Administration and its international counterparts establish noise-related regulations that will make

it possible for commercial supersonic airliners to fly over land across country.

“Providing that data will be a key step in bringing accessible and affordable supersonic flight to the traveling public,” Coen said.

Meanwhile, other experimental aircraft also are under consideration, including those with novel shapes that break the mold of the traditional tube and wing airplane, and others that are propelled by hybrid electric power.

Exactly what these X-planes will look like, how they will be operated and where they will be flown all have yet to be precisely defined.

“We’re going to let the marketplace and the community help us inform our decisions on the direction we want to go,” Waggoner said. “But we’re really excited about all of the things we might demonstrate.”

Interestingly, despite these future test aircraft being referred to as X-planes, it is entirely possible only some of them will actually get an official X-plane number designation – or perhaps none of them will.

“We just don’t know yet,” Waggoner said. “That decision likely won’t take place for each aircraft until we’re about to award the construction contract.”

So whether NASA winds up calling these new planes by an X-number or a catchy acronym – or both – one thing is clear: NASA’s flight research program is on its way to creating a renaissance of an exciting era in aviation research.

Research

ASCENT STUDYING AIRCRAFT NOISE EFFECT ON HEART DISEASE

ASCENT – FAA’s Center of Excellence for Alternative Jet Fuels and Environment – is undertaking a multi-year project on the relationship between aircraft noise exposure and cardiovascular disease.

It is one of six aircraft noise projects being undertaken by ASCENT, which was launched in September 2013 and replaces FAA’s earlier PARTNER Center of Excellence which has completed its 10-year life (25 ANR 118).

Researchers at Boston University School of Public Health, the University of North Carolina at Chapel Hill, and Brown University are conducting the project looking at the impact of aircraft noise on heart disease. It is using data from an existing long-term U.S health study conducted by the National Institutes of Health in 1991 that following the health of more than 160,000 postmenopausal women aged 50-79 for 15 years.

The Women’s Health Initiative (WHI) was conducted to address major health issues causing morbidity and mortality in postmenopausal women: cardiovascular disease, cancer, and osteoporosis. It one of the largest U.S. prevention studies of its kind, with a budget of \$625 million.

The WHI data includes detailed medical and other indi-

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vidual data tied to geographic location. The first step in the multi-year ASCENT project is to use the WHI geographic data to determine noise exposure estimates for WHI study participants and later to link those estimates to data on their health outcomes and relevant variables.

ANR is trying to find out from FAA when each of the six ASCENT projects addressing aircraft noise will be completed. The projects are at <https://ascent.aero/topic/noise/>

ONCC, from p. 62

take substantive steps to address noise issues during all hours of O'Hare operations, we cannot endorse the elimination of a 10,000-ft. runway, which represents an important operational alternative as well as a vital resource for noise mitigation.

"Demolishing runway 14L-32R – as well as the planned closure in late 2018 or early 2019 of runway 14R/32L – will deprive air traffic controllers of important cross-wind options and waste taxpayer money.

"With noise complaints exceeding four million in 2015, we know all too well the harmful impact the new traffic patterns have had on the well-being of hundreds of thousand of our constituents. Given O'Hare's lack of improvement in performance despite billions spent on new runways and a new east-west traffic pattern, it's hare to argue that retaining the diagonal runways will adversely affect O'Hare's efficiency.

"While we understand the operational restrictions imposed by the FAA's Converging Runway Operations rule, we firmly believe that O'Hare needs to retain every possible runway option, to increase efficiency, enhance safety and provide noise relief to the towns and neighborhoods surrounding the airport."

The congressional representatives told Chicago's Aviation Commissioner that they appreciate the role she had played in overhauling O'Hare's Fly Quiet program but asked her "to challenge the short-sighted planning of a decade ago and keep O'Hare's diagonal runways operational.

Vote on Nighttime Runway Rotation Plan

The O'Hare Noise Compatibility Commission (ONCC) is voting this morning on whether to approve a six-month test of a revised nighttime runway rotation plan for O'Hare that is supported by the community coalition Fair Allocation in Runway Use (FAiR) and the Suburban O'Hare Commission (SOC), which represents communities surrounding O'Hare.

A study done for SOC by JDA Aviation supports the plan under which night runway use would be rotated every week for 12 weeks to spread noise impact.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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ONCC Approves Nighttime Runway Rotation Plan for O'Hare

1 message

Anne Kohut <editor@airportnoisereport.com>

Fri, May 6, 2016 at 11:35 AM

The O'Hare Noise Compatibility Commission just announced its approval of the revised nighttime runway rotation plan for O'Hare. See below;

SUBJECT: ONCC APPROVES A RUNWAY ROTATION PLAN TO BALANCE O'HARE NIGHTTIME NOISE

Chicago and suburban leaders reach consensus on proposal for overnight noise relief

MAY 6, 2016 – By a two-thirds majority vote, the O'Hare Noise Compatibility Commission (ONCC) today approved a weekly nighttime runway rotation plan for O'Hare International Airport.

The Fly Quiet Runway Rotation Plan, developed by the Chicago Department of Aviation (CDA), in consultation with CDA and Suburban O'Hare Commission (SOC) aviation experts, seeks to establish a weekly runway rotation program at O'Hare during overnight hours that is designed to achieve a more balanced distribution of noise exposure for Chicago and suburban communities.

Each 12-week period may consist of one arrival and one departure runway or one mixed use runway (runway used for both arrivals and departures). The rotation schedule would also be published online for the public to view.

"What we accomplished today fulfills our mission for regional aircraft noise mitigation," said ONCC Chair and Mount Prospect Mayor Arlene A. Juracek. "The Runway Rotation Plan doesn't burden one community. If we failed to get the vote we would have been stuck with the status quo and our members should not be satisfied with that outcome."

Under the current Fly Quiet Program, certain runways are predominately utilized for aircraft arrivals and departures. Communities near the flight paths of these designated runways are the most heavily impacted by aircraft noise at night. With a rotation program in place, the designated nighttime arrival and departure runways at O'Hare would be rotated on a weekly basis.

The CDA will submit the plan to the Federal Aviation Administration for review and approval. Implementation of the rotation plan as a six-month test program could begin as early as June or July 2016.

Because the runway rotation plan is only a six-month test period, Fly Quiet procedures will revert back to the original plan upon completion of the test. However, comments and data will be collected and reviewed during the test period as a metric for long-term aircraft noise solutions. Upon completion of this analytical phase, ONCC will review and decide if the actual Interim Fly Quiet Program should be implemented, until closure of Runway 14R/32L.

ONCC, an inter-governmental agency representing over 2.1 million residents living in 52 municipalities, school districts, and Cook and DuPage counties, is dedicated to mitigating aircraft noise from O'Hare International Airport.

ONCC member communities: Arlington Heights; Bensenville; Bloomingdale; Chicago including Wards 36, 38, 39, 40, 41, 45; Des Plaines; Downers Grove, Elmwood Park; Franklin Park; Hanover Park; Harwood Heights; Hoffman Estates; Itasca; Maywood; Melrose Park; Mount Prospect; Niles; Norridge; Northlake; Palatine; Park Ridge; River Forest; River Grove; Rolling Meadows; Rosemont; Schaumburg; Schiller Park; Stone Park; Wood Dale, Cook County and DuPage County. ONCC member school districts: 59; 63; 64; 80; 81; 84; 84.5; 85.5; 86;

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87; 89; 214; 234; 299; and 401.

Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 17

May 13, 2016

O'Hare Int'l

ONCC APPROVES RUNWAY ROTATION PLAN TO BALANCE O'HARE NIGHTTIME NOISE

On a vote of 45-5, the O'Hare Noise Compatibility Commission (ONCC) on May 6 overwhelmingly approved a six-month test of a weekly nighttime runway rotation plan for O'Hare International Airport.

"What we accomplished today fulfills our mission for regional aircraft noise mitigation," said ONCC Chair and Mount Prospect Mayor Arlene A. Juracek. "The Runway Rotation Plan doesn't burden one community. If we failed to get the vote we would have been stuck with the status quo and our members should not be satisfied with that outcome."

An earlier nighttime runway rotation plan had failed to get the two-third vote needed for passage by the ONCC, which represents local jurisdictions and school districts around O'Hare.

The revised Fly Quiet Runway Rotation Plan – developed by the Chicago Department of Aviation (CDA) in consultation with Suburban O'Hare Commission's airspace expert JDA Aviation – seeks to establish a weekly runway rotation pro-

(Continued on p. 67)

Reagan National Airport

DC ATTORNEY GENERAL, REP. VAN HOLLEN URGE FAA TO REVISE NEXT-GEN FLIGHT PATHS

In separate letters, Washington, DC, Attorney General Karl Racine and Rep. Chris Van Hollen (D-MD) urged FAA Administrator Michael Huerta to revise tightly focused NextGen flight paths out of Reagan National Airport that have moved aircraft away from the Potomac River noise abatement corridor and onto flight tracks over portions of the upscale Georgetown area of D.C. and, further out, over the wealthy communities of Bethesda and Chevy Chase, MD.

"I am writing to urge the FAA to reconsider the implementation and use of flight paths out of Ronald Reagan Washington National Airport that have shifted air traffic east of the Potomac River. These new flight paths, implemented in 2015, permit aircraft departing Reagan National to the North to fly over Foggy Bottom, Georgetown University, Canal Road, and MacArthur Boulevard. The District residents in those areas have been seriously and adversely affected by the aircraft noise from these new flight paths," Racine wrote in a May 6 letter.

"My Office is aware that a collection of Community Groups and Georgetown University have challenged the FAA's implementation of these new flight paths in

(Continued on p. 67)

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Reagan National ... D.C. Attorney General, MD congressman urge FAA to revise NextGen flight paths - p. 66

Noise Metrics ... French researchers develop a new indicator for measuring the monetary impact of aircraft noise around airports - p. 67

Litigation ... Ninth Circuit rules that EIS not needed for commercial service at Paine Field, attorneys at California law firm Gatzke Dillon & Ballance explain in their Aviation Alert - p. 68

News Briefs ... FAA accepts airport noise exposure maps for Boise Air Terminal, Harrisburg Int'l Airport; announces it is reviewing proposed Part 150 program for Boise ... Landrum & Brown has an opening for an Airport Noise Monitoring Specialist in the firm's Irvine, CA, office - p. 69

O'Hare, from p. 66

gram at O'Hare during overnight hours that is designed to achieve a more balanced distribution of noise exposure for Chicago and suburban communities. The revised runway rotation plan includes 12 one-week periods that incorporate parallel and diagonal runways and six east flow and six west flow configurations.

The rotation schedule would be published online for the public to view.

The CDA will now submit the plan to the Federal Aviation Administration for review and approval. Implementation of the rotation plan as a six-month test program could begin as early as June or July.

Because the runway rotation plan is only a six-month test period, Fly Quiet procedures will revert to the original plan upon completion of the test. However, comments and data will be collected and reviewed during the test period as a metric for long-term aircraft noise solutions, ONCC said.

Only an Interim Plan

Upon completion of this analytical phase, the ONCC will review and decide if the actual Interim Fly Quiet Program should be implemented.

However, if the interim plan is approved, it will run only until closure of diagonal Runway 14R/32L in 2019, at which point the nighttime runway rotation plan would be revised to only include O'Hare's parallel runways.

The community coalition Fair Allocation in Runways (FAiR) said that its support of the current Fly Quiet program is contingent upon O'Hare's diagonal runways remaining a permanent part of the nighttime runway rotation plan.

FAiR asserts that the only path to a fair solution to the change in noise impact caused by the move to an east-west runway alignment two and a half years ago under the O'Hare Modernization Plan is to use all existing and available runways, including the diagonals, and to rotate them "in a balanced and equitable way."

The CDA and FAA counter that the diagonal runways must be closed for safety reasons.

"Given that the Fly Quiet rotation plan contains the diagonal runways in almost half of the new nighttime configurations, the [ONCC] clearly saw the value of them, just as FAiR and JDA consultants advocated," FAiR said in a statement issued following the ONCC vote.

"But in spite of this heavy reliance on the diagonals, this is only an interim plan. The 14/32 diagonal runways, which are best suited to achieve the goals of the Fly Quiet program, are scheduled for demolition in the near future," FAiR noted.

"If that happens, a new and final rotation plan will need to be developed, one which will have very different impacts on the communities surrounding O'Hare. With the removal of two of the best rotational runways, noise relief will be limited at best."

FAiR also said that the runway rotation plan would be meaningless unless it is made mandatory for the airlines.

DCA, from p. 66

the United States Court of Appeals for the District of Columbia Circuit, and we continue to monitor that litigation (27 ANR 124).

"Rather than wait for that litigation to play out, the FAA should instead reconsider the use of these new flight paths in light of the serious noise concerns from the District residents they affect. The FAA has taken similar steps in the past, see *Helicopter Ass'n Int'l, Inc. v. FAA*, 722 F.3d 430 (D.C. Cir. 2013), and should rightly do so again now."

In *Helicopter Association International, Inc. v. FAA*, the D.C. Circuit confirmed that the FAA had authority to change flight paths in order to reduce the impact of aircraft noise on residents living below them.

Van Hollen Letter

In response to numerous complaints from residents of Bethesda and Chevy Chase, MD, Rep. Chris Van Hollen (D-MD) – who is heavily favored to win the Senate seat that Sen. Barbara Mikulski is vacating in November – sent a May 10 letter to FAA urging swift action to alleviate the noise and disruptions caused by flight paths changes out of DCA.

"My constituents had no opportunity to weigh in on the complete change in lifestyle that they would experience due to the narrowing of flight paths," Congressman Van Hollen wrote. "I request that the FAA take swift action to review the impact of these changes on all residents of the affected communities."

"Over the last few months, I have heard from many of my constituents regarding the frequent planes flying over their homes. FAA staff has advised that all departures now follow one specific, tightly constrained route at a low altitude. As a result, while only a handful of communities experience the effects of hundreds of flights daily, the effects on these neighborhoods is simply unbearable," Van Hollen told FAA Administrator Huerta.

Noise**REAL ESTATE TOLERANCE LEVEL IS NEW NOISE IMPACT MEASURE**

French researchers have developed a new indicator called the Real Estate Tolerance Level (RETL) for measuring the impact of aircraft noise around airports.

The RETL is not being used in France nor has the French government adopted it.

It was inspired by the Community Tolerance Level (CTL), which was introduced in a revision of ISO Standard 1996-1 on measurement and assessment of environmental noise, which was approved on March 9 (28 ANR 42).

The French study describing the new way to monetize aircraft noise impact, "A new indicator to measure the noise impact around airports: The Real Estate Tolerance Level

(RETL) – Case study around Charles de Gaulle Airport,” is available at <http://www.sciencedirect.com/science/article/pii/S0003682X16300470>

Study Abstract

Following is the study Abstract:

The Community Tolerance Level (CTL) is a new indicator which characterizes the impact of aircraft noise around local airport. It corresponds to the exposure sound level (DENL or DNL) where 50% of the population is highly annoyed.

Inspired by this indicator, this paper aims at calculating the Real Estate Tolerance Level (RETL) which corresponds to the exposure sound level where a property price is 50% depreciated compared to the price of the same property which would be situated in an area whose DENL is below 50 dB(A).

The use of a notarial database analyzed with the Hedonic Price Model (HPM) made it possible to calculate the percentage of property price depreciation around Charles DeGaulle Airport, with 1-dB steps of DENL, and so far to calculate the RETL. 19,891 house transactions and 23,264 apartments have been localized with a Geographic Information Systems (GIS) and crossed with the Sound Environment Curves provided by Airport of Paris.

The RETL value for single houses and for apartments around CDG is 75.8 dB. It is comparable to the mean CTL value which has been estimated to 73.3 dB from the DNL data of 43 airports over the world (about 73.9 dB from DENL data).

The RETL is predictable without field survey and could characterize the impact of aircraft noise around local airports. It could be a good indicator to follow the evolution of population tolerance over the years.

Special Report

COURT RULES EIS NOT NEEDED FOR COMMERCIAL SERVICE AT PAINE FIELD

[Following is an Aviation Alert by Lori D. Ballance, Danielle K. Morone, and Michael P. Masterson of the Carlsbad, CA, law firm Gatzke, Dillon & Ballance.]

In *City of Mukilteo v. U.S. Dep’t of Transp.*, the Ninth Circuit upheld the Federal Aviation Administration’s (FAA) decision to permit commercial passenger operations at Paine Field — an airfield located in Snohomish County, Washington, near the city of Everett. (815 F.3d 632 (9th Cir. 2016).)

The FAA’s decision was based on the preparation of a final Environmental Assessment (EA), which is a “less robust” form of environmental review under the National Environmental Policy Act (NEPA), as compared to an

Environmental Impact Statement (EIS).

The Ninth Circuit agreed that a full EIS was not necessary to commence commercial passenger service at Paine Field.

In September 2012, the FAA published a final EA that, among other things, evaluated the proposed amendment to Paine Field’s Part 139 Certificate to allow for commercial passenger service. The final EA found no significant environmental impacts as a result of the approval.

City Challenges EA

The City of Mukilteo Petitioners challenged the FAA’s decision in the Ninth Circuit, claiming that the FAA unreasonably restricted the scope of the EA, and improperly predetermined an outcome before conducting its review. The Ninth Circuit rejected these claims and denied the petition.

As to the scope of the FAA’s environmental review, Petitioners claimed that the FAA failed to analyze what would happen if more airlines later seek access to the airport, as NEPA requires the FAA to analyze all “reasonably foreseeable” environmental impacts of its decision to open Paine Field to commercial passenger service. (See 40 C.F.R. §1508.9; *id.* at §1508.8(b); *id.* at §1508.7.)

Here, the FAA reviewed its flight operation projections for Paine Field and determined that the only additional, and reasonably foreseeable, flights were those initially proposed by two airlines. In contrast, Petitioners touted projections based on the airport’s maximum capacity and did not take into account actual historical demand.

Court Rejects Challenge

The Court rejected Petitioners’ argument and found that the FAA’s projections were not arbitrary and capricious. In doing so, the Court applied a deferential standard of review, and deferred to the FAA’s “agency expertise” with respect to aviation forecasting, which is a factual determination. (*City of Mukilteo*, *supra*, 815 F.3d at p. 637.)

The Court also rejected related challenges, finding the FAA reasonably did not base its projections on a “speculative” number of operations that could someday be carried out.

Petitioners also argued that the FAA wrongly decided what the result would be before performing the EA, noting that agencies are required to conduct the required environmental review “objectively and in good faith,” rather than as “subterfuge to rationalize a decision already made.” (*Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000).)

Petitioners claimed the FAA predetermined the result by: (1) making statements favoring passenger service at Paine Field; and (2) giving a schedule to the consulting firm that prepared the EA, which included the date on which the finding of no significant impact (FONSI) could issue.

However, the Ninth Circuit rejected these claims because NEPA does not prohibit agencies from expressing a favored outcome. (*Ibid.*) And, the fact that the FAA provided a schedule showing when a FONSI could issue did not obligate the FAA to reach a finding of no significant impact. Accord-

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ingly, the FAA was found to have performed its NEPA obligations in good faith, and Petitioners' bias arguments failed.

In short, *City of Mukilteo* illustrates the proper use of an EA – as opposed to a more-robust EIS – to expand airport operations.

In Brief...

Boise Part 150 under Review

On May 10, the FAA announced that noise exposure maps submitted by the City of Boise, ID, for the Boise Air Terminal (Gowan Field) are in compliance with federal requirements.

The FAA also announced that it is reviewing a proposed Part 150 noise compatibility program for the airport. FAA's review of the proposed Part 150 program will be completed by Oct. 29.

For further information, contact Scott Eaton at FAA's Helena, Montana, office; tel: (406) 449-5291.

FAA Accepts Harrisburg Int'l NEMs

On May 10, the FAA announced its determination that noise exposure maps submitted by the Susquehanna Regional Airport Authority for Harrisburg International Airport meet applicable federal requirements.

For further information, contact Susan McDonald, and environmental protection specialist in FAA's Harrisburg ADO; tel: (717) 730-2830.

L&B Seeks Airport Noise Monitoring Specialist

L&B, a global airport planning and consulting firm operating in the U.S. and internationally, is currently seeking an entry-level Airport Noise Monitoring Specialist to join our team of professionals located in Irvine, California.

As a consultant at L&B you will have an opportunity to work independently but also learn from senior staff as you use your quantitative skills to analyze data to determine noise, vibration and air quality impacts, participate in noise data collection measurement trips and actively communicate with project team members as well as clients to contribute towards delivering high quality technical memos and reports.

In order to submit a resume and cover letter, please access the full job description for Airport Noise Monitoring Specialist on our website at http://www.landrum-brown.com/career_openings.htm

EEO/M/F/D/V

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 18

May 20, 2016

NoCal Metroplex

FAA ASSESSES FEASIBILITY OF CHANGES PROPOSED BY THE PUBLIC TO REDUCE NOISE

On May 16, the FAA released its study on the feasibility of implementing airspace changes proposed by the public to mitigate the noise impact caused by implementation of the FAA's Northern California Metroplex Plan.

Launched in March 2015, the NoCal Metroplex plan introducing new Performance Based Navigation (PBN) procedures and employed Time Based Flow Management to make the Northern California Metroplex airspace more efficient and to improve access to its airports.

The effort focuses on a number of airports, including San Francisco International, Oakland International, San Jose International, Sacramento International, Hayward Executive, and Palo Alto Airport in Santa Clara County.

But the communities that had flight paths moved over them – especially on the coast south of San Francisco – were outraged and turned to their elected representatives for help.

Under strong political pressure from elected officials in the Northern California

(Continued on p. 71)

Heathrow Airport

HEATHROW AGREES TO EXPAND NIGHT BAN ON SCHEDULED FLIGHTS IF RUNWAY ADDED

In an effort to persuade the UK Government to choose Heathrow as the site for a new runway in the London area, airport officials announced May 11 that they will meet and, in most cases, exceed the noise and air quality environmental conditions set out last year in the UK Airports Commission's recommendation for Heathrow expansion.

Heathrow officials told the Government that, if allowed to build a third runway at Heathrow, they would accept any Government decision to rule out building a fourth runway in the future.

Heathrow officials also said they will comply with a key Airports Commission requirement that new flights at Heathrow would only be permitted if air quality did not breach EU limits.

In terms of noise, Heathrow officials proposed imposing a six and one-half hour ban on scheduled night flights between 11 p.m. and 5:30 a.m., with the ban being introduced as soon as the "necessary airspace" has been modernized after planning consent for the third runway has been obtained.

The ban proposed by Heathrow officials would be an hour and one-half longer

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NoCal Metroplex ... FAA releases a report assessing the feasibility of implementing airspace changes proposed by the public to mitigate the noise impact of agency's Northern California Metroplex initiative - p. 70

Heathrow ... In an effort to win approval of a new third runway, airport officials agree to exceed noise requirements proposed by Airports Commission - p. 70

PBN ... Recommendations on how to improve FAA outreach to communities when implementing PBN procedures will be presented at a June 17 NAC meeting - p. 71

Charlotte-Douglas Int'l ... FAA holds public meeting to explain new air traffic control procedures being implemented on May 31 under Metroplex initiative - p. 71

News Briefs ... FAA is reviewing proposed Part 150 Airport Noise Compatibility Program for Bob Hope Airport - p. 72

NoCal Metroplex, from p. 70

area – and at the request of California congressional Reps. Jamie Farr (D), Anna Eshoo (D), and Jackie Speier (D) – the FAA agreed to undertake an initiative to assess whether the ideas proposed by the public to mitigate the noise impact of the NoCal Metroplex plan were feasible and, if so, to implement them.

FAA’s “Initiative to Address Noise Concerns of Santa Cruz/Santa Clara/San Mateo/San Francisco Counties” consists of three phases:

- A feasibility study (which was just issued);
- Stakeholder feedback, initial environmental review, and safety assessment; and
- Final determination, roundtable/community outreach, National Environmental Policy Act (NEPA) actions, flight procedure development, charting, and implementation.

FAA’s feasibility study focused on whether the recommendations for proposed new and modified flight procedures met established FAA criteria and could be flown by the fleet mix that operates in the Bay Area. The FAA also assessed impacts to operations at the surrounding airports and traffic flows, and evaluated potential procedural modifications, including speed/altitude adjustments, airspace changes, moving existing waypoints and operational safety.

The feasibility study provides specific details on the disposition of each suggestion from the public and the basis for FAA’s determination as to whether it is feasible or not.

“In cases where the FAA team determined proposed procedural amendments were unfeasible or operationally unacceptable, the agency completed a detailed description explaining why. These explanations will be provided to the Congressional representatives,” FAA said.

“In cases where the FAA team determined proposed procedural amendments were feasible and flyable, as well as operationally acceptable from a safety point of view the agency will conduct formal environmental and safety reviews, and seek feedback from existing and/or new community roundtables and operators, before moving forward with the formal amendment process. Items that the team considered feasible but require committee discussion were identified as such in the final determination report,” the report notes.

Committee Will Consider FAA Study

FAA’s feasibility study will now be considered by the public and the Select Committee on South Bay Arrivals, which was formed by Reps. Eshoo, Farr, and Speier in April (28 ANR 46).

The committee includes 12 elected representatives from Santa Cruz, Santa Clara, and San Mateo Counties, as well as eight city and town governments in the San Francisco Bay Area who will work to find a regional solution to the NoCal Metroplex noise problems.

The Committee will hold a public meeting on May 25.

In the Executive Summary of its Feasibility Study, FAA said, “We look forward to feedback from the Select Commit-

tee and once a regionally vetted endorsement is provided to the FAA, we can move forward with next steps; for example, if there is a feasible procedural change or amendment endorsed by the Select Committee, the FAA will proceed with all necessary safety and environmental reviews (as required by FAA policy and regulations) to complete the formal amendment process for implementation.

FAA’s Feasibility Study is at <http://eshoo.house.gov/wp-content/uploads/2016/05/NoCal-Initiative-Phase-One-Report.pdf>

NAC

NAC TASK GROUP TO OFFER REC ON PBN COMMUNITY OUTREACH

At an upcoming June 17 NextGen Advisory Committee meeting, a NAC task group will present recommendations on how FAA can improve its outreach to communities when implementing Performance-based Navigation (PBN) procedures.

The meeting will be held from 9 a.m. to 3 p.m. at The Boeing Company office at 929 Long Bridge Drive, Arlington, VA, 22202. The Boeing office is two blocks from the Crystal City Metro station, which is accessible from the DC Metro’s Blue and Yellow lines.

Although the NAC meeting is open to the public, the meeting location has security protocols that require advanced registration. Please email bteel@rtca.org with name, company and country of citizenship to pre-register. Attendance is limited to space available.

With approval of the NAC chairman, members of the public may present oral statements at the meeting and should contact the RTCA Secretariat at tel: (202) 833-9339; fax: (202) 833-9434, or contact Andy Cebula, NAC Secretary, at email: acebula@rtca.org or tel: (202) 330-0652.

The June 17 NAC meeting agenda was announced in the May 18 Federal Register at

<https://www.gpo.gov/fdsys/pkg/FR-2016-05-18/pdf/2016-11715.pdf>

Charlotte-Douglas Int’l

FAA BRIEFS RESIDENTS ON METROPLEX AIRSPACE CHANGES

On May 19, the Federal Aviation Administration held a public meeting on new air traffic control procedures for flights at Charlotte Douglas International Airport (CLT) that will go into effective on May 31.

Dennis Roberts, FAA Southern Regional Administrator, presented the briefing to the community at a location in the City of Charlotte.

The new procedures are part of the FAA’s Metroplex ini-

tiative, a comprehensive plan to improve the flow of air traffic at airports in major metropolitan areas nationwide.

They include three new Standard Instrument Departure procedures for flights heading to the northeast and southeast of the airport.

The initial departure tracks are the same as aircraft fly today.

However, the departure track splits into two different directions when the aircraft are at or above 3,000 to 6,000 feet giving air traffic controllers more options for directing flights.

The third departure route combines two procedures into one. The FAA also is modifying a new Standard Terminal Arrival Route for flights approaching CLT from the northeast. The flight track remains the same below 16,000 feet.

The FAA conducted an Environmental Assessment (EA) of the changes, which included three public meetings, in the Charlotte area, in December 2014 and January 2015. The EA resulted in a Finding of No Significant Impact in June 2015.

The FAA said it will hold another meeting in June or July to brief the public on additional air traffic procedures, which will be implemented on July 24.

In Brief...

FAA Reviewing Bob Hope Part 150 Program

The FAA announced May 19 that it is reviewing a proposed Part 150 Airport Noise Compatibility Program for Bob Hope Airport. The agency's review will be completed by Nov. 7.

The public comment on the proposed Part 150 Program ends on July 11.

For further information, contact Victor Globa in FAA's Lost Angeles Airports District Office; tel: (310) 725-3637.

Heathrow, from p. 70

than the current five-hour ban on scheduled night flights from 11:30 p.m. to 4:30 a.m.

The Airports Commission recommended that Heathrow impose a six and one-half hour ban on scheduled night flights but from 11:30 p.m. to 6 a.m.

The Aviation Environmental Federation (AEF), a coalition of UK anti-aircraft noise groups, wants a binding eight-hour night flight ban at Heathrow from 11 p.m. to 7 a.m.; the World Health Organization's eight-hour night period.

Heathrow claims to have exceeded the Airport Commission's recommendation by committing to implementing the partial ban as soon as permission is granted, rather than waiting for the third runway to be built, on condition that airspace modernization takes place, the AEF said.

"However, it is unclear how binding the proposed ban

would be. The current restrictions on night flights at Heathrow – and particularly the five-hour period with no scheduled flights – are a combination of the Government's night [flight] quota and a voluntary agreement with airlines, meaning there are fairly regular breaches of the 'ban' between 11:30 p.m. and 4:30 a.m.. Would Heathrow's commitment be subject to the same infringements?" the AEF asked.

There is currently no total ban on night flights at Heathrow, although there is a limit of 5,800 take-offs and landings between 11:30 p.m. and 6 a.m. each year.

There also a night quota limit, which caps the amount of noise the airport can make at night, and Heathrow has a voluntary ban in place that prevents flights scheduled between 4:30 a.m. - 6 a.m. from landing before 4:30 a.m.

Exceed Commission's Recommendations

Last July, the UK Airports Commission unanimously recommended that adding a third runway at London Heathrow Airport is the best way to expand airport capacity in Britain. However, the Commission stressed that Heathrow should be expanded only if stringent environmental and compensation conditions are met (27 ANR 97).

Heathrow officials committed in their May 11 announcement to exceeding many of the Airports Commission's noise requirements, in addition to the expansion of the ban on scheduled night flights:

- **Noise Envelope:** The Airports Commission recommended that Heathrow establish a clear and legally binding noise envelope for the new third runway, if approved, that will give certainty to airport neighbors on noise impact.

Heathrow officials said they will exceed that requirement by "supporting the introduction of an independent noise authority and a system for the independent regular review of the noise envelope framework and targets to incentivize a reduction in aircraft noise over time."

- **Noise Respite:** The Airports Commission stipulated that Heathrow maintain more predictable periods of noise respite and publish a publicly-available timetable of respite for different areas under the flight path so local people know exactly when no planes will fly over their homes.

Heathrow said they will exceed that requirement by using advances in navigational technology to ensure that there will be noise respite for everyone living under the final flight path and will consult and provide options on its proposals for alternative runway use.

- **Property Compensation:** Heathrow officials said they will meet the Airports Commission's requirement to compensate those who would lose their homes at full market value plus an additional 25 percent above their unblighted market value plus legal fees, taxes, and moving costs and they will extend this offer to a further 3,750 properties close to the compulsory purchase zone, offering residents the option to move to a new home.

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• **Community Compensation:** Heathrow officials said they will exceed the Airports Commission's requirement to spend more than £1bn (\$1.4 billion) on community compensation (noise and property) – and to introduce a new aviation noise charge or levy to ensure that airport users pay more to compensate local communities – by beginning funding of that compensation from the day planning consent is granted for the new runway.

• **Community Engagement Board:** The Airports Commission required that Heathrow establish an independent Community Engagement Board, under an independent chair, that will have “real influence” over spending on community compensation and community support and over the airport's operations.

Heathrow officials said they will exceed this by establishing the Community Engagement Board after the new runway is approved and will propose that a number of the members of the Board “are those who have campaigned for the best possible deal for local residents.”

• **Independent Aviation Noise Authority:** The Airports Commission called for the creation of an independent aviation noise authority with a statutory right to be consulted on flight paths and other operating procedures at Heathrow.

Airport officials said they back the creation of such an independent authority with statutory powers.

Neither the Airports Commission nor Heathrow officials, however, defined what the powers of the independent authority would be in terms of defining flight paths and operating procedures at Heathrow.

Gatwick Comments

Gatwick Airport is still in competition with Heathrow to be selected by the UK Government as the site of the new London-area runway.

Gatwick CEO Stewart Wingate called Heathrow official's proposal “a desperate last throw from a project that has repeatedly failed.”

“Heathrow can promise many things but they cannot wish away the reality of its location. An expanded Heathrow will impact hundreds of thousands of people currently not affected by aircraft noise – an expanded Gatwick would impact less than 3% of this number,” he said.

Heathrow's latest proposal to impose tight environmental restrictions on a new runway comes as the manifesto of Sadiq Khan, London's new mayor, states that he would oppose a third runway at Heathrow. He pledged to continue to call for expansion at Gatwick as a “more viable, cheaper and easier to build alternative” even if the Government pursues the Heathrow option.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 19

May 27, 2016

FAA Appropriations

HOUSE APPROP. COMMITTEE BILL REQUIRES FAA TO REEVALUATE INSULATION CRITERIA

The FAA would be required to reevaluate its criteria for sound insulation and provide airports with more flexibility in awarding insulation – including second round insulation – under the Fiscal Year 2017 THUD appropriations bill passed by the House Appropriation Committee on May 24.

The provision was added to the Departments of Transportation, Housing and Urban Development, and Related Agencies (THUD) Appropriations bill by Rep. Mike Quigley (D-IL).

Earlier he added language to the bill that would require the FAA to identify short and long-term noise mitigation measures at Chicago O’Hare International Airport, where a major runway realignment has communities in his district up in arms over new aircraft noise impact.

The House Appropriations Committee rejected a third amendment offered by Rep. Quigley that would have kept O’Hare International Airport from using funds to deconstruct and decommission the airport’s two diagonal runways – currently

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Frankfurt Airport

TEST OF CURVED ‘RNP TO XLS’ APPROACH EXPECTED TO PRODUCE QUIETER LANDINGS

On May 26, Lufthansa airline, German Air Traffic Control (DFS), and Fraport jointly began a three-month test of so-called “RNP to xLS” curved approach procedures at Frankfurt Airport which they hope will result in greater operational efficiency and quieter landings.

The goal of the tests – which will end on Aug. 31 – is to prove the advantages of curved and steeper approach procedures in the vicinity of airports.

Additionally, the suitability of the procedure in an environment of high traffic density will be investigated. During test flights, flight track adherence and aircraft noise emission “will be especially intensively observed and subsequently evaluated,” Fraport said.

“With the start of the tests of the new procedures by Fraport, DFS, and Lufthansa, the international pioneering role of Frankfurt Airport in research and further development of active noise protection will once again be underlined,” Fraport noted.

The tests are being conducted under the framework of the European research

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House Appropriations Committee approves bill requiring FAA to reevaluate its sound insulation criteria; provide airports with more flexibility, including second round insulation - p. 74

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Lufthansa, German ATC, Fraport begin three-month flight test of curved ‘RNP to xLS’ approaches at Frankfurt Airport expected to result in quieter landings - p. 74

NASA ... Rep. Grace Meng (D-NY) meets with NASA Associate Administrator for Aeronautics Dr. Jaiwon Shin to discuss ways to combat aircraft noise - p. 76

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scheduled for demolition as part of O'Hare's Modernization Project (OMP) – until the FAA and the Chicago Department of Aviation, in consultation with surrounding communities, agreed on a plan for a more even distribution of day and night time air traffic at the airport.

Rep. Quigley, along with Reps. Tammy Duckworth (D-IL) and Jan Schakowsky (D-IL), who also represent noise-impacted Chicago area communities, urged Chicago Aviation Commissioner Ginger Evans in an April 22 letter to retain the two diagonal runways at O'Hare slated for demolition and use them for noise mitigation (28 ANR 62).

In its report on the THUD bill, the House Appropriations Committee said it "is concerned that FAA's current criteria restricts eligibility for federally funded sound insulation and limits one of the most important tools that airports have to address community concerns about noise impacts. The Committee encourages FAA to reevaluate its current criteria and provide airports with flexibility to expand eligibility where appropriate, and permit second round insulation to account for subsequent improvements in technology."

Regarding O'Hare, the Committee report on the bill "directs the FAA to continue to work expeditiously to identify appropriate short and long term mitigation measures to address local concerns that have been raised as a result of the O'Hare Modernization Program at Chicago O'Hare International Airport. The FAA is expected to provide a progress report on these measures to the Committee within 90 days of enactment of this Act."

Constituents Facing Unprecedented Noise

"My constituents back home in Chicago are facing unprecedented noise pollution that is eroding their quality of life, lowering their property values, and impacting their health. I've been working hard to explore solutions to mitigate noise for the sake of public health at the local level, as well as at the national level with my colleagues in the Quiet Skies Caucus, and through my role on the House Appropriations Committee," Rep. Quigley said in a statement.

"I'm pleased that language was included in the fiscal year 2017 bill requiring the FAA to identify short and long-term noise mitigation measures and reevaluate its criteria for sound insulation. However, I'm disappointed that my amendment to keep funding from decommissioning O'Hare's diagonal runways was not included.

"With noise complaints exceeding four million in 2015, we know all too well the harmful impact the new traffic patterns have had on the comfort and well-being of hundreds of thousands of homeowners. Given O'Hare's lack of improvement in performance despite billions spent on new runways and a new east-west traffic pattern, it's hard to argue that retaining the diagonal runways will adversely affect O'Hare's efficiency."

FY 2017 FAA Appropriation

The THUD appropriations bill passed by the House Appropriations Committee on a voice vote would provide the following:

- \$16.3 billion in total budgetary resources for the FAA – \$69 million above the fiscal year 2016 enacted level and \$450 million above the request.

The \$16.3 billion for FAA is \$100 million less than the \$16.4 billion the Senate Appropriations Committee approved for FAA in its FY 2017 THUD appropriations bill passed on April 21 (28 ANR 58).

- \$1 billion for the FAA's Next Generation Air Transportation System (NextGen). The Senate Appropriations Committee approved the same funding level.

- \$167.5 million for FAA research, engineering, and development activities, which is \$1.5 million above the enacted level and the same as the budget request.

The House appropriation is \$8.5 million less than the \$176 million for FAA RE&D approved by the Senate Appropriations Committee.

- \$3.75 billion for grant-in-aid to airports. The Senate Appropriations Committee approved the same funding level.

- \$15 million for FAA's Airport Cooperative Research Program (ACRP). The Senate Appropriations Committee approved the same funding level.

- \$7 million for NextGen Alternative Fuels for General Aviation, the same as the enacted level and an increase of \$1,208,000 above the budget request.

Report on Automation Improvements

The House Appropriations Committee said in its report on the THUD appropriations bill that "it recognizes that Performance Based Navigation (PBN) is the essential stepping stone to NextGen, and a top investment priority for the NextGen Advisory Committee. However, as the Inspector General has reported, the lack of automated controller tools to manage and sequence aircraft remains a barrier to maximizing benefits from new PBN routes.

"The Inspector General highlighted that while FAA deployed an automation tool to help controllers optimize PBN operations at high altitudes, it has not effectively managed the implementation of the tool or made it a priority. Moreover, it is unclear when the new Terminal Sequencing and Spacing Tool can be implemented at the Nation's most active airports.

"The Committee directs FAA to provide a report on the automation improvements to-date and actions still needed, as well as the status of deploying the Terminal Sequencing and Spacing tool at the Nation's most active airports."

The THUD appropriation bills passed by the House and Senate Appropriations Committees must still be approved by the full House and Senate and sent to a House-Senate conference committee to iron out differences between the bills.

The bill passed by the Senate Appropriations Committee does not include noise provisions similar to those added by Rep. Quigley to the House bill.

Technology

MENG MEETS WITH NASA ON WAYS TO MITIGATE AIRCRAFT NOISE

On May 19, Rep. Grace Meng (D-NY) met with Dr. Jaiwon Shin, NASA Associate Administrator for Aeronautics Research for the Aeronautics Research Mission Directorate, to discuss ways to combat airplane noise over her district of Queens, NY.

The space agency is working on technology to mitigate aircraft noise and is seeking funding to test and further develop these initiatives so that they can be made available for commercial use.

“I’ll talk to anybody who can play a role in mitigating airplane noise over our borough,” said Meng. “We must exhaust all traditional means in our fight against noise but we must also think out of the box and that is why I asked NASA to meet with me about the problem.

“Although most of the potential technology is years away, it is never too early to pursue it. Whether it’s NASA, increasing pressure on the FAA or my efforts to have the EPA take over mitigation efforts, we must continue to explore all possibilities to reduce excessive aircraft noise from the skies of Queens.”

Shin, who works at NASA Headquarters in Washington, DC, manages the agency’s aeronautics research portfolio and guides its strategic direction. The portfolio includes research in the fundamental aeronautics of flight, aviation safety, and the nation’s airspace system.

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project Single European Sky Air Traffic Management Research (SESAR).

The RNP to xLS (x Landing System) satellite-based curved approaches guide aircraft very accurately and seamlessly on both precision approach systems that are available at Frankfurt Airport: the decades-old Instrument Landing System (ILS) and the new Ground Based Augmentation System (GBAS), which will replace ILS as new aircraft become equipped to use it.

GBAS augments the Global Positioning System (GPS) to provide precise navigation service for an airport and surrounding airspace. Formerly called the Local Area Augmentation System in the United States, GBAS supports precision approach operations within 20 nautical miles of runway thresholds.

GBAS is accurate to less than 1 meter in both vertical and horizontal directions.

The new RNP to xLS procedures should enable aircraft to more accurately fly in curves in the vicinity of airports and to increase their flight track adherence.

At Frankfurt Airport, the lateral course of the new approach procedure is strongly orientated to the low-noise seg-

mented approach procedures followed for years. But the RNP to xLS procedure allows aircraft, for the first time, to follow the low-noise curving procedure onto the airport’s northwest runway.

The flight procedures for the Frankfurt Airport test were developed by German Air Traffic Control and have already been submitted to the airport’s Aircraft Noise Commission. Throughout the entire duration of the tests, Fraport will supervise the approach procedures with fixed and mobile flight noise monitoring stations and will subsequently evaluate the data.

Lufthansa will use aircraft models A380, B747-8 as well as three upgraded GBAS capable A319 for the tests at Frankfurt. In addition, a test aircraft from Honeywell will fly the new routes.

Honeywell International’s SLS-4000 SmartPath GBAS system received initial System Design Approval for Category I Precision Approach operations from the FAA in September 2009. The agency approved subsequent updates in 2012 and 2015.

How GBAS Works

GBAS provides a precise approach with a digital guide and operates according to the so-called “Differential Global Positioning System” procedure (DGPS). On the basis of its own highly accurate position, a GBAS ground station at the airport calculates correction data for every satellite of the American Global Positioning System (GPS). Via a digital data link this correction data is sent, together with further information on the current error and geometry of final approaches, to all equipped aircraft in the vicinity of the airport.

The GBAS receiver on board the aircraft can then correct the received GPS signals itself, consequently calculate the exact flight position, and once the pilot has selected the desired approach, compare it with the chosen approach path. The calculated deviation between the position of the aircraft and the chosen approach path will be shown to the pilot in the usual form on his cockpit displays or the flight control system will provide the aircraft with an automatic approach.

One of the advantages of GBS is that a single GBAS ground station can support many different final approaches on several runways. These approaches can also be of different steepness.

In the United States, GBAS has received operational approval at two airports: Newark Liberty International and Houston George Bush Intercontinental. GBAS is in use at several international airports, including Frankfurt and Bremen in Germany, Sydney International in Australia, Malaga in Spain, Zurich Switzerland, and 15 Russian locations.

Airlines that have operational approval to fly GBAS Landing System approaches in the U.S. include United, Delta, British Airways, Emirates, Lufthansa, and Cathay Pacific.

FAA says GBAS is the only feasible satellite-based navigation capability for Category II/III precision approaches to permit low visibility operations to touchdown and rollout.

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In Brief...

FAA Approves Charlotte Noise Maps

FAA announced May 20 that Noise Exposure Maps submitted by the City of Charlotte for Charlotte Douglas International Airport are in compliance with applicable federal requirements.

For further information, contact Aaron Braswell in FAA's Memphis Airports District Office; tel: (901) 322-8192.

Vancouver Seeks Env. Analyst, Noise Management

The Vancouver (Canada) Airport Authority has a full-time permanent opportunity for an Environmental Analyst (Noise Management).

Reporting to the Manager, Environment, and working with the Supervisor, Noise Abatement & Air Quality, the successful candidate is responsible for assisting in the development and implementation of all strategies to reduce aircraft noise exposure and further improving the performance of the YVR Aeronautical Noise Management Program.

Key qualifications include:

- Bachelors degree in Engineering, Science, Environmental Science, or related degree coupled with demonstrated commensurate technical experience.
- Experience with noise measurement and assessment, as well as noise and technical report preparation and environmental communication.
- Advanced analytical and computer skills, including the use of word processing, spreadsheets and databases for Windows.
- Proven experience with customers and dealing with the public.
- Excellent oral and written communication.

For a complete job posting and to apply, please visit the airport's website <http://www.yvr.ca/en/careers/current-opportunities>

Reference no. 16-28E; Application deadline: June 7, 2016

New ACRP Report Issued

The Transportation Research Board this week issued Airport Cooperative Research Program (ACRP) Report 156: *Guidebook for Managing Compliance with Federal Regulations: An Integrated Approach*, which provides guidance on managing compliance with federal regulations pertaining to the operation and management of airports including planning and development.

Accompanying the guidebook is the Regulation Compliance Management (RCM) Tool, an index of the applicable statutes, federal regulations, executive orders, OMB Circulars, and other documents with their compliance requirements.

The guidebook is at <http://www.trb.org/ACRP/Blurbs/174389.aspx>

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 20

June 10, 2016

UK

UK TO OPEN CONSULTATION ON PROPOSAL TO ESTABLISH AVIATION NOISE AUTHORITY

Later this year, the UK Department of Transportation (DfT) plans to launch a public consultation on a proposal to establish an independent UK aviation noise authority with a statutory right to be consulted on flight path changes and other operating procedures at London Heathrow and perhaps other UK airports.

A DfT spokesman confirmed on June 7 that the public consultation on the proposal would be held but said no decision has been made yet by the UK Government regarding whether to establish the independent aviation noise authority.

He could not comment on whether the aviation noise authority would govern noise and flight path decisions only at London Heathrow Airport or at all UK commercial airports.

The UK Government consultation will obtain public and aviation industry comment on the idea of establishing an independent aviation noise authority, which was proposed last year by the UK Airports Commission.

Last July, the UK Airports Commission unanimously recommended that adding

(Continued on p. 79)

FAA Policy

FAA WILL NOT MEDIATE DISPUTED CHANGES OF SPONSORSHIP AT AIRPORTS, POLICY SAYS

On June 6, the Federal Aviation Administration issued in the *Federal Register* a Notice of Policy on Evaluating Disputed Changes of Sponsorship at Federally Obligated Airports.

Asked why the FAA issued the policy statement, an FAA spokeswoman said, "The FAA's position is that the change in an airport's governing structure is a local decision. Officials at the state and local level should work together to transfer the airport in compliance with federal law.

"Unfortunately, in a number of cases local and/or state officials cannot agree on the new governing structure and are turning to the FAA to mediate the dispute. The FAA will not mediate disputes. It is up to local and/or state officials to resolve their differences before an application for a requested change in sponsorship/ownership is submitted to the FAA."

The spokeswoman did not comment on whether there currently are any legal disputes surrounding a proposed change in sponsorship of a publicly owned, federally obligated airport in the U.S.

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In This Issue...

UK ... The UK Dept. of Transportation will open a public consultation later this year on an Airports Commission proposal to establish an aviation noise authority with statutory power to review flight path changes and monitor aircraft noise - p. 78

FAA Policy ... Agency makes clear in policy statement that it will not mediate disputes between local/state officials about changes in airport sponsorship or governance; but says only FAA can approve such changes - p. 78

NASA ... Press event at Armstrong Flight Center highlights supersonic aircraft sonic boom mitigation; F-18s mimic much quieter booms that Quiet Supersonic Technology demo aircraft is expected to produce - p. 79

Personnel ... ESA announces that Chris Sequeria, who directed development of FAA's AEDT, has joined the firm as Senior Managing Associate in its Airport Practice - p. 80

UK, from p. 78

a third runway at London Heathrow Airport was the best way to expand airport capacity in Britain (27 ANR 97).

However, the Commission stressed that Heathrow should be expanded only if stringent environmental and compensation conditions at Heathrow are met, including:

- Establishing an independent UK aviation noise authority to be consulted on flight paths and operating procedures at airports;
- A ban on all scheduled night flights at Heathrow from 11:30 p.m. to 6 a.m.;
- Legally-binding caps on air pollution and noise and a legally-binding “noise envelope” at Heathrow;
- A Government commitment to never add a fourth runway at Heathrow;
- A noise levy on airport users to compensate local communities around Heathrow;
- A community engagement board be set up to allow local residents near Heathrow to have input on the airport; and
- Training and apprenticeships for residents near the airport.

The UK Government will make the final decision on whether to add a new runway in the London area and whether it should be added at Heathrow or Gatwick airport.

The UK newspaper *The Times* reported May 28 that the consultation on an UK aviation noise authority may further delay a final decision by the UK Government on the new runway. A decision had been expected this year.

In an effort to persuade the UK Government to choose Heathrow as the site for the new London area runway, airport officials announced May 11 that they will meet and, in most cases, exceed the noise and air quality conditions set out last year by the UK Airports Commission (28 ANR 70).

Heathrow officials said they backed the Airports Commission’s proposal for an independent aviation noise authority with statutory powers.

However, the Airports Commission did not define what the specific powers of the independent aviation noise authority would be in terms of approving flight path changes and other aircraft operating procedures.

Those details are likely to be specified in the UK Government’s consultation.

Gatwick Noise Mitigation Pledges

Not to be outdone by Heathrow’s noise mitigation plans, Chairman of the Gatwick Airport Board Sir Roy McNulty promised UK Prime Minister David Cameron in a June 7 letter that, if selected as the site for the new London-area runway, they will cap the number of people most affected by noise and pay “an industry leading” compensation scheme to residents around the airport.

Gatwick officials pledged to introduce a noise contour cap of 70 kmsq (27 square miles) covering 15,000 people experiencing 57 decibels LEQ noise and a wider contour cap of 175 kmsq (67.5 sq. miles) covering 40,000 people experienc-

ing 55 decibels LDN.

“These limits would materially affect how a two runway Gatwick would operate in the future and would be an important consideration in the annual planning cycle around flight paths and aircraft flight frequency, McNulty told the UK Prime Minister.

“We would obviously want to work out the details of how this would best be managed in consultation with local people and within the formal planning process,” he added.

McNulty said that Gatwick officials recognize “that noise contours are not enough and that we need to go further. Uniquely, alongside a wider program of compensation, Gatwick is pledging to pay £1000 (\$1,446) per annum towards the Council Tax [similar to a property tax] of those most affected by noise (57 decibels LEQ) from 2025. This will apply to tenants as well as homeowners. We believe this is the most progressive approach to compensation proposed by any major infrastructure project in the UK.”

Although the UK Airports Commission recommended Heathrow as the site of the new runway, Gatwick officials are still aggressively lobbying for the runway.

NASA**NASA SOCIAL HIGHLIGHTS WORK ON SONIC BOOM REDUCTION**

The United States “needs to make sure it is out front” on supersonic aircraft, which could reduce travel times by half and infuse the economy with good jobs and open new markets, according to Dave Richwine, NASA Commercial Supersonic Technology (CST) subproject manager, who is based at NASA’s Langley Research Center in Virginia.

His comments were made May 31 at a NASA Social for media representatives held at the agency’s Armstrong Flight Research Center in California to highlight two projects: supersonic aircraft sonic boom mitigation and the use of subsonic aircraft to validate technologies that could lead to Unmanned Aircraft Systems Integration into the National Air-space System.

Tom Jones, NASA CST associate project manager based at Armstrong, said supersonic travel could one day “bring the world a little closer together.”

A three-pronged sonic boom noise reduction strategy is progressing, NASA explained. The approach includes a sonic boom simulation lab at NASA Langley, shaped sonic boom research in restricted airspace at Armstrong, and data collection with a proposed supersonic demonstrator called the Quiet Supersonic Technology (QueSST).

The strategy could provide the information needed to make recommendations to the Federal Aviation Administration for amending a prohibition in place since the 1970s on over land supersonic travel.

The idea is to reduce the strength of the sonic booms and break them up so the sound is hardly noticeable by people on

the ground, Jones explained.

The QueSST is being designed through a NASA contract with Lockheed Martin. Michael Buonanno, Lockheed Martin chief engineer for the QueSST contract, said the design includes a 94.2-foot long, piloted aircraft with a single engine. The concept includes many commercially-available systems to reduce cost of the potential future X-plane that would greatly reduce the sound of current breaches of the sound barrier.

Attendees heard sonic booms from a NASA F/A-18 supersonic aircraft in level flight and also witnessed demonstrations of a special flight technique that mimics the magnitude of the much quieter sonic booms that the QueSST aircraft is being designed to achieve in level flight.

Philip Belzeski, a Boise State University physics major who hopes to become an astronaut, heard his first sonic boom. “The first sonic boom was shocking,” he explained. “I was startled. The other demonstration flights sounded more like dropping a mattress (from an aircraft).”

Personnel

CHRIS SEQUEIRA LEAVES FAA, JOINS ESA’S AIRPORT PRACTICE

Environmental Science Associates (ESA) announced June 1 that Chris Sequeira – who directed the development of FAA’s Aviation Environmental Design Tool (AEDT) – has joined the firm as a Senior Managing Associate in its Airports Practice.

He will support ESA aviation clients nationally in the areas of noise, air quality, land use compatibility, and public outreach from his base in New York City.

“Chris’ experience and background are ideally suited to address the challenges of noise and emissions in today’s complex and evolving aviation environment,” said Michael Arnold, ESA’s Deputy Airports Practice Leader.

“As a lead expert in the FAA’s Aviation Environmental Design Tool (AEDT) 2b, and with a strong interest in public outreach, Chris not only has the technical skill set required to offer our clients creative solutions, but a personal commitment to improving the relationships between airports and their communities. These are two areas that ESA has built its reputation on and Chris will serve to broaden and deepen our bench.”

Before joining ESA, Chris served in various roles with the FAA in Washington, D.C. While with the FAA’s Office of Environment and Energy, he directed four software contractors in the \$30 million development of FAA’s AEDT Version 2b.

On May 29, 2015, AEDT 2b replaced the FAA’s Integrated Noise Model (INM) and Emissions and Dispersion Modeling System (EDMS) and is now the model required for all new aviation noise and emissions analyses.

Most recently, Chris served as an Environmental Protec-

tion Specialist in the FAA’s Air Traffic Organization (ATO) and led the creation of plans to improve public involvement in FAA’s air traffic modernization process, incorporating recommendations from the NextGen Advisory Committee’s “Blueprint for Success to Implementing Performance Based Navigation.” This included leading a public involvement workgroup including ATO, other FAA lines of business, and the National Air Traffic Controllers Association.

Chris is a recognized expert in aviation noise and air quality modeling and public outreach. He holds a Master of Science in Technology and Policy, and both a Bachelor and Master of Science in Aeronautics and Astronautics from the Massachusetts Institute of Technology.

Policy, from p. 78

She also did not comment on whether FAA’s policy statement was issued in response to recent efforts by members of the Chicago City Council’s Progressive Reform Caucus and unions affiliated with the Service Employees International Union to introduce a measure in the Chicago City Council that would ask voters in November whether Chicago’s airports should be managed by an elected airport board rather than the Chicago mayor and his appointed aviation commissioner.

Anti-noise groups, upset by the noise impact of the O’Hare Modernization Program, strongly back the proposed ballot measure.

Proponents of moving to an elected airport board assert that all other major U.S. airports are run by either an elected airport authority or a board appointed by the local mayor and state governor. They contend that Chicago is the only city to have its airports run directly out of City Hall.

However, the Chicago Department of Aviation countered in a statement that “no other major airport in the country has an elected airport authority.

“Under Mayor Emanuel we have made major strides at the airports – modernizing terminals, improving the experience for visitors, adding the first gates at O’Hare in 20 years, addressing noise, and we are about to break ground on a new runway at O’Hare.

“We oppose subjecting thousands of jobs and the economic future of the region to an unknown and untested political process.”

A footnote in FAA’s policy statement stressed that “consent from the current sponsor/operator before a change of sponsorship or operational authority is a critical factor for the FAA in determining whether safety, efficiency, and compliance with grant assurances as required by Federal law will be fully satisfied prior to, during, and after any transition period between sponsor/operators. Even when consent is obtained, the FAA independently will determine whether the proposed sponsor/operator is able to satisfy Federal requirements for airport sponsorship or operations.”

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Policy Statement

FAA's policy statement explains the requirements for state or local government entities to coordinate with the FAA when contemplating actions that may impact an airport's ownership, sponsorship, governance, or operations.

"While state or local legislative action, or a judicial action, as the case may be, may seek to change an airport's ownership, sponsorship, governance, or operations, only the FAA has the authority to determine sponsor eligibility, approve and formally change airports sponsorship, and approve and issue a new Airport Operating Certificate pursuant to 14 CFR part 139," the policy states.

FAA said it "expects that all disputes about whether to change airport sponsorship and/or operating authority will be resolved through a legally-binding agreement between the parties involved in the dispute or a final, non-reviewable legal decision."

"While parties should seek technical assistance from the FAA as early as practicable, parties are encouraged to wait until a dispute has been resolved before submitting an application to the FAA seeking the agency's approval of a change in sponsorship of, and/or operational responsibility for, an airport," the policy explains.

The FAA said it "will accept an application for a change in airport sponsorship/operation only upon a legally definitive resolution of a dispute. At that time, the FAA will evaluate whether an application is complete and whether the proposed airport/sponsor/operator is capable of assuming all grant assurances, safety compliance, and other Federal obligations, and has the expertise to operate the airport as required by law."

FAA explained in its policy statement that in cases where it does approve a change in airport sponsorship or operations, the new sponsor/operator "should reimburse the prior sponsor for investments that have been made by the prior sponsor of the airport but have not been fully recouped at the time of the change in airport sponsorship."

Any such reimbursements must be consistent with FAA's Policy and Procedures Concerning the Use of Airport Revenue, 64 FR 7696 (Feb. 16, 1999).

The FAA policy statement does not apply to a change in sponsorship or ownership of a privately-owned airport, transfers under the Airport Privatization Pilot Program, or changes when the Federal Government exercises its right of reverter.

The FAA is accepting comments on its policy statement at Regulations.gov. Search for Docket "FAA-2013-0259-1251".

There is not deadline listed for submitting comments.

For further information, contact Kevin Willis, manager of FAA's Airport Compliance Division, tel: (202) 267-3085.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 21

June 17, 2016

NASA

NASA SOFTWARE TURNS NOISE PREDICTIONS INTO SOUND; CAN NOW HEAR FUTURE PLANES

[NASA recently unveiled a revolutionary new noise prediction software tool – called the NASA Auralization Framework (NAF) – that allows aircraft designers and the public to actually hear what aircraft of the future will sound like.

NASA took this concept one step further and partnered with a CGI company to produce lifelike video depictions comparing the sight and sound of future aircraft with those flying today.

To see a video comparing a modern twin-aisle aircraft with a possible future hybrid wing aircraft, go to <http://www.nasa.gov/topics/aeronautics/index.html>

Click on “NASA Auralization Tool Reveals ...”

Following is a NASA press release on the NAF prepared by Jim Banke of NASA’s Aeronautics Research Missions Directorate.]

If an airplane designer standing alone in the forest calculates how much noise his or her new aircraft will make in flight, does the prediction make a sound?

(Continued on p. 83)

Legislation

BILL WOULD REVITALIZE U.S. COMMITMENT TO MANUFACTURING ADVANCED AIRCRAFT

Rep. Steve Knight (R-CA) introduced legislation in the U.S. House of Representatives on June 14 to revitalize America’s commitment to the study, design, and manufacturing of advanced aircraft, including a low boom commercial supersonic airplane.

The Aeronautics Innovation Act (H.R. 5466) lays out a roadmap for the future of American aerospace research with the goal of developing aeronautics programs that can face the challenges of the 21st century.

There are currently a handful of government projects and initiatives that support aeronautics research and development, but a lack of coordination and funding inhibits their potential, Rep. Knight said in introducing his bill. He believes his Aeronautics Innovation Act would address this problem by establishing long-term goals, promoting interagency cooperation, and directing Congress to commit to funding the necessary programs.

Rep. Knight’s measure begins by declaring that the U.S. is entering an era of new and extensive challenges to its air dominance, then goes on to formulate a plan for creating new national aeronautics programs that can secure U.S. commercial

(Continued on p. 84)

In This Issue...

NASA ... An new noise prediction software tool called the NASA Auralization Framework (NAF) allows engineers designing future aircraft, and the public, to actually hear what aircraft still on the drawing board will sound like. NAF converts noise prediction calculations into an audio file that can be played on compatible sound systems - p. 82

Legislation ... House bill would direct NASA to establish five full-scale aeronautics technology programs, including low-boom supersonic aircraft program to encourage repeal of domestic, international bans on commercial supersonic flight overland - p. 82

FAA CLEEN Program ... Aircraft noise and emissions reduction technologies developed in first phase of FAA’s CLEEN Program are expected to begin entering service this year, agency says in a Fact Sheet detailing program accomplishments to date - p. 85

NASA, from p. 82

As it turns out, if the design engineer has access to all of NASA's noise-predicting software tools – including a fairly new one called the NASA Auralization Framework (NAF) – the answer is yes.

“With NAF, what we've done is to develop a set of computer codes that allows us to take noise predictions on paper and turn them into something we can listen to,” said Stephen Rizzi, senior researcher for aeroacoustics at NASA's Langley Research Center in Virginia.

Even short videos can be produced.

These long established noise-predicting tools, in concert with NAF, already are helping engineers to better deal with a decades-old problem in aviation.

Since the dawn of the commercial jet age during the 1960s there has been a constant effort to make airplanes quieter and less of a public annoyance in terms of noise – a need that becomes even more challenging as more and more airplanes fill the sky.

The job continues at NASA today as engineers research and test aircraft and jet engines that are intended to fly within the next decade or so. These future aircraft are designed to cut noise to nearly one-eighth of what is allowed today, and confine the most annoying noise to within an airport's outer fence line.

To ensure they are on track to reach that goal, NASA's aeronautical innovators rely on a number of computer-based tools, including the Aircraft Noise Prediction Program (ANOPP), which does exactly that, and was first developed during the mid-1970s.

Using ANOPP, engineers calculate how much noise will be made by aircraft components such as flaps, slats, landing gear and any other parts that stick out into the slipstream to cause localized, noise-making turbulence. Not to mention the jet engines.

Then a more recent development of ANOPP – a new version called ANOPP2 – was created to enable engineers to analyze noise produced by aircraft that don't follow the conventional tube-and-wing designs flown today. For example, a hybrid wing body design, which, with its engines mounted above the fuselage, is made to be more quiet.

ANOPP spits out a series of numbers that show predictions on paper – or PowerPoint slide – of what the airplane might sound like during its various phases of flight from the point of view of a person on the ground listening from various points around the airport.

Make Some Noise

But a piece of paper or a projected slide with a bunch of sterile numbers on it doesn't really sing, literally or figuratively – especially for the designer who strangely found they were in the middle of a forest trying to make a sound.

As a result, to help bring more engaging audio context to all of these lifeless and mute noise-prediction numbers, about three years ago the NAF was developed by NASA and its

partners as a complementary tool to ANOPP.

As it is designed to work now, NAF inputs all the aircraft noise prediction calculations from ANOPP and ANOPP2, processes the information and within minutes outputs a standard .wav format audio file that can be played on any compatible sound system.

“The vision is that an engineer working on the aero-acoustics of a new airplane would be able to readily generate an auralization output in the form of a calibrated (sound) file,” Rizzi said.

However, it's not quite as easy as just pushing a button.

“Not just anyone can sit down in front of a computer and do the analysis leading up to an auralization. That takes a great deal of subject matter expertise from a lot of different disciplines,” Rizzi said.

Sound Reasoning

There are at least three big benefits to having this sound file available, Rizzi said, with the first related to how hearing the sound helps verify and validate the engineering process followed to make the prediction in the first place.

“If my prediction method is producing something that I know doesn't sound realistic – for example, if I am trying to auralize an aircraft already flying today to use as a reference and the file sounds nothing like the real thing – then that tells me something is wrong or missing in the process,” Rizzi said.

A second benefit is that the sound files can be used to evaluate how people respond to what they hear coming from various aircraft configurations, which in turn can be fed back into the design process to make airplane noise less of an annoyance.

Rizzi calls this “perception-influenced design.”

“What we're trying to do is not only lower the decibel level to meet future noise regulations, but we also want to make sure that the resulting sound isn't objectionable to the public,” Rizzi said.

For example, two different sounds can be heard at the same perceived decibel level, but if one of those sounds is a person quietly scratching their fingernails on a blackboard, then it doesn't matter how quiet or loud the sound is if it's annoying.

The same holds true for airplanes, and especially turbofan jet engines. Two different engines may generate the same loudness in terms of decibels, but may sound differently because of the way they are designed, making one more annoying than the other.

A third major benefit is to use the sound files as a communication or public relations tool aimed at anyone who has a vested interest in how much noise an airplane makes near or at an airport. That could include airport or airline officials, federal regulators, state and local lawmakers, and the general public who actually live near an airport.

“With this tool we can share these sound files with a community so they can hear first-hand what a new jet engine or airplane design might sound like,” Rizzi said.

“We can tell people we've made a reduction of 42 deci-

bels in noise levels, but what does that sound like? How does that compare with current levels? Now we can demonstrate that with realistic sound.”

In fact, NAF was used to show that several noise-reducing ideas evaluated by NASA’s recently completed, six-year-long Environmentally Responsible Aviation (ERA) project would indeed deliver on the promise of cutting noise to nearly one-eighth of today’s standards.

And now there’s video too.

Seeing is Believing

Taking NAF one step farther, NASA researchers partnered with a company called AMA Studios to combine the noise prediction sound file with flight simulator quality CGI representing the actual aircraft configurations analyzed.

The result is a lifelike depiction enabling designers to hear and see their work in action.

“And like the sound files alone, the combined audio visual presentation also can be used as a tool to showcase to the public the dramatic reductions in perceived noise levels achieved by these new aircraft designs,” Rizzi said.

A set of videos illustrating ERA’s promising noise-reducing results were the first produced under this collaboration and were premiered in May during an international aero acoustics conference in France.

“The videos were well received by those attending the conference, with many noting how helpful it was to be able to compare the sounds of the two different aircraft shown,” Rizzi said.

For this first set of videos, two different aircraft were shown from the perspective of someone standing near a runway off to one side as the airplane is taking off, as well as near the end of the runway directly under the final approach path of the airplanes.

The first aircraft represents a typical tube and wing airplane as flown today, with two engines slung beneath the wings – essentially a configuration similar to a wide body Boeing 777.

The second aircraft sports a blended hybrid wing body with twin engines mounted to the top of the airplane near the tail, very similar to Boeing’s subscale X-48 technology demonstrator that has flown for several years now.

The hybrid wing body is one of several promising design concepts to come out of ERA for an aircraft that meets future fuel, emissions and noise reduction goals. A full-scale version of the design is a leading candidate for NASA’s new series of X-planes to be flown as part of the agency’s decade-long New Aviation Horizons initiative.

“If you watch the videos and compare the sound of the two aircraft, both in terms of the overall decibel level and the annoyance factor, there’s no debate that the hybrid wing body represents a huge reduction in perceived noise,” Rizzi said.

Legislation, from p. 82

and military aviation leadership.

This includes the establishment of five full-scale experimental plane and systems programs (often called the X- program); elevating efforts to coordinate and strengthen hypersonics programs across the Federal Government, especially in the military; and establishing a \$40 million investment fund to upgrade and create new facilities to ensure NASA has the capability to pursue a path to flight for each of the Act’s proposed demonstration projects.

H.R. 5466 states that NASA “should” [but does not use the mandatory word “shall”] establish a long-term goal of increasing its Aeronautics research spending, over time, to 10 percent of its overall budget.

President Obama’s request for NASA’s fiscal year 2017 budget is \$19 billion, including \$790 million of the agency’s Aeronautics Program (up from \$640 in FY 2016).

So, Rep. Knight’s legislation gives NASA the leeway to increase its future Aeronautics Program budget to more than double the current funding level.

Five NASA Technology Programs

The bill directs NASA to establish full-scale technology programs to demonstrate innovative advances in five areas of aeronautics:

- A low-boom supersonic aircraft program to demonstrate aircraft designs and technologies to reduce sonic boom noise to levels that will encourage the repeal of domestic and international bans on commercial supersonic flight overland;
- Three subsonic flight programs – from among the ultra-efficient X-Plane and hybrid-electric X-Plane programs – to enable significant increases in energy efficiency and lower life cycle emissions, to demonstrate transformative propulsion systems, to introduce technologies enabling transformative levels of environmental-related performance improvements in the next generation of large civil air transports, and to culminate in X-Plane demonstrations; and
- An unmanned aircraft operations programs.

Crowdsourcing Pilot Program

The legislation would establish a pilot program to allow NASA to experiment with the crowdsourcing of early stage experimental aerospace vehicle design work.

NASA would be required to establish a mechanism for crowdsourcing the preliminary designs of advanced aerospace vehicles “that will increase the speed, range, capacity, safety, and affordability of aerospace transportation such as supersonic or hypersonic aircraft.”

The pilot program would run for five years.

“The Aeronautics Innovation Act is a roadmap to restoring American aeronautics to its full potential, which is crucial for our national defense and economic growth,” said Knight. “I look forward to working with my colleagues in Congress, with the relevant agencies, and with our partners in the private sector to make this vision a reality.”

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FAA

FAA PROVIDES STATUS REPORT ON PROGRESS UNDER CLEEN PROGRAM

Aircraft emissions and noise reduction technologies developed through the initial phase of the FAA's Continuous Lower Energy, Emissions, and Noise (CLEEN) Program – which ran from 2010-2015 – are expected to begin entering the aviation system this year, FAA said in a Fact Sheet on the program issued June 8.

The green technologies developed under the CLEEN Program will reduce U.S. fleet-wide fuel burn by 2 percent from 2025 through 2050, representing a cumulative savings of 22 billion gallons of jet fuel, FAA said. The CO₂ savings are the equivalent of taking 1.7 million cars off the road over the duration of this 25-year period.

The CLEEN Program is the FAA's principal NextGen environmental effort to accelerate development of new aircraft technologies that reduce aircraft fuel burn, emissions, and noise, and to advance sustainable alternative jet fuels. The program is a key element of the FAA's strategy to achieve environmental protection that allows for sustained growth in air travel.

Five companies participated in the first phase of the CLEEN Program: The Boeing Company, General Electric (GE), Honeywell, Pratt & Whitney (P&W), and Rolls-Royce, North America. The CLEEN projects they conducted and their environmental benefits are detailed in the Fact Sheet, which is at

http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20454

Over the five-year period of the CLEEN Program, the FAA invested \$125 million. The participating companies' funding brought the program's total investment to more than \$250 million.

To date, a number of aircraft technologies developed through the CLEEN Program have matured, culminating in full-scale ground and flight testing.

"These efforts have demonstrated fuel burn, emissions, and noise benefits and validated the various technologies' readiness to enter into future commercial aircraft designs. In addition, the alternative jet fuel projects have provided test data to support international approval of several alternative jet fuel production pathways. Further, all of the CLEEN companies participated in a coordinated process with other Original Equipment Manufacturers (OEMs) to review alternative jet fuel testing data reports that expedited international approval of several new fuels," FAA said.

With the success of the initial CLEEN Program, the FAA has now advanced to a second phase, CLEEN II, which is planned to run from 2015 through 2020.

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 28, Number 22

June 24, 2016

PBN

NAC GROUP RECOMMENDS MORE WAYS TO IMPROVE FAA COMMUNITY OUTREACH

As part of its PBN implementation effort, FAA should form a specialized outreach team of professionals trained to engage in local community outreach, the NextGen Advisory Committee's PBN Blueprint Task Group recommended in a draft report released June 17.

The Task Group's 20-page draft report offers both "Practical Guidance" and "General Findings" on how FAA can improve its community outreach efforts when implementing Performance-based Navigation (PBN) procedures.

The draft report by the NAC's PBN Blueprint Task Group – which includes representatives of airlines, airports, aviation industry trade groups, the consultant community, and the National Organization to Insure a Sound-controlled Environment (N.O.I.S.E.), which represents elected officials of communities near airports – also recommends that FAA:

- Develop a standard Community Outreach Toolkit for educating communities regarding the drivers of and to promote the benefits of NextGen/PBN in general;

(Continued on p. 87)

Research

AIRCRAFT NOISE LINKED TO INCREASED RISK FOR HIGH BLOOD PRESSURE, HEART DAMAGE

Living near an airport for three years or more was found to be associated with increased risk for high blood pressure and hypertension, which could then lead to heart damage and increased risk for a heart attack, according to the findings of a European study getting wide coverage in the press.

The study – "The effect of aircraft noise exposure on blood pressure and asymptomatic organ damage" – assessed the impact of aircraft noise on the development of hypertension and associated asymptomatic heart damage.

It was presented by Marta Rojek, a researcher at Jagiellonian University Medical College in Krakow, Poland, at the recent EuroPREvent 2016 conference sponsored by the European Association for Cardiovascular Prevention and Rehabilitation (EACPR).

"The volume of air traffic has skyrocketed since jet powered planes were introduced in the 1960s," Rojek said in a press release on her study. "According to the International Civil Aviation Organization, there were 64 million take-offs and landings in 2013 and this figure is set to double in the next 20 years."

"The steady growth in air traffic and expansion of airports, along with the de-

(Continued on p. 87)

In This Issue...

PBN ... NAC Task Group recommends additional ways for FAA to improve its community outreach efforts when implementing PBN procedures - p. 86

Research ... European study finds association between living near an airport for three years or more and increased risk for hypertension, heart damage - p. 86

Newark Airport ... Five NY congressional representatives tell FAA Administrator Huerta they will fight to block use of additional runway for arrivals if it shifts flights over Queens - p. 88

Navy Jets ... House passes DoD appropriations bill with \$2 million to find ways to lower Super Hornet, Growler jet noise - p. 88

News Briefs ... The first of five X-planes under NASA's New Aviation Horizons Initiative will test electric propulsion. It will be designated the X-57 and nick-named 'Maxwell' - p. 89

PBN, from p. 86

- Develop specific Local Community Outreach Toolkits tailored for, and able to be understood by a wide range of audiences for the Community Outreach Strategy for specific PBN procedure efforts based upon an assessment of the local community needs;
- Develop ongoing and scalable Community Outreach Programs in collaboration with local airports in order to establish a basis of communication and collaboration with local communities that can help support PBN procedure implementation;
- Disseminate both this document as well as the original Blueprint for Success to Implementing PBN to airport operators, airlines and other stakeholders to encourage and foster successful community engagement efforts; and
- To the extent practicable, incorporate the best practices outlined throughout this document for (1) preparation; (2) education; (3) engagement; (4) advocacy; and (5) post-implementation steps in PBN-related community engagement.

N.O.I.S.E. Supports Recommendations

Asked to comment on the NAC Task Force recommendations, N.O.I.S.E. President Brad Pierce, who also is a NAC Member and Aurora, CO, City Councilmember, told ANR that his association “is encouraged by the NAC’s approval of these recommendations and continued focus on the need for robust community engagement.

“N.O.I.S.E. believes that community engagement and advocacy is key towards successful implementation of PBN and we will continue to work on the NAC and with the FAA to advocate for meaningful solutions to the impacts of aviation noise on our nation’s communities.”

The Task Group’s draft report was submitted to the full NAC Committee, which met in Arlington, VA, on June 17. It is a follow-on to earlier “Blueprint for Success to Implementing Performance Based Navigation” the NAC submitted to the FAA in October 2014 (26 ANR 135).

The Blueprint stressed that the participation of “non-technical stakeholders” – airport authorities, local and regional planning agencies, and community leaders – is critical to the success of efforts to implement PBN procedures. “What has been lacking is a structured approach to engaging community support for PBN,” the NAC told the FAA in its Blueprint.

FAA Has Taken Positive Steps

The NAC said that FAA has taken positive steps in response to its Blueprint, including:

- (1) Updating its Community Involvement Manual;
- (2) Establishing a Noise Complaint Initiative working group to find ways “to more efficiently and effectively respond to and address noise complaints in a clear, consistent, and repeatable manner that is responsive to the public and applies the best use of FAA resources”;
- (3) Developing more systematic procedures for community outreach attendant to PBN implementation for Metroplex

implementation, which can be scaled to single-site PBN implementation; and

(4) Reviewing the array of PBN implementation projects already underway to determine if additional community engagement is needed.

But the NAC said that additional steps are still needed to improve FAA’s community outreach efforts on PBN. So, it asked its PBN Blueprint Task Group “to provide practical guidance to improve community outreach efforts that can be applied to varying types of PBN projects in order to fill or bridge existing gaps” in guidance.

“While the majority of PBN initiatives have not generated concerns or issues from the public, some have received significant high-profile attention,” the Task Group’s draft report notes. “At a minimum,” it says, “this delays important projects; in the worst case, it threatens to halt the initiative. This adds considerably to the time and resources needed to resolve issues.”

The draft report asserts that there is “tremendous value” in providing the additional effort to the overall PBN implementation that the Task Group recommends. “As real experience has shown, failing to follow through [on community outreach efforts] will result in unstable results, unpredictable costs, and loss of benefits to the national air transportation system.”

The Task Group said its recommendations “should be viewed as an investment in our NextGen infrastructure.”

The Task Group’s draft report can be downloaded at <http://www.rtca.org/nac>

Scroll down page to find report under heading “Next Meeting Agenda.”

Research, from p. 86

velopment of residential areas near airports, has led to more people being exposed to aircraft noise. There is emerging data to suggest that exposure to aircraft noise may increase the risk of hypertension, particularly at night, and of hospitalization for cardiovascular diseases – but more evidence is needed,” she said.

“Our results suggest that living near an airport for three years or more is associated with an increased risk of high blood pressure and hypertension,” said Rojek. “These changes may then lead to damage of the aorta and heart which could increase the risk of having a heart attack.”

The study subjects were 201 randomly selected adults aged 40 to 66 years who had lived for more than three years in an area with high or low aircraft noise. Of these subjects, 101 were exposed to more than 60 decibels (dB) of aircraft noise on average and 100 were exposed to less than 55 dB and acted as a control group.

For their analysis, the researchers matched the groups in pairs by gender, age, and amount of time living in the area. All participants had their blood pressure measured. Asymptomatic organ damage was assessed by measuring stiffness of

the aorta and the mass and function of the left ventricle.

Rojek and colleagues found that the group who lived in an area of high aircraft noise had more hypertension than those who lived in a low aircraft noise area (40% versus 24%). They also had higher systolic (146 versus 138 mmHg) and diastolic (89 versus 79 mmHg) blood pressure than the control group.

When they looked at the indicators of asymptomatic organ damage, the researchers found that those who lived near high aircraft noise had stiffer aorta and higher left ventricular mass. The measurements of left ventricular function were less conclusive.

Stiffness of the aorta was assessed by measuring carotid-femoral pulse wave velocity (the time it takes for the arterial pulse to propagate from the carotid to the femoral artery) and central blood pressure (the pressure in the aorta near that heart).

“European Union regulations say that countries must assess and manage environmental noise, and there are national laws on aircraft noise. Poland stipulates a maximum of 55 dB around schools and hospitals and 60 dB for other areas. Noise can be kept below those levels by using only noise-certified aircraft, redirecting flight paths, keeping airports away from homes, and avoiding night flights,” Rojek said in the press release.

She added, “More work is needed to enforce laws on exposure to aircraft noise as it is detrimental to our health. We also need further research to understand how the damage occurs and whether it can be reversed.”

However, neither the press release on the study issued by the European Society of Cardiology nor the study abstract identify what airport the study subjects lived around nor whether the study has been published yet in a peer-reviewed journal.

Newark Airport

NY REPS WILL FIGHT MOVING MORE AIR TRAFFIC OVER QUEENS

Five NY congressional representatives, led by Rep. Grace Meng (D-NY), sent a letter to FAA Administrator Michael Huerta on June 9 expressing concern over a new flight arrival plan that may create additional airplane noise over Queens.

They vowed to fight a plan that would allow Newark Airport to use another runway for some incoming flights if the move results in more air traffic over the New York City Borough of Queens.

This new procedure, if implemented, could force airplanes heading towards New York City airports to utilize flight paths that require an increased amount of time in airspace over the borough, they told Huerta.

Queens Members of Congress who signed onto Meng’s letter include Reps. Joseph Crowley (D), Gregory Meeks (D), Hakeem Jeffries (D), and Steve Israel (D).

“I am dismayed at the possibility of more aircraft noise

over Queens,” said Meng. “In 2012, new flight patterns over Queens slapped increased airplane noise over our borough, a move that continues to ruin quality of life for Queens residents. We will not accept any new noise and we’ll do everything in our power – legislative and otherwise – to fight this plan should it negatively impact our borough. The FAA must immediately clarify whether this new plan for Newark Airport will cause any new aircraft noise over Queens.”

The FAA is seeking to implement the new plan for Newark Airport in the fall. It would allow air traffic controllers to shift a small number of arriving flights to Newark’s Runway 29 if the airport’s Runway 4 Left or 4 Right are at capacity. The FAA is presently reviewing the environmental impact study it conducted for the plan.

Reps. Meng, Crowley, Meeks, Jeffries, and Israel are members of the Congressional Quiet Skies Caucus.

Military Jets

HOUSE APPROVES DOD APPROP. WITH \$2M TO LOWER JET NOISE

On June 15, Reps. Derek Kilmer (D-WA) and Rick Larsen (D-WA) added an amendment to the FY 2017 Department of Defense Appropriations bill that provides \$2 million to help lower engine noise on Navy Super Hornets and Growler aircraft that are used in current military operations.

The Navy has proposed expanding training missions at Naval Air Station Whidbey Island, WA, on the Olympic Peninsula north of Seattle for Growler pilots who are preparing to be deployed overseas.

“This investment will help the Navy be a better neighbor,” said Kilmer. “We all want our service members to be properly trained. By taking an approach grounded in science and supporting new technological breakthroughs, we can ensure that training happens in a way that better protects the soundscape and environment of Olympic National Park and the surrounding communities.”

The amendment prioritizes and expands ongoing Navy research to develop new technology that can reduce the sound of the military aircraft, associated hearing loss of naval personnel who work in close proximity to them, and operations and maintenance costs, without affecting performance.

The FY 2017 DoD Appropriations bill passed the House on June 16 but has yet to be acted on by the Senate.

Congressmen Kilmer and Larsen’s amendment seeks to address the noise problem caused by low-level Navy EA-18G ‘Growler’ jet training flights at Naval Air Station Whidbey Island, located about 40 miles north of Seattle on the Puget Sound.

Last August, a federal judge declined to issue an injunction sought by neighbors of the Air Station who sought to stop the training flights by the Navy’s newest electronic-warfare aircraft, which are done to practice aircraft carrier landings in preparation for combat in the Middle East.

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U.S. District Court Judge Thomas Zilly ruled that Citizens for the Ebey's Reserve for a Healthy, Safe and Peaceful Environment (COER) had failed to show that the training flights were significantly worse than what the Navy predicted in a 2005 Environmental Assessment, which was conducted when the Navy transitioned to the newer Growler from the older EA-6G Growler.

The Navy has agreed to conduct a new Environmental Assessment of the Growler training flights, although it has not been released yet.

After losing its court case, the Ebey's Reserve citizen group recently sought assistance from the Washington County Health Board in their effort to ban the training flights. However, the five-member Board (three of which are also County Supervisors) refused to take up the matter. That prompted the citizens group to accuse the Board of failing to exercise its duty to address what the group calls a "public health emergency" caused by the Howler aircraft noise.

COER has now turned to the Washington State Board of Health for help, asserting that the Navy and County Health Board have dismissed the findings of peer-reviewed studies they presented showing a link between aircraft noise exposure and health problems and student learning impairment.

"The Navy knows there are serious health issues related to noise, which is why it designates hazardous noise areas requiring use of high-quality hearing protection and routine health monitoring of its personnel. Sadly, the Navy's concern for its own is not extended to civilians on Whidbey Island who are being exposed to noise levels that exceed any World Health Organization, OSHA, or State of Washington noise standards," COER President Ken Pickard said in a statement on the organization's web site.

In Brief...

'Maxwell' Will Be NASA's First X-Plane under NAH

The first X-plane to be flown under NASA's New Aviation Horizons Initiative (NAH) will test electric propulsion technology and be designated the X-57. It will be nicknamed 'Maxwell'.

Maxwell will be powered only by batteries, eliminating carbon emissions and demonstrating how demand would shrink for lead-based aviation fuel still in use by general aviation. The electric propulsion technology is expected to significantly decrease aircraft noise, making it less annoying to the public.

NASA's press release on Maxwell is at

<http://www.nasa.gov/press-release/nasa-electric-research-plane-gets-x-number-new-name>

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.
e-mail: editor@airportnoisereport.com; Price \$850.

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KEY WEST INTERNATIONAL AIRPORT
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ENPLANEMENTS & DEPLANEMENTS
- 2016 -

Months	AMERICAN / ENVOY		SILVER AIRWAYS		DELTA CONNECTION		US AIRLINES - REPUBLIC AIR		MONTHLY TOTALS			YEAR TO DATE TOTALS				
	ENP	DEP	ENP	DEP	ENP	DEP	ENP	DEP	ENP	DEP	BOTH	ENP	DEP	ENP	DEP	
JAN	14,592	13,765	5,312	4,547	15,395	14,758			35,299	33,070	68,369	35,299	33,070	35,299	33,070	
FEB	15,672	15,754	5,024	4,773	15,372	14,729			36,068	35,256	71,324	36,068	35,256	71,367	68,326	
MAR	18,305	18,239	6,705	6,412	16,872	17,948			41,882	42,599	84,481	41,882	42,599	113,249	110,925	
APR	14,110	13,096	5,924	6,655	16,216	14,843			36,250	34,594	70,844	36,250	34,594	149,499	145,519	
MAY	10,706	9,526	6,845	6,162	15,119	14,005			32,670	29,693	62,363	32,670	29,693	182,169	175,212	
JUN									0	0	0	0	0			
JUL									0	0	0	0	0			
AUG									0	0	0	0	0			
SEP									0	0	0	0	0			
OCT									0	0	0	0	0			
NOV									0	0	0	0	0			
DEC									0	0	0	0	0			
Totals	73,385	70,380	29,810	28,549	78,974	76,283	0	0	182,169	175,212	357,381	182,169	175,212	357,381	175,212	
YTD Airline Totals	143,765		58,359		155,257		0				YEAR-TO-DATE TOTAL			345,986		
Prior YTD Airline Totals	141,515		68,830		135,631		*				PRIOR YEAR-TO-DATE TOTAL			345,986		
% change				-15.2%		14.5%		*Prior YTD added to AA								3.3%

MONTHLY	
Total PAX	MAY 2016
Total PAX	MAY 2015
	280
	0.5%

YEAR-TO-DATE	
Total PAX	YTD - 2016
Total PAX	YTD - 2015
	11,395
	3.3%



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LANDINGS

- 2016 -

	AMERICAN EAGLE	SILVER AIRWAYS	DELTA CONNECTION	US AIRLINES - REPUBLIC AIR	MONTHLY TOTALS	YEAR TO DATE TOTALS
Months						
JAN	250	239	184		673	673
FEB	266	240	175		681	1,354
MAR	303	328	145		776	2,130
APR	237	328	177		742	2,872
MAY	170	320	158		648	3,520
JUN					0	
JUL					0	
AUG					0	
SEP					0	
OCT					0	
NOV					0	
DEC					0	
Totals	1,226	1,455	839	0	3,520	3,520
					YEAR-TO-DATE TOTAL	3,520
Prior YTD Totals	1,184	1,784	696	*	PRIOR YEAR-TO-DATE TOTAL	3,664
% change	3.55%	-18.44%	20.55%	*		-3.9%

*Prior YTD added to American

MONTHLY			
TOTAL	MAY - 2016	648	
TOTAL	MAY - 2015	688	
		<u>-40</u>	
		<u>-5.8%</u>	

YEAR-TO-DATE			
TOTAL	YTD - 2016	3,520	
TOTAL	YTD - 2015	3,664	
		<u>-144</u>	
		<u>-3.9%</u>	