Key West International Airport

Ad-Hoc Committee on Airport Noise

Agenda for Tuesday, November 1st, 2016

Call to Order 2:00 pm Harvey Government Center

Roll Call

A. Welcome New Members

1. Paula Joyner-Clinard, representing Aviation, replacing Amy Kehoe

B. Review and Approval of Meeting Minutes

1. For July 5th, 2016

C. Discussion of NCP Operational Measures

1. Pilot Information Brochure

D. Discussion of NCP Preventive Land Use Measures

1. The Enclave at Riviera (aka 2800 Flagler)
2. Ocean Walk Apartments – Two New Buildings
3. Catholic Charities Affordable Housing (2700 Flagler)

E. Discussion of NIP Implementation

1. NIP Design Activities Schedule
2. Meetings with KWBTS Board of Directors

F. Other Reports:

1. Noise Hotline and Contact Log
2. Airport Noise Reports

G. Discussion of Meeting Schedule for 2017

H. Other Discussion

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
July 5th, 2016 Meeting Minutes

Meeting called to order by Commissioner Kolhage at 2:00 P.M.

ROLL CALL:

Committee Members in Attendance:

Commissioner Danny Kolhage
Marlene Durazo
Harvey Wolney
Tom Nelson
Sonny Knowles
Dr. Julie Ann Floyd
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
James Gasche, Air Traffic Management
Jessica Steinbach, KWBTS Manager
Marie Welsh

A quorum was present. Commissioner Kolhage chaired the meeting.

Review and Approval of Meeting Minutes for the April 25th, 2016 Ad Hoc Committee Meetings

Commissioner Kolhage asked if there were any comments or corrections to the April 25th minutes. Marlene Durazo made a motion to approve the minutes Peter Horton seconded the motion. The minutes were approved as presented.

Discussion of NCP Operational Measures

<u>Overnight Maintenance Run-up Restrictions</u>

The County received an email including a complaint regarding engine run-up noise during the night. Silver is the only airline that has maintenance personnel on site, and they were conducting maintenance run-ups. Don DeGraw issued an Airport Manager's Operational Directive Bulletin (AMB 2016.3),

dated May 29, 2016, describing the Overnight Aircraft Maintenance Run-up Restriction. Deborah questioned whether the existing Ordinance needed to be amended to reflect the AMB. Danny Kolhage and Peter Horton felt that this should be sufficient for now, but if it is not, we should proceed to amend the Ordinance. Don and Sarah (Airport Operations Manager) are available 24/7 to approve maintenance run-ups if necessary.

Pilot Information Brochure

Deborah submitted the Brochure to the FAA for review and comment, but has not received a response. Marlene pointed out that the White Street Pier has been renamed to the Edward B. Knight Pier. The Committee decided to leave the name as White Street Pier, since it is more well known by that name.

Discussion of NCP Preventive Land Use Measures

Meeting with City of Key West Planning Department – June 14

Don and Deborah met with the Planning Department staff on June 14th, and they were very cooperative and interested in incorporating our requests regarding new construction within the Noise Exposure Map.

On May 11, 2016, Don DeGraw wrote a letter to the City of Key West Planning Director, requesting that the airport be included in the planning and approval process for the proposed construction at the Ocean Walk Apartment Complex. Don later met with the developer and informed them that they needed to file a 7460 form (Notice of Proposed Construction or Alteration) with the FAA right away, which would determine if there are any issues pertaining to the height of the proposed buildings. Ocean Walk is planning to add two buildings on their existing property. Aircraft noise is also a concern, since the location is within the DNL 65 dB contour.

The City Planning Department staff asked the airport to get involved in the proposed development at the Catholic Charities Facility on Flagler Avenue. Catholic Charities is proposing to demolish most of the existing buildings, including the former parsonage and the office building that includes the kitchen and dormitory-style housing. They are proposing to build six new buildings, five of which will contain Single Room Occupancy (SRO) units, and one building containing the new Office and Kitchen. The existing SRO building contains ten (10) units. The five proposed buildings will contain a total of 37 SRO units. The buildings are modular. The proposed site plan is on page 17 of

the agenda package. The City Planning Department asked us for comments. We suggested they include a requirement that the buildings provide a minimum of 25 dB of Noise Level Reduction (NLR).

Development of Acoustical Building Requirement Plans

Deborah and Don suggested to the City Planning staff that we could develop Acoustical Building Requirements for both Ocean Walk and the Catholic Charities to assist them in meeting the NLR requirements. Steve described his ideas for development of these documents. The documents will provide guidance on the products (e.g., windows and doors) that should be used to achieve the required NLR.

We provided suggested language to the City for inclusion in their Conditional Use approval for both the Catholic Charities Facility and Ocean Walk Apartments. Don and Deborah both felt confident that the City would include our proposed language. What we proposed was consistent with the Florida Building. The Catholic Charities Facility seems to be moving forward, but the Ocean Walk Apartments may be a little further away.

Avigation Easement for New Development

Deborah indicated that a draft Avigation Easement that we suggest for use for the Catholic Charities Facility is included in the agenda package. It indicates that the new buildings will not be eligible for the NIP in the future, although the existing building is eligible.

A similar Avigation Easement will be prepared for the Ocean Walk Apartments. None of the buildings at Ocean Walk (existing or future) are eligible for the NIP

Discussion of NIP Implementation

Deborah turned the discussion over to Steve Vecchi to discuss recent events. Steve handed out a two-page summary describing the accelerated KWBTS NIP implementation plan, as well as the items to be discussed with the KWBTS Board of Directors tomorrow.

By working with Don DeGraw and the FAA, we were able to cut two years out of the implementation schedule, so we will be able to finish the NIP at KWBTS by May 2020. We are going to design all the buildings during the first year, but only bid the

construction for Building B. While we are constructing Building B, will be conducting Design Reviews of Building C, etc. Not only does this save time, it also saves money.

We are meeting with the KWBTS Board of Directors tomorrow. The Board will make decisions regarding the type of products they want to use for the whole condo (e.g., type of windows, window materials, colors). Steve and Richard (the Project Architect) have designed a pre-fabricated soffit to cover the condensate line and other wiring associated with the ductless split air conditioning systems.

Other Reports

Noise Hotline and Contact Log

No calls.

Airport Noise Report

Deborah mentioned ANR Vol 28, No. 11 on page 25 where there is an article discussing revising the noise standard to DNL 55 rather than DNL 65, which will include a lot more people. She doesn't believe this will happen quickly.

Dr. Julie Ann Floyd mentioned ANR Vol, No. 15 on page 42 regarding Manasses Airport, real estate disclosure, and a zoning amendment. Can renters be required to sign a disclosure that they understand they are going to be living within "X" number of feet from a busy airport? We should do this for the new Ocean Walk. Don indicated we could add this to our Avigation Easement for Ocean Walk.

Don mentioned the Special Report about Chicago implementing a runway rotation plan to balance nighttime noise, rather than closing a runway.

Any Other Discussion

Don described the passenger and landing report. The number of passengers is up, but the number of aircraft landings is down, because of the use of larger planes.

Amy Kehoe has resigned from the committee, and the new manager, Paula Joyner-Clinard has volunteered to replace her. Peter Horton made a motion to nominate Paula, which was seconded by Tom Nelson. Danny Kolhage will put it on the BOCC agenda for approval.

Peter Horton moved to adjourn the meeting. The meeting adjourned at approximately 2:55 pm.

Gmail

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

Review and Approval of Proposed Pilot Information Hand-out

4 messages

Deborah Lagos <deborah.murphy.lagos@gmail.com> Tue, Jun 14, 2016 at 4:47 PM
To: Allan Nagy <Allan.Nagy@faa.gov>, Krystal.Ritchey@faa.gov, Pedro.Blanco@faa.gov

Hello Allan, Krystal, and Pedro:

The Ad-Hoc Committee has reviewed the language in the attached hand-out, and has asked me to forward it to the FAA for review and approval.

Development of this Pilot Information Hand-out was approved by the FAA as PM-3 in the NCP ROA dated March 12, 2015.

The ROA states, "Prior to release, language in the pilot handout must be reviewed and approved for wording and content by the appropriate FAA office. The content of the pilot handout is subject to specific approval by appropriate FAA officials."

Therefore, I am submitting the attached document on behalf of the Airport Sponsor for specific approval by appropriate FAA officials.

FYI, some minor enhancements to the graphic are forthcoming. They include making the area for helicopters to avoid more obvious.

Please let me know if you have any questions or need additional information.

THANKS!
Deborah

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

Virus-free. www.avast.com

Publication2 V2 - Website Version V2.pdf
2062K

Deborah Lagos <deborah.murphy.lagos@gmail.com> Thu, Sep 15, 2016 at 2:56 PM
To: Allan Nagy <Allan.Nagy@faa.gov>, Krystal.Ritchey@faa.gov, Pedro.Blanco@faa.gov

Hello Allan, Krystal, and Pedro:

I hope you have all had a nice summer (i.e., survived the heat)!

I just wanted to check in with you and see if you have heard anything from the reviewers regarding the Pilot Information Hand-out. Our next Ad-Hoc Committee meeting is November 1,and it would be great if I could report some progress.

THANKS!
Deborah

P.S.

Thanks for the grant! I was amazed at how quickly it was issued. Another region I work with (to be left unnamed) did not issue noise grants until late August.

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

[Quoted text hidden]

Allan.Nagy@faa.gov <Allan.Nagy@faa.gov> Mon, Sep 19, 2016 at 9:09 AM
To: deborah.murphy.lagos@gmail.com, Krystal.Ritchey@faa.gov, Pedro.Blanco@faa.gov

Deb,

The Pilot Handout looks good.

We have no comments.

Good luck at your meeting.

- Allan

From: Deborah Lagos [mailto:deborah.murphy.lagos@gmail.com]
Sent: Thursday, September 15, 2016 2:56 PM
To: Nagy, Allan (FAA); Ritchey, Krystal (FAA); Blanco, Pedro (FAA)
Subject: Re: Review and Approval of Proposed Pilot Information Hand-out

[Quoted text hidden]

Deborah Lagos <deborah.murphy.lagos@gmail.com> Mon, Sep 19, 2016 at 9:48 AM
To: Allan Nagy <Allan.Nagy@faa.gov>
Cc: Krystal.Ritchey@faa.gov, Pedro.Blanco@faa.gov

Thanks! We'll proceed toward finalizing it.

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

[Quoted text hidden]

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

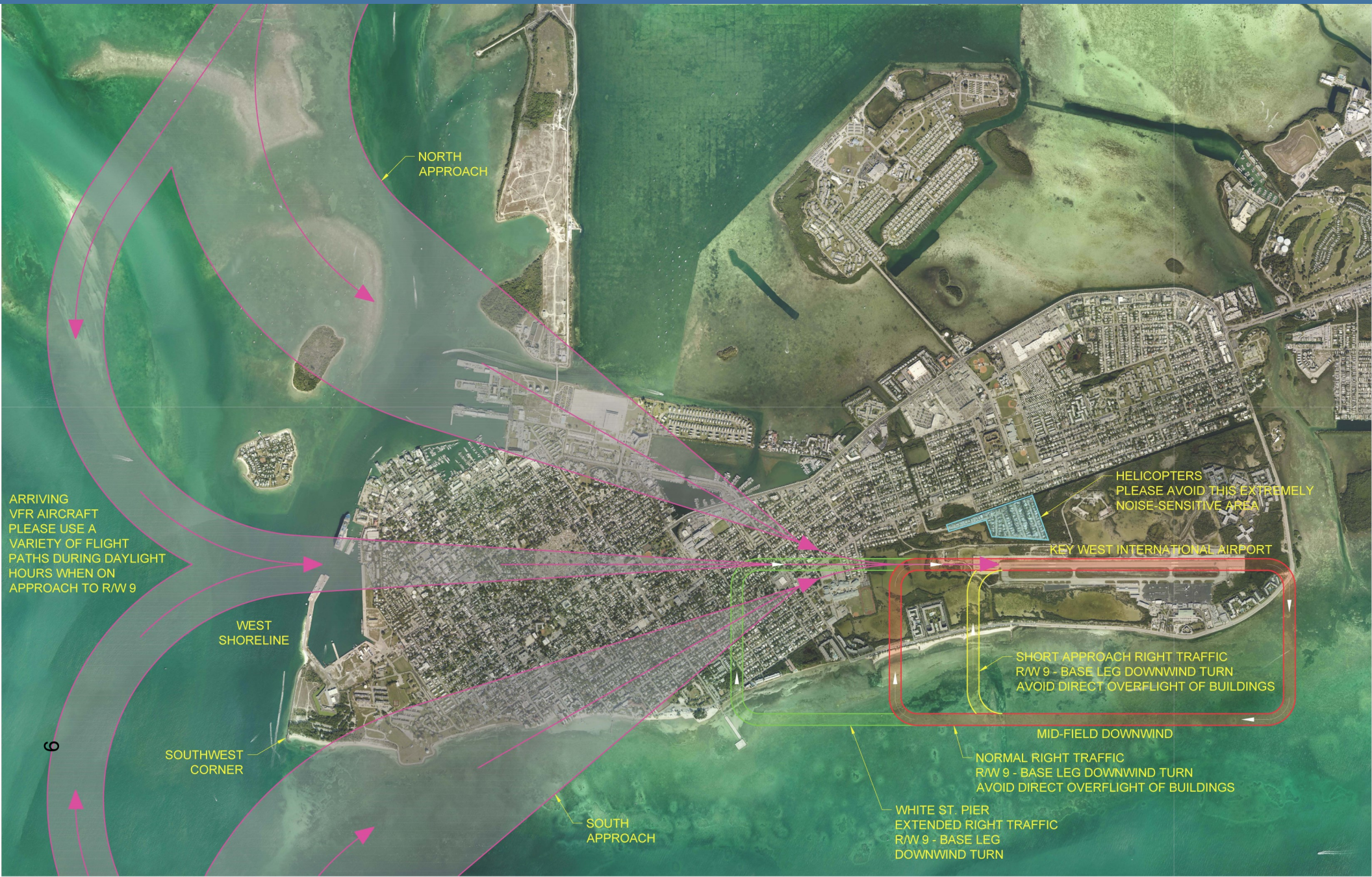
- Between the hours of 11:00 pm and 7:00 am local time, aircraft engine run-ups must be conducted at the designated location as shown below. Run-up is defined as "advancing the r.p.m. of a prop aircraft's engine or engines to the appropriate medium setting for the aircraft type as a final engine and 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



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2016-ASO-21164-OE

Issued Date: 09/12/2016

Kurt Kenyon
Ocean Walk Key West Owner, LLC
119 Washington Ave, Suite 505
Miami Beach, FL 33033

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building New Residential Building B
Location:	Key West, FL
Latitude:	24-33-29.91N NAD 83
Longitude:	81-45-05.83W
Heights:	2 feet site elevation (SE)
	39 feet above ground level (AGL)
	41 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 L.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 03/12/2018 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (404) 305-6462. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ASO-21164-OE.

Signature Control No: 301627260-304268690 (DNE)
Michael Blaich
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2016-ASO-21164-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2016-ASO-21162-OE

Issued Date: 09/12/2016

Kurt Kenyon
Ocean Walk Key West Owner, LLC
119 Washington Ave, Suite 505
Miami Beach, FL 33033

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The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

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NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (404) 305-6462. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ASO-21162-OE.

Signature Control No: 301626062-304268691 (DNE)
Michael Blaich
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2016-ASO-21162-OE

NIP Design Activities

NIP PROGRAM ORIENTATION PRESENTATION DEVELOPMENT Sept.19 – Sept.29, 2016

NIP PROGRAM ORIENTATION SESSIONS October 4 - October 7, 2016

Tuesday, October 4

10:00 am – 12:00 noon	Building A Property Owners	(22 units)
1:00 pm – 3:00 pm	Building B Property Owners	(22 units)
3:30 pm – 5:30pm	Building C Property Owners	(26 units)

Wednesday, October 5

10:00 am – 12:00 noon	Building C Property Owners	(22 units)
1:00 pm – 3:00 pm	Building A Property Owners	(22 units)
3:30 pm – 5:30pm	Building B Property Owners	(26 units)

Thursday, October 6

10:00 am – 12:00 noon	Building B Property Owners	(21 units)
1:00 pm – 3:00 pm	Building C Property Owners	(24 units)
3:30 pm – 5:30 pm	Building A Property Owners	(21 units)

Friday, October 7

9:00 am – 11:00 am	Single Family (3)	(3 units)

DESIGN SURVEY VISITS – BUILDING B October 17 – October 21, 2016

Monday, October 17

8:00 am – 12:00 noon	8 units (30 minutes each) – 1st floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 1st and 2nd floor

Tuesday, October 18

8:00 am – 12:00 noon	8 units (30 minutes each) – 2nd and 3rd floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 3rd floor

Wednesday, October 19

8:00 am – 12:00 noon	8 units (30 minutes each) – 4th floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 4th and 5th floor

Thursday, October 20

8:00 am – 12:00 noon	8 units (30 minutes each) – 5th and 6th floor
1:00 pm – 5:30 pm	9 units (30 minutes each) – 6th floor

Friday, October 21

8:00 am – 12:00 noon	Makeup time for Bldg. B units requiring additional time

PRE-CONSTRUCTION NOISE TESTING – BUILDINGS A, B, C, 3 SF November 1 - November 4, 2016

Tuesday, November 1

9:00 am – 12:00 noon	3 SF Homes

Wednesday, November 2

8:00 am – 12:00 noon	Building A - 7 units - (1st, 2nd and 3rd floors)
1:00 pm – 5:00 pm	Building B – 7 units - (1st, 2nd and 3rd floors)

Thursday, November 3

8:00 am – 12:00 noon	Building C - 7 units - (1st, 2nd and 3rd floors)
1:00 pm – 5:00 pm	Makeup time - if required (Buildings A, B, C)

DESIGN SURVEY VISITS – BUILDING A, 3 SF November 7 – November 11, 2016

Monday, November 7

8:00 am – 12:00 noon	8 units (30 minutes each) – 1st floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 1st and 2nd floor

Tuesday, November 8

8:00 am – 12:00 noon	8 units (30 minutes each) – 2nd and 3rd floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 3rd floor

Wednesday, November 9

8:00 am – 12:00 noon	8 units (30 minutes each) – 4th floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 4th and 5th floor

Thursday, November 10

8:00 am – 12:00 noon	8 units (30 minutes each) – 5th and 6th floor
1:00 pm – 5:30 pm	9 units (30 minutes each) – 6th floor

Friday, November 11

8:00 am – 1:00 pm	3 SF homes
1:00 pm – 5:00 pm	Makeup time for Bldg. A units requiring additional time

HAZARDOUS MATERIAL TESTING – BUILDINGS A, B, C, 3 SF November 7 – November 11, 2016

Monday, November 7

8:00 am – 12:00 noon	Building B – 4 units (2 - 1st floor; 2 - 2nd floor)
1:00 pm – 5:00 pm	Building B – 4 units (2 - 3rd floor; 2 - 4th floor)

Tuesday, November 8

8:00 am – 12:00 noon	Building B – 4 units (2 - 5th floor; 2 - 6th floor)
1:00 pm – 5:00 pm	Building A – 4 units (2 - 1st floor; 2 - 2nd floor)

Wednesday, November 9

8:00 am – 12:00 noon	Building A -- 4 units (2 - 3rd floor; 2 - 4th floor)
1:00 pm – 5:00 pm	Building A – 4 units (2 - 5th floor; 2 - 6th floor)

Thursday, November 10

8:00 am – 12:00 noon	Building C – 3 units (2 - 1st floor; 1 - 2nd floor)
1:00 pm – 5:00 pm	Building C – 3 units (1 - 2nd floor; 2 - 3rd floor)

Friday, November 11

8:00 am – 12:00 noon	2 SF Homes
1:00 pm – 3:00 pm	1 SF Home

DESIGN SURVEY VISITS – BUILDING C December 5 – December 9, 2016

Monday, December 5

8:00 am – 12:00 noon	8 units (30 minutes each) – 1st floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 1st floor

Tuesday, December 6

8:00 am – 12:00 noon	8 units (30 minutes each) – 1st and 2nd floors
1:00 pm – 5:00 pm	8 units (30 minutes each) – 2nd floor

Wednesday, December 7

8:00 am – 12:00 noon	8 units (30 minutes each) – 2nd floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 2nd floor

Thursday, December 8

8:00 am – 12:00 noon	8 units (30 minutes each) – 2nd and 3rd floor
1:00 pm – 5:00 pm	8 units (30 minutes each) – 3rd floor

Friday, December 9

8:00 am – 12:00 noon	8 units (30 minutes each) – 3rd floor
1:00 pm – 3:00 pm	4 units (30 minutes each) – 3rd floor
3:00pm – 5:00 pm	Makeup time for Bldg. C units requiring additional time

REMAINING 2017 DESIGN & BID DATES

DESIGN DEVELOPMENT – BUILDING B, 3SF	**October 24, 2016 – January 30, 2017**
SPONSOR & FAA DESIGN REVIEW	**December 1, 2016 – January 30, 2017**
DESIGN REVIEW MEETINGS - BUILDING B, 3 SF	**February 6 – 28, 2017**
BID ADVERTISEMENT - BUILDING B, 3 SF	**February 12 – 17, 2017**
PRE-BID MEETING - BUILDING B, 3 SF	**March 13 – 17, 2017**
THC PSO 3 SCOPE & BUDGET DEADLINE	**May 6, 2017**
BID OPENING - BUILDING B, 3 SF	**May 8 – 12, 2017**
BID REVIEW / CONTRACT AWARD RECOMMENDATION	**May 15 – 26, 2017**
FY 2017-18 GRANT APPLICATION	**June 14, 2017**

NIP Proposed Acoustic Modifications – Single Family Homes

The following is a summary of the proposed acoustic modifications for the three (3) single family homes as a part of the Key West International Airport Noise Insulation Program (NIP). These acoustic modifications were developed in accordance with FAA Order 5100.38D, Airport Improvement Program (AIP) Handbook (September 2014) and the unique single family home conditions. This summary contains a general building overview and a detailed summary of each proposed NIP acoustic modification. The proposed NIP acoustic modifications were designed to achieve the required minimum noise level reduction of five (5) decibels in each participating single family home.

Single Family Home – Proposed NIP Acoustical Modifications

Based on the above, the following is the proposed NIP Acoustical Modifications for the three (3) participating single family homes to meet a minimum noise level reduction of five (5) decibels or greater, utilizing the most cost-effective methods and maintaining a newly-tightened interior environment with adequate moisture control:

1. **Acoustical Double Hung Window Replacements**
   Removal of all existing windows and replacement with new acoustical windows.

2. **Acoustical Prime, French, and Sliding Patio Door Replacements**
   Removal of all prime entry, French, and sliding patio doors and replacement with new acoustical prime entry, French, and sliding patio doors.

3. **Addition of a Bathroom Exhaust Fan**
   Bathrooms with a tub/shower will generate a high degree of moisture in the interior environment. Given the highly tightened interior environment created by the addition of NIP acoustical modifications, it will be very important to provide a directly exhausted bathroom ventilation fan to remove bathroom moisture at its source. In the event bathroom exhaust fans are not present, the NIP is proposing to provide a new bathroom exhaust fan. It should be noted that all past Key West NIP Phases 1-7 modification packages included a bathroom exhaust fan for bathrooms that didn't have one. Presently, the Hartsfield-Jackson Atlanta International Airport Noise Insulation Program and the Fort Lauderdale Airport Noise Insulation Program are providing a bathroom exhaust fan for treated properties for the same reasons specified above.

NIP Proposed Acoustic Modifications – KWBTS Condominiums

The following is a summary of the proposed acoustic modifications for Key West by the Sea (KWBTS) Condominium Complex as a part of the Key West International Airport Noise Insulation Program (NIP). The proposed NIP acoustic modifications were developed in accordance with FAA Order 5100.38D, Airport Improvement Program (AIP) Handbook (September 2014) and the unique KWBTS building conditions. This summary contains a general building overview and a detailed summary of each proposed NIP acoustic modification. The proposed NIP acoustic modifications were designed to achieve the required minimum noise level reduction of five (5) decibels in each participating condominium floor plan.

Key West by the Sea (KWBTS) Condominium Complex – General Building Overview

The KWBTS Condominium Complex is a 206-unit residential condominium complex that was built in the early 1960's, comprised of three (3) individual residential buildings – Buildings A, B and C.

Buildings A and B Highlights

Buildings A and B are similar in design, each containing six (6) stories in height and sixty-five (65) total condominium units, including 1-Bedroom, 2-Bedroom, and 3-Bedroom floor plans. Both buildings have a common exterior walkway on each floor *(which serves the main entrance to each unit)*, exit stairways, and other common spaces. Each condominium unit has an exterior walk-out private balcony, while ground floor units have a walk-out patio.

Buildings A and B are constructed of reinforced masonry exterior walls and poured concrete floor and roof slabs supported by steel joists. Buildings A&B have a low-slope flat roof. Penetrations through the roof deck consist of plumbing vent piping, roof drainage, and common wind-driven turbines which ventilate the toilet exhaust ventilation shafts that are connected to each bathroom by a 6" x 6" passive wall register located above the water closet.

Building C Highlights

Building C is three (3) stories in height, containing seventy-six (76) total condominium units. This building has four (4) floor plans including Studio, 1-Bedroom, 2-Bedroom and 3-Bedroom condominiums. Building C has a common exterior walkway on each floor *(which serves the main entrance to each unit)*, exit stairways, and other common spaces. Each condominium unit also has an exterior walk-out private balcony, while ground floor units have a walk-out patio.

Building C is constructed of reinforced masonry exterior walls and poured concrete floor slabs supported by steel joists. The roof is a wood-trussed pitched roof with fiberglass roof shingles on plywood. The upper-floor unit ceilings are gypsum board which is directly below the wood roof trusses. A 6" x 6" passive wall register is located above the water closet in each condominium unit. A common ventilation chase connects the toilet rooms vertically and duct work within the attic level connects multiple vertical chases. The ductwork terminates in the attic space.

Existing Windows and Doors

All 206 KWBTS condominium units were originally constructed with aluminum windows, wood prime entry doors and large sliding glass patio doors. The vast majority of the condominiums have their original windows and doors, which are about 55 years old. The original windows and doors are in poor condition and, by default, are providing large quantities of outside air and noise into each condominium unit. It should be noted that a small number of KWBTS property owners replaced their original windows and doors *(during the past several years)* with hurricane impact-rated replacement products. However, NIP eligibility noise testing proved that even these condominiums had interior noise levels greater than 45 decibels, due to the fact that these newer products are not acoustically rated and therefore only slightly below the maximum code-allowed levels of air infiltration.

In summary, all existing windows and doors in the KWBTS condominiums will need to be replaced with acoustically rated replacement products in order to achieve the required minimum five (5) decibel reduction. Due to the high performance acoustical window and door products, which have an insignificant amount of allowable air leakage, this modification will eliminate all "naturally occurring" air infiltration that currently exists in the condominiums. This reduction of natural ventilation in the treated condominiums will justify a need for a supplemental central ventilation system.

Existing "Through Wall / Window Portable Air-Conditioning units (PTACs)

All 206 KWBTS condominium units were originally constructed with portable "through-wall/window air conditioning units" (PTACs). The PTAC units are located in each bedroom and one is located in the common living area. The vast majority of KWBTS condominiums still contain the original PTAC units, and, depending on the floor plan, each condominium contains two (2) to four (4) PTAC units. Like the original windows and doors, the seals around the PTAC units are in poor condition and, by design, represent a large "hole" in the wall, allowing a significant amount of inside / outside air infiltration by means of "natural ventilation" caused by air leakage. In summary, all PTAC units will need to be removed, in-filled, and replaced with a cost-effective air-conditioning system in order to achieve the required minimum five (5) decibel noise reduction. Similar to the windows and doors, this modification will eliminate all "natural" air infiltration that is currently occurring in the condominiums, which will justify a need for a supplemental central ventilation system.

A small number of KWBTS condominiums have replacement air-conditioning systems *(with both ducted and ductless systems.* It should be noted that these condominium units will not receive new replacement air-conditioning systems since they are already existing.

Lack of Existing Bathroom Exhaust Fans

All 206 KWBTS condominium units were originally constructed without bathroom exhaust fans. Bathroom exhaust fans are critical to the exhausting of moisture, especially in a "tightened" interior environment of a condominium after the addition of NIP modifications. While a few condominium property owners have added bathroom exhaust fans in recent years, the vast

majority of KWBTS condominiums currently lack an adequate method to exhaust bathroom tub/shower moisture which, after the installation of new acoustical products, will severely compromise interior air quality and increase the potential for mold growth.

KWBTS) Condominium Complex – Proposed NIP Acoustical Modifications

Based on the above, the following is the proposed NIP Acoustical Modifications for the KWBTS condominiums to meet a minimum noise level reduction of five (5) decibels or greater, utilizing the most cost effective methods and maintaining a newly-tightened interior environment with adequate positive ventilation and moisture control:

1. **Acoustical Double Hung Window Replacements**
   Removal of all existing windows and replacement with new acoustical double hung windows.

2. **Acoustical Prime and Sliding Patio Door Replacements**
   Removal of all prime entry doors and sliding glass patio doors and replacement with new acoustical prime entry doors and sliding glass patio doors.

3. **Removal & Infill of Existing PTAC Units *(where present)***
   Removal and infill of all existing PTAC units. Infill method will be CMU block and gypsum board (interior wall) and stucco (exterior wall).

4. **Addition of Ductless Multi-Zone AC systems *(where required)***
   Given the removal of all existing PTAC units, the NIP will need to provide each participating condominium with a cost-effective replacement AC system. Of the two (2) replacement system options, a ductless multi-zone AC system is clearly the best option based on the analysis provided below:

   Option 1 - Conventional Residential Ducted Split-System Air-Conditioning
   A conventional residential ducted split system air conditioning consists of an exterior condensing unit and a single central air handling unit. Air distribution is provided using insulated supply and return ductwork which is typically run within a concealed attic or floor joist space. The existing KWBTS condominium unit's concrete structure presents barriers to the installation of a ducted split system air conditioner for the following reasons:

   a. Limited vertical space for ductwork installation in the living area – In each unit the finished ceiling is 8 feet above the finished floor, and 7 feet above the finished floor in the bathrooms.
   b. Limited concealed space (attic) - With the exception of 26 third floor units in Building C; there is less than 12 inches of concealed space above the finished ceiling. The concealed space contains the steel joists for the concrete floor above, and are as close as 24" center to center. There is insufficient space to install ductwork within the space above the finished ceiling.

c. Structural Concrete Beams - In addition to the limited space above the ceiling, there are supporting concrete beams *(8" wide x 16" deep)* that provide the primary structural support for the floor/roof system. The concrete beams separate the bedroom areas from the living room and kitchen areas, and the bottom of the beam is approximately 7'-7" above the finished floor. This makes it impractical to run an air duct from one structural bay to another. *(In the upper floor of Building C, there is a wood trussed attic space above the 8' ceiling)*

Due to the above structural conditions, a conventional split system would be difficult and therefore cost prohibitive to install in most unit floor plans. In addition to the ductwork installation, available space for equipment is at a premium in the units and the air handler would occupy either an existing closet or a new mechanical closet would have to be built. Also, the only suitable location for the exterior equipment (condensing unit) is on the existing unit balcony. The typical conventional split system condensing unit has a large footprint approximately 32" to 36" square which will take away the functionality of the existing balcony which measures approximately 6' deep and 15' wide.

Option 2 - Ductless Multi-Zone Air-Conditioning System:

A ductless multi-zone air conditioning system is an air conditioning system designed specifically for use in condominium and apartment buildings where space is limited. The ductless system utilizes a condensing unit with a smaller footprint than that of the conventional split system air conditioner. The ductless air conditioning condensing unit is also significantly quieter than that of the conventional split system. The small footprint condensing unit can be located on the existing balcony without the balcony losing its functionality. The indoor component of the system utilizes multiple wall-mounted fan-coil heat pumps located in each bedroom and in the living room. The connection between the common condensing unit and each wall-mounted fan-coil unit fits within a 3" diameter pipe bundle allowing for routing below the existing concrete beams and within the existing 12" concealed space above the finished ceiling. Small vertical gypsum board chases would be constructed to route the piping below the structural beams where required.

In summary, the ductless multi-zone air conditioning system is the ideal solution for the KWBTS condominiums and the total cost of the system would be much less than that of a conventional ducted split-system, due to the additional building modifications *(soffits, closets and chases)* required to house the equipment and conceal the ductwork for a conventional system.

5. Addition of Central Air Ventilation System

As referenced above, the replacement of existing windows, doors, and removal of existing PTAC units will virtually eliminate all "natural" air infiltration that is currently occurring in the condominiums. Given the solid concrete floors, walls and ceilings, the treated KWBTS condominium units will be transformed into a "closed-air" interior environment since they don't have an existing fresh air ventilation system. Furthermore, the City of Key West Chief Building Official has indicated *(to the NIP Design Team)* his concern for the need of a means to provide

positive ventilation in the treated KWBTS condominiums due to the highly tightened interior so as to not compromise indoor air quality. Therefore, the NIP will seek to provide the most cost effective Positive Air Ventilation System to each treated KWBTS condominium unit. This treatment is allowable by the FAA AIP Handbook – Order 5100.38D:

> *The following measures are allowable: window and door replacement, caulking, weather-stripping and installing Central Air Ventilation so that the windows can be kept closed, only if the structure does not already have a central air ventilation system.*
>
> *A Continuous Positive Ventilation System is the allowable package for these residences. The sponsor must also provide detailed information about the ventilation package including costs of the package compared to the cost of a standard noise insulation package.*

It should be noted that, by itself, a ductless multi-zone air conditioning system is not capable of introducing outdoor air into the condominium indoor environment due to the fact that it only conditions and recycles the existing indoor air. Since there is not an existing ventilation system present in the KWBTS condominiums and property owners are advised against opening their windows and doors to ventilate their homes with fresh air in order to maintain a quiet environment, a compact and cost-effective central ventilation system is required for all treated KWBTS condominiums. In South Florida, bringing "untreated" moisture-laden outside air into a sealed, conditioned indoor environment may cause condensation and mold; therefore, a "balanced" central ventilation system should be prescribed. By using an E*nergy Recovery Ventilator system (ERV),* which utilizes the outgoing conditioned exhaust air to temper and dehumidify the incoming warm moist outdoor air, excess moisture is removed from the incoming ventilation air before it can condense on the cool interior building surfaces.

After conducting an extensive product research study to identify the most cost-effective ventilation system, the NIP Design Team proposes the use of a compact balanced ERV ventilation system, similar to the Broan ERVS100 which is specifically designed for use in the South Florida climate. This cost-effective ventilation system has various pre-set settings which allow it to run automatically for 20 minutes per hour. If the outdoor air is too humid it will automatically reduce the run time to only 10 minutes per hour. To help reduce construction costs, the NIP Design Team will locate the ERV ventilation system in a soffit by the front door so that it is centrally located and therefore only one ERV system per condominium unit is required.

6. Addition of a Bathroom Exhaust Fan

Bathrooms with a tub/shower will generate a high degree of moisture in the interior environment. As previously stated above, the vast majority of KWBTS condominiums do not have a bathroom exhaust fan and rely on outdated and inefficient wind driven ventilators. Given the highly tightened interior environment created by the addition of NIP acoustical modifications, it will be very important to provide a directly exhausted bathroom ventilation fan to remove bathroom moisture at its source. The proposed bathroom exhaust fan will run on a "time-delay" switch so

as to not run continuously and negatively pressurize the condominium. The combination of a bathroom exhaust fan with a central ventilation ERV system will maximize the removal of moisture while introducing fresh air in a tightened environment.

It should be noted that all past Key West NIP Phases 1-7 modification packages included a bathroom exhaust fan for bathrooms that didn't have one. Presently, the Hartsfield-Jackson Atlanta International Airport Noise Insulation Program and the Fort Lauderdale Airport Noise Insulation Program are providing a bathroom exhaust fan for treated properties for the same reasons specified above.

Airport Noise Report

A weekly update on litigation, regulations, and technological developments

Volume 28, Number 23 July 22, 2016

Legislation

SENATE BILL WOULD GIVE EPA OVERSIGHT OF AIRCRAFT NOISE ISSUES; REVIVE ONAC

On July 15, New York Democratic Sens. Charles Schumer and Kirsten Gillibrand introduced the Quiet Communities Act of 2016 (S. 3197), which would empower the Environmental Protection Agency to oversee airplane noise issues across the country.

The legislation, introduced in response to constituent concerns about increased aircraft noise impact, would revive the EPA's dormant Office of Noise Abatement and Control (ONAC), which was defunded in 1981. That has long been a goal of community anti-noise groups who feel the Federal Aviation Administration's noise policy is outdated and does not address their concerns.

The bill would authorize appropriations of $21 million to fund EPA's Office of Noise Abatement and Control for each of fiscal years 2017 through 2021.

Sens. Schumer and Gillibrand are trying to push the bill through Congress as quickly as possible but the 114th Congress ends on Jan. 3, 2017. If the bill is not passed by then, they will have to reintroduce it in the next Congress.

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Research

MA SENATORS, REPS ASK NAS TO STUDY NEXT-GEN FLIGHT PATH IMPACTS ON HEALTH

Massachusetts Senators Elizabeth Warren and Edward Markey, along with MA Reps. Michael Capuano, Stephen F. Lynch, and Katherine Clark, asked the National Academy of Sciences (NAS) in a July 7 letter to conduct a study on the effects of air traffic noise and pollution from focused NextGen flight paths on human health.

Their letter was sent at the urging of leaders of the Town of Milton, MA, a residential community of 27,000 people located 12 miles south of Boston Logan International Airport and under new concentrated NextGen flight paths that the Town has been fighting for several years.

"While there has been some research in this area, we believe this issue merits much more independent and high-quality objective research to help Congress assess this problem and take appropriate action," the Massachusetts lawmakers told NAS President Marcia McNutt in a their letter.

They noted the sharp increase in noise complaints from flight path changes at various locations around the country. For instance, between January and September of 2015, more than 11,000 noise complaints were logged by the Massachusetts Port

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The legislation is the Senate companion to a House bill – the Quiet Communities Act of 2015 – introduced in July 2015 by Rep. Grace Meng (D-NY) (27 ANR 140).

Currently, the Federal Aviation Administration oversees airplane noise issues, however, Sens. Schumer and Gillibrand explained in a press release that the EPA is better fit to address these matters.

"Communities in the New York-metro area have long struggled with incessant airplane noise caused by the highly-trafficked skies above and it's time we set up an office dedicated to tackling this issue head on," said Schumer, who is expected to become Senate Majority Leader if the Democrats take control of the Senate in the upcoming November election.

"Airplane noise is a major quality of life issue and that's why it makes sense for the EPA to take the lead role in addressing these matters. This legislation will once again set up an Office of Noise Abatement and Control at the EPA so that environmental experts can address airplane noise," he said.

"This legislation will provide additional tools to assist communities is addressing excessive airplane noise by reestablishing an EPA Office of Noise Abatement & Control," said Sen. Gillibrand, a member of the Senate Environment and Public Works Committee.

"The federal government must take more proactive steps to address the concerns of New Yorkers who are affected by airplane noise, and this bill will give the EPA the ability to act."

Schumer and Gillibrand went on to say that the EPA's core mission is to protect human health and the environment, and so it would make sense for the EPA to be granted jurisdiction over airplane noise.

The senators said airplane noise can greatly impact the environment and an individual's quality of life and that's why the EPA should take the lead on airplane noise issues.

EPA Would Conduct Research

Under their legislation, the EPA would conduct research on the impacts of noise and provide technical assistance and grants to communities to mitigate noise. The bill also would require the EPA Office of Noise Abatement and Control to carry out a study on airport noise, examining FAA noise measurement methodologies, the threshold of noise at which health impacts are felt, and the effectiveness of noise mitigation measures at airports.

Due to budget cuts in 1981, the EPA's Office of Noise Abatement and Control was dismantled and the FAA was given oversight into all matters regarding aircraft noise pollution.

Schumer and Gillibrand said that they have long supported measures to help address the issue of airplane noise in local communities.

Specifically, they successfully pushed for a hotline phone number for airplane noise complaints. And, after Schumer's urging, New York State directed the Port Authority of New York and New Jersey to hold regular roundtable discussions in collaboration with FAA representatives and other affected parties regarding issues at two major New York airports.

Schumer has urged the Port Authority and FAA to install additional noise monitors at airports and use the data collected to make decisions about changes to flight patterns. Earlier this summer, the senators urged the Port Authority of New York and New Jersey to complete its Part 150 noise studies as quickly and thoroughly as possible so that it can begin taking noise mitigation steps. The Part 150 studies aim to evaluate noise impacts to the communities surrounding JFK and LaGuardia Airport and, once complete, Schumer and Gillibrand said that the studies will recommend measures to mitigate excessive noise where possible.

FAA Reauthorization

NOISE PROVISIONS NOT INCLUDED IN AUTHORIZATION EXTENSION

On July 6, House and Senate leaders agreed to a bipartisan measure to extend the authorization of FAA's current programs and funding through Sept. 30, 2017, after House Transportation and Infrastructure Committee Chairman Bill Shuster (R-PA) agreed to temporarily drop his effort to privatize FAA's air traffic service.

However, the extension of FAA's authorization (agreed to by the House on July 11 and the Senate on July 13) omitted provisions addressing NextGen noise impact that had been added to the original House and Senate FAA reauthorization bills by the House Quiet Skies Caucus and Arizona Sens. John McCain (R) and Jeff Flake (R).

The extension gives Rep. Shuster and the airlines more time to try to build support for privatizing FAA's air traffic service, which Senate Democrats staunchly oppose.

An important question left unanswered by Shuster's measure to privatize FAA's air traffic services – which would transfer FAA's authority over airspace issues to an ATC Corporation dominated by the airlines – is weather the FAA would have the authority to reject an airspace or policy change sought by the ATC Corporation for non-safety reasons, such as community or environmental impact (28 ANR 22). Democrats will demand clarity on that issue if discussions on ATC privatization continue.

Noise Provisions Omitted

The extension of FAA's authorization in House Resolution 818, the "FAA Extension, Safety and Security Act of 2016," includes aviation safety and security provisions but none of the many noise provisions that had been included in the original House and Senate FAA reauthorization bills.

The House FAA reauthorization bill – the Aviation, Innovation, Reform and Reauthorization Act (AIRR Act), (H.R. 4441) – would have required the FAA:

• To conduct a review of the relationship between aircraft noise exposure and its effects on communities around airports and to submit a report to Congress recommending revisions, if appropriate, to Part 150 land use compatibility guidelines;

• 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;

• To improve community involvement in FAA Metroplex projects; and

• To 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, asked the agency to do so.

The Senate FAA reauthorization bill – Federal Aviation Administration Reauthorization Act of 2016. (S. 636) – would have required FAA:

• To review airspace procedures being implemented at airports, if asked by communities, 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 have been required to consider the use of alternative flight paths;

• 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. McCain and Flake also introduced a separate bill with similar provisions (S. 2585; the Airspace Management Advisory Committee Act) on Feb. 25, which was referred to the Senate Aviation Subcommittee. However, it is not likely to be acted on by the Committee before Congress expires at the end of the year;

• To clarify when airports must supply noise map revisions to the FAA; and

• To 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.

Meng Criticizes Omission of Noise Provisions

U.S. Rep. Grace Meng (D-NY), a founder and Co-Chair of the Congressional Quiet Skies Caucus, sharply criticized the omission of aircraft noise mitigation provisions in the FAA Extension, Safety and Security Act.

Meng also expressed disappointment over the lack of transparency and the manner in which the bill was brought to the House Floor, pointing out that members of the House were not allowed to offer any amendments, provide input, or address concerns of labor unions.

The Congresswoman said that the legislation will not expire until September 30, 2017, meaning that for more than a year, Members of Congress won't have any opportunities to be heard on issues surrounding this important legislation.

She noted that the AIRR Act was not voted on but included processes for notifying communities near airports of flight path changes and a study on the health impacts of noise exposure.

"The absence of any measures to combat the problem of excessive aircraft noise is a huge disappointment," said Meng. "I have consistently called for this important legislation to include provisions to mitigate airplane noise. This bill would have allowed for an opportunity to directly address the issue, and the previous version of this legislation included ways to deal with it.

"It is also very unfortunate that this bill was rushed through while keeping House members out of the process. Queens and other affected communities continue to be bombarded by the roaring sounds of aircraft noise that constantly disrupt the quality of life in our neighborhoods. A solution must be reached and I will keep up the fight until we achieve one."

ACRP

GUIDE ON AIRPORT'S ROLE IN PBN IMPLEMENTATION ISSUED BY TRB

On July 8, the Transportation Research Board issued a Resource Guide for airports on all aspects of Performance-Based Navigation and how PBN implementation affects overall airport operations.

Airport Cooperative Research Program *Report 150: NextGen for Airports: Volume 1: Understanding the Airport's Role in Performance-Based Navigation: Resource Guide* is the first in a series of five reports TRB plans to issue this year under its ACRP NextGen Initiative.

The other reports in the NextGen series are:

• ACRP Project 01-27: NextGen – A Primer

• ACRP Project 01-28, NextGen—Guidance for Engaging Airport Stakeholders;

• ACRP Project 03-33, NextGen—Airport Planning and Development; and

• ACRP Project 09-12, NextGen—Leveraging NextGen Spatial Data to Benefit Airports.

The purpose of the Airport PBN Resource Guide, which was the subject of ACRP Project 03-34, is to provide comprehensive information concerning PBN "presented in an understandable, usable, and accessible format for airport operators, planners, managers, and other appropriate stakeholders," the guide notes.

"This Resource Guide encompasses background information, description of effects on short- and long-term airport development, impacts on safety and performance measures, and other critical factors affecting future airport operations," TRB Staff Officer Lawrence Goldstein explained in a *Foreword* to the report.

"In addition to providing guidance to users on available resources for additional assistance, this volume also includes

lessons learned and best practices based on findings from case studies that examined the airport operator's role in PBN implementation" at Atlanta, Seattle, Denver, Minneapolis, Henderson, and Houston, Goldstein said.

The report can be downloaded at http://www.trb.org/ACRP/Blurbs/174588.aspx

Legislation

BILL WOULD PREVENT RUNWAY AT LAX FROM BEING MOVED

On July 7, Rep. Maxine Waters (D-CA), Ranking Member of the House Financial Services Committee, introduced the LAX Community Safety Act (H.R. 5651) to prevent Runway 24R, the northernmost runway at Los Angeles International Airport (LAX), from being relocated farther to the north.

"Relocating LAX's northernmost runway farther to the north would increase noise, air pollution, and other environmental impacts on residents, schools, churches, and businesses in the communities surrounding LAX," said Congresswoman Waters.

LAX has two pairs of parallel runways: the North Runways, located north of the main terminals, and the South Runways, located south of the main terminals. Runway 24R is the northernmost of the two North Runways. Los Angeles World Airports (LAWA), which operates LAX, has proposed relocating Runway 24R at least 260 feet north of its current location, bringing it closer to the residential communities north of LAX.

"LAX operations already cause tremendous noise, air pollution and traffic congestion for the communities near LAX," said Congresswoman Waters. "Relocating Runway 24R closer to Westchester will exacerbate these impacts."

The communities most impacted by the operations of the LAX North Runways include the communities of Westchester and Playa del Rey, which lie along the north side of LAX, and the City of Inglewood and the community of South Los Angeles, which lie to the east of LAX underneath the arrival flight path. Members of these communities have expressed strong opposition to runway relocation.

"Safety is a critical concern for LAX," said the Congresswoman. "That includes both the safety of the airport and all who use the airport and the safety of the surrounding communities. Relocating Runway 24R farther to the north would bring the risk of an aircraft accident closer to homes, schools, churches, and businesses in Westchester and Playa del Rey and, consequently, reduce safety for people who live and work in these communities."

LAWA has argued that relocating the northernmost runway at LAX would improve safety. However, Rep. Waters noted that a panel of academic experts studied the configuration of LAX and concluded that the airport is safe under its current configuration.

Research, from p. 90

Authority, proprietor of Boston Logan. During the same period in 2012, 1,700 noise complaints were filed.

"Chicago's O'Hare International Airport topped two million jet noise complaints during the first seven months of 2015 – eight times the number filed in all of 2014. There has been spikes in aircraft noise complaints at airports in San Francisco, Baltimore, Phoenix, and other cities," the lawmakers stressed.

"In Massachusetts, the noise increase goes well beyond the threshold of being an annoyance, and there is growing concern in our communities that aircraft noise could be impacting human health," the delegation members wrote.

They said their concerns "are not just anecdotal," noting that several studies have found associations between aircraft noise and various health problems.

"While there has been some research in this area, we believe this issue merits much more independent and high quality objective research to help Congress assess this problem and take appropriate action," the lawmakers asserted.

They asked the NAS president to convene "a multidiscipline expert committee to conduct a study to determine the causes of these increased noise reports and the health impacts of increased jet noise in these communities, and to author a report with recommendations on how to address the problem."

They said the study and report should include:

• An evaluation of the human environment and specific health impacts related to aircraft noise and pollution, including carbon dioxide or other emissions associated with air quality;

• A statistical analysis of noise complaints filed by residents in communities near large and medium hub airports where NextGen flight path changes have been implemented and the "absolute levels" of noise exposure experienced by those filing noise complaints;

• A review and evaluation of FAA's current policies and abilities to respond and address noise concerns, including FAA policies related to Day-Night Average Sound Level (DNL);

• An analysis of "what is an appropriate DNL limit," including alternative methodologies to measure community noise exposure;

• An analysis of the processes used to determine how flight paths could be altered to mitigate the noise caused by these flights, including the utilization of noise mapping;

• A thorough analysis of aircraft noise reduction technologies, including a cost-benefit analysis of technologies currently utilized on aircraft that operate in the European Union and other high air traffic areas; and

• Provide recommendations on the best and most cost-effective approaches to address increased aircraft noise and other issues as the expert committee considers appropriate.

On April 27, MA Rep. Stephen Lynch and 16 members of

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the House Quiet Skies Caucus introduced the Airplane Impacts Mitigation Act of 2016 (H.R. 5075) which would require the FAA Administrator to enter into an agreement with a school of public health to conduct a study of the health impacts of tightly focuses NextGen flight track (28 ANR 58).

The study would include people living under NextGen flight paths in Boston, Chicago, New York, the Northern California area, Phoenix, and three other metropolitan areas. It would focus on asthma exacerbation, sleep disturbance, stress, and elevated blood pressure.

The bill was referred to the House Transportation and Infrastructure Committee where it now sits and is not likely to be considered by the Republican-controlled committee.

In Brief…

AEDT Training Course in San Diego

The Volpe Center is proud to announce a full day, introductory level, hands on training course on the Aviation Environmental Design Tool (AEDT) version 2b on the West Coast.

The training will be held on October 19, 2016, (just after the AAAE/ACI-NA Airport Noise Conference), hosted by the San Diego International Airport Noise Mitigation Office.

Note that space is limited to 20 participants so sign up soon. Please visit our website for more information about the course and to register.

https://www.volpe.dot.gov/policy-planning-and-environment/environmental-measurement-and-modeling/volpe-aedt-training

Key West, T.F. Green Awarded AIP Noise Grants

Rep. Carlos Curbelo (R-FL) announced on July 8 that FAA has awarded a $1.35 million Airport Improvement Grant to Key West International Airport for noise mitigation.

Sen. Jack Reed (D-RI) announced on July 9 that FAA awarded T.F. Green Airport in Warwick, RI, a $9.3 million AIP grant, of which $887,032 may be used for voluntary acquisition of three homes and $8.4 million will be used to provide sound insulation for 76 single family homes, 142 condominiums, and 82 apartments.

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

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Airport Noise Report

A weekly update on litigation, regulations, and technological developments

Volume 28, Number 24 July 29, 2016

Helicopters

FAA EXTENSION OF L.I. HELICOPTER ROUTE FOR FOUR YEARS INFURIATES CONGRESSMAN

On July 25, the FAA announced a final rule that extends for four years a mandatory helicopter route off the North Shore of Long Island, NY, that was intended to reduce noise complaints by keeping helicopters over water but failed to do so because loopholes in the rule allow pilots to cross over communities, especially on the east side of the island.

In response to FAA's announcement, Congressman Lee Zeldin (R-NY), a member of the House Transportation and Infrastructure Committee and Vice Chairman of the House Subcommittee on Aviation, released the following statement:

"The FAA's announcement that they will be extending the North Shore route for four years is an unacceptable example of incompetence and arrogance on the part of faceless, unelected and unaccountable federal bureaucrats. This decision violates the Administrative Procedures Act, a federal law that requires transparency and a public comment period on any major regulatory decisions.

"The agency's written explanation for this extension, including the justification

(Continued on p. 96)

Research

TRANSPORTATION NOISE ANNOYANCE LINKED TO SWISS RESIDENTS EXERCISING LESS

[Following is a July 15 News Alert issued by the European Commission on a study conducted by Swiss researchers that suggests there may be an indirect connection between noise annoyance and cardiovascular disease, diabetes and obesity.]

Physical inactivity raises the risk of ill health, so environmental factors that reduce the level of physical activity in people should be of concern to policymakers as well as to individuals. A new study has associated long-term annoyance with transportation noise with reduced physical activity in Swiss residents, which may indirectly contribute to diseases including cardiovascular disease, diabetes, and obesity.

Exposure to noise pollution can affect people's health. Previous studies have linked exposure to long-term noise from transport, due to living under a flight path or near to a busy road for example, with cardiovascular diseases, such as stroke or heart disease.

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for its lack of public comment or notice, reaches a new level of tone-deafness, when citing 'good cause for immediate adoption without prior notice'. This is the unresponsive bureaucracy at it's worst.

"After repeated follow up from myself, my office, the House Subcommittee on Aviation, other elected officials, and countless concerned citizens on the East End, the FAA has chosen to go radio silent and release this directive in secret as if the American public is the enemy.

"In October of last year, I clearly stated to FAA Administrator Huerta that the North Shore route should be extended for no longer than one year, with an extensive strengthening of altitude requirements and enforcement of flight standards, and a true all water route over the Atlantic Ocean as the permanent solution.

"The FAA Administrator should immediately reconsider this decision, and if he is unwilling to respond to Congress, or to the concerns of the people whom we were elected to represent, then he should resign or be replaced.

"I will continue working to protect residents of the East End whose quality of life is severely impacted by aircraft noise. I hope that New York Senators Schumer and Gillibrand will join me in calling on the FAA to put in place a more permanent fix such as the South Shore all water route."

In 2008, the FAA added to its flight chart a voluntary North Shore Helicopter Route that kept helicopters one mile off the north coast of Long Island on their way mainly from Manhattan to vacation spots in the Hamptons.

The voluntary route, which requires helicopters to fly at least 2,500 feet above sea level, was made mandatory for two years in 2012 and extended for another two years in 2014. The rule was due to expire on Aug. 6.

FAA said it now needs to extend the rule for another four years in order to complete research – on modeling of helicopter performance and noise, helicopter noise-abatement procedures, and community response to helicopter noise – that will inform the agency's future actions on the rule. Details on the status of that research are provided in FAA's final rule at https://www.federalregister.gov/articles/2016/07/25

Scroll down to Federal Aviation Administration.

NASA

NASA SEEKS PARTNERS TO HELP AGENCY DESIGN NEW X-PLANES

NASA announced July 22 that it is looking for partners in its efforts to design X-planes to help demonstrate greener, quieter airliner technologies.

The agency put out a request for proposals that would outline some of the system requirements for concepts that would support its Aeronautics Research Mission Directorate's Ultra-Efficient Subsonic Transport Thrust.

NASA seeks to further develop technology with U. S. industry and other government partners that will allow revolutionary transport aircraft to simultaneously reduce the fleet level carbon footprint of aviation by at least 50 percent, and reduce perceived community noise levels by one half, while significantly reducing landing and takeoff emissions around airports.

The objective of the request for proposal is to help NASA to define the technical approach, schedule and cost for proceeding with potential X-plane procurements. The emphasis of the proposal should be on X-plane development plans, including scale, complexity, and readiness, as well as previous flight test and X-plane experiences and lessons learned.

NASA is investigating using X-plane flight demonstrators to mature new promising, as well as previously studied, technologies and configurations that would advance its ambitious environmental goals for future airliners.

Concepts should be human-piloted X-planes, capable of flying for three hours in at least two research fights a week over a year and able to fit into future national air transportation system operations. The first flight would be no later than 2021.

Proposals should include a comprehensive description and technology maturation plan, including ground and flight test requirements. Potential X-planes can be either integrated or purpose built. Integrated X-planes will be designed and flown to demonstrate the impact of a suite of integrated technologies at the aircraft system level. Purpose-built X-planes will be designed and flown to demonstrate the isolated impact of a specific multi-disciplinary technology.

NASA will use the data gathered from the contracts awarded under this solicitation to assist in the development of its X-plane requirements. Proposals are due by Aug. 18. Initial awards to qualified participants will be six months in duration.

Research

BOEING, EMBRAER UNVEIL LATEST ECO-DEMONSTRATOR

In early July, Boeing and Embraer unveiled the next phase of Boeing's ecoDemonstrator program in which an Embraer E170 will serve as the flying testbed and will feature advanced environmental technologies that will undergo operational testing in Brazil during August and September.

The ecoDemonstrator flights will test several technologies designed to reduce carbon emissions, fuel use, and noise including:

• LIDAR (Light Detection and Ranging) technology uses lasers to measure air data parameters such as true airspeed, angle of attack and outside air temperature. LIDAR shows potential to increase air data reliability by complementing current sensors, which could lead to further innovations that improve fuel efficiency and reduce carbon emissions.

• An "ice phobic" paint designed to reduce icing and help prevent accumulation of dirt and bugs due to its low adhesive property. The special paint can help operators save water by reducing the need for frequent aircraft washing.

• A new wing design with improved slats to reduce noise on takeoff and approach.

• Special sensors and air visualization techniques near the wing surface to better understand in-flight aerodynamics. This analysis could lead to further innovations to improve fuel efficiency and reduce carbon emissions as, for example, new wing designs.

• A Brazilian-produced biofuel blend made up of 10 percent bio-kerosene and 90 percent fossil kerosene, the maximum mixture according to international standards. Studies have shown that sustainably produced aviation biofuel emits 50 to 80 percent lower carbon emissions through its life cycle than fossil jet fuel.

"The ecoDemonstrator collaboration expands a relationship that began in 2012 when Boeing and Embraer signed a cooperation agreement to benefit their customers, their companies and the global aviation industry," Boeing explained.

"Since then, Boeing and Embraer have supported Embraer's KC-390 defense aircraft program and improved runway safety by providing commercial customers with tools to reduce runway excursions. Last year Boeing and Embraer opened a joint biofuel research center in São José dos Campos to perform biofuel research and coordinate research with Brazilian universities and other institutions."

To date, the ecoDemonstrator program has tested more than 50 technologies, using a Next-Generation 737-800 (2012), 787 (2014), and 757 (2015) as flying testbeds.

Research, from p.95

Noise may directly contribute to cardiovascular disease through automatic, physiological stress reactions in the body. There is also a psychological aspect; people may suffer 'noise annoyance' due to hearing unwanted and disturbing sound.

This study is the first to demonstrate that long-term annoyance caused by transportation noise may indirectly contribute towards cardiovascular disease, as well as to diabetes and obesity, by reducing physical activity. Physical activity, along with a good quality and quantity of sleep, is important for health and wellbeing.

Since 1991, the SAPALDIA (Swiss Cohort Study on Air Pollution and Lung and Heart Diseases in Adults) project, which is partly supported by the European Commission, has been following volunteers, recruited from different parts of Switzerland, to explore how personal and environmental factors affect the respiratory and cardiovascular health of adults. For this study, the researchers selected a sample of 3,842 participants from the SAPALDIA study.

In 1991, 2001 and 2011, participants were interviewed about their health and lifestyle and given heart and respiratory examinations. In all three interviews, the participants were asked whether they experienced noise annoyance at home due to transportation and, if so, to rate the annoyance on a scale from 0–10. In 2001 and 2011, the participants were also asked whether they engaged in physical activity and if so, about the intensity, frequency and duration of activities. Finally, in 2011, they were asked about the source of the transportation noise that had annoyed them (at night) over the previous year.

Using the 1991 and 2001 data, the researchers modeled the long-term association between noise annoyance and physical activity reported by the participants in 2011, adjusted for factors that might influence any association, including age, sex, body mass index (BMI), socioeconomic status and lifestyle factors, including smoking, alcohol consumption and diet.

The results revealed that long-term annoyance due to transportation noise at home was associated with reduced (mainly moderate) physical activity. Other studies have found that physical inactivity is a risk factor for death, cardiovascular disease, diabetes and obesity, as well as loss of healthy life years.

This study therefore suggests there may be an indirect connection between noise annoyance and cardiovascular disease, diabetes and obesity.

Using the 2011 data, the researchers also modeled the effect of annoyance with specific sources of night-time noise on physical activity levels. Road traffic noise and then aircraft noise caused the most annoyance and were also linked to reduced levels of physical activity.

Further analysis suggested long-term annoyance with transportation noise particularly reduced physical activity in people who had daytime sleepiness, chronic diseases and in women. For example, the researchers suggest that people who are ill might be more susceptible to being annoyed by noise at night and have disturbed sleep. This, in turn, is followed by sleepiness the next day which affects their behavior by disrupting their intended physical activities. One possible explanation for women being especially affected is that they spend more time at home, the researchers suggest. In this study, more male participants were out of the house at work compared with female participants.

The researchers say that although the effect of noise annoyance on physical activity was modest (a 3.2% decrease in moderate physical activity for each point on the noise annoyance scale), this is concerning because even low levels of noise annoyance were associated with reduced physical activity. Worldwide, there are millions of people who are annoyed by noise, which could be contributing to the global burden of disease.

However, more research is needed to better understand the role of long-term noise annoyance in sleep disturbance and physical activity, say the researchers.

The study, "Long-term transportation noise annoyance is associated with subsequent lower levels of physical activity," by researchers at the Swiss Tropical and Public Health Insti-

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tute, the University of Basel and its Centre for Chronobiology, the Swiss Federal Office for the Environment, and other Swiss institutions was published in the journal *Environment International* and can be downloaded at: http://www.sciencedirect.com/science/article/pii/S0160412016300897

In Brief…

Gulfport-Biloxi Gets AIP Noise Grant

On July 23, Miss. Sen. Thad Cochran (R) announced that FAA had awarded airports in the state a total of $20.3 million in Airport Improvement Program (AIP) grants, including a grant of $3,420,000 to Gulfport-Biloxi International Airport for noise mitigation measures for nearby residences.

Swiss Air First to Fly New C Series

On July 15, Swiss International Air Lines (SWISS) became the first airline in the world to operate the new Bombardier C Series when its first CS100 aircraft took off on its first commercial flight.

The new "whisperjet" left Zurich for Paris Charles de Gaulle after an inauguration ceremony at the departure gate. The new Bombardier C Series will gradually replace the present Avro RJ100s on SWISS's short- and medium-haul routes between now and July 2017.

The new C Series aircraft has been dubbed the "whisperjet" for its low noise emissions.

FAA Issues Policy Statement on VOR Network

On July 26, FAA issued a Final Policy Statement on Provisions of Navigation Services for the Next Generation Air Transportation System (NextGen) Transition to Performance-Based Navigation (PBN) (Plan for Establishing a VOR Minimum Operational Network).

The document "provides the discontinuance selection criteria and candidate list of VOR Navigational Aids (NAVAIDs) targeted for discontinuance as part of the VOR MON (Minimum Operational Network) Implementation Program and United States National Airspace System (NAS) Efficient Streamline Services Initiative.

As part of this Initiative, the number of conventional NAVAIDs will be reduced while more efficient Area Navigation (RNAV) routes and procedures are implemented throughout the NAS.

The policy can be downloaded from the *Federal Register* at
https://www.federalregister.gov/articles/2016/07/26
Scroll down to Federal Aviation Administration.

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Airport Noise Report

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ACRP

TWO NOISE PROJECTS AMONG 16 SELECTED FOR INCLUSION IN ACRP'S FY 2017 PROGRAM

Two noise projects were among the 16 research projects included in the Fiscal Year 2017 Airport Cooperative Research Program (ACRP) announced on July 30 by the Transportation Research Board.

The goals of the noise projects are to improve noise modeling in the FAA's Aviation Environmental Design Tool (AEDT) and in a new noise model FAA is developing for commercial space operations noise and sonic boom.

ACRP Project 02-97: AEDT Noise Model Improvements to Account for Terrain and Man-made Structures.

This project will be funded at a level of $500,000.

The objectives of this research are to develop modeling improvements that would better account for terrain and man-made structures in AEDT and to provide guidance to help airport industry practitioners determine when accounting for terrain and man-made structures is warranted.

(Continued on p. 100)

Santa Monica

CITY COUNCIL TO CONSIDER RESOLUTION ON ITS INTENT TO CLOSE AIRPORT BY 6/30/2018

On July 26, the Santa Monica City Council unanimously approved a motion to consider a resolution indicating its intent to close the Santa Monica Airport by June 30, 2018, or as soon as legally permitted.

Council directed staff to bring a proposed resolution to its Aug. 23 meeting.

"We are committed to reclaiming our land and this motion gets us closer to protecting the health and safety of our residents, and to transitioning the Airport land to better uses, uses the community has asked for at the ballot box," said Mayor Tony Vazquez who introduced the motion with Mayor Pro Tempore Ted Winterer.

In 2014, Santa Monica voted to pass Ballot Measure LC, which mandates that, if the Airport land is permanently closed to aviation uses, it will be used for parks, open space, and recreational facilities, unless the voters decide otherwise.

The ballot measure followed years of litigation with the FAA and aviation trade groups in which the City failed in its efforts to restrict faster, larger jet aircraft operations at Santa Monica Airport in order to reduce aircraft noise and emissions and increase safety.

The City Council said it "also directed the City Manager to report back to us on

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Electric Aircraft ... 'Nearly silent' is the way first flight test of solar-electric Sun Flyer flight trainer prototype aircraft is described - p. 100

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"Several ACRP projects and other research have produced results to enhance the predictive accuracy of the FAA's AEDT model, including improvements to its modeling of general aviation aircraft, nonstandard approach and departure profiles, and aircraft activity during low power settings.

"Another key issue that would enhance AEDT's accuracy would be improving the modeling of terrain and man-made structures. These features can impact the noise level experienced by people near airports, often either reducing noise impacts (through shielding) or increasing noise impacts (by reflection)," TRB explained.

ACRP Project 02-81: Commercial Space Transportation Noise Measurements

This project will be funded at a level of $600,000.

The objective of this research is to design and conduct a noise measurement campaign of commercial space transportation activity to build a high-fidelity dataset to help validate the ACRP Project 02-66 noise model and enhance its predictive accuracy.

"A number of airports wish to support the growing demand for commercial space operations and therefore are seeking launch site operator licenses from the FAA. As these airports develop to become dual-use sites, they will need to conduct environmental analysis, including quantifying the potential noise impacts from space operations," TRB said.

"ACRP Project 02-66, Commercial Space Operations Noise and Sonic Boom Modeling and Analysis, is developing a noise model compatible with the FAA's AEDT. A critical factor in the model's validation and ultimate predictive accuracy is a robust database of rocket/engine/motor noise data for commercial space launch operations, yet current noise data for these activities are lacking."

Project Oversight Panel Members Sought

The ACRP Oversight Committee, the governing board for the program, met on July 21 to review and select projects for the FY 2017 program. ACRP is now soliciting nominees to serve on project-oversight panels for these new projects.

The announcement is at
http://www.trb.org/Main/Blurbs/174740.aspx

Each ACRP project is assigned to a panel of volunteers that provides technical guidance and counsel throughout the life of the project. The typical project panel consists of airport representatives, academicians, research specialists, consultants, airlines, and other industry practitioners.

Self-nominations are welcome and are encouraged to be made using the ACRP Practitioner Portal.

If you nominate someone other than yourself, use the nomination form and submit it by e-mail to
acrp_portal@nas.edu.

Nominations will be accepted immediately but no later than September 21, 2016, so that the program can move forward in a timely manner.

Aircraft

ALL-ELECTRIC FLIGHT TRAINER 'NEARLY SILENT' IN FLIGHT TEST

A flight test conducted last December with a prototype of the Aero Electric Aircraft Corporation's (AEAC) "Sun Flyer" solar-electric general aviation flight trainer found it to be "nearly silent," the company said July 18.

A high-definition video overview of the noise tests conducted by the National Park Service featuring the technology demonstrator for the "Sun Flyer" is available at
https://nps.gov/subjects/sound/video.htm

Click on "A Quiet Flight."

AEAC participated in noise research for the National Park Service at Centennial Airport in early December 2015 to help determine the amount of noise generated by electric-powered aircraft.

The Park Service is interested in the issue because of the thousands of air tour flights over national parks with piston-driven engines that create noise levels that disturb park visitors and wildlife. A move to quieter electric tour aircraft is expected to significantly decrease park overflight noise.

In the noise test of the Sun Flyer, AEAC flew its single-seat electric technology demonstrator aircraft, powered by lithium-ion batteries, while a scientist and representatives from the National Park Service gathered sound data.

Other participants in the test effort included Erik Lindbergh with Powering Imagination and a representative from Colorado State University (CSU) to do an audio and video recording of the event.

Conventional aircraft overflight provided comparison for the AEAC electric test aircraft, AEAC said but did not identify the comparison aircraft.

"According to Kurt Fristrup, Branch Chief, Science and Engineering for the National Park Service, the electric aircraft produced roughly 30 dB less, or 1/1000th the noise, of the conventional aircraft," AEAC said in its press release.

"We continue to advocate that electric-powered flight brings numerous cost and environmental benefits, but noise reduction is certainly near the top of the list of benefits," said George Bye, CEO of AEAC. "Our thanks to all those who participated in the noise measurement evaluations, particularly the National Park Service and Colorado State University."

The Sun Flyer aircraft "is intended to be the first FAA-certified, U.S.-sponsored, practical, all-electric airplane serving the flight training and general aviation markets," AEAC said.

"It features a remarkably low operating cost, low aircraft unit cost, low noise and the elimination of exhaust pollutants. Energy, or "fuel," cost for Sun Flyer is only about $1 of electricity for each hour of flight, compared to $25 to $65 per hour for legacy aircraft with piston-engine leaded avgas."

The 2-seat proof of concept prototype for the Sun Flyer solar-electric flight trainer was unveiled to the public in May

and is completing final integration. It will begin power-on tests at its home station at Centennial Airport near Denver, AEAC said.

Bye expects the Sun Flyer to complete the FAA certification process in two to three years. The new aircraft design will be subject to Appendix G of FAA Part 36 aircraft noise standards which cover small propeller-driven airplanes.

At the unveiling of the Sun Flyer prototype in May, AEAC announced a new strategic partnership with the University of Denver's Daniel Felix Ritchie School of Engineering & Computer Science.

Dr. Ing. Kimon Valavanis, Director of the DU Unmanned Systems Research Institute, noted how Sun Flyer's electric propulsion technology is scalable to numerous aviation platforms. "It is our desire to have much closer collaboration with AEAC and its founding partner, Bye Aerospace," he said. "The sky is not the limit for the future of aviation."

"We anticipate collaborative efforts [with the University of Denver] on a variety of potential platforms, given our mutual interests in electric propulsion and unmanned aerial systems," Bye said.

"We have made ambitious progress on the Sun Flyer program over the past two years," said Bye. "In addition to producing the first two-seat Sun Flyer prototype, which was unveiled just two months ago, we have received a number of deposits for the first production Sun Flyers. This includes 25 deposits from Spartan College of Aeronautics and Technology."

Santa Monica, from p. 99

what other measures could be taken in the interim to reduce the impacts of the Airport and to implement the proposed resolution, which includes jump starting the planning process and environmental analysis under the California Environment Quality Act to get Santa Monica closer to the community's vision for the land."

"This motion helps clear the air regarding our intent, which is to close the Airport as soon as is possible. Equally important is to dispel rumors that the City wants to turn the Airport into a massive development," said Mayor Pro Tempore Ted Winterer.

The City of Santa Monica has had several legal setbacks in its effort to close the airport.

On Feb. 13, 2014, U.S. District Judge John F. Walter granted a motion by the Department of Justice and FAA to dismiss a City lawsuit seeking to release it from its obligation to operate Santa Monica Municipal Airport as an airport through a quiet title action, which the judge ruled was barred by the statute of limitations (26 ANR 22).

The judge rejected the City's assertion that, when it agreed to the transfer the airport land to the federal government for use in World War II, it was unaware that the federal government would retain an interest in the airport land when it was transferred back to the city in 1948 and that, if the city were to ever close the airport, the government could take back the land.

The judge found that the city had been put on notice of the United States' interest in the airport property, and that the statute of limitations for the city to make the quiet title claim expired decades ago. The city also raised various constitutional issues in its lawsuit, which the judge dismissed as not "ripe" for judicial review until the City decides definitively whether to close the airport.

The City has appealed FAA's determination.

The FAA also decided in December 2015 that a federal grant agreement requiring the airport to stay open does not expire until Aug. 27, 2023, while the City asserts that the grant obligation expired in June 2014.

BWI Int' Airport

COUNTY OFFICIALS MEET WITH FAA OVER NEXT-GEN OPS

A contingent of Howard County, MD, officials met with officials of the FAA in Washington, DC, on July 14 to discuss a sharp increase in noise complaints from residents near Baltimore-Washington International Airport that they attribute to the introduction of NextGen flight paths.

"It's clear to County Executive Allan Kittleman that something around the airport has changed and we believe the NextGen system is the source of the problem," said County Chief Administrative Officer Lonnie Robbins.

"We requested this meeting to work together to find some way to alleviate the unacceptable noise levels that are disrupting these communities and to restore the quality of life for these residents."

At the meeting, the County said it "pressed federal representatives to take steps to implement a near-term improvement to alleviate the problem, while pursuing a formal process for a permanent solution. FAA officials pledged to work with local elected officials, community organizations, and the Maryland Aviation Administration, to establish a collaborative working group with the ultimate goal of addressing the negative impact from NextGen."

NextGen was launched at BWI in November 2014. Since then, planes have been taking off in more concentrated areas and turning at lower altitudes, increasing the noise in Elkridge, Hanover, and parts of Columbia, MD.

Data released by BWI show the airport received 835 noise complaints in 2014. In 2015, that number jumped to 1,849, an increase of 121 percent.

"Our Howard County residents have been vocal that their quality of life has been negatively impacted following the implementation of NextGen," said Howard County Chair Dr. Calvin Ball.

"They have been patient long enough but deserve results. I am concerned with the FAA's response to date but following this meeting I'm hopeful they have heard our pleas for a re-

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turn to the original flight plan while a true study can be conducted."

"I have been working on this issue for well over one year, and I have been determined to get answers for my constituents. Unsatisfied by the answers so far, I have pushed for this face-to-face meeting to engage the FAA directly," said County Vice Chair Jon Weinstein.

"At first we were led to believe that the noise was due to runway construction. There has been no relief since that work concluded and the significant increase in noise has hurt my constituents' health, welfare, and property values."

The County officials met with Brian Langdon of the FAA's Office of Government and Industry Affairs. Also in attendance were representatives from the offices of MD Senator Ben Cardin, Congressmen Elijah Cummings, John Sarbanes, and Dutch Ruppersberger, and Maryland Delegates Eric Ebersole and Clarence Lam, all Democrats.

In Brief…

SFO Seeks Consultant to Assist with Insulation

The City and County of San Francisco, through its Airport Commission, announces the issuance of a Request for Qualifications (RFQ) to select a Noise Insulation Consultant to assist the San Francisco International Airport (SFO) with its Noise Insulation Program (NIP), partially funded by the Federal Aviation Administration (FAA).

Qualified and experienced firms interested in providing Noise Insulation Consulting services are invited to respond to this RFQ.

The scope of work under SFO's NIP involves acoustic treatment of dwellings and/or acquisition of easements for aircraft noise.

The City seeks a consultant for assistance in the management of all aspects of this program. The preferred firm will be selected based on the level of experience in management of noise insulation programs in the United States for airports or for communities near commercial airports, as well as its familiarity with FAA requirements for noise insulation programs, and the State of California Noise Standards for Airports.

Information about this RFQ is presented online at:
http://mission.sfgov.org/OCABidPublication/BidDetail.aspx?K=11144 or
http://www.flysfo.com/business-at-sfo/current-opportunities.

Responses to the RFQ must be received by the Airport on or before August 30, 2016, at 2:00 P.M.

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Airport Noise Report

A weekly update on litigation, regulations, and technological developments

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NASA

NASA TO STUDY FIVE GREEN TECH CONCEPTS WITH POTENTIAL TO TRANSFORM AVIATION

NASA has selected five green technology concepts that have the potential to transform the aviation industry in the next decade by reducing aircraft fuel use, emissions, and noise.

The concepts were selected under NASA's Transformative Aeronautics Concepts Program for a two-year study. The topics, including three specifically targeted at electrically-propelled aircraft – which could be significantly quieter than piston-driven or jet aircraft – are:

- Alternative fuel cells;
- Using 3-D printing to increase electric motor output;
- The use of lithium-air batteries for energy storage;
- New mechanisms for changing the shape of an aircraft wing in flight; and
- The use of a lightweight material called aerogel in the design and development of aircraft antenna.

These five concepts, in addition to three of the six selected in 2015, address

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Santa Monica

ATTORNEY PLANS TO FILE 8,473 CLAIMS OF NOISE, PM NUISANCE CREATED BY AIRPORT

An attorney representing an unknown number of residents near Santa Monica Airport informed City Manager Rick Cole in late July that he planned to file 8,473 tort claims against the City over the nuisance created by its airport.

In a letter announcing the initial claims filings under the California Claims Act, Los Angeles attorney Jonathan Stein told the City Manager that he also intended to file claims for up to 33 schools seeking damages for the noise and air quality nuisance created by the airport.

Such filings are required prior to filing a class action lawsuit against the City, which is seeking to close its airport (28 ANR 99).

"This is an initial claims filing for inverse condemnation, damages (loss of and/or damage to property and personal injury) from the continuing public nuisance that is specially injurious to claimants," Stein wrote.

He said that each of the 8,473 claimants who own real estate in the vicinity of the airport has "suffered a taking of property, either through the diminution of value of such property or the constructive total taking thereof. Further, each claimant

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NASA's green aviation initiatives to cut fuel use by half, lower harmful emissions by 75 percent, and significantly reduce aircraft noise.

"There definitely was an emphasis in our selections on bringing forward activities that addressed a NASA aeronautics goal to reduce the carbon footprint of aviation during the 21st century," said program manager Doug Rohn.

Though there can be no guarantee the studies will result in deployable technologies, given the novelty of the concepts, researchers are confident much critical data and information will be gleaned from the studies that will inform future green aviation concepts and research efforts.

"Is failure an option? It depends on your definition of failure. We're going to ask the questions and see if these ideas are feasible or not. A successful feasibility assessment may determine the concept won't work," Rohn said.

The five study teams selected this year represent researchers from a variety of technical disciplines who work at NASA aeronautics centers in Virginia, California, and Ohio.

Each study was required to be multidisciplinary, involve multiple centers, directly relate to addressing one or more of NASA aeronautics strategic research goals, and do all of this in a way that is transformative in pushing the state-of-the-art in aviation.

The technologies to be studied were selected following a two-day series of presentations from a number of teams who presented in a competitive environment similar to what entrepreneurs experience when pitching investors.

The five ideas selected this year for feasibility studies include:

FUELEAP: Fostering Ultra-Efficient Low-Emitting Aviation Power

The idea here is to see if a new kind of fuel cell can be used to generate power for an electrically-propelled General Aviation-sized aircraft.

Fuel cells combine hydrogen and oxygen to generate electricity and have been a staple of NASA's human spaceflight programs going back to Project Gemini during the mid-1960s. Typically, the hydrogen and oxygen is stored onboard the vehicle as super cold liquids, requiring complex and expensive tankage and plumbing that would not be practical for a small, single-engine airplane.

Researchers will study a fuel cell system that would be able to pull hydrogen from standard hydrocarbon-based aviation gas, pull oxygen from the air, and then combine the hydrogen and oxygen to generate electricity. Exhaust products from the process also would be used to increase energy output through a turbine.

The fuel cell would generate this energy more efficiently than if the fuel were burned in a standard piston engine, thus saving fuel and reducing emissions. Such a system also could be supported by airports right now as it wouldn't require any expensive new facilities or equipment to be installed.

Compact Additively Manufactured Innovative Electric Motor

As NASA considers all options for achieving its research goals related to green aviation during the next decade and beyond, all-electric and hybrid electric aircraft offer promising solutions.

But in addition to the challenges associated with electrical power generation and battery storage, researchers hope to improve the power density – a measure of the size and mass of a motor in relation the power it puts out – of the electrical motors that turn the propellers or fans which generate thrust.

The question addressed here is can the increasingly capable process of 3D printing be used in producing electric motor parts that are significantly lighter, perhaps smaller, and made with materials that when assembled together will result in motors with higher power densities.

LION: Lithium Oxygen Batteries for NASA Electric Aircraft

One obstacle for widely adopting electric-powered aircraft is the extraordinary demand for storing enough energy in batteries, even for small planes traveling short distances. A potential answer is the use of Lithium-Air (Li-Air) batteries, which have the highest theoretical energy storage capacity of any battery technology.

Li-Air batteries are "breathing batteries." That means that as the battery is drained of its energy, oxygen is pulled into the battery to react with Lithium ions, and as the battery is being charged, the oxygen is expelled.

Unfortunately, standard electrolytes – the internal material that enables the battery to work – when used with Li-Air batteries quickly decompose during operation, making the battery useless after only a few charge/discharge cycles.

This team of researchers will investigate the feasibility of designing, novel, ultra-stable electrolytes that are resistant to decomposition so the batteries will last longer, allowing aircraft to extend the distance they can fly.

Spanwise Adaptive Wing

One concept for making airliners more fuel, emissions and noise efficient is to reduce the size of the vertical tail.

The tail size is based on the need to be able to keep an airplane centered on the runway in the event of engine failures during takeoff or landing. Once an airplane is at cruising altitude, the larger tail just adds fuel-wasting mass and drag.

A potential solution is to design the airplane's wing so good-sized outer portion at either end can fold up or down as needed to act as a rudder at the beginning and ending of a flight, enabling the main vertical tail to be smaller.

The challenge is how best to accomplish the mechanical task of moving the hardware. Questions to be answered include how best to achieve a compact and lightweight design, and would that design include conventional actuators or something more novel?

Lightweight, Conformal Antennas for Beyond Line of Sight Communications

One challenge limiting the growth of commercial Unmanned Aerial System vehicles, or drones, flying in the National Airspace System is the current requirement that all such aircraft be operated within the radio line of sight of its ground-based pilot operator.

Relaying command and control communications through a satellite-based tracking system is a potential answer, but the associated antenna systems can be heavy and protrude from an aircraft's surface – increasing drag, fuel use and emissions.

Researchers hope to enable satellite-based communications by deploying a flexible antenna whose foundation is made of lightweight and very thin aerogel that can snugly conform to the contours of an aircraft – reducing drag, fuel use and emissions.

A key feature of the proposed antenna will be its ability to transmit signals in specific directions, assuring strong links with satellites while minimizing interference with the ground when the aircraft is flying lower.

Conferences

INAUGURAL AIRPORT NOISE CONFERENCE SET FOR OCT. 16-18

After 15 successful years of the Airport Noise Mitigation Symposium, the American Association of Airport Executives (AAAE) has joined with the Airports Council International – North America (ACI-NA) to launch a new, expanded noise conference.

The inaugural joint AAAE/ACI-NA Airport Noise Conference will be held Oct. 16-18 in San Diego at the Paradise Point Resort, site of the first conference 16 years ago. San Diego International Airport is hosting this year's event.

The conference will address the latest topics in airport noise management, including mitigation, research updates, operational impacts on noise, and community engagement.

Exhibits and sponsorship sales are now open as well. Please contact Janet Bennett at janet.bennett@aaae.org or 703-797-2533 for more information.

Conference sessions will address the noise challenges and successes experienced at three California airports, congressional updates, PBN/Metroplex implementation updates and issues, view from the FAA, noise research updates, and policy implications of research and next steps.

Conference agenda and registration information is at
https://www.aaae.org/

Click on "Professional Development," then "Meetings," then "Environmental."

In Brief…

Comments Sought on PFC Order Update

On Aug. 5, the FAA issued a notice seeking public comment on draft FAA Order 5500.1B, which clarifies and updates statutory and regulatory requirements for imposing Passenger Facility Charges, including those affected by changes to the PFC statute from multiple FAA reauthorizations.

When finalized, draft Order 5500.1B will replace FAA Order 5500.1, Passenger Facility Charge, which was issued on Aug. 9. 2001. PFCs are a major source of funding for airport noise mitigation projects.

The FAA's notice, which includes links to the draft order and a comment form, is at
https://www.gpo.gov/fdsys/pkg/FR-2016-08-05/pdf/2016-18670.pdf

The deadline for submitting comments is Sept. 30.

ICAO Issues 2016 Environmental Report

On Aug. 1, the International Civil Aviation Organization (ICAO) released its 2016 Environmental Report, which summarizes the progress made over the last three years by its Committee on Aviation Environmental Protection (CAEP) in key aviation environmental areas, including noise, air quality, and climate change.

Chapter 2 of the report covers aircraft noise. It include an Overview of CAEP's work and 10 White Papers.

The report can be downloaded at:
http://www.icao.int/Newsroom/Pages/default.aspx
Scroll down to Aug. 1, 2016, entry.

John Wayne Seeks Access, Noise Manager

John Wayne Airport (SNA) is seeking an experienced Manager, Access and Noise to manage four full-time Airport Access/Noise Specialist positions, five professional service contracts (related to the noise monitoring system, acoustical engineering and air service development), and frequently collaborates with Airport Special Counsel for legal services. This position is responsible for the management and enforcement of policies related to the regulatory framework that governs the operational limits and restrictions for JWA.

For a full job description and position requirements, please visit our employment website at
http://agency.governmentjobs.com/oc/default.cfm.

Only on-line applications will be accepted. Apply by Tuesday, August 23, 2016.

HMMH Announces Promotions

HMMH announced Aug. 3 that Joseph J. Czech, P.E. has joined the firm as Principal Consultant in the Federal Programs Group and will be based in Southern California. Joe has nearly 30 years of experience in the acoustical consulting field, conducting noise and/or environmental studies for a va-

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riety of military and civilian clients.

HMMH also announced that Bradley Nicholas has been promoted to Principal Consultant. He has participated in projects that have included noise modeling/analysis for airports, aviation noise field measurements and data processing, and environmental assessment and impact studies.

Justin Divens has been promoted to Senior Consultant at HMMH. His primary responsibilities include modeling airport noise using the FAA's Integrated Noise Model (INM) and NOISEMAP, as well as wide-ranging technical and analytical support.

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(without regards to property ownership) has suffered harm, including, without limitation, physical and emotional distress."

"In our case," he wrote, "jet-powered aircraft operations have now grown to such an extent that they now exceed the existing avigation easement and so constitute a public nuisance, as well as an inverse condemnation of private property."

The attorney asserted that "damages exceeding $100,000 to the fair market value of each home, as well as additional amounts for young students and residents exposed to ultrafine particulates (which cause cancer in various parts of the body), are being caused by the City.

"Using this average calculation as an estimate, total damages would be over $847 million for homes alone. Should only 10 percent of the impacted schools, press their claims, the potential damages to the City would exceed $100 million."

Stein noted in his letter to the City Manager that a 2002 jury verdict in *Cole v. Santa Monica* found "jet-powered aircraft operations at Santa Monica Municipal Airport" to be a public nuisance that "substantially and unreasonalby interferes with plaintiff's free use and enjoyment of his or her property."

The attorney said that this ruling "with passage of time is now a final judgment and *res judicata* [a matter already judged] that binds the City to the judicial determination of public nuisance."

ANR tried to contact Mr. Stein to ask him what noise contour the 8,473 claimants live in and why the avigation easement has been exceeded, how many residents in that contour have actually agreed to be part of the lawsuit, and whether he will seek class action status for the lawsuit. He has not yet replied.

On Aug. 23, the Santa Monica City Council will consider a resolution indicating its intent to close Santa Monica Airport by June 30, 2018, or as soon as legally possible. Stein's litigation – with its threat of costing the City over $100 million in damages – could be intended to pressure the City Council into approving the resolution.

AIRPORT NOISE REPORT

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Airport Noise Report

A weekly update on litigation, regulations, and technological developments

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Los Angeles Int'l

TENTATIVE MOU WOULD END LITIGATION BY COMMUNITIES OVER LAX MODERNIZATION

On Aug. 17, Los Angeles Mayor Eric Garcetti announced a tentative Memorandum of Understanding (MOU) that would end lengthy litigation with the community organization Alliance for a Regional Solution to Airport Congestion (ARSAC) over modernization plans at Los Angeles International Airport.

Garcetti called the MOU "a landmark agreement that would help clear the path for billions of dollars in investment to modernize LAX — including the proposed plan to bring rail to the airport — while bringing long-sought neighborhood resources to the communities of Westchester and Playa del Rey. If approved by the City Council, the MOU will usher in a new era of cooperation between LAWA and the local community."

"All Angelenos deserve livable neighborhoods — whether they're quiet and secluded, or next to one of the world's largest airports," said Mayor Garcetti. "Our goal in this process has always been to reach a compromise that helps us strengthen and enhance the Westchester and Playa del Rey communities while pursuing a

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Santa Monica

FAA REJECTS CITY'S APPEAL OF DECISION THAT AIRPORT MUST STAY OPEN UNTIL 2023

On Aug. 15, FAA Associate Administrator for Airports Eduardo Angeles rejected an appeal by the City of Santa Monica of an agency decision requiring Santa Monica Airport – which the City wants to close as soon a legally possible – to remain open until at least 2023.

Angeles upheld a December 2015 decision by Byron Huffman, acting director of the agency's Office of Airport Compliance, concluding that a $240,600 federal Airport Improvement Program (AIP) grant accepted by the City in August 2003 requires the airport to remain open until August 2023, the 20 year term of federal grant obligations.

Santa Monica had considered the $240,600 to be an amendment to the original AIP grant of $1.6 million the city accepted in June 1994. Under the City's reasoning, the amended grant would expire in June 2014.

However, Angelo rejected that argument, finding that the $240,600 was a new grant that came with its own 20-year grant requirements.

The City of Santa Monica has now exhausted the FAA's administrative review process of Huffman's ruling and must decide whether to move to federal court to

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Santa Monica ... FAA rejects City's appeal of earlier administrative decision requiring airport to remain open until at least 2023 - p. 107

Heathrow ... Airport is adding 50 noise monitors in communities, lowering landing fees for aircraft that meet most stringent noise certification standards - p. 109

Noise Grants ... Some 10 airports have received AIP noise mitigation grants thus far in FY 2016, a recent update of FAA grant data shows - p. 110

News Briefs ... NASA awards a $30.1 million contract to the National Academy of Sciences to conduct studies and evaluations in support of agency's Aeronautics Research Mission Directorate - p. 110

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world-class modernization of LAX. After years of hard work, I am proud that we have reached this tentative agreement together."

Under the MOU, LAWA would commit to implementing and studying a variety of safety improvements on the airport's north airfield and would identify a site for a new air quality monitoring station.

"We did it! This proposed agreement would formalize our intent to modernize LAX in cooperation with local neighborhoods, and it is great news for Westchester, Playa del Rey and the millions of passengers who travel through LAX," said Los Angeles Councilmember Mike Bonin.

"When I first ran for office, I promised to modernize LAX by prioritizing the projects on which there was broad agreement, like improving the terminals, connecting LAX to Metro, and common-sense safety improvements to the runways that didn't move them north. This agreement would allow for those critical improvements to our airport and the surrounding neighborhoods, and would help make LAX the world-class airport and first-class neighbor that every resident of Los Angeles deserves."

"I respect the many community leaders who have advocated so passionately for LAX to be a good neighbor while implementing its long term goals to provide Los Angeles with a 21st century airport, said Los Angeles Councilmember Bob Blumenfield, chair of the Council's Innovation, Grants, Technology, Commerce and Trade Committee. I congratulate LAWA, my colleague Councilmember Bonin, and Mayor Garcetti, all of whom worked long and hard to find common ground to make sure that LAX is the premier airport that Los Angeles deserves."

"This is great news for LAX, the traveling public, airport neighbors, and regional aviation," said Board of Airport Commissioners Vice President Valeria Velasco, who represents the Westchester and Playa del Rey communities located north of LAX.

"This agreement shows what we can accomplish when we work together to build the future of our economy and preserve the unique character of L.A.'s neighborhoods."

LAMP Can Move Forward

If approved, the agreement would allow the airport to move forward through local, state and federal environmental reviews, approvals, and implementation without ARSAC litigation on its proposed Landside Access Modernization Program (LAMP), improvements to passenger gate facilities, and airfield safety enhancements.

LAWA CEO Deborah Flint said, "I am proud of my team and appreciative of the efforts of all who put aside differences to draft an agreement that would allow LAWA to move forward with a community-sensitive plan for LAMP that would relieve the growing traffic congestion in and around LAX, allow us to implement airfield safety measures, and improve the guest experience with new gate facilities."

"We have been the strongest advocate for fixing and improving service at LAX and to make it safe," said Denny Schneider, President of ARSAC. "This is a great day for L.A. because LAWA is now updating needed landside terminals and public access to LAX along with significant taxiway improvements and upgraded electronics."

Under the tentative MOU, ARSAC has agreed it will not directly or indirectly commence, prosecute or fund any lawsuits or administrative complaints that could delay, prevent, impede, alter or affect in any way the approval or implementation of several projects, including LAMP.

The proposed $5.5 billion Landside Access Modernization Program includes five major program elements: the Automated People Mover that would connect three on-airport stations to Metro Rail and transit services – providing a seamless connection to public transportation; a new consolidated Rent-A-Car center; to two Intermodal Transportation Facilities for additional parking, meeter-greeter activities; and roadway improvements to access the new facilities.

The tentative MOU will be heard by the full Los Angeles City Council on Aug. 24.

Heathrow

AIRPORT ADDING 50 MONITORS, LOWERING QUIET AIRCRAFT FEES

In the wake of the UK's Brexit vote to leave the European Union and Prime Minister David Cameron's resignation, the decision on how to expand runway capacity in the London area now falls to the new British Prime Minister Theresa May who is expected to make an announcement in the fall.

Adding a new third runway at London Heathrow Airport was the recommendation of the UK Airports Commission but the new UK Government is not bound to follow that recommendation.

So, Heathrow officials are still moving to implement noise mitigation measures to convince the new Prime Minister that a third runway at Heathrow is a better choice than the other two options under consideration: expansion of an existing Heathrow runway or a new runway at Gatwick Airport.

On Aug. 17, London Heathrow Airport began installation of 50 new noise monitors in local areas as well as upgrades to its existing monitoring network.

The action – one of 10 practical steps set out in the latest version of Heathrow's Blueprint for Noise Reduction published the same day – is the direct result of the airport's engagement with resident groups through the Heathrow Community Noise Forum, Heathrow officials said.

The new monitors will help the airport and residents gain a better understanding of the impacts of noise in local areas, and will complement the modeling of the existing fixed and mobile monitors. The data gathered will be shared publicly through the Heathrow noise website and the Heathrow Community Noise Forum. In the future, Heathrow plans to use

the monitoring system to provide real-time noise measurements to residents.

Other measures outlined in the Blueprint include:

• Fitting quiet technology to A320s aircraft;

• Establishing a voluntary Quiet Night Charter to reduce the impact of Heathrow's night operations; and

• Launching a web-based tool for residents to access flight data specific to their locations.

Lower Landing Fees for Chapter 14 Aircraft

Also, beginning on January 2017, the airport will introduce lower landing charges to incentivize airlines to prioritize their quietest types of aircraft – known as ICAO Chapter 14 aircraft or as Stage 5 aircraft in the U.S. – for use at Heathrow.

This action will make Heathrow the first airport in the world to differentiate charges for aircraft like A350s, airport officials said. They noted that the anticipated move is already having an effect, with the first daily A350 XWB service – an aircraft which boasts the latest, top-of-the-range, ultra-quiet technology – having launched three days earlier on Aug. 14 by Ethiopian Airlines.

As a result of incentives and evolving technology, Heathrow said it is now quieter than it has been at any time since the 1970s, despite the doubling of aircraft movements.

New data released Aug. 17 shows a 5.5 percent increase in the proportion of quieter, new generation aircraft – such as the A350 – being used at Heathrow compared with the same period last year.

Said John Holland-Kaye, Heathrow Chief Executive, "Heathrow shares a common objective with local residents: we want to make the skies around us quieter. The arrival of new, quieter aircraft and the start of our program to install 50 new noise monitors will help us to accelerate the reduction in the noise impacts of Heathrow.

"Our new plan for a third runway means that we will reduce the number of people affected by noise even with expansion, while increasing the social and economic benefits that Heathrow provides.

"Heathrow expansion is no longer a choice between the environment or the economy. It will deliver for both. That's why the Prime Minister can make the right choice and expand Heathrow."

Airport officials said their "New Plan" for expansion, "balances the national and local economic gain from expansion with the environmental impacts."

Heathrow has committed to meet and, in most cases, exceed the conditions set out in the Airports Commission's recommendation for Heathrow expansion, including on noise mitigation (28 ANR 70).

In May Heathrow said it would expand the current night ban on scheduled flighs and not add a fourth runway if allowed to add a third runway.

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continue challenging it.

Huffman ruled in an FAA Part 16 complaint filed by the Aircraft Owners and Pilots Association (AOPA), the National Business Aviation Association (NBAA) as well as airport tenants who want the airport to remain open.

AOPA General Counsel Ken Mead said the City is expected to appeal this latest decision from the FAA to federal court, and AOPA will continue to participate in the legal battle to protect the airport. Santa Monica officials have not yet commented on FAA's decision.

"The FAA's ruling was spot on," Mead said. He noted that Santa Monica "implored" the FAA for the 2003 grant, and the city "needs to play by the same rules as airports all over the country do and abide by the grant assurances they made."

Mead noted the final FAA decision (which spans 17 pages, 21 pages including citations)" includes a thorough analysis of the legal issues and history involved, and clearly presents the legal basis of the FAA decision to enforce the city's obligation to the public. It is, therefore, a decision unlikely to be overturned by a judge.

"The city should stop wasting taxpayer dollars on litigation it's going to lose," Mead said.

NBAA Comments

"It is indisputable that Santa Monica officials received those grant funds, and the city's legal obligations under the terms of that policy are equally indisputable," said Alex Gertsen, NBAA director of airports and ground infrastructure. "We thank the FAA for its careful consideration of the issue."

Added Gertsen, "In addition to the 20-year grant commitments, airport proponents also note that the 1948 deed transferring control of SMO from the federal government to the city under the Surplus Property Act – following substantial improvements made by the federal government during World War II – requires that the airport be maintained for public use in perpetuity. That interpretation is now under challenge by Santa Monica in the federal courts; NBAA has and will continue to support the federal government's position.

"The Part 16 complaint regarding Santa Monica's federal grant obligation is one of numerous challenges presented by NBAA and other stakeholders to the city's numerous attempts to curtail operations at SMO and shut down the historic airfield. A second Part 16 complaint, now pending, addresses the city's gross overcharging of airport landing fees, mishandling of airport finances and failure to offer new leases to aviation-related businesses on the field.

"SMO is a vital aviation resource in Southern California, and an important economic contributor to the community," Gertsen concluded. "We hope that city officials will now turn their efforts toward preserving a fair and equitable operating environment for pilots and businesses operating at SMO, rather than wasting public funds to mount numerous court challenges focused on the single, misguided purpose of shuttering this important facility."

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AIP

FAA AWARDS AIP NOISE GRANTS TO 10 AIRPORTS THUS FAR IN FY 2016

On Aug. 15, FAA issued and update to its list of airports that have received Airport Improvement Program (AIP) grants thus far in fiscal year 2016, which ends on Sept. 30. It shows that 11 noise mitigation grants have been awarded to the following 10 airports:

• San Francisco Int'l Airport received $1.8 million for noise mitigation measures for residences in the 65-69 DNL noise contour;

• Tweed-New Haven (CT) Airport received $575,499 for noise mitigation measures for residences in the 65-69 DNL contour;

• Ft. Lauderdale-Hollywood Int'l received $1,857,103 to conduct a noise compatibility plan study;

• Key West Int'l received $1,350,000 for noise mitigation measures for residences in the 65-69 DNL noise contour;

• Greater Cincinnati Int'l received $3,459,593 to conduct a noise compatibility plan study;

• Westover Air Reserve Base in Chicopee, MA, received $2,498,674 to acquire land for noise compatibility in the 65-69 DNL noise contour;

• Westfield Barnes Regional Airport in Westfield, MA, got $2,499,999 to acquire land for noise compatibility in the 65-69 DNL noise contour;

• Gulfport Biloxi (MS) Int'l Airport in received $3,420,000 for noise mitigation measures for residences in the 65-69 DNL noise contour;

• T.F. Green Airport in Warwick, RI, received two grants: an $887,032 grant to acquire land for noise compatibility in the 70-74 DNL noise contour and an $8,435,954 grant for noise mitigation measures for residences in the 65-69 DNL noise contour;

• General Mitchell Int'l Airport in Milwaukee, WI, received $1,549,779 to conduct a noise compatibility plan study.

In Brief…

NASA Awards Policies Study Contract

NASA has awarded a $30.1 million sole source contract to the National Academy of Sciences (NAS) in Washington, DC, to conduct studies and evaluations in support of the agency's Aeronautics Research Mission Directorate at NASA Headquarters.

NASA will conduct studies to address questions of national importance relating to aeronautics and space programs and policies. The contractor will provide NASA the means to access an independent pool of scientists and engineers from industry, academia and other government agencies to conduct the studies and to staff advisory committees.

AIRPORT NOISE REPORT

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A weekly update on litigation, regulations, and technological developments

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Santa Monica

CITY COUNCIL VOTES TO CLOSE AIRPORT SETTING STAGE FOR MORE LITIGATION

In a move certain to be challenged by FAA and aviation trade groups, the Santa Monica City Council adopted a resolution on Aug. 23 calling for the closure of Santa Monica Airport as soon as legally permitted, with the goal of closure on or before July 1, 2018.

"Our Council and community, in solidarity, want to close the airport that predominantly caters to the 1% that can afford to travel by private jet. We have directed the City Manager to take every step possible to expedite the transformation of our land from Airport to park," said Mayor Pro Tem Ted Winterer.

"There are real legal obstacles and while we need to be conscientious as we navigate the court system, our resolve to close the Airport is firm," Winterer said in a statement issued by the City, which has sought to close its airport – one of the busiest single-runway GA airports in the country – for 35 years.

The Aircraft Owners and Pilots Association and the National Business Aviation Association have already said that they will challenge any attempts by the City to

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ACRP

EFFECTIVE PRACTICES FOR MANAGING HELICOPTER NOISE DESCRIBED IN REPORT

A new Airport Cooperative Research Program (ACRP) report provides airport operators and surrounding communities with an improved understanding of helicopter noise as well as a description of the current state of effective practices for managing helicopter noise impacts.

ACRP Synthesis Report 76: *Helicopter Noise Information for Airports and Communities* was issued by the Transportation Research Board on Aug. 19 and is available online at http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_076.pdf

The report is based on a review of the literature and survey of 10 airports on their helicopter issues and their helicopter noise management programs. The mitigation strategies that surfaced as effective practices are discussed in chapter seven of the report.

The airport survey respondents "generally agreed that community outreach was the most important part of their noise management programs," the report notes. "These outreach programs include updated websites, educating the public and operators in person, and notifying the public of changes in helicopter routes either for

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ACRP ... New Synthesis report provides description of current state of effective practices for managing helicopter noise impacts - p. 111

... New resource guide addresses potential cost, environmental benefits, and challenges of alternative aircraft taxiing systems - p. 113

Reagan National ... Noise working group submits recommendations to FAA on ways to mitigate noise impact of departures to the south of airport - p. 112

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Santa Monica, from p. 111

close busy Santa Monica Airport, which serves as a reliever for Los Angeles International Airport, located just several miles away.

Following the City Council vote, the FAA issued the following statement: "On Aug. 15, 2016, the FAA issued its Final Agency Decision on a formal complaint about Santa Monica Airport. The agency decision determined the City of Santa Monica remains obligated to operate the airport until at least 2023. The FAA expects the City to comply with its federal obligation to operate the airport and to provide access to aeronautical users. The FAA will continue to work with the City to ensure the airport remains available to those users."

Measures to Reduce Adverse Impacts

The Council directed the City Manager to implement a series of measures intended to reduce the adverse environmental impacts of the Airport until operations permanently cease. It also adopted a fixed based operations (FBOs) policy for the City Manager to implement to replace private aircraft support services with services provided by the City.

These measures include petitioning the FAA to remove the far west segment of the runway from aviation use. This would shrink the runway by 2,000 feet and consequently reduce the adverse impacts of the Airport. It also will keep out faster, heavier business jets.

The City Council directed the City Manager to commence the planning and environmental analysis of converting the SMO into a park.

The Council also approved a policy regarding FBOs, which provide aeronautical services, such as fuel and aircraft storage. Currently those services are provided by two private companies. The Council directed the City Manager to create a city-run FBO service by Dec. 31 or as soon as feasible. This change, allowed under FAA regulations, would significantly diminish the incentive for private companies to market their services to corporate and personal jet traffic, the City said.

In its Resolution, the City Council declared the Airport produces a wide range of adverse impacts, including noise and air pollution, as well as safety issues. The Council's Resolution notes the positive consequences of transitioning the land from aviation to open space, parks, recreation, educational, and cultural uses as required by Measure LC, the ballot measure that Santa Monica voters approved in 2014.

"Through our unanimous vote tonight, the Council demonstrated our commitment to stop the harmful impacts the Airport has on our community. Transitioning our land into a 'great-park' is the single most transformative action this Council can take," said Mayor Tony Vazquez. "The land needs to be transformed from a source of pollution and potential danger, into a community asset."

The Council vote comes just eight days after FAA rejected an appeal by the City of an earlier determination that Santa Monica Airport must remain open until 2023 to satisfy federal grant obligations (28 ANR 107). The city has decided to challenge that agency decision in federal court.

In 2014, a federal district court judge dismissed a lawsuit by Santa Monica against the FAA seeking to release it from its obligation to operate Santa Monica Airport as an airport (26 ANR 22). But a federal appeals court reinstated the case earlier this year and a jury trial is scheduled for late 2017.

Reagan National Airport

GROUP RECOMMENDS WAYS TO REDUCE FLIGHT PATH NOISE

On Aug. 11, the Reagan National Community Noise Working Group submitted recommendations to the FAA on ways to mitigate the noise impact of aircraft departing to the south out of Ronald Reagan National Airport.

The Working Group was established in October 2015 to respond to an increase in noise complaints caused by FAA's implementation of NextGen flight path changes out of the airport, which moved some aircraft away from the Potomac River noise abatement corridor and over communities.

The Working Group recommended that FAA "modify flight paths and make other modifications, including possible waypoint adjustments, along south flow departure routes from Reagan National Airport with the goal of maximizing the time aircraft spend flying directly over the Potomac River and minimizing the time aircraft spend flying over land in communities south of the airport, especially residential neighborhoods, as a way to mitigate the impact of aircraft noise."

The Working Group further recommended that FAA

• Relocate the turning point for aircraft heading west off the river farther south along the Potomac River to minimize flights over residential areas and at a location where aircraft have reached the highest practical altitudes, consistent with the FAA's study of operational considerations; and

• Engage in outreach to communities that could be impacted by modifications in flight paths or procedures resulting from this recommendation."

Working Group voting stakeholders include community members appointed by elected officials from local jurisdictions affected by noise from the airport: District of Columbia, Prince George's County and Montgomery County, MD, and Arlington County, Fairfax County, and City of Alexandria, VA. In addition, two airline representatives participate on the Working Group.

The Metropolitan Washington Airports Authority (MWAA) serves as the facilitator for Working Group. MWAA and FAA serve as non-voting, advisory Working Group members.

The Airports Authority will forward recommendations approved and endorsed by the Working Group to the FAA for consideration and action.

In an Aug. 12 letter, Rep. Don Beyer (D-VA) urged FAA Administrator Michael Huerta to support the Working Group's recommendations for a plan to reduce aircraft noise

on departures south of the airport, which affects his constituents.

Beyer also urges the FAA to "pursue holistic approaches to noise mitigation," including lowering the decibel level standard by which the FAA determines acceptable noise pollution. Residents of communities both north and south of DCA have grown increasingly concerned about aircraft noise, he told Huerta.

"Implementing this recommendation would go a long way to reducing excessive airplane noise south of National Airport," Beyer wrote.

"The proposal was put together by a group of citizens and community leaders in consultation with major stakeholders, and I hope that FAA will act on these suggestions with all possible haste. I further urge the FAA to pursue other means at its disposal to reduce the impact of aircraft noise on the region."

Helicopters, from p. 111

temporary purposes or permanent changes (and why). Respondents agreed that simply publishing noise mitigation procedures without making operators aware of them is not all that helpful.

"In the literature as well as from the airport survey, helicopter altitude was the next most cited control measure. This is subject to ATC and cannot be mandated by the airport. Noise reduction with increased altitude is most effective directly under the flight track and noise reduction diminishes to the side with increasing distance. The route structures also were commonly cited in the literature as well as in the airport survey.

"Airports can develop and propose voluntary noise abatement procedures that affect the speed, descent angle, or other operational aspects of helicopters, subject to review by FAA to ensure that they can be accomplished safely, do not compromise aircraft performance standards, and do not affect ATC clearance and separation standards."

The report, prepared by Landrum & Brown and Paul Schomer and Associates, does not address the legal issues associated with control of airspace or helicopter access restrictions at public use airports.

"In some areas of the country, helicopter noise has reemerged as a topic of intense community concern. As can be seen in the literature, many of the helicopter noise research projects date back to the 1970s and 1980s, with more than half of the documents reviewed published before 1990 and an overwhelming number published before 2000," the report stresses.

This Synthesis report is one of three ACRP projects on helicopter noise that have been completed or are currently underway. The other two helicopter studies are:

• ACRP S02-44, *Guidance for Helicopter Community Noise Prediction*, which has been published as ACRP Research Results Digest 24: *Recommended Community Noise Model Enhancements to Improve Prediction of Helicopter Activity Impacts*, and addresses the improved technical methods to model helicopter noise and;

• ACRP S02-48, *Assessing Community Annoyance of Helicopter Noise*, which is due out at the end of 2016. It was undertaken to investigate acoustical and non-acoustical factors that influence community annoyance to helicopter noise, describe how this compares with community annoyance with fixed-wing aircraft, and develop a research method to relate helicopter noise exposure to surveyed community annoyance.

ACRP

GUIDE ADDRESSES CHALLENGES, BENEFITS OF ALT. TAXI SYSTEMS

Information on the potential cost, energy, environmental benefits (noise and emissions), and challenges of implementing alternative aircraft-taxiing systems at U.S. airports is provided in a resource guide issued by the Transportation Research Board on Aug. 25.

Airport Cooperative Research Program (ACRP) Report 158: *Deriving Benefits from Alternative Aircraft-Taxi Systems* can be downloaded at
http://www.trb.org/ACRP/Blurbs/174896.aspx

Full documentation of the research conducted and findings compiled are presented in a final report, which is not being published but is available to future researchers and other interested parties by contacting ACRP.

"As demand for air travel continues to grow, airports are facing increased pressure to reduce their contributions to local air emissions and noise. Airport managers, environmental agencies, and other parties in the aviation industry are becoming increasingly aware of the contribution of airport-related activities to local air quality, greenhouse gas emissions, and noise," TRB Staff Officer Michael Salamone said in a Foreword to the report.

"Recently, non-main-engine aircraft-taxiing (alternative aircraft-taxiing) systems have attracted the interest of industry and government research organizations. These systems include, among other alternative systems, an electric motor permanently fixed to the aircraft, or an electric tug. While many of these alternatives may provide energy and environmental benefits, their use may introduce potential challenges to aircraft operators and air traffic control, as well as place new demands on airport infrastructure."

"By removing the need for using aircraft main engines during the majority of the taxi phase of operation in aircraft movement areas, there may be an overall net benefit for both the airport and aircraft operator."

In terms of noise reduction, the report notes that studies undertaken by a number of alternative aircraft-taxiing system developers (of both electric motor and external systems) indicate a noise reduction of between 10 dB and 12 dB close to taxiways, which may be perceptible in communities close to

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taxiways but may not be captured by airport noise monitors.

"Many airports own and operate noise monitoring systems, which measure noise levels continuously. However, the monitors are typically located in communities surrounding airports and are designed to capture overflight noise levels.

"Even in the rare cases where a noise monitor is located near an airfield, it would be difficult to separate out noise levels from taxiing aircraft from those of takeoffs, arrivals, and reverse-thrust operations. Therefore, even if alternative aircraft-taxiing systems were in operation at a particular airport in the future, it is unlikely that alternative aircraft-taxiing systems would make significant differences to monitored noise levels," the report explains.

The resource guide, developed by a team led by The Cadmus Group, Inc., focuses on alternative aircraft-taxiing systems at U.S. airports; however, a large body of research from Europe has been incorporated where relevant.

The report notes that a number of alternative aircraft-taxiing systems that are at different stages of development have the potential to enable an aircraft to taxi without the use of its main engines.

"When these alternative aircraft-taxiing systems are used, there is no associated aircraft main engine fuel burn, emissions, or noise, but these will be partly replaced by those of the alternative aircraft-taxiing system. However, main engines must be warmed up approximately five minutes before takeoff, resulting in aircraft main engine fuel burn, emissions, and noise," the report states.

"The net reduction in fuel burn, emissions, and noise will be a result of the length of time spent taxiing and the types of equipment and engines used for the aircraft and the alternative aircraft-taxiing system. In some cases, the overall benefits will be limited. The potential also exists for increased costs [for purchase (or lease) of the alternate system, maintenance, and fuel]. However, there are other issues that should be considered before any fuel, emissions, and noise benefits can be realized,"

These key considerations are addressed in the guide.

In Brief…

B&K Providing Heathrow Noise Monitors

Brüel & Kjær announced Aug. 25 that it has contracted with Heathrow Airport to deliver, install, and service 50 new noise monitoring terminals. The units will increase Heathrow's noise monitoring capacity and expand its leading-edge noise abatement program.

AIRPORT NOISE REPORT

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A weekly update on litigation, regulations, and technological developments

Volume 28, Number 29 September 2, 2016

Noise Grants

O'HARE GETS $20 M GRANT FOR INSULATION; TWO LOUISIANA AIRPORTS ALSO GET GRANTS

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The funding, awarded by FAA, will help soundproof residences with noise levels between 65 and 69 DNL.

"I've spent years working to alleviate the damaging quality of life and health effects that O'Hare noise pollution has on my neighbors. Today, I'm proud to announce this infusion of federal funds which will help provide relief to countless families living in communities surrounding our state's world-class transportation hub," Rep. Duckworth.

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LaGuardia

FOIA DATA DOCUMENTS COMMUNITY CLAIM OF SHARP INCREASE IN QUEENS OVERFLIGHTS

A change in runway use at LaGuardia Airport and the introduction of NextGen departure procedures resulted in a 47 percent increase in aircraft departures over the northeast section of the New York City Borough of Queens, according to a report by the community anti-noise group Queens Quiet Skies (QQS).

The nearby community of Jackson Heights saw a 78 percent increase in departures over the last eight years, according to the report, which was based on an analysis of operational data for 2002 – 2014 obtained from the FAA and the Port Authority of New York/New Jersey under Freedom of Information Act requests.

QQS said its data analysis shows that, as recently as 2010, LaGuardia operated with an equitable distribution of departures among its three main departure runways. But by 2014, "the disparity is glaring" and the runway directing traffic over northeast Queens is handling almost twice as many departures as either of the two other runways.

The findings illustrate "what members of the community have long known – airplane noise has increased at unprecedented levels over the past decade as a result

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"This welcome investment by the FAA will improve the quality of life of O'Hare area residents. I am pleased by today's announcement, and I will continue to work to bring federal resources to Chicago's airports and the communities that surround them," said Sen. Durbin.

"I am pleased that the FAA is taking steps to provide some relief to residents around O'Hare Airport by awarding new funds for residential sound proofing in the surrounding communities," said Rep. Quigley.

"I will continue working with my congressional colleagues, the Chicago Department of Aviation and the FAA to help reduce and distribute aircraft noise because I believe that O'Hare can be both a good neighbor and an economic engine for Chicago and Illinois."

"I often hear concerns from constituents in the 9th Congressional District who are negatively impacted by aircraft noise from O'Hare International Airport," Rep. Schakowsky said.

"Together with Sen. Durbin, Rep. Quigley, Rep. Duckworth and other members of the Illinois delegation, I have worked hard to address these concerns, and I am pleased to see the FAA providing $20,000,000 to help additional noise mitigation efforts. This funding will help bring much needed relief."

Lafayette Regional Gets $2.2 M Grant

On Aug. 30, Sen. David Vitter (R-LA) announced that the U.S. Department of Transportation will be awarding a $2,235,985 grant to fund a noise mitigation project for the Paul Fournet Airfield at the Lafayette Regional Airport, which will aim to reduce noise measurements for nearby residences.

"This grant for the Lafayette airport will go a long way in making sure we're able to continue operating efficiently while at the same time offering solutions to help those in the area live comfortably and with as little commotion as possible," Vitter said.

The grant will provide for noise mitigation for residences within the vicinity of the airport, and is awarded under the Moving Ahead for Progress in the 21st Century Act (MAP-21), a long-term bipartisan bill to reauthorize the nation's transportation programs, which Vitter led the passage of through the Senate Environment and Public Works Committee in 2014.

As Chairman of the EPW Subcommittee on Transportation and Infrastructure, Vitter has long championed grants that fund the improvements to Louisiana's infrastructural developments, including highways, airfields and ports.

Alexandria Int'l Gets $10 M Noise Grant

Rep. Ralph Abraham (R-LA) announced Aug. 26 that

the Department of Transportation has awarded the Alexandria International Airport at England Airpark nearly $17 million in federal grant funds, including a grant for residential sound insulation.

The $10 million grant will fund noise mitigation measures at residences adjacent to the Alexandria International Airport to meet requirements outlined in the latest Airport Noise Compatibility Plan.

Two other separate grants will fund construction of an emergency access road and reconstruction of 63,500 square yards of apron pavement that has reached the end of its useful life.

Airlines

AA RETIRES 20 MD-80 AIRCRAFT ON SAME DAY IN FLEET UPDATE

American Airlines undertook one of the largest one-day aircraft retirements in airline history on Aug. 23 when it retired 20 of its old and noisy MD-80 aircraft.

American plans to retire a total of 45 MD-80s by the end of this year, leaving 52 still in its fleet. Those will be retired by late 2018.

Under its fleet renewal program, AA is replacing its MD-80s with newer, more fuel-efficient and quieter aircraft, especially B 737s and Airbus A320s.

Delta and Allegiant airlines still operate MD-80 aircraft and plan to retire them in 2019.

Mode C transponders in aircraft must be equipped with ADS-B Out (Automatic Dependent Surveillance – Broadcast) by Jan. 1, 2020, to support NextGen implementation. MD-80 aircraft must either be updated to meet ADS-B Out or retired by that point.

American Airlines began acquiring MD-80s in 1982 and they were once the most numerous aircraft in its fleet, with more than 370 aircraft at one time.

American's MD-80s were equipped with Pratt & Whitney JT8D engines, which were manufactured to meet now outdated FAA Stage 3 noise standards. Two Stage 4 hushkits were developed for the MD-80 but neither sold well, Armando Tovar, Noise officer for Raleigh-Durham International Airport, told ANR.

Retirement of American's MD-80s will mean another step-down in noise exposure around airports where MD-80s are in daily use (Dallas-Ft. Worth International, Atlanta-Hartsfield International, Las Vegas McCarran International, and even Raleigh-Durham International), said Tovar, who closely follows the retirement of noisier commercial aircraft.

MD-80s are louder than other Stage 3 aircraft on departure because their P&W JT8D-200 series engine is an upgraded design of the JT8D standard series engine which was found on the 727, 737-200, and DC9, he explained.

Engine bypass ratio is directly related to fuel burn and noise, Tovar saod. "In general, the higher the bypass ratio, the lower the fuel burn and noise."

The JT8D-200 series engine for the MD-80 has a bypass ratio of 1.75, he said.

The CFM56 engine for more modern 737-100 and A320 aircraft has as bypass ratio of 5 to 6 while the CFM LEAP engine for the 737 Max and A320 neo has a bypass ratio of 10 to 11.

"By the numbers, you can see that the MD-80 provides old technology performance, although P&W says it is very reliable," Tovar said.

Personnel

MAXWELL TO MANAGE HARRIS SYMPHONY PRODUCT PORTFOLIO

Harris Corporation announced Aug. 30 that it has appointed Gregory Maxwell as Airport Solutions Manager for the Harris Symphony product portfolio.

Symphony's (www.symphonycdm.com) enterprise portfolio includes NextGen environmental & noise management, real-time situational awareness, collaboration, security and vehicle tracking solutions for the global airport community.

As Airport Solutions Manager, Mr. Maxwell will help guide and manage the overall strategy and roadmap for the Symphony solutions to ensure Harris delivers products and solutions that meet the current and future requirements of the global airport community.

"We are very excited to have Gregory join the Symphony team as he is a well-respected member of the airport community with strong operational knowledge and experience," said Chris Zanardi, Commercial Director of the Symphony portfolio. "Gregory's history as a thought leader and innovator in the industry will also prove to be extremely valuable as we continue to invest in new and innovative capabilities for our customers."

Prior to Harris, Mr. Maxwell served as the Aviation Noise Abatement Program Manager for the City of Philadelphia. He has also held noise analyst and management positions at Flight Research Associates and the Port of Portland.

Mr. Maxwell received his MS degree in Safety Science from Embry-Riddle Aeronautical University and a BS in Geography from Sam Houston State University. He will be based in Harris' Herndon, Virginia, office.

LaGuardia, from p. 115

of changes in runway usage and flight patterns over the last several years," QQS said.

"We all felt we were getting more airplane noise over this community. Now the records show it," NY State Sen. Tony Avella (D), who represents Queens, said at an Aug. 30 news conference announcing the report findings.

QQS is using the data analysis to bolster its argument that the long-stalled formation of the New York Community Aviation Roundtable needs to be quickly completed "so that coordinated and influential dialogue between the community and the Port Authority and the FAA can finally begin."

QQS wants aircraft noise impact mitigated by distributing it more evenly among communities in the New York City area.

"We recognize that the airports are huge economic engines, especially for the borough of Queens, but that doesn't mean there can't be a balance. Let's balance the need and the impact over everybody, so that one neighborhood like Northeast Queens or Jackson Heights don't get it all," Sen. Avella told the *New York Daily News*.

FAA Comment

An FAA spokesman said the agency "is unable to comment on the [QQS] analysis since the agency cannot verify the methodology used or the accuracy of the data and its conclusions."

He noted that the FAA "is responsible for the management of the National Airspace System and for the safe and efficient arrival and departure of all aircraft at U.S. Airports. The airspace around the New York metropolitan area is the most complex airspace in the world. LaGuardia Airport, John F. Kennedy International Airport and Newark Liberty International Airport are all within ten miles of each other. Several smaller airports with commercial service and a busy general aviation airport are all nearby.

"Each day the FAA uses, to the maximum extent possible, all available runways, to move aircraft in and out of the New York Area safely and efficiently. There are a number of factors that determine how many runways will be available for air traffic operations. These factors include safety, current and forecasted wind direction and strength; runway and taxiway closures; the availability of communications, navigation, surveillance and guidance equipment; anticipated traffic levels; special events; runway surface conditions; and runway length.

"Selection of a runway configuration is not based on a single factor, such as wind direction."

In its report, QQS said that the FAA "has consistently maintained that runway use is determined by prevailing winds and that nothing has changed procedurally" at LaGuardia.

"The fact that prevailing seasonal wind direction hasn't changed is antithesis to a near 50 percent increase in departures from one particular runway over the past decade. Historical wind data was found at windfinder.com. LaGuardia's capacity has also remained relatively constant since the Port Authority and FAA established a hard cap of 75 flights per hour …"

Statement from the Port Authority

Asked to comment on the QQS report, the PANYNJ provided the following statement:

The total number of flights from LaGuardia Airport has remained flat over the last decade, and the number of flights is limited under the FAA's slot control rules. Air traffic pat-

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terns are controlled by the FAA based on a variety of factors including wind, weather, mandated runway maintenance and safety. Our analysis shows the boundaries of significant noise (which is Federally defined as 65DNL) in areas around the airport have not changed significantly since 2008. In 2012, the FAA increased the use of certain departure routes which had shifted aircraft flight patterns to neighborhoods in Northern Queens. Additionally, construction related to Federally-mandated Part 139 runway safety compliance work has forced increased use of a runway pattern leading over Jackson Heights on an interim basis, and is expected to conclude in the coming months.

The Port Authority is taking a multifaceted, comprehensive series of steps to work more closely with communities on addressing noise issues at its airports. This includes working toward establishing roundtable meetings to maintain open lines of communication and manage noise impacts while providing communities input, information and ongoing updates.

The agency is also conducting formal 14 CFR Part 150 Airport Noise Compatibility Planning Studies to better evaluate incompatible land uses and noise impacts to the communities surrounding LaGuardia and John F. Kennedy International airports. The first phase of this study, which has been underway since 2014, requires the development of noise exposure maps for existing conditions and future conditions. These noise exposure maps require acceptance by the Federal Aviation Administration (FAA). At the direction of Executive Director Pat Foye, aviation staffers are working to accelerate completion of the studies.

The Port Authority and the agency's expert consultant team, work in concert with residents, elected officials, industry partners and FAA representatives on this intensive and complex study, while also keeping the public informed regarding progress, particularly through public meetings and workshops. On September 29th at the LaGuardia Airport Marriott, the Port Authority will seek public feedback and review.

In Brief…

Akron-Canton Part 150 under Review

FAA announced on Aug. 26 that noise exposure maps submitted by the Akron-Canton Airport Authority for Akron-Canton Airport meet applicable federal requirements.

The agency said its review of the proposed Part 150 airport noise compatibility program submitted by the agency will be completed on or before Jan. 18, 2017.

For further information, contact Katherine Delaney, a community planner in FAA's Detroit Airports District Office; tel: 734-229-2900.

AIRPORT NOISE REPORT

Anne H. Kohut, Publisher

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Alexandria Int'l Gets $10 M Noise Grant

Rep. Ralph Abraham (R-LA) announced Aug. 26 that

the Department of Transportation has awarded the Alexandria International Airport at England Airpark nearly $17 million in federal grant funds, including a grant for residential sound insulation.

The $10 million grant will fund noise mitigation measures at residences adjacent to the Alexandria International Airport to meet requirements outlined in the latest Airport Noise Compatibility Plan.

Two other separate grants will fund construction of an emergency access road and reconstruction of 63,500 square yards of apron pavement that has reached the end of its useful life.

Airlines

AA RETIRES 20 MD-80 AIRCRAFT ON SAME DAY IN FLEET UPDATE

American Airlines undertook one of the largest one-day aircraft retirements in airline history on Aug. 23 when it retired 20 of its old and noisy MD-80 aircraft.

American plans to retire a total of 45 MD-80s by the end of this year, leaving 52 still in its fleet. Those will be retired by late 2018.

Under its fleet renewal program, AA is replacing its MD-80s with newer, more fuel-efficient and quieter aircraft, especially B 737s and Airbus A320s.

Delta and Allegiant airlines still operate MD-80 aircraft and plan to retire them in 2019.

Mode C transponders in aircraft must be equipped with ADS-B Out (Automatic Dependent Surveillance – Broadcast) by Jan. 1, 2020, to support NextGen implementation. MD-80 aircraft must either be updated to meet ADS-B Out or retired by that point.

American Airlines began acquiring MD-80s in 1982 and they were once the most numerous aircraft in its fleet, with more than 370 aircraft at one time.

American's MD-80s were equipped with Pratt & Whitney JT8D engines, which were manufactured to meet now outdated FAA Stage 3 noise standards. Two Stage 4 hushkits were developed for the MD-80 but neither sold well, Armando Tovar, Noise officer for Raleigh-Durham International Airport, told ANR.

Retirement of American's MD-80s will mean another step-down in noise exposure around airports where MD-80s are in daily use (Dallas-Ft. Worth International, Atlanta-Hartsfield International, Las Vegas McCarran International, and even Raleigh-Durham International), said Tovar, who closely follows the retirement of noisier commercial aircraft.

MD-80s are louder than other Stage 3 aircraft on departure because their P&W JT8D-200 series engine is an upgraded design of the JT8D standard series engine which was found on the 727, 737-200, and DC9, he explained.

Engine bypass ratio is directly related to fuel burn and noise, Tovar saod. "In general, the higher the bypass ratio, the lower the fuel burn and noise."

The JT8D-200 series engine for the MD-80 has a bypass ratio of 1.75, he said.

The CFM56 engine for more modern 737-100 and A320 aircraft has as bypass ratio of 5 to 6 while the CFM LEAP engine for the 737 Max and A320 neo has a bypass ratio of 10 to 11.

"By the numbers, you can see that the MD-80 provides old technology performance, although P&W says it is very reliable," Tovar said.

Personnel

MAXWELL TO MANAGE HARRIS SYMPHONY PRODUCT PORTFOLIO

Harris Corporation announced Aug. 30 that it has appointed Gregory Maxwell as Airport Solutions Manager for the Harris Symphony product portfolio.

Symphony's (www.symphonycdm.com) enterprise portfolio includes NextGen environmental & noise management, real-time situational awareness, collaboration, security and vehicle tracking solutions for the global airport community.

As Airport Solutions Manager, Mr. Maxwell will help guide and manage the overall strategy and roadmap for the Symphony solutions to ensure Harris delivers products and solutions that meet the current and future requirements of the global airport community.

"We are very excited to have Gregory join the Symphony team as he is a well-respected member of the airport community with strong operational knowledge and experience," said Chris Zanardi, Commercial Director of the Symphony portfolio. "Gregory's history as a thought leader and innovator in the industry will also prove to be extremely valuable as we continue to invest in new and innovative capabilities for our customers."

Prior to Harris, Mr. Maxwell served as the Aviation Noise Abatement Program Manager for the City of Philadelphia. He has also held noise analyst and management positions at Flight Research Associates and the Port of Portland.

Mr. Maxwell received his MS degree in Safety Science from Embry-Riddle Aeronautical University and a BS in Geography from Sam Houston State University. He will be based in Harris' Herndon, Virginia, office.

LaGuardia, from p. 115

of changes in runway usage and flight patterns over the last several years," QQS said.

"We all felt we were getting more airplane noise over this community. Now the records show it," NY State Sen. Tony Avella (D), who represents Queens, said at an Aug. 30 news conference announcing the report findings.

QQS is using the data analysis to bolster its argument that the long-stalled formation of the New York Community Aviation Roundtable needs to be quickly completed "so that coordinated and influential dialogue between the community and the Port Authority and the FAA can finally begin."

QQS wants aircraft noise impact mitigated by distributing it more evenly among communities in the New York City area.

"We recognize that the airports are huge economic engines, especially for the borough of Queens, but that doesn't mean there can't be a balance. Let's balance the need and the impact over everybody, so that one neighborhood like Northeast Queens or Jackson Heights don't get it all," Sen. Avella told the *New York Daily News*.

FAA Comment

An FAA spokesman said the agency "is unable to comment on the [QQS] analysis since the agency cannot verify the methodology used or the accuracy of the data and its conclusions."

He noted that the FAA "is responsible for the management of the National Airspace System and for the safe and efficient arrival and departure of all aircraft at U.S. Airports. The airspace around the New York metropolitan area is the most complex airspace in the world. LaGuardia Airport, John F. Kennedy International Airport and Newark Liberty International Airport are all within ten miles of each other. Several smaller airports with commercial service and a busy general aviation airport are all nearby.

"Each day the FAA uses, to the maximum extent possible, all available runways, to move aircraft in and out of the New York Area safely and efficiently. There are a number of factors that determine how many runways will be available for air traffic operations. These factors include safety, current and forecasted wind direction and strength; runway and taxiway closures; the availability of communications, navigation, surveillance and guidance equipment; anticipated traffic levels; special events; runway surface conditions; and runway length.

"Selection of a runway configuration is not based on a single factor, such as wind direction."

In its report, QQS said that the FAA "has consistently maintained that runway use is determined by prevailing winds and that nothing has changed procedurally" at LaGuardia.

"The fact that prevailing seasonal wind direction hasn't changed is antithesis to a near 50 percent increase in departures from one particular runway over the past decade. Historical wind data was found at windfinder.com. LaGuardia's capacity has also remained relatively constant since the Port Authority and FAA established a hard cap of 75 flights per hour …"

Statement from the Port Authority

Asked to comment on the QQS report, the PANYNJ provided the following statement:

The total number of flights from LaGuardia Airport has remained flat over the last decade, and the number of flights is limited under the FAA's slot control rules. Air traffic pat-

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terns are controlled by the FAA based on a variety of factors including wind, weather, mandated runway maintenance and safety. Our analysis shows the boundaries of significant noise (which is Federally defined as 65DNL) in areas around the airport have not changed significantly since 2008. In 2012, the FAA increased the use of certain departure routes which had shifted aircraft flight patterns to neighborhoods in Northern Queens. Additionally, construction related to Federally-mandated Part 139 runway safety compliance work has forced increased use of a runway pattern leading over Jackson Heights on an interim basis, and is expected to conclude in the coming months.

The Port Authority is taking a multifaceted, comprehensive series of steps to work more closely with communities on addressing noise issues at its airports. This includes working toward establishing roundtable meetings to maintain open lines of communication and manage noise impacts while providing communities input, information and ongoing updates.

The agency is also conducting formal 14 CFR Part 150 Airport Noise Compatibility Planning Studies to better evaluate incompatible land uses and noise impacts to the communities surrounding LaGuardia and John F. Kennedy International airports. The first phase of this study, which has been underway since 2014, requires the development of noise exposure maps for existing conditions and future conditions. These noise exposure maps require acceptance by the Federal Aviation Administration (FAA). At the direction of Executive Director Pat Foye, aviation staffers are working to accelerate completion of the studies.

The Port Authority and the agency's expert consultant team, work in concert with residents, elected officials, industry partners and FAA representatives on this intensive and complex study, while also keeping the public informed regarding progress, particularly through public meetings and workshops. On September 29th at the LaGuardia Airport Marriott, the Port Authority will seek public feedback and review.

In Brief…

Akron-Canton Part 150 under Review

FAA announced on Aug. 26 that noise exposure maps submitted by the Akron-Canton Airport Authority for Akron-Canton Airport meet applicable federal requirements.

The agency said its review of the proposed Part 150 airport noise compatibility program submitted by the agency will be completed on or before Jan. 18, 2017.

For further information, contact Katherine Delaney, a community planner in FAA's Detroit Airports District Office; tel: 734-229-2900.

AIRPORT NOISE REPORT

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S. Calif. Metroplex Project

FAA ISSUES FONSI/ROD ON SOCAL METROPLEX; WILL BEGIN IMPLEMENTATION IN NOVEMBER

On Sept. 2 – the eve of the Labor Day holiday weekend when the public's attention was elsewhere – the FAA announced that it will begin implementing a vast redesign of the airspace in the Southern Caliornia area in November under its contentious Southern California Metroplex project.

FAA issued a Finding of No Significant Impact/ Record of Decision for the project, which enables the agency to begin replacing dozens of existing conventional air traffic control procedures with new satellite-based procedures.

FAA said its environmental analysis for the project calculated noise at more than 330,000 locations throughout the study area and showed the proposed action would not result in any "significant or reportable" noise increases under the National Environmental Policy Act (NEPA).

However, in comments on the proposed plan, several Southern California cities and airports asserted that FAA's Draft Environmental Assessment of the SoCal Metroplex plan did not provide sufficient data and analysis to determine what the

(Continued on p. 120)

Future Aircraft

NASA WIND TUNNEL TESTING BWB MODEL WITH ENGINES ON THE TOP TO SHIELD NOISE

NASA said Sept. 7 that, as its aeronautics engineers prepare to develop a series of greener, quieter, faster X-planes, they are already testing concepts that could be candidates.

One of those concepts is a blended wing body (BWB) wth the engines on top to help shield noise from going to the ground.

A six-percent scale model of a Boeing BWB is being tested for six weeks in the 14-by 22-Foot Subsonic Tunnel at NASA's Langley Research Center in Hampton, Virginia.

"We're happy to have the model back in our wind tunnel," said Dan Vicroy, principal investigator at NASA Langley. "It gives us a couple of opportunities to add to our knowledge about this configuration as well as how to improve our testing methods."

A blended wing body doesn't look like a conventional airplane, NASA explained. "Instead of the usual tube and wing design, it's shaped more like a triangle where the wings are, in essence, merged into the body. Another difference is that it

(Continued on p. 121)

In This Issue…

Metroplex ... FAA issues a Finding of No Significant Impact and Record of Decision for its Southern California Metroplex project, under which 99 new NextGen procedures will be implemented at six major airports and 15 smaller airports in Southern California. FAA says the airspace changes will not result in any "significant or reportable" noise increases under NEPA - p. 119

NASA ... Wind tunnel testing of a six-percent scale model of a blended wing aircraft concept with engines on top to shield noise is underway at Langley - p. 119

Noise Grants ... Laredo Int'l Airport gets a $5 million AIP grant for noise mitigation in 65-69 DNL contour - p. 120

Part 150 Program ... FAA announces overall approval of an update to Airport Noise Compatibility Program for Boise Air Terminal; updated noise exposure maps for Baltimore-Washington Int'l Airport approved - p. 121

Metroplex, from p. 119

environmental impact of the broad airspace redesign will be (27 ANR 144).

Whether the FONSI/ROD satisfies their concerns remains to be seen.

Prior to approving the project, the FAA conducted thorough environmental reviews and approximately 90 public meetings and stakeholder briefings. The agency said in a press release that it also evaluated and responded to thousands of public comments and made a number of changes in response to public input.

FAA plans to begin working immediately toward phasing in use of the procedures, starting in November 2016 and continuing through April 2017. Before publishing the procedures, the agency said it will conduct additional public outreach to further inform people about the changes.

99 New NextGen Procedures

In all, the Southern California Metroplex project includes 99 new satellite-based procedures, which are a key component of the FAA's Next Generation Air Transportation System (NextGen). The new procedures consist of 41 departures, 37 arrivals and 21 approach procedures that guide aircraft down until they're very close to their destination airports.

The project also expands the number of entry and exit points into and out of the Southern California airspace, which is like creating more on- and off-ramps in the sky. It encompasses most of Southern California and includes six major airports and 15 satellite airports.

Modernization is needed, FAA said, because many of the current air traffic procedures in Southern California are decades old. While they are all safe, some are inefficient because they rely on ground-based navigation aids, which limit available flight paths.

Some procedures are not fully optimized, meaning they are longer than necessary, or require inefficient climbs and descents, or converge and occupy the same airspace. As a result, air traffic controllers issue a series of instructions to pilots to vector aircraft onto more direct routes and to keep aircraft safely separated from each other. Vectoring, in turn, results in irregular and less predictable flight paths and increases pilot-controller communications and workload.

Satellite-based procedures, by contrast, allow for more optimized routing with fixed routes, altitudes and speeds. Their precise flight tracks help keep routes automatically separated. This in turn reduces the need for vectoring and reduces controller-pilot communications.

Additionally, the NextGen modernization work that the FAA is doing nationwide is laying the foundation for future safety and efficiency improvements.

The FAA held 11 public workshops on the project after releasing the Draft Environmental Assessment in June 2015. Agency officials conducted approximately 79 additional briefings for stakeholders including community groups, tribes, airport officials and local, state and federal officials.

Additionally, following a 120-day public comment period, the FAA evaluated and responded to more than 4,000 comments before making a final decision on the project. In response to comments received, the agency developed one new arrival procedure and made changes to six other proposed procedures.

When the Southern California Metroplex procedures are implemented, some people might see aircraft where they did not previously fly, FAA said. This is because some air route changes will occur, and because satellite-based procedures create more concentrated flight paths than conventional procedures.

Some people will experience slight noise decreases, some will see no changes, and some will experience small noise increases.

Some flight track dispersion will continue to occur after the new procedures are implemented because the Metroplex project includes a number of existing procedures, the agency said. Also, air traffic controllers will need to occasionally vector aircraft for safety or efficiency reasons or to reroute them around weather systems.

The Finding of No Significant Impact/ Record of Decision, as well as the Final Environmental Assessment, are available on the Southern California Metroplex website at http://www.metroplexenvironmental.com/socal_metroplex/socal_introduction.html

The website's Google Earth feature allows people to view the projected flight paths and noise changes associated with the project.

Updates on procedure implementation dates will be provided on the project website.

The FAA said it will announce the upcoming public outreach in press releases and on Facebook, Twitter, Instagram, the Metroplex website and possibly other platforms too. The agency also will notify airport and elected officials about the outreach.

Noise Grants

LAREDO INT'L GETS $5 MILLION GRANT FOR NOISE MITIGATION

On Sept. 6, Rep. Henry Cuellar (D-TX) announced that FAA has awarded a $5 million Airport Improvement Program (AIP) grant to Laredo International Airport to support noise mitigation measures in the airport's 65-69 DNL contour.

Laredo International's noise mitigation program, which began in 1994, allows homeowners within the designated noise contour area to choose between three mitigation measures. The program permits the airport to acquire the property, to purchase an easement (at 8 percent of the appraised value of the property), or to insulate the home.

The $5 million AIP grant will provide sound insulation for 26 residences, enable the purchase of 26 residences, and the acquisition of avigation easements of 59 residences.

The City of Laredo anticipates that this grant will help reduce noise complaints for approximately 411 residents, or 111 homes.

In January, Congressman Cuellar announced a $6 million noise mitigation grant, which has helped reduce noise in 126 homes around the airport.

"As the Laredo International Airport continues to grow, a higher volume of air traffic has contributed to noise for residents in the surrounding neighborhoods," Rep. Cuellar said. "This funding will allow the airport to implement noise mitigation measures for residences within 65-69 DNL."

To date this year, Rep. Cuellar has secured over $11 million in federal funding from the FAA to address aircraft noise for 237 homes near Laredo International Airport.

"As our airport continues to grow, we must also make sure that our nearby neighborhoods are heard and taken care of during this process," said Congressman Cuellar. "These funds will continue to provide the necessary assistance to residents who live near the airport. "

Part 150 Program

FAA APPROVES UPDATE TO BOISE NOISE COMPATIBILITY PROGRAM

On Sept. 1, the FAA announced its overall approval of an update to the Part 150 Airport Noise Compatibility Program for Boise Air Terminal (Gowen Field) in Boise, Idaho.

The submitted program contained one noise abatement measure (which was approved) and 12 noise mitigation/land use compatibility measures, seven of which were disapproved for purposes of Part 150 because they were local land use matters.

In addition, 22 measures were included in the Part 150 update that had been approved earlier.

FAA stressed that the following approved measures are all voluntary:

• Preferential runway use – This measure would revise the existing measure to include designation of preferential arrival flow, and designation of north and south parallel runways as preferential for arrivals and departures, respectively;

• Voluntary residential property acquisition of 105 existing homes within and adjacent to DNL 65+ contour on the 2015 noise exposure map (NEM);

• Acquisition of undeveloped land with potential for non-compatible development within the DNL 65+ contour from the 2015 NEM;

• Purchase of aviation easements for homes and other noise-sensitive structures within the DNL 65+ contour from the 2015 NEM;

• Implementation of a sound insulation program for homes and noise-sensitive public buildings within the DNL 65+ contour of the 2015 NEM; and

• Initiate a noise monitoring system to analyze and understand long-term noise issues.

Measures Not Approved

FAA said it disapproved the following land use measures for purposes of the Part 150 Program because the federal government has no authority to control local land use. Implementation of these measures is within the authority of the responsible local land use control body:

• Land use compatibility standards in airport influence area;

• Maintain rural preservation zoning;

• Amend subdivision regulation and building permit applications to require avigation easements;

• Adoption of project review guidelines for the City of Boise and Ada County;

• Continue to promote early recognition of airport influence area within all application processes;

• Maintain airport staff liaison for planning and zoning and building departments of both City of Boise and Ada County; and

• Amend City of Boise zoning ordinance to include airport influence area overlay.

For further information, contact Scott Eaton in FAA's Helena, Montana, Airports District Office; tel: 406-449-5291.

The FAA's Record of Approval of the Part 150 Program update for Boise Air Terminal will be available at http://www.faa.gov/airports/environmental/airport_noise/part_150/states/.

BWI International Noise Maps Approved

In other Part 150 Program news, FAA announced on Aug. 30 that noise exposure maps submitted by the Maryland Aviation Administration for Baltimore/Washington International Thurgood Marshall Airport are in compliance with applicable federal requirements.

For further information, contact Marcus Brundage, an environmental protection specialist in FAA's Washington, DC, Airports District Office; tel: 703-661-1354.

NASA, from p. 119

does not have a tail."

This same Boeing BWB model was put through its paces in the Langley 14-by 22-Foot tunnel in 2014 and in the 40-by 80-Foot Wind Tunnel at NASA's Ames Research Center in California in 2015. That work was part of NASA's Environmentally Responsible Aviation program, which developed technologies to improve fuel efficiencies, lower noise levels and reduce emissions.

But for the current test, the model looks a little different. The top of it has been painted in non-reflective matte black to accommodate laser lights that will sweep across the model in sheets. NASA and Boeing researchers will use those laser sheets combined with smoke in the technique known as particle imagery velocimetry (or PIV) that will map the airflow over the model.

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"We didn't get the opportunity to use PIV in the previous tests," added Vicroy. "It helps us analyze the flow going into the engine inlets, which is one of the challenges with this design since the engines are on top of the fuselage, toward the rear."

In most planes flying today the engines are out on the wings, in front, where there is nice clean airflow. Anything in front of an engine can disrupt the flow.

"Airflow makes a difference in how well the engine performs," said Vicroy. "It's a matter of how much distortion the engine is seeing. So if you want the engines to perform well you want to have the distortion at a minimum."

Engines on Top Shield Noise

"So if engineers have to worry about airflow – why change where the engines are? Researchers say putting them on top of the plane helps shield noise, especially from people on the ground, and contributes toward NASA's goals of developing greener, quieter planes."

The other benefit to NASA from this test has more to do with the tunnel itself. The 14-by 22-Foot tunnel recently completed repairs and an upgrade, so having the same model return can verify how well it's working. And having the same model tested in a totally different facility, such as the one in California also helps add to engineers' knowledge base.

"In wind tunnel testing we have to account for how the model is installed, the size and proximity of the tunnel walls in the test section and other factors," said Vicroy. "Testing the same model in two very different tunnels gives us data to improve our test correction methods, some of which were developed in 1940s."

For Boeing the tests are part of an ongoing research development program.

"Our tests are a continuation of more than two decades of successful research and development of this concept, which is unparalleled in industry," said John Bonet, Boeing's test director for the BWB.

"What we learn from this round of testing will be used to complete the definition of our aerodynamic, stability and control low-speed databases – a major milestone in the technology development of the concept."

With the exception of Boeing proprietary technology, NASA knowledge gained from this collaborative research will be documented and publicly available to benefit the aviation industry.

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NASA

CONTRACT WILL CONTINUE DEVELOPMENT OF 'DOUBLE BUBBLE' D8 GREEN AIRCRAFT

Manasas, VA-based Aurora Flight Sciences announced Sept. 13 that it has been awarded a six-month $2.9 million contract from NASA for continued development of the company's "Double Bubble" D8 aircraft, an ultra-efficient subsonic commercial airliner that is a candidate for demonstration in NASA's new X-Plane program.

Aurora's target timeframe for the D8 entering commerical airline fleets is 2027 "assuming an aggressive and successful flight demonstration campaign," Aurora D8 Program Manager Brian Yutko told ANR. He added that the next step in the NASA X-Plane program will be openly competed.

Based on a reconfigured tube and wing aircraft design with a very wide fuselage that provides extra lift, the D8's low sweep wings reduce drag and weight and its embedded engines sit aft of the wings.

The D8's configuration has the potential to achieve a 71 percent reduction in fuel burn, a 60 EPNdB reduction in noise, and an 87 percent reduction in landing and takeoff NOx – relative to a best-in-class Boeing 737-800 narrow-body aircraft,

(Continued on p. 124)

O'Hare Int'l

COOK COUNTY FACTORING AIRCRAFT NOISE EXPOSURE INTO HOME VALUE ASSESSMENTS

The Cook County, IL, Assessor's Office has begun adjusting property values of home owners near O'Hare International Airport to reflect the impact of increased aircraft noise from newly constructed runways and changed flight paths made under the O'Hare Modernization Program to improve operational safety and efficiency.

More than 8,000 property owners in Cook County's Norwood Park Township are getting 4 to 5 percent reductions in the assessed 2016 value of their properties due to aircraft noise impact, the *Chicago Sun Times* reported.

Cook County plans to adjust 2016 property tax assessment to reflect noise impact in two additional townships later this year.

Last year nearby DuPage County gave about 2,000 property owners a 3 to 8 percent reduction in the assessed value of their property due to aircraft noise impact, according to the paper.

Cook County Assessor Joseph Berrios began studying the relationship between aircraft noise and property values two years ago, following the skyrocketing in-

(Continued on p. 125)

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NASA ... Aurora gets $2.9M contract to continue work on ultra efficient, quiet "Double Bubble" aircraft - p. 123

O'Hare Int'l ... Cook County, IL, reduces property tax assessments for more than 8,000 homeowners after factoring in aircraft noise impact - p. 123

Aircraft ... Boeing 737 MAX undergoing noise certification testing; expected to have 40% smaller noise footprint than NextGen 737 - p. 124

News Briefs ... Midway Airport gets $17.5M AIP grant to fund residential sound insulation ... Burlington, VT, Int'l gets FAA grants to fund home buyouts, sound insulation ...TRB offering webinar on benefits of renewable energy at airports, sustainability best practices ... 2017 International Congress on Noise as a Public Health Problem will be held in Zurich; request for abstracts issued ... NextGen Advisory Committee will meet Oct. 5 in Orlando - p. 125

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the firm said.

"The noise benefits of the D8 are mostly derived from the configuration itself – the D8 engines are shielded from the ground by both the fuselage and the vertical tails," Yutko explained.

The D8 series aircraft would be used for domestic flights and is designed to fly at Mach 0.74 and to carry 180 passengers 3,000 nautical miles in a coach cabin roomier than that of a Boeing 737-800.

"The D8 is a commercial aircraft concept that enables substantial efficiency improvements within the next decade; by entry into service the D8 will be over 50 percent more fuel-efficient than current best-in-class aircraft while simultaneously reducing airline operating costs," Aurora said.

The D8 evolved from Aurora's work on the NASA N+3 Program. In 2009, a combined Aurora, Massachusetts Institute of Technology (MIT), and Pratt & Whitney team was awarded a contract to study technologies and designs for transport-class aircraft that could enter service during the 2030s.

The structural test articles fabricated under this program will be at the same scale as the planned X-Plane, thereby serving as part of a building-block approach for a flight demonstrator.

In 2015, the FAA selected the D8 for design development under its Continuous Lower Energy, Emissions and Noise Program (CLEEN II). In the CLEEN II program, Aurora will design, fabricate and test the unique structural features of the D8 fuselage in order to demonstrate the aircraft's substantial weight savings and manufacturability.

In its FY2017 budget, NASA announced the New Aviation Horizons program. In this new program, NASA intends to flight test a series of X-planes capable of demonstrating significant reductions in fuel consumption, community noise impacts, and air quality impacts.

The current grant award to Aurora will help mature the D8 as a possible X-Plane candidate that supports NASA's Ultra Efficient Subsonic Transport Thrust and accomplishes Mid- and Far-Term Community Goals.

Reconfigured Tube and Wing Design

Aurora's design – named the D8 after its chief designer Mark Drela – reconfigures the classic tube-and-wing aircraft in order to make extensive use of Boundary Layer Ingestion (BLI) which improves propulsion efficiency, high bypass ratio engines, and composite materials.

The D8 benefits are enabled by modern composite manufacturing technologies and a propulsion system that leverages BLI. In addition, the design offers significant noise and emissions reductions, Aurora explained on its website.

"The efficiency gains of the D8 are the result of a tightly integrated design approach, considering the air vehicle as a single, integrated system rather than an assembly of individual parts.

"For example, increased lift generated by the wide 'double-bubble' fuselage means smaller wings are needed to carry the vehicle's weight, resulting in less fuel to fly a given mission. When the engines are integrated into the back of the fuselage, thrust requirements are further reduced due to efficiencies from Boundary Layer Ingestion (BLI). This means that smaller engines can be used, which reduces weight, and hence fuel even further. This cycle of repeated optimization is what gives the D8 such groundbreaking efficiency, but it requires that all facets of the aircraft be designed together.

"Thus far, our team has developed the D8 aircraft configuration, verified the benefits of the design analytically, and conducted a series of wind tunnel tests that validated analytical estimates. The next step to prove the benefits of the D8 aircraft configuration is to conduct flight research using a demonstrator capable of achieving actual flight conditions."

For more information on Aurora's D8 design, visit www.aurora.aero/D8.

Aircraft

BOEING 737 MAX UNDERGOING NOISE CERTIFICATION TESTING

Boeing said Sept. 21 that when its 737 MAX took flight above the open fields of Glasgow, Mont., last month, Boeing engineers and technicians were all ears.

That's because they were listening to and recording every decibel of sound through microphones to certify that the MAX meets federal and international noise regulations, Boeing said in a new video ("Shhh .. The New 737 MAX Redefines a Quiet Airplane") put up on the company's website.

"The noise standards are becoming increasingly stringent as people start to live closer to airports," said Barry St. Germaine, a Boeing Test & Evaluation (BT&E) pilot.

"We will not be able to fly into certain airports if we don't meet the noise requirements, so tests like this ensure we continue to maintain the current market and gain access to new markets around the world," he said.

The 737 MAX is designed to have a 40 percent smaller noise footprint than today's Next-Generation 737. Community noise testing is intended to validate that design.

"We're still looking at the numbers, but preliminary results show the MAX noise levels are right where we want them to be," said Keith Leverkuhn, vice president and general manager of the 737 MAX program.

Boeing's video shows the community noise testing of the 737 MAX and explains how engine noise is shielded by a newly designed nacelle and noise treatments designed specifically for the noise signature of the engines.

With noise certification on the horizon, the 737 MAX is one step closer to entering service in 2017, Boeing said.

The video is at
http://www.boeing.com/features/2016/09/737max-noise-09-16.page

O'Hare, from p. 123

crease in noise complaints caused by the O'Hare Modernization Program and assertions that new or increased noise impact had lowered property values.

"Our Valuation Department has accumulated a significant body of information" on the relationship between home value and aircraft noise, Berrios told homeowners in a recent letter informing them of the new Assessed Valuation of their home that reflects aircraft noise impact.

"This Office, through our own independent research, has compiled the data necessary to identify those areas in which a market transactions have established that residential property values have been adversely impacted by [aircraft noise]," Berrios explained.

He said his Office has considered, and will continue to consider, on an ongoing basis, the following:

• Some 25 academic, appraisal, professional, and scientific studies from 1990 forward considering the impact of aircraft noise on residential communities throughout North America;

• The most recent O'Hare Environmental Impact Study;

• Sales prices within five separately identified zones;

• Documented noise complaints;

• The LDN noise contours overlaid with assessment, township, and neighborhood maps;

• Recent runway re-configurations; and

• Relevant market behavior and activity.

"As a result," the letter states, "the Assessor's Office has made refinements to our Computer-Assisted Mass Appraisal (CAMA) regression equation for non-condominium residential property to reflect those changes supported by objective data.

"We have delineated zones, neighborhoods, and other geographic areas impacted by aircraft noise and have ranked those areas by severity. This research has been undertaken by our staff for more than two years with additional technical assistance."

Berrios told homeowners that "an appropriate adjustment factor" for aircraft noise impact has been applied to their 2016 assessment and will remain in effect until the next regularly scheduled triennial reassessment. Any change in the actual amount of real estate taxes due will be reflected in the 2016 Second Installment Property Tax Bill, which will be sent out in 2017, he told homeowners.

The community group Fair Allocation in Runways (FAiR) has been offering primers to homeowners impacted by O'Hare noise on how to appeal property tax assessments.

FAiR member Dan Dwyer told the *Sun Times* that Cook County's property value reassessments "confirm what we have been saying all along – that aviation noise has had an impact on property values."

In Brief…

Midway Gets Grant for Sound Insulation

Sen. Dick Durbin (D-IL) and Chicago Mayor Rahm Emanuel announced Sept. 13 that the FAA has awarded O'Hare International Airport and Midway International airport improvement grants totaling $30.5 million, including a $17.5 million grant for residential sound insulation around Midway.

The Midway grant is reimbursement funding for sound insulation on residences within 65-69 Day/Night Noise Level (DNL). This noise mitigation project is being completed in accordance with the Midway Part 150 Noise Compatibility Plan and has benefited a total of 1,635 people.

This is good news for both residents and travelers flying in and out of Chicago's airports," said Sen. Durbin. "These investments by the FAA will allow O'Hare and Midway to continue serving passengers safely and effectively, and also ensure that they remain good neighbors to the communities that surround them."

Added Mayor Emanuel, "This federal funding will help us in our ongoing efforts to ensure that O'Hare and Midway remain economic engines for the City of Chicago."

Burlington Offering Final Round of Buyouts

On Sept. 12, the Burlington, VT, City Council approved a $14 million FAA grant to fund home buyouts around Burlington International Airport, at which F-16 military fighter jets are already based and louder F-35 fighters will soon arrive.

The FAA grant will give 39 homeowners near the airport a final opportunity to take buyouts from the airport. Officials of the airport and of South Burlington have decided to move away from home buyouts as a noise mitigation measure because the buyouts are depleting needed low-income housing stock.

Rather than buyouts, the airport now wants to begin a noise mitigation program that focuses on residential sound insulation. FAA has awarded the City of Burlington a $455,000 grant to fund a sound insulation program.

Burlington International recently updated its noise exposure maps for the first time since 2006 and they will be used to determine eligibility for the residential sound insulation program. However, some residents are reportedly upset that the updated map does not account for the arrival of the F-35 fighter jets, which are expected to be louder than the current fleet of F-16s based at the airport.

The Vermont National Guard expects the F-35s to arrive in the fall of 2019.

"I've made a personal commitment to the community that a year after those jets arrive, there will be a new study," Burlington International Aviation Director Gene Richard said, according to VTDigger.org.

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Webinar on Renewable Energy, Sustainability

TRB will conduct a webinar on Oct. 20 from 2:00PM to 3:30PM ET that features research conducted by TRB's Airport Cooperative Research Program (ACRP).

The research covers the financial and public policy benefits of using renewable energy at airports and new case studies on sustainability practices at airports to enhance the Sustainable Aviation Guidance Alliance (SAGA) website. The research also focuses on how to maximize these benefits using business case evaluations.

For further information, go to
http://www.trb.org/main/blurbs/174865.aspx

ICBEN 2017 Congress

The International Commission on Biological Effects of Noise (ICBEN) is soliciting abstracts for the 12th ICBEN Congress on Noise as a Public Health Problem, which will be held June 18-22, 2017, in Zurich.

Registration and abstract submission is open on the ICBEN website at www.icben2017.org. Deadline for submitting abstracts is Jan. 15, 2017.

Held once every three years, the congress will be devoted to the newest research in the following 10 areas:

- Noise-induced hearing loss;
- Noise and communication;
- Non-auditory health effects of noise;
- Effects of noise on cognition, performance, behavior;
- Effect of noise on sleep;
- Community response to noise and noise annoyance;
- Noise policy and economics;
- Noise exposure assessment in health effect studies;
- Special topics related to noise effects; and
- Low frequency noise and vibration.

Leading noise experts from all over the globe have agreed to organize and chair plenary and parallel sessions in their research fields. ICBEN 2017 will also host the Low Frequency Noise and Vibration Conference.

NextGen Advisory Committee Meeting

The NextGen Advisory Committee will hold its 19th meeting on Oct. 5 in Orlando, FL. The meeting will be held at JetBlue University, 8265 Hangar Blvd, from 8:30 a.m. to 3 p.m.

For further information, contact NAC Secretariat Andy Cebula at acebula@rtca.org; tel: 202-330-0652.

The meeting agenda is at
http://www.rtca.org/Files/Committee%20Agendas/Agenda%20NAC%20Mtg%20Oct%202016_FNL.pdf

AIRPORT NOISE REPORT

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A weekly update on litigation, regulations, and technological developments

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Germany

DLR FLIGHT TESTS SYSTEM TO ASSIST PILOTS IN NOISE-OPTIMIZED APPROACHES

The first flight tests of a flight deck display system that assists pilots in making quieter and more fuel-efficient landing approaches were conducted by the German Aerospace Center (DLR) on Sept. 26-28 at Frankfurt Airport.

The DLR's Low Noise Augmentation System (LNAS) was developed to reduce aircraft noise over residential areas in the Frankfurt region – and around other German airports – while also saving fuel.

This dual improvement in reduction noise and fuel use is the goal of a joint research project being conducted by the DLR and funded at a level of 560,000 euros ($630,393) by the information center of the Frankfurt Airport and Regional Forum.

The Forum brings together airport, aviation industry, and elected officials in an effort to address aircraft noise concerns. An expert working group of the Forum is providing guidance for the project.

The flight tests of the LNAS system were conducting using the DLR's A320 Advanced Technology Research Aircraft (ATRA).

(Continued on p. 128)

AIP Noise Grants

FAA AWARDS NOISE GRANTS TO 16 AIRPORTS THUS FAR IN FY 2016, UPDATED DATA SHOWS

On Sept. 28 – with only two days left in the fiscal year – the FAA updated its Airport Improvement Program (AIP) grant data.

It shows that 16 airports received grants for noise mitigation projects thus far in FY 2016. If no additional noise grants were awarded on Sept 29 or 30, then this is the final list for FY 2016.

Later in the fall, ANR will provide its annual report and analysis of both AIP noise grants and PFC revenue approvals awarded to support airport noise mitigation projects in fiscal 2016.

Following is the list of AIP noise grants awarded as of Sept. 28:

• San Francisco Int'l Airport received a grant of $1.8 million for noise mitigation measures (sound insulation) for residences within the 65-69 DNL contour;

• Tweed-New Haven (CT) Airport received a $926,973 grant for noise mitigation measures for residences within the 65-69 DNL contour;

(Continued on p. 129)

In This Issue…

Germany ... The first flight tests of a new cockpit system that shows pilots when to take certain actions, such as extending flaps and lowering landing gear, to create the optimum low-noise descent into airports were conducted this week at Frankfurt Airport under a joint project of the German Aerospace Center (DLR) and the information center of the Frankfurt Airport and Regional Forum.

The Low Noise Augmentation System was developed with the dual goal of reducing aircraft noise and fuel use over residential areas of the Frankfurt region - p. 127

AIP Noise Grants ... Some 16 airports received AIP noise mitigation grants thus far in fiscal year 2016, according to updated grant data issued by the FAA just two days shy of the end of the fiscal year - p. 127

News Briefs ... TRB will hold a Webinar on Dec. 14 on the issue of Effective Stakeholder Relationships at Airports - p. 130

Germany, from p. 127

Asked how the DLR's Low Noise Augmentation System relates to the Continuous Descent Approach (CDA) procedure – also known as an Optimized Profile Descent (OPD) – used in the U.S. and elsewhere to reduce aircraft arrival noise, Falk Dambowsky of the DLR's Communication's Office, told ANR:

"At Frankfurt Airport, the Low-Drag-Low-Power (LDLP) procedure is the primary vertical approach profile which is flown during the day for a better handling in respect to [aircraft] separation. Hence the LDLP vertical profile is used in the LNAS display. There is also the possibility to implement other approach procedures into the LNAS display but mostly the CDA procedure is only used at off-peak times due to reasons of capacity."

So, in essence, the LNAS display guides pilots in fine-tuning their quiet descents.

Quieter Deployment of Landing Gear, Flaps

During landing – generally the most labor-intensive phase of a flight – it is often difficult for pilots to select the optimum times at which to extend the flaps and lower the landing gear so that the greatest possible part of the landing approach can be conducted in quiet, fuel-efficient circumstances, with the engines at idle, the DLR explained in announcing the flight tests of its LNAS system.

"As a result of a doctoral research project at the DLR Institute of Flight Systems in Braunschweig, an assistance system has been developed that shows the pilots a flight deck display of the points at which they need to carry out certain actions to create the optimum low-noise descent in line with the approach controller's instructions," the DLR said.

"To date, the system has been successfully tested in a simulator and in initial research flights with no surrounding air traffic. Now it is time for the real test, during the peak period at Frankfurt Airport."

Weather conditions, poor visibility, the weight of the aircraft, and instructions from air traffic control each have a different effect on every landing. DLR said its researchers want to find out how these variable influences affect the new assistance system and how professional pilots respond to the system.

For this reason, pilots from several airlines have taken turns in sitting alongside a DLR test pilot on ATRA's flight deck and make approach flights to Frankfurt – sometimes with the LNAS assistance system, sometimes without.

The test flights are being coordinated with the German air traffic control service (Deutsche Flugsicherung; DFS) and Frankfurt Airport. Before the actual flight tests, extensive trials were carried out in the DLR Air VEhicle Simulator (AVES).

"We are delighted to now be able to send the newly-developed assistance system for a real-life check at the busiest airport in Germany," says Stefan Levedag, Head of the DLR Institute of Flight Systems.

"An important step in the development process is gathering the impressions and experiences of experienced airline pilots with the new system in the demanding operational environment at Frankfurt Airport, with its high volume of traffic."

Another advantage is the numerous noise measurement stations that have been set up around the airport. These can be used to locally quantify the noise reduction effect of the optimized approaches.

Improving the noise situation for the Rhine-Main region through active noise abatement is a top priority for the Airport and Regional Forum.

"In collaboration with DLR, we have succeeded in continually advancing new, innovative processes. The LNAS project has a very special appeal because it enables noise to be reduced and kerosene to be saved at the same time," said Günter Lanz, Managing Director of Forum's information center (Umwelt- und Nachbarschaftshauses (UNH).

"In addition to processing data and carrying out monitoring, the main purpose of our work is to commission scientific studies and research projects and thus fill factual and expertise gaps. Hence, we want to provide new impetus for the debate concerning aircraft noise and give innovative ideas a chance."

The results of the LNAS project will be presented at the International Conference on Active Noise Abatement (ICANA 2016) in November and subsequently published.

ICANA 2016 will take place in the conference center of the Hilton Hotel in the SQUAIRE at the Frankfurt Airport.

For further information, e-mail icana@umwelthaus.org or google ICANA 2016.

Test Flight Program

The flight test program for the LNAS system includes a total of five test flights during five hours per day, including take-off, approach and go-around using the northwest runway at Frankfurt Airport. During each test flight, the flight captain – a DLR pilot – will be accompanied by four pilots who will each carry out two approaches in normal operational conditions – once with and once without the pilot assistance system. The sequence of pilots and use of the system has been arranged so that any learning effect is excluded.

In the test flights, the altitude and speed profiles of conventional approach flights will be investigated in terms of their potential for reducing noise, fuel consumption, and flight time within the constraints of real flight operations.

In addition to improvements in terms of noise and precision, error-free functioning of the prototype in actual flight operation is expected from the start. At the same time, a high level of acceptance by the pilots is sought.

LNAS System Details

The DLR provided the following description of the LNAS pilot assistance system:

The LNAS assistance system consists of the preliminary path planning, runtime correction and energy-based display

components. From the data available for the A320 ATRA, a simplified simulation model is generated for the preliminary path planning of an ideal vertical approach profile. This ideal vertical approach profile includes optimum points for deploying the flaps and landing gear, and speed set points.

If the pilot carries out maneuvers in line with the guidelines, the approach from cruising altitude to the stabilization height can be carried out with minimal thrust (engines at flight idle).

At the time of this planning, the aircraft will ideally be just about to start the approach. At this point, only the wind information at the current position of the aircraft and on the ground is available. This means that all intermediate values can initially only be interpolated from these two values, as the precise wind profile is still not known. Via an appropriate Human Machine Interface, the pilots can see the altitude profile and, especially, the precalculated speed changes in the form of energy levels, as well as the individual action points shown as symbols.

During the approach, the actual wind values are recorded at each new altitude, and these are used to improve the wind profile for the entire approach.

In the event of possible lapses on the part of the pilots (carrying out an action too early or too late) or instructions from the approach controllers, the ideal sequence of actions needs to be constantly adapted.

The runtime correction component of the system carries out these adjustments by making corresponding shifts in the individual action timings. In doing so, the optimization goals for the adjustments are always adhere to the stabilization conditions at the 1000-foot gate, the lowest possible engine speed and the complete avoidance of spoiler deployment.

Potential Limits on Airport's Ops

In related news, *Reuters* reported Sept. 28 that Tarek Al-Wazir, Transport Minister for the German State of Hesse, in which Frankfurt Airport is located, said that the State wants to ensure that noise levels do not increase and could restrict the number of operations at the airport if noise limits are exceeded two years in a row.

Such a restriction at Europe's fourth largest airport concerns Frankfurt Airport proprietor Fraport and Lufthansa.

Fraport is adding a third terminal at the airport, which is due to open in 2023 and will allow the airport to increase takeoffs and landings from 468,000 in 2015 to 701,000.

Al-Wazir told *Reuters* that "he would first speak with the aviation industry to try to reach a deal. Should these discussions not lead to agreement, we want to change the operating licence correspondingly," he told the paper.

But Fraport CEO Stefan Schulte responded that "an upper noise limit must not be allowed to thwart our expansion plans. Lufthansa agreed, stressing that the conditions defined in the planning approval for the new terminal must not be changed retrospectively. Aviation advocates questioned whether changes to the airport's operating license would be legal.

Noise Grants, from p. 127

• Ft. Lauderdale-Hollywood Int'l Airport received a $1,857,101 grant to conduct a Noise Compatibility Plan study;

• Key West Int'l Airport received a $1,284,751 grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Atlanta Hartsfield-Jackson Int'l Airport received a $29,730,979 grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Chicago Midway Int'l Airport received a $17.5 million grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Chicago O'Hare Int'l Airport received a $20 million grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Alexandria (LA) Int'l Airport received a $10 million grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Lafayette (LA) Regional Airport received a $2,235,985 grant for noise mitigation measures for residences within the 65-69 DNL contour;

• Westover Air Reserve Base in Chicopee, MA, received a $2.5 million grant to acquire land for noise compatibility within the 65-69 DNL contour;

• Westfield-Barnes Regional Airport in Westfield, MA, received a $2,499,999 grant to acquire land for noise compatibility within the 65-69 DNL contour;

• Gulfport-Biloxi Int'l Airport in Gulfport, MS, received a $3,420,000 grant for noise mitigation measures for residences within the 65-69 DNL contour;

• T.F. Green Airport in Warwick, RI, received a $887,032 grant to acquire land for noise compatibility in the 70-74 DNL contour;

• T.F. Green Airport in Warwick, RI, received a $8,435,954 grant for noise mitigation measures for residences within the 65-69 DNL contour;

• T.F. Green Airport in Warwick, RI, received a $6,065,247 grant to acquire land for noise compatibility in the 70-74 DNL contour;

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• Laredo Int'l Airport received a grant of $5 million for noise mitigation measures for residences within the 65-69 DNL contour;

• San Antonio Int'l Airport received a grant of $11,040,000 for noise mitigation measures for residences within the 65-69 DNL contour;

• Burlington (VT) Int'l Airport received a grant of $2,090,226 to acquire land for noise compatibility within the 70-74 DNL contour;

• Burlington (VT) Int'l Airport received a grant of $13,995,000 to acquire land for noise compatibility within the 70-74 DNL contour;

• Burlington (VT) Int'l Airport received a grant of $405,000 to conduct a Noise Compatibility Plan study.

In Brief…

Webinar on Understanding Community Expectations

The Transportation Research Board (TRB) will hold a Webinar on Effective Stakeholder Relationships at Airports on Dec. 14 from 2 p.m. to 3:30 p.m. ET.

The Webinar will examine how airports can form effective stakeholder relationships to enhance their functional capabilities, maintain or enhance available services, provide a platform for the airport to be an integral part of the broader community it serves, and/or yield positive economic growth and returns.

Presenting the Webinar will be Bryan Elliott from Ricondo & Associates, Inc., Rusty Chapman of Delta Airport Consultants, Inc., and Stephanie Ward and Lynn Wilson from Mead & Hunt, Inc.

They will focus on the findings of two Airport Cooperative Research Program (ACRP) projects:

• ACRP Synthesis 65: Practices to Develop Effective Stakeholder Relationships at Smaller Airports; and

• ACRP Project 03-31: Aligning Community Expectations with Airport Roles.

At the end of the Webinar, participants will be able to (1) identify how airports proactively manage stakeholder relations, (2) identify ways to formulate strategic partnerships and forge effective solutions through case studies and benchmarking data, (3) understand how to build community support for the airport, and (4) understand how to use an electronic tool that was created in place of a traditional guidebook.

For further information, go to:
http://www.trb.org/ElectronicSessions/Blurbs/175033.aspx

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Environmental Review

COMMUNITY INVOLVEMENT MANUAL UPDATE ORDERED BY CONGRESS IS ISSUED BY FAA

As ordered by Congress at the end of last year, the FAA has issued an update of its Community Involvement Manual, which provides FAA personnel with the knowledge and resources needed to facilitate "meaningful community involvement" in the environmental review of agency actions that raise concerns in communities, such as the implementation of NextGen airspace changes and procedures.

FAA announced on Sept. 29, via e-mail, that the updated manual had been issued. The agency appears to have made no public announcement.

The Consolidated Appropriations Act of 2016 – passed by Congress in December 2015 – included language requiring the Administrator of the FAA to improve the agency's methods for involving communities and airports in its implementation of NextGen Performance-based Navigation (PBN) procedures (28 ANR 1).

That language was added by members of Congress representing communities reeling from the noise impact of consolidated NextGen flight paths, particularly in the Phoenix area where flight path changes had sparked prolonged community out-

(Continued on p. 132)

Santa Monica Airport

FAA LAUNCHES INVESTIGATION OF ACTIONS CAUSING 'DE FACTO' CLOSURE OF AIRPORT

On Sept. 15, the FAA notified the City of Santa Monica, CA, that it had initiated an investigation into a series of actions by the City that appear to be leading to a *de facto* closure of Santa Monica Airport in violation of applicable law.

These actions include:

• An Aug. 23 resolution by the City Council calling for the airport closure "as soon as it is legally permitted with a goal of on or before July 1, 2018";

• The adoption of a new Airport Leasing Policy that has resulted in the City entering into leases with several non-aeronautical users while denying leases to aeronautical users; and

• The City Manager's intent to implement the airport closure resolution by, among other things, phasing out the sale of leaded fuel that is necessary for the operation of most aircraft and entering into contract negotiations to replace it with unleaded fuel.

On Sept. 15, Santa Monica served 30-day notices of eviction to Atlantic Aviation, the field's largest fixed-base operator (FBO) and its sole provider of Jet-A fuel, as well as American Flyers, a flight school and fuel provider that has operated

(Continued on p. 133)

In This Issue…

Environmental Review ... FAA issues an update to its Community Involvement Manual that provides agency personnel with the information and resources needed for "meaningful community involvement" in the environmental review of NextGen, PBN procedures - p. 131

Santa Monica ... FAA launches an investigation of actions being taken by the Santa Monica City Council which agency fears are leading to a *de facto* closure of the city's airport - p. 131

Research ... NASA and France's national aviation research office agree to collaborate on research focusing on mitigating civil air transportation noise - p. 132

... NASA seeks designs for advanced commercial aircraft - p. 133

Conferences ... 'Seeking Solutions for NextGen Impacts' is theme of 2017 UC Davis Aviation Noise and Air Quality Symposium - p. 134

Env. Review, from p. 131

rage and charges that the community had not been consulted before airspace changes were implemented.

The Appropriations Act required the FAA Administrator to review and update the agency's Community Involvement Manual as it relates to new air traffic procedures, public outreach, and community involvement and to "complete and implement a plan which enhances community involvement techniques and proactively addresses concerns associated with performance based navigation projects."

FAA was required to transmit the community involvement manual to the House and Senate Committees on Appropriations, the House Committee on Transportation and Infrastructure, and the Senate Committee on Commerce, Science and Transportation no later than 180 days after enactment of the Act (around mid-June).

The agency sent the updated manual to Congress in late September.

Reaffirms Commitment to Involve Public

In a Foreword to its updated Community Involvement Manual, FAA Administrator Michael Huerta said the update "reaffirms our commitment to inform and involve the public and to give meaningful consideration to community concerns and views as the FAA makes aviation decisions that affect them."

He thanked those who contributed to the update of the Community Involvement Manual.

"We received significant advice and input through more than 40 interviews with local community groups, airports, aviation associations, and consultants. We also had the benefit of recommendations and specific suggestions from the NextGen Advisory Committee (NAC). The contribution of these organizations and individuals was critical in ensuring that a balance of perspectives and experiences were considered and are reflected in this manual."

The updated manual provides FAA personnel – who are planning, conducting, or approving aviation actions with potential environmental issues that raise concerns within a community – "with the knowledge and resources needed to facilitate meaningful community involvement for such actions, including effectively engaging communities, encouraging exchange of information, and having community viewpoints heard."

FAA said the updated manual "reaffirms the FAA's commitment, established in our Community Involvement Policy, to give the public an opportunity to be informed, become involved, and have their concerns and views considered as the FAA makes aviation decisions that might affect them. In some cases, this may mean going beyond legally mandated public participation requirements."

But the FAA added, "Community involvement does not guarantee outcomes that satisfy everyone. However, decisions that take community input into consideration are more likely to reflect the collective public interest, receive broader community acceptance, and experience fewer implementation and post-implementation problems."

'Community' Defined Broadly

The manual broadly defines the term "community" to include local residents, the general public, and other stakeholders. Examples of individuals and groups included in the definition of "community" for the purposes of the manual are:

- Airport area residents and neighborhood groups;
- Airport sponsors and airport users (e.g., traveling public, aircraft operators);
- Public interest groups (e.g., Non- Governmental Organizations [NGO], community action groups, roundtables);
- Government organizations and elected officials; and
- Business interests (e.g., Chambers of Commerce).

The manual does not impose any requirements on FAA personnel. Rather, it "offers practices, tools, resources, and techniques as options that can guide practitioners in tailoring community involvement to their specific efforts. Tools and techniques should be selectively used, since a single approach does not fit all circumstances. FAA Lines of Business and Staff Offices (LOBs/SOs) should also use any community involvement guidance materials specific to their programs."

FAA said that community involvement "should be closely coordinated with efforts to satisfy public participation requirements in applicable laws, and this manual should be used in conjunction with environmental regulations and relevant FAA orders."

To downloaded the manual, copy/paste:
https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/guidance/media/FAA_CIM.pdf

Research

NASA, FRANCE TO COLLABORATE ON AIRCRAFT NOISE RESEARCH

NASA and France's Office National d'Etudes et de Recherches Aerospatiales (ONERA) signed an agreement on Sept. 30 to collaborate on research that focuses on mitigating the effects of civil air transportation noise.

The agreement was signed by Jaiwon Shin, associate administrator of NASA's Aeronautics Research Mission Directorate, and Bruno Sainjon, president and chief executive officer of the ONERA, during a bilateral meeting held in South Korea in conjunction with the seventh annual International Forum for Aviation Research Summit.

"Noise is a major issue affecting not only the aviation community, but citizens around the world that live near active airports," said Shin. "This agreement with ONERA establishes a partnership in the area of mitigating of aircraft noise research to create a synergistic effect that just can't be achieved when working alone."

Under the agreement, NASA and ONERA will work to-

gether to advance technology in the areas of aircraft noise prediction and understanding human response to aircraft noise through validation of models using advanced measurement methods and comprehensive data sets.

The agreement creates a forum through which both agencies can share technical knowledge and data in order to independently improve their own capabilities with the overall objective of mitigating the effects of civil air transportation noise.

This research complements the work currently being performed by NASA's Aeronautics Research Mission Directorate.

Santa Monica, from p. 131

at SMO for decades. Both FBOs immediately filed emergency requests for the FAA to halt the eviction process.

The FAA's Part 16 Notice of Investigation strongly urged the City to vacate the eviction notices and gave the City only 10 days to respond to subpoenas requiring the City to provide detailed information on its plans to replace the functions provided by the two private FBOs and its plan to provide fuel that can be used by all aircraft.

FAA also demanded in-person testimony by the City on Oct. 12 to explain how the City plans to live up to its obligations after eviction of all providers of aeronautical services.

NBAA, AOPA Welcome FAA Action

National Business Aviation Association (NBAA) and Airport Operators and Pilots Association (AOPA) welcomed FAA's action, which follows years of debate over the airport's future and comes in the midst of several ongoing legal disputes over the city's federally mandated requirements to operate the airport.

Stacy Howard, NBAA's Western regional representative, noted the FAA's response reflects concerns from industry stakeholders about the city's actions. "While federal regulations may allow the city to operate its own FBO, Santa Monica is certainly not prepared to provide an equivalent level of service by Oct. 15," she added. "It is also unlikely the city would ever do so in a manner beneficial to the airport and its aviation users."

Alex Gertsen, NBAA's director of airports and ground infrastructure stated, "We urge the city to withdraw these eviction notices, as requested by the FAA, and to acknowledge its commitments to this valued airport."

The FAA's actions follow other challenges, presented by NBAA and other stakeholders, to the city's repeated attempts to curtail operations at SMO to reduce noise and air pollution. FAA asserts that federal grant assurances require the City to keep the airport open through 2023, and in perpetuity through a 1948 Instrument of Transfer.

"SMO is an important local and national resource, providing numerous jobs and contributing millions of dollars to Santa Monica's economy," Gertsen concluded. "These ill-conceived efforts to close and restrict the airport not only have wasted millions of taxpayer dollars, but also have resulted in lost opportunities to work with the aviation community to ensure that the airport continues to be a good neighbor and a vibrant, irreplaceable asset."

In a Sept. 6 reply to FAA's concerns about the City Council's recent actions, Santa Monica Mayor Tony Vasquez called FAA's threats of legal action "alarmist and heavy-handed," reassuring the agency that the City would only pursue "legally permitted" actions.

"As proprietor and operator, we have legal responsibility for the Airport and its impacts; and, we have legal rights, as proprietor, to protect the health, safety and welfare of our residents and the environment. The federal regulations administered by your agency do not trump those rights. Nor do any contractual agreements that may remain in effect between the City and the FAA nullify those rights. That is because, among other things, the City 'actions' that you question are expressions of policies that are reasonable, non-discriminatory and well within our proprietary and other legal rights," Mayor Vazquez asserted.

NASA

DESIGNS SOUGHT FOR ADVANCED COMMERCIAL GREEN AIRCRAFT

On Oct. 4, NASA issued a grant notice that seeks to stimulate the formulation of a conceptual design of an advanced single-aisle-class commercial transport with expected entry into service in 2035 or earlier.

The solicitation specifically targets designs where a significant amount of electrical power is used for aircraft propulsion. Electrified aircraft propulsion using full or partial turboelectric or full or partial hybrid-electric configurations are sought.

The design concept must meet the operational requirements of a conventional Boeing 737/Airbus A320, 154 passenger class, single-aisle twin-turbofan configuration and perform better on the aircraft-level metrics of mission energy use, life cycle carbon, emissions, and noise.

NASA encourages proposers for the grant to put together their best teams in complementary partnerships with industries, small businesses, and universities.

No granted amount is listed in NASA's notice.

Notifications of interest are due Oct. 14 and proposals are due Nov. 28.

For further information on grant notice for "Advanced Air Transport Technology (AATT1) Project, go to

http://www.grants.gov/search-grants.html

Search for Opporunity Number NNH16ZEA001N-AATT1

For technical assistance, contact Grants.gov Contact Center; tel: 1-800-518-4726.

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Conferences

2017 UC DAVIS SYMPOSIUM WILL FOCUS ON SOLVING NEXT-GEN ENV. IMPACTS

"Seeking Solutions for NextGen Impacts" is the theme of the 2017 University of California at Davis Aviation Noise and Air Quality Symposium, which will be held Feb. 26 - March 1, 2017, in Palm Springs, CA.

The conference will focus on the ground-breaking efforts being undertaken by elected officials, airports, consultants, communities, and the FAA to develop ways to work cooperatively to mitigate the environmental impacts of NextGen flight path changes. The impact of the upcoming presidential election on FAA noise policy, NextGen implementation, and pending legislation also will be addressed.

The keynote speaker at the conference will be Gregory Blatt from Solar Impulse, which recently flew around the world powered only by the sun.

Several new events are being offered at the 2017 Symposium: a Tutorial on Air Traffic Control, the Inaugural Networking Meeting of airport noise officers and environmental program managers, and a new Community Workshop on "Engaging with Your Airport."

The popular Noise 101 Tutorial will again be offered to those new to the subject of aircraft noise.

Other program highlights include:

• NextGen toolkits, interfaces and what lies ahead;

• Real-world "lessons learned" stories from airports implementing PBN, NextGen, and Metroplex operations;

• NASA's emerging supersonic and quiet technologies;

• Recent findings on sleep, cardiac, and health impacts associated with aviation noise;

• How a legacy airline is reborn with a comprehensive environmental agenda;

• A Member of the UK Parliament describes an innovative proposal to address aircraft noise;

• How Asia and Europe handle airspace integration, modernization;

• A special session devoted to General Aviation issues; and

• An overview of the latest improvements and upcoming plans for the FAA's Aviation Environmental Design Tool (AEDT).

The 2017 Symposium will be held at a new location in Palm Springs: the Hard Rock Hotel.

Registration for the Symposium opened on Oct. 3 and closes on Feb. 17, 2017. Early Bird registration ends on Dec. 31, 2016.

The conference agenda and registration link is at
https://sites.google.com/site/ucdaviationsymp2017/home

AIRPORT NOISE REPORT

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Airport Noise Report

A weekly update on litigation, regulations, and technological developments

Volume 28, Number 34 October 14, 2016

Boston Logan Int'l

FAA, MASSPORT SIGN MOU ON REDUCING NOISE FROM CONCENTRATED FLIGHT PATHS

Under strong political pressure, the FAA and the Massachusetts Port Authority (Massport) signed a Memorandum of Understanding (MOU) on Oct. 7 framing a process for analyzing opportunities to revise NextGen arrival and departure procedures in effect at Boston Logan International Airport that have concentrated aircraft noise impact over several communities, causing a sharp increase in aircraft noise complaints.

FAA said the MOU is the result of months of collaboration between the agency and Massport and marks the first such collaboration in the nation between the FAA and an airport proprietor.

The study will be led by Professor R. John Hansman Jr., director of the Massachusetts Institute of Technology's International Center for Airport Transport, to ensure that the results are independent. The Massport Community Advisory Committee (CAC) also will participate in the study. Local press reports said the study is expected to take one year and cost $500,000 in Massport staff time. ANR

(Continued on p. 136)

FAA

DRAFT AC ON COMMUNITY INVOLVEMENT IN AIRPORT PLANNING OUT FOR COMMENT

On Oct. 7, the FAA issued for comment Draft Advisory Circular 150/5050-4A, *Community Involvement in Airport Planning*.

The public and aviation industry associations have until Nov. 8 to comment on the Draft AC, which provides guidance for community involvement in airport planning.

"This update describes expectations for community involvement on federal actions that have occurred since the previous version of the AC was drafted in 1975," Michael S. Hines, manager of FAA's Airport Planning and Environmental Division, explained in letter to aviation industry representatives announcing issuance of the Draft AC.

"This AC is intended to advise airport sponsors, planners, and the public on the need for early community involvement in airport planning, and the methods by which this can be achieved. It will be used by FAA personnel that are advising airport sponsors and planners on matters pertaining to community involvement."

The Draft Advisory Circular incorporate the following principle changes:

• Updates the AC Citizen Participation in Airport Planning, from 1975.

(Continued on p. 138)

In This Issue…

Boston Logan Int'l ... FAA and Massport sign a landmark MOU marking the first formal collaboration between the agency and an airport proprietor to study ways to reduce the noise impact of concentrated PBN flight tracks. Lessons learned in this endeavor, which will be led by MIT, may be applied in other metropolitan areas, says FAA Administrator Michael Huerta - p. 135

Advisory Circular ... FAA issues for comment by the public and aviation industry trade groups Draft Advisory Circular 150/5050-4A, Community Involvement in Airport Planning - p. 135

NASA ... NASA awards six-month contracts to Aurora Flight Sciences, Dzyne Technologies, Lockheed Martin, and Boeing to define the specific system requirements for one or more piloted 'green aviation' subsonic X-Planes capable of sustained flight for two-to-three hours initially and eventually flying by 2021 - p. 137

Massport, from p. 135

is in the process of confirming that.

Under the MOU, the FAA and Massport agreed to their specific roles, responsibilities, and contributions in a test program to reduce overflight noise related to the FAA's implementation of Performance Based (PBN) navigation procedures at Boston Logan, including Area Navigation (RNAV). Specifically, the MOU will:

• Identify specific proposed ideas to reduce overflight noise from RNAV concentration;

• Assess the feasibility of specific noise abatement operational or procedural design ideas;

• Design and model feasible ideas to assess the level of benefits and potential impacts for testing and/or implementation; and

• Incorporate community outreach and feedback in the process.

"If these ideas are successful, we may be able to use the lessons learned to address challenges in neighborhoods around other large metropolitan airports," said FAA Administrator Michael Huerta. "We are working on many initiatives to reduce aviation's effect on the environment, and this is an important part of that effort."

Massport has already proposed several ideas for a test program with the FAA to better understand the implications of the flight concentrations and to study possible strategies to address the neighborhood concerns.

'Step in the Right Direction'

"I'm encouraged that Massport and the FAA are committed to taking steps to abate airplane noise around Logan Airport," said Sen. Edward J. Markey (D-MA). "I look forward to working with all parties involved to ensure that aircraft noise doesn't keep our families up at night."

"While this announcement is a step in the right direction toward reducing the significant airplane noise affecting communities in Massachusetts, more needs to be done," Sen. Elizabeth Warren (D-MA) said.

"The dramatic increase in airplane noise in certain cities and towns raises serious concerns about its impact on our environment and on families' health, and I'm going to keep working with the congressional delegation and with our federal and state partners to address this problem."

"Families in Milton, South Boston, Dorchester, Hull, and other towns are dealing with a disproportionate burden of airplane noise and communities across the 8th Congressional District have been unequivocal in their calls for changes to the flight paths," said Congressman Stephen F. Lynch (D-MA).

"Since 2014, we have worked closely with affected residents, our local elected officials, Massport, and the FAA to find solutions to address the concerns about noise, health, and environmental impacts. As this process moves forward, I urge both Massport and the FAA to place a strong emphasis on community engagement in these pilot studies and find strategies that reduce noise and improve the quality of life for our local communities."

"While it has taken far too long to get to this point, I do appreciate the FAA and Massport's willingness to try different ideas," said Rep. Mike Capuano (D-MA). "Not everything will work, but there will be lessons learned from failures and successes. Determining what works best will ultimately lead to improvement for those living in the area."

"Airplane noise pollution can be a serious quality of life issue," added Rep. Katherine Clark (D-MA). "Families I've met are concerned and frustrated with the persistent noise pollution that interferes with essential activities like sleeping, studying, and doing business. I'm encouraged by this partnership, and I am particularly encouraged that RNAV departures from runway 33L will be studied. I urge the FAA and Massport to continue listening to, and learning from, our residents whose lives are impacted by noise pollution."

Preliminary Areas of Study

The collaboration between the FAA, Massport, the Massport Community Advisory Committee, and scientists at MIT has identified several preliminary distinct areas of study to explore whether changes in the RNAV system will result in community noise benefits without compromising safety.

"Massport is committed to being a good neighbor and being able to connect Massachusetts to the global economy," said Massport CEO Thomas P. Glynn. "I am proud of the Massport team that worked with the FAA, the Community Advisory Committee, and folks at MIT to put these ideas on the table so they can be tested."

"On behalf of the Massport CAC, I welcome this initiative from Massport and the FAA," said David Carlon, chair of the Community Advisory Committee. He believes that noise from Logan overflights and the RNAV concentration should be addressed regionally.

The preliminary areas of study could include:

• Using higher altitudes for arrivals and departures where applicable, which could have benefits throughout the metro region.

• Looking at the feasibility of reducing the persistent level of noise from RNAV departures through a case study analysis of a major departure procedure from Runway 33L, which would benefit communities west of Logan Airport, including Arlington, Belmont, Cambridge and Watertown. If successful, this idea could reduce the persistent noise for some residents.

• More over-water operations: Currently departure and arrival procedures require a separation of three miles for head-to-head operations. This suggested study would maintain that safety requirement but examine how to incorporate a greater number of over-water operations. The proposed area of study will look at maintaining the current three-mile separation between the arrival stream on Runway 27 and the departure stream from Runways 22R/22L, which makes a sharp left turn as aircraft depart and fly over Boston Harbor. This procedure could produce benefits for South Boston and Hull.

• Accelerating adoption of RNAV special procedures. Airlines can and do propose RNAV special procedures. Currently, other air carriers cannot always easily adopt the approved RNAV special procedures that are made available for "public" use. At Boston Logan for example, JetBlue proposed a late night RNAV special procedure for Runway 33L arrivals that would provide noise benefits by having aircraft fly an initial visual approach to avoid going over land wherever possible. Massport will work with FAA air traffic controllers and the airlines to increase use. This effort is already underway and could benefit the South Shore and Hull.

• Analyzing alternative RNAV designs that would bring aircraft over more compatible land use. At Boston Logan, the test case will examine Runway 4R Arrivals, looking at the feasibility of a curved approach, for example, such as along the Southeast Expressway or Boston's inner harbor. Neighborhoods that could benefit are parts of Milton and Dorchester.

• Using Single-Event noise data: In order to improve data collection for communities and the FAA, use real-world single-event noise data from communities under RNAV tracks to develop a supplemental metric to measure and track the concentration of flights due to RNAV technology. These metrics would better identify the potential for community understanding, support or opposition to proposed procedural changes. The proposed pilot testing will use these supplemental metrics.

NASA

CONTRACTS LET TO DEFINE X-PLANE SYSTEM REQUIREMENTS

NASA said Oct. 6 that it has recently awarded six-month contracts to four companies that will each define the technical approach, schedule, and cost for one or more large-scale, "green aviation" subsonic X-plane concepts.

The NASA contracts went to Aurora Flight Sciences Corporation of Manassas, VA; Dzyne Technologies Incorporated of Fairfax, VA; Lockheed Martin Aeronautics Company of Ft. Worth, TX; and The Boeing Company of Hazelwood, MO.

"Engaging these contractors now to gather this information will help us move forward efficiently and expeditiously when we're ready to commit to building the X-planes themselves," said Ed Waggoner, NASA's Integrated Aviation Systems Program director.

Each company is to detail their specific X-plane system requirements for a piloted experimental aircraft capable of sustained, two to three hours of powered high subsonic flight, as well as conducting at least two research flight sorties per week over the course of a year-long program.

The requested information is to be built around a plan that would see the selected experimental aircraft eventually flying no later than 2021.

NASA is working to create experimental aircraft that will demonstrate new "green aviation" technology intended to dramatically reduce fuel use, emissions and noise – with the goal of cutting emissions from the nation's commercial aircraft fleet by more than 50 percent, while also reducing perceived noise levels near airports to one-half the level of the quietest aircraft flying today.

NASA's return to flying large-scale X-plane technology demonstrators – a staple of its aeronautical research heritage – is part of New Aviation Horizons, an ambitious 10-year accelerated research plan developed and announced by NASA earlier this year.

Five Concepts Being Considered

The five X-plane concepts envisioned for possible further development and the contractor responsible for providing NASA with the required information include:

• Aurora Flight Services for the D8 "Double Bubble," a twin-aisle, largely composite airliner in which the fuselage is shaped to provide lift – enabling smaller wings – and the jet engines are mounted atop the rear tail area, which takes advantage of the air flow over the aircraft to both improve engine efficiency and reduce noise in the cabin and on the ground below.

• Dzyne Technologies for a smaller regional jet-sized aircraft that features a blended wing body (BWB) design in which the lines of a traditional tube and wing airliner are shaped to become one continuous line in which the seam between the wing and fuselage is nearly indistinguishable. As an aerodynamic shape, this configuration increases lift and reduces drag.

• Lockheed Martin for its Hybrid Wing Body, which includes features of the BWB on the forward part of the fuselage but has a more conventional looking T-shaped tail, with its jet engines mounted on the side of the hull but above the blended wing. Increased lift, reduced drag and quieter operations are all potential benefits.

• Boeing for both its BWB concept – versions of which the company has flight tested with its subscale X-48 program in partnership with NASA – and a Truss-Braced Wing concept, which features a very long, aerodynamically efficient wing that is held up on each side by a set of trusses connecting the fuselage to the wing. Otherwise the aircraft appears more conventional than the other X-plane concepts under consideration.

Work Already Underway

Preliminary design work already has begun on a half-scale X-plane called the Quiet Supersonic Technology, or QueSST, a piloted supersonic aircraft that generates a soft thump, rather than the disruptive boom currently associated with supersonic flight.

Work also is underway on the X-57 Maxwell, a general aviation-sized electric research airplane. Maxwell will fly for the first time in early 2018 and demonstrate battery powered, distributed electric propulsion. Transport-sized electric aircraft could reduce energy use by more than 60 percent and

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harmful emissions by more than 90 percent. This was the first project to get an X-plane number designation in a decade.

NASA's other green aviation initiatives include reducing airline emissions and flight delays. Working in partnership with airlines and air traffic controllers at the Charlotte Douglas International Airport in North Carolina, NASA is beginning the first-of-a-kind demonstration of new technologies that coordinate operational schedules for aircraft arrivals, departures, and taxiing.

Advisory Circular, from p. 135

• Highlights that community involvement should be tailored to the scale of the specific action and the unique needs of a community, and should be conducted to the extent required to produce an informed decision that could lead a better outcome for the airport and its community.

• Recognizes that community involvement programs are potentially eligible for federal funding through the Airport Improvement Program (AIP) when they are part of airport projects that are themselves eligible for such funding and justified.

• Reiterates the need for community involvement on all planning and studies receiving federal funding, or which require FAA approvals for implementation; and offers specific strategies for Master Plans, environmental reviews, and Part 150 noise studies or Part 161 applications.

• Recognizes new techniques and tools for community involvement including use of online resources and technologies.

Hines said that FAA will consider comments received by Nov. 8 for inclusion in the AC.

Comments must be submitting to Tom Cuddy, Environmental Protection Specialist, Airport Planning and Environmental Division, at Thomas.Cuddy@faa.gov and Christina Nutting, Airport Planning Specialist, Airport Planning and Environmental Division, at Christina.Nutting@faa.gov.

Comment must be submitted using a matrix that is available at http://www.faa.gov/airports/resources/draft_advisory_circulars/

FAA asked that justification be provided for all comments and recommended modifications.

FAA may revise the final document as a result of comments the agency receives after further review within the FAA. It will then prepare and publish the final AC.

The Draft Advisory Circular is available and can be viewed at the FAA Airports website:
http://www.faa.gov/airports/resources/draft_advisory_circulars/

AIRPORT NOISE REPORT

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Community Involvement

FAA ACCEPTS NAC RECS, NAMES JULIE MARKS TO BE COMMUNITY INVOLVEMENT MANAGER

The FAA has accepted the NextGen Advisory Committee's recommendations on ways to improve community outreach when implementing NextGen Performance-based navigation (PBN) procedures and airspace changes.

The agency also has named Julie Marks to the new position of Community Involvement Manager for Airspace Projects in FAA's Air Traffic Organization (ATO). She formerly served as manager of Environmental Policy and Operations.

FAA told the NAC at its Oct. 5 meeting in Orlando that it has begun a new process, based on the NAC's recommendations, to better educate and communicate with the public about airspace changes.

FAA plans to expand its current process of community outreach by adding "multiple layers of engagement" with stakeholders in order to make the collaborative process of airspace redesign more transparent to airports; local, state, and federal governments; community organizations; and the general public.

Public outreach will be integrated into the PBN study, design, and implementa-

(Continued on p. 140)

Research

'FRUSTRATED MINORITY' OF CITIZENS FILING MOST NOISE COMPLAINTS, THINK TANK FINDS

A study just issued by a major conservative think tank evaluated aircraft noise complaint data at nine U.S. airports and found that the majority of complaints at most of these airports were filed by just a handful of people whose influence, the study authors contend, runs the risk of impeding much-needed improvements to the aviation system that would benefit their communities.

"There are worrisome signs that this small, frustrated minority of citizens is affecting aviation policy," Eli Dourado and Raymond Russell, researchers at the Mercatus Center at George Mason University, concluded in their paper "Airport Noise NIMBYism: An Empirical Investigation."

"Airport noise can be a nuisance but it is also necessary for economic activity in the modern world," they wrote. "Airport noise policy must strike a reasonable balance between noise abatement and the economic benefits associated with noisy airplane takeoffs and landings. However, because the majority of noise complaints come from a small number of loud objectors, there is a danger that this balance has been tilted too far in the direction of noise abatement," they asserted.

"We hope that increasing awareness of the lopsided distribution of noise com-

(Continued on p. 140)

In This Issue…

Community Involvement ... FAA tells the NextGen Advisory Committee that it has accepted the NAC's recommendations on ways FAA can improve its community outreach when instituting NextGen procedures and airspace changes; Julie Marks is named to the new position of FAA Community Involvement Manager - p. 139

Noise Complaints ... Only a 'frustrated minority' of citizens is responsible for filing the vast majority of the noise complaints at most of the nine airports whose noise complaint data was analyzed in a new study by a conservative think tank that could influence thinking in Congress.

This handful of complainers is influencing FAA noise policy and risks impeding much-needed improvements to the aviation system, the study authors assert. But acoustical and legal experts disagree and city officials express their great concern over the implications of the study - p. 139

FAA, from p. 139

tion processes and airspace designs will be refined based on public outreach and airport input.

FAA will continue to use a workshop format to allow the public to provide feedback on airspace changes and will use visual props to illustrate changes in flight paths and explain why they are being made.

FAA also has added a new section on Community Engagement to its NextGen website (www.faa.gov/nextgen). The new section has links to individual Metroplex airspace projects with updates on their status.

NAC Recommendations

Last June, the NAC's PBN Blueprint Task Group sent recommendations to FAA on ways to improve the agency's community's community outreach efforts (28 ANR 86).

The Task Group urged FAA to do the following:

• Form a specialized outreach team of professionals trained to engage in local community outreach;

• 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.

Complaints, from p. 139

plaints can help promote noise standards that strike an appropriate balance and facilitate the advancement of faster and cheaper commercial flight."

The Mercatus Center, one of the best-funded think tanks in the U.S., was founded by the Koch Family Foundations and is described by a Democratic strategist as "ground zero for deregulation policy in Washington."

That market-oriented zeal is evident in Dourado and Russell's paper on aircraft noise complaints, which is being picked up by news outlets around the country.

"It would be a mistake to allow the preference of a vocal but minuscule minority of citizens, however sympathetic their circumstances, to impede much-needed improvements in aviation," such as the implementation of NextGen flight paths and development of new supersonic aircraft, Dourado and Russell argued, contending that new SSTs should not be subject to subsonic aircraft noise standards.

"Holding supersonic aircraft to subsonic noise standards would hamper the viability of the new market," they asserted.

"Aircraft noise standards are already quite strict and they create real economic and environmental costs associated with lower aircraft fuel efficiency," the researchers said.

They noted that, in recent decades, the FAA has imposed progressively more stringent noise standards on aircraft operating in U.S. airspace.

"While noise abatement is desirable, it can have significant costs – particularly on the fuel efficiency of aircraft – resulting not only in higher carbon emissions but also in higher ticket prices," they argued.

Implications of Paper Concern N.O.I.S.E.

The N.O.I.S.E. organization – which represents elected officials of jurisdictions with aircraft noise problems – told ANR it has "great concerns" with the implications of the Mercatus Center report.

"To suggest that noise impacts are captured and dialogue and policies are implemented only based off of citizen complaints is misleading," Brad Pierce, N.O.I.S.E. president and Aurora, CO, City Council Member, told ANR.

"We too have concerns with the noise complaint system at many U.S. airports, but as we know from the FAA, noise policy is not determined based on complaints – it is based on modeling using long standing and still implemented metrics.

"We too agree that centering the discussion solely on noise complaints would be ineffective. However, what this report suggests is that there is no further dialogue, discussion and collaboration between impacted communities and the FAA and airports beyond call logs of complaints.

"The N.O.I.S.E. organization participates and is engaged in these discussions at U.S. airports every day and we encourage the FAA and federal policy makers to continue the effort to take community impacts into strong consideration when implementing new technologies and changing airspace."

Criticism of Study

Because the Mercatus Center paper has the potential to significantly influence congressional discussions on matters regarding NextGen flight path decisions, privatization of FAA's air traffic control system, and noise policy issues, ANR asked two experts with in-depth knowledge of FAA noise policy development and the legal structure underpinning it to comment on the study.

ANR also asked one of the authors of the paper, Eli Dourado, to address several questions posed by ANR.

Dourado is a research fellow at the Mercatus Center, which is located in Fairfax, VA, and director of its Technology Policy Program.

Thesis Both Simplistic and Wrong

Following are comments by Dr. Sanford Fidell, a Los Angeles-based psychoacoustician and expert on how communities respond to aircraft noise. He is one of the architects of recently revised ICAO Standard 1996-1 on measurement and assessment of environmental noise:

"Airport Noise NIMBYism: An Empirical Investigation" by Eli Dourado and Raymond Russell, posted to the website of George Mason University's Mercatus Center, is an analysis produced by a graduate student and an undergraduate of the influence of aircraft noise complaints on U.S. aircraft noise regulatory policy.

Its thesis is both simplistic and demonstrably wrong. The work proceeds from several incorrect assumptions:

1) That noise complaints play a substantive role in awards of federal subsidies to airport infrastructure projects (they don't);

2) That the historic imposition of source level restrictions on aircraft types have been motivated primarily by concerns about aircraft noise impacts (they were in fact developed and encouraged by aviation interests to secure much lower operating costs of replacement aircraft); and

3) That airports always represent the best and highest economic uses of land.

The authors further seem unaware:

1) That all regulation seeks to balance conflicting societal interests, not to overwhelmingly favor one set of interests over others;

2) That their insights about aircraft noise complaints are hardly novel; and

3) That the professional, peer-reviewed technical literature on aircraft noise effects offers far more rigorous analysis of ratios of complainants to complaints.

Even more disturbingly, however, Dourado and Russell complain about the ability of their fellow citizens (whom they denigrate as "NIMBYs") to exercise their Constitutionally-guaranteed rights of free speech and to petition elected officials.

This complaint suggests a preference for a more business-oriented political system, if not a general impatience with the untidiness of democracy. After all, Mussolini's Fascists are popularly (if incorrectly) credited with making Italy's trains run on time, and China quickly builds dams, bullet trains, airports and even complete cities by the simple expedient of ignoring opposition to infrastructure projects.

Dourado and Russell seem to regret that in America, industry must still attempt to socialize costs while privatizing profits the old-fashioned way: by lobbying Congress (think ANCA) and regulatory agencies for operating and construction subsidies. As Churchill observed in 1947, democracy remains " … the worst form of Government except all those other forms that have been tried from time to time."

Diminishes Impact of Aviation Noise

Following are comments by Steven Taber of the Taber Law Group in Irvine, CA, who formerly served as an FAA attorney and now represents communities impacted by aircraft noise from NextGen flight path changes:

The report diminishes the impact of aviation noise on communities by showing that in several cases a few individuals or households accounted for a high percentage of noise complaints. The implicit conclusion is that if people really were affected by aviation noise there would be more unique complainers. This is an unreasonable conclusion.

First, this conclusion assumes that noise complaints are a statistically good example of the communities' opinion of aviation noise. There is no research to support this conclusion.

The article by Fidell, Mestre and Sneddon in the Jan-Feb 2012 edition of *Noise Control Engineering Journal* (title: "A potential role for noise complaints as a predictor of the prevalence of annoyance with aircraft noise") reaches valid conclusions about noise complaints.

Second, it has been my experience that many residents do not believe that noise complaints are an effective tool for expressing their discontent about aviation noise. Because of their belief they do not file noise complaints even though they are severely affected by aviation noise. The issue with filing noise complaints with the airport and/or FAA is that residents in communities do not see any results from filing noise complaints.

Another concern is the report's emphasis on economic considerations. The report authors continue "[t]here are worrisome signs that this small, frustrated minority of citizens is affecting aviation policy." They claim that noise abatement has an effect on fuel efficiency, which increases carbon emissions and raises ticket prices. Therefore, the economic considerations should outweigh the concerns of a few "annoying," but vocal, citizens.

This ignores the very real health effects that aviation noise has on people. Summarily dismissing the residents' concerns as being the result of a "small, frustrated minority" ignores the breadth of the community's opposition to an increase in aviation noise.

The report ignores the FAA's duty to protect these communities. See "[T]he Congress declares that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare." 42 USC § 4901(b); see also 49 U.S.C. § 40103(b)(2) "Administrator shall prescribe air traffic regulations on the flight of aircraft (including regulations on safe altitudes) for . . . protecting individuals and property on the ground." The statutes do not state that the FAA should take airline ticket prices into account when deciding whether noise abatement is appropriate.

While the report does not propose any firm policy options, it is worrisome that the effect of aviation noise on communities should be downplayed because only a few vocal

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individuals are filing noise complaints. There is enough evidence that the health, as well as the economic, effects of aviation noise have a wide ranging effect on communities.

Finally, the report ignores the FAA's obligations under the law. When the FAA was reauthorized in 2003 and the FAA began its roll-out of NextGen, the Congress directed the FAA to "take into consideration, to the greatest extent practicable, design of airport approach and departure flight paths to reduce exposure of noise and emissions pollution on affected residents." 49 U.S.C. § 40101 note, Vision 100 - Century of Aviation Reauthorization Act of 2003, Pub.L. No. 108-176, § 709(c)(7). The report is asking the FAA to ignore its statutory duties.

Not the Final Word on Right Policy Balance

Following are comments by paper author Eli Dourado:

Airport noise policy is made in an incredibly complex way, entailing both legislative action and input from several agencies at the federal level, as well as local and international components.

The purpose of our study is not to claim that there is a direct pathway from citizen complaints to FAA policymaking on noise. Rather, it is simply to document that, by one available metric, policy input from the public is highly concentrated in a tiny minority of people.

Moreover, although many policymakers are aware of the skewed distribution of complaints, others, such as members of Congress, may not be.

Although there may be better conceptual measures of public input or of its impact on policy, the distribution of complaints is available data. We do not believe our paper to be the final word on whether airport noise policy strikes the right balance, but taking account of this available data is a necessary part of the discussion.

As is the case with all papers published by the Mercatus Center, our paper was subject to double-blind peer review. Our paper received both constructive and critical feedback from reviewers who are experts in relevant fields and, based on their comments, extremely familiar with the issue of airport noise. Now that our paper is published, we welcome further research, including opposing views, on whether airport noise policy strikes the right balance and why.

My interest in airport noise policy stems from my broader interest in aviation innovation. I would love to live in a world with radically cheaper, faster, and more convenient flight. Some of the barriers to this are technological and others are regulatory. While we cannot fully deregulate aviation in pursuit of innovation, we can at least ensure that regulation strikes the right tradeoff between competing interests.

His paper can be downloaded at
https://www.mercatus.org/publications/airport-noise-nimbyism

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2017 Calendar

January 2017						
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