



Meeting Announcement

Legislative Subcommittee

Monday, March 1, 2021
2:00 p.m. – 3:30 p.m.

BY VIDEO CONFERENCE ONLY

Please click the link below to join the webinar:

<https://smcgov.zoom.us/j/91015902350>

Or Dial-in:

US: +1(669)900-6833 Webinar ID: 910 1590 2350

Note: To arrange an accommodation under the Americans with Disabilities Act to participate in this public meeting, please call (650) 363-4220 at least 2 days before the meeting date.

PUBLIC PARTICIPATION:

Written public comments can be emailed to amontescardenas@smcgov.org, and should include specific agenda item to which you are commenting. Spoken public comments will also be accepted during the meeting through Zoom. Please see instructions for written and spoken comments at the end of this agenda.

AGENDA

1. **Call to Order**
2. **Public Comment on Items NOT on the Agenda**
3. **FAA Aircraft Noise Policy and Research (Docket No. FAA-2021-0037), Deadline for Comments March 15, 2021**
 - Emily Tranter, N.O.I.S.E. Board Recommendations (15-min)

 - Gene Reindel, and Justin Cook, HMMH, Key Findings - Conclusions on FAA's Key Research, Tools, and Technology Programs (15-min)

 - Discussion & Recommendations to FAA on Additional Investigation, Analysis, or Research: (60-min)
4. **Adjourn**

Attachments:

- Docket FAA-2021-0037 pg. 3
- N.O.I.S.E. Board Recommendations pg. 10
- HMMH Presentation on FAA NES Results and Fact Sheet pg. 12
- Eight Bills Introduced by Rep. Jackie Speier, Dec 20, 2019; Airport Noise Report Vol. 33 No. 6 pg. 26

****Instructions for Public Comment during Videoconference Meeting**

During videoconference of the Legislative subcommittee meeting, members of the public may address the Roundtable as follows:

Written Comments:

Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:

1. Your written comment should be emailed to amontescardenas@smcgov.org.
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 3:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

Spoken Comments:

Spoken public comments will be accepted during the meeting through Zoom. Please read the following instructions carefully:

1. The March 1, 2021 Legislative meeting may be accessed through Zoom online at <https://smcgov.zoom.us/j/91015902350>. The meeting ID: 910 1590 2350. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering meeting ID: 910 1590 2350, then press #.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Roundtable Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.
5. When called, please limit your remarks to the time limit allotted.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket No. FAA-2020-1157]

Agency Information Collection Activities: Requests for Comments; Clearance of a Renewed Approval of Information Collection: Commercial Space Transportation Licensing Regulations

AGENCY: Federal Aviation
Administration (FAA), DOT.

ACTION: Notice and request for
comments.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, FAA invites public comments about our intention to request the Office of Management and Budget (OMB) approval to renew an information collection. The information will determine if applicant proposals for conducting commercial space launches can be accomplished according to regulations issued by the Office of the Associate Administrator for Commercial Space Transportation.

DATES: Written comments should be submitted by March 15, 2021.

ADDRESSES: Please send written comments:

By Electronic Docket:
www.regulations.gov (Enter docket number into search field).

By mail: Charles Huet, 800 Independence Avenue SW, Room 331, Washington, DC, 20591.

By fax: 202-267-5463.

FOR FURTHER INFORMATION CONTACT: Charles Huet by email at: Charles.huet@faa.gov; phone: 202-267-7427.

SUPPLEMENTARY INFORMATION:

Public Comments Invited: You are asked to comment on any aspect of this information collection, including (a) Whether the proposed collection of information is necessary for FAA's performance; (b) the accuracy of the estimated burden; (c) ways for FAA to enhance the quality, utility and clarity of the information collection; and (d) ways that the burden could be minimized without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

OMB Control Number: 2120-0608.

Title: Commercial Space Transportation Licensing Regulations.
Form Numbers: FAA Form 8800-1.

Type of Review: Renewal of an information collection.

Background: The Commercial Space Launch Act of 1984, 49 U.S.C. App.

§§ 2601-2623, as recodified at 49 U.S.C. Subtitle IX, Ch. 701—Commercial Space Launch Activities, 49 U.S.C. 70101-70119 (1994), requires certain data be provided in applying for a license to conduct commercial space launch activities. These data are required to demonstrate to the Federal Aviation Administration (FAA), Associate Administrator for Commercial Space Transportation (AST), that a license applicant's proposed activities meet applicable public safety, national security, and foreign policy interests of the United States.

Respondents: Approximately 17 space launch applicants renewing applications.

Frequency: Information is collected on occasion.

Estimated Average Burden per Response: 163 hours.

Estimated Total Annual Burden: 2,779 hours.

Issued in Washington, DC.

Kelvin Coleman,

Deputy Associate Administrator, Commercial Space Transportation, Federal Aviation Administration.

[FR Doc. 2021-00480 Filed 1-12-21; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket No. FAA-2021-0037]

Overview of FAA Aircraft Noise Policy and Research Efforts: Request for Input on Research Activities To Inform Aircraft Noise Policy

AGENCY: Federal Aviation
Administration (FAA), Department of
Transportation (DOT).

ACTION: Notice of research programs and
request for comments.

SUMMARY: The FAA is releasing a summary to the public of the research programs it sponsors on civil aircraft noise that could potentially inform future aircraft noise policy. The FAA invites public comment on the scope and applicability of these research initiatives to address aircraft noise.

The FAA will not make any determinations based on the findings of these research programs for the FAA's noise policies, including any potential revised use of the Day-Night Average Sound Level (DNL) noise metric, until it has carefully considered public and other stakeholder input along with any additional research needed to improve the understanding of the effects of aircraft noise exposure on communities.

DATES: Comments on this notice must identify the docket number and be received on or before March 15, 2021.

ADDRESSES: Send comments identified by docket number FAA-2021-0037 using any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30; U.S. Department of Transportation, 1200 New Jersey Avenue SE, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.

- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- *Fax:* Fax comments to Docket Operations at (202) 493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov>, including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Mr. Donald Scata, Office of Environment and Energy (AEE-100), Federal Aviation Administration, 800 Independence Ave. SW, Washington, DC 20591. Telephone: (202) 267-0606. Email address: NoiseResearchFRN@faa.gov.

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Background Information

Since the mid-1970s, the number of people living in areas exposed to significant levels of aircraft noise¹ in the United States has declined from roughly 7 million to just over 400,000 today. At the same time, the number of commercial enplanements has increased from approximately 200 million in 1975 to approximately 930 million in 2018. The single most influential factor in that decline was the phased transition to quieter aircraft, which effectively reduced the size of the areas around airports experiencing significant noise levels. That transition was the result of the development of new technology by aircraft and engine manufacturers; establishment of increasingly stringent noise standards for civil subsonic aircraft;² investments by U.S. airlines in newer, quieter aircraft; and requirements by the FAA and the United States Congress to phase out operations by older, noisier aircraft.

A second factor has been cooperative efforts by airports, airlines and other aircraft operators, State and local governments, and communities to reduce the number of people living in areas near airports exposed to significant levels of aircraft noise. Under the FAA's Airport Noise Compatibility Planning Program,³ airports may voluntarily initiate a collaborative process to consider measures that reduce existing noncompatible land uses and prevent new noncompatible land uses in areas exposed to significant levels of aircraft noise. Since 1983, more

¹ Under longstanding FAA policy, the threshold of significant aircraft noise exposure in residential areas is a Day-Night Average Sound Level of 65 decibels (dB). See the "Aviation Noise Abatement Policy," issued by the Secretary of Transportation and the FAA Administrator in 1976. This document is available on the FAA website at https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/.

² Consistent with International Civil Aviation Organization standards, FAA has set increasingly more stringent aircraft certification noise standards, such as the Stage 5 noise certification standard. 82 FR 46123 (October 4, 2017).

³ This process is outlined under 49 U.S.C. 47501 *et seq.*, as implemented by 14 CFR part 150.

than 250 airports have used this process to consider changes to local land use planning and zoning, sound insulation, acquisition of homes and other noise-sensitive property, aircraft noise abatement routes and procedures, and other measures. Over \$6 billion in funding has been provided for airports to undertake noise compatibility programs and implement noise mitigation measures. The FAA encourages the process by providing financial and technical assistance to airport sponsors to develop Noise Exposure Maps and Noise Compatibility Programs, and implement eligible noise-related mitigation measures recommended in the program, depending upon the availability of funding.

In addition to noise compatibility planning, the FAA also issues grants to airport operators and units of local government to fund mitigation projects, most notably to sound-insulate homes, schools, and other noise-sensitive facilities. While sound insulation reduces indoor noise levels, it does not address concerns about noise interfering with the enjoyment of the outdoors. Moreover, there are limits to the effectiveness of sound insulation. In some areas with elevated noise levels, sound insulation may not sufficiently reduce interior noise levels to meet established interior noise standards.⁴ Conversely, in areas where overall noise levels are lower, interior noise standards may already be met without additional sound insulation treatments.⁵

Today's civilian aircraft are quieter than at any time in the history of jet-powered flight. The FAA, aircraft manufacturers, and airlines continue to work toward further reducing aircraft noise at the source.⁶ As an example, the noise produced by one Boeing 707–200 flight, typical in the 1970s, is equivalent in noise to 30 Boeing 737–800 flights that are typical today.⁷ As a result, for many years there was a steady decline in the number of people exposed to significant noise in communities located near airports. In recent years, however, as aviation industry growth has led to an increase in operations in many areas, the number of people and the size of the

⁴ FAA Order 5100.38D, Appendix R.

⁵ P.J. Wolfe et al., 2016 Costs and benefits of US aviation noise land-use policies Transportation Research Part D 44 (2016) 147–156, <http://dx.doi.org/10.1016/j.trd.2016.02.010>.

⁶ See, for example, information on the FAA's "Continuous Lower Energy, Emissions, and Noise" (CLEEN) Program at: https://www.faa.gov/about/office_org/headquarters_offices/apl/research/aircraft_technology/cleen/.

⁷ Based on an average of approach and takeoff certificated noise levels as defined in 14 CFR part 36.

areas experiencing significant aircraft noise has started to show a gradual expansion. The introduction of Performance Based Navigation (PBN) procedures, as needed to safely and efficiently modernize the national air transportation system,⁸ has also provided noise benefits for many by allowing for new and more efficient flight paths, but has in some places resulted in community concerns, particularly related to increased concentration of flights. In 2016, the FAA released an update to the FAA Community Involvement Manual to reaffirm the FAA's 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 community interests. The FAA has since developed and begun implementing a comprehensive and strategic approach to transform and enhance FAA community involvement practices, including working through airport community roundtables, to equitably discuss opportunities to shift or, when possible, reduce aircraft noise exposure.

Overview of FAA Research on Aircraft Noise

Recognizing that aircraft noise remains a primary concern of many stakeholders, the FAA is actively working to understand, manage, and reduce the environmental impacts of global aviation through research, technological innovation, policy, and outreach to benefit the public.

With the vision of removing environmental constraints on aviation growth by achieving quieter, cleaner, and more efficient air transportation, the FAA has worked closely with a number of industry, academic, and governmental stakeholders to assemble a comprehensive portfolio of research activities (including leveraging research undertaken by others) aimed at guiding investments in scientific studies, analytical tools, and innovative technologies to better understand and manage aircraft noise. However, due to the complex nature of aircraft noise and the varied priorities and concerns of stakeholders, no single set of findings can completely guide decision making. A broad understanding of aircraft noise and any potential impacts, from many different perspectives, is therefore needed. Summaries of the FAA's key

⁸ See Section 213, "Acceleration of NextGen Technologies," of the FAA Modernization and Reform Act of 2012, Public Law 112–95, 213, 126 Stat. 11, 46–50 (2012), 49 U.S.C. 40101 note (PBN implementation required at key airports by statutory deadline).

research, tools, and technology programs designed to potentially inform aircraft noise policy are provided below.

(1) Effects of Aircraft Noise on Individuals and Communities

Speech Interference and Children's Learning

Much of our current understanding on speech interference due to noise was established by the Environmental Protection Agency (EPA) in the 1970s.⁹ The findings from these early research assessments are still relevant for today's considerations on the impacts from aircraft noise. However, the FAA is also investigating whether there are related considerations warranting more detailed studies. One area in particular is the potential effects of aviation noise on reading comprehension and learning motivation in children. Initial research in this area has shown there are challenges in designing effective studies, and this continues to be an area of interest to better inform noise mitigation and abatement strategies for schools and other noise-sensitive facilities. While additional research in this area is still being explored, the FAA has invested more than \$440 million in sound insulation treatments at schools around the country¹⁰ in order to mitigate any potential issues related to aircraft noise.

Health and Human Impacts Research

While community annoyance due to aircraft noise exposure provides a useful summary measure that captures public perceptions of noise, a full understanding of the impact of noise on communities requires a careful consideration of the potential physiological impacts as well. Knowledge of physiological impacts could also help the FAA develop targeted measures to address aircraft noise. Emerging research capabilities are providing new opportunities to examine specific impacts of noise on humans. When these are examined in a holistic manner with research on community annoyance, they could further inform aircraft noise policy considerations. The FAA is conducting research on the potential impacts of aircraft noise on cardiovascular health and sleep disturbance, as described below.

Impacts to Cardiovascular Health

In partnership with academic researchers that are being led by the Boston University School of Public

Health, the FAA is working to understand the relationship between aircraft noise exposure and cardiovascular health. The researchers are doing this by leveraging existing national longitudinal health cohorts wherein statistically large numbers of people provide data about their health on a periodic basis over the course of many years. These studies are typically used to understand the relative risk of different factors like diet on different health outcomes like heart disease. The Boston University team is expanding the list of factors to include aircraft noise exposure such that it can be placed in context with other factors that could increase one's risk of cardiovascular disease. The team is leveraging existing collaborations with well-recognized and respected health cohorts including the Nurses' Health Studies and the Health Professionals Follow-Up Study, as well as a complementary study at Boston University that is examining the Women's Health Initiative cohort through funding from the National Institutes of Health.

Sleep Disturbance

The FAA is working with a team led by the University of Pennsylvania School of Medicine to conduct a national sleep study that will quantify the impact of aircraft noise exposure on sleep. The study will collect nationally representative information on the probability of being awoken by aircraft noise exposure. The study will start with input being requested from approximately 25,000 respondents through a mail survey. These surveys will be used to determine the eligibility of respondents for a detailed field study that will involve roughly 400 volunteers. The volunteers in the detailed field study will use equipment provided by the research team to collect both noise and electrocardiography data in their homes while they sleep. The electrocardiography data combined with information on the level of aircraft noise exposure will advance our understanding of the physiological effects of aircraft noise on sleep.

Economic Impacts

In addition to the aforementioned community and physiological impacts, the FAA is also working with researchers at Massachusetts Institute of Technology (MIT) to conduct an empirical assessment of the economic impacts to businesses located underneath aircraft flight paths. This assessment will take into account the economic benefits from aviation activities, as well as potential environmental and health impacts that

might reduce economic productivity. The FAA is also in the developmental stage of a research project that would build on existing work done by MIT that has used housing value data to reveal the willingness of people to pay to avoid aircraft noise exposure. This research is intended to serve as a follow on to the Neighborhood Environmental Survey (described in the next section), to determine whether the findings of that survey on residents' sensitivity to aviation noise is also reflected in their "revealed preferences" when making housing location decisions.

Neighborhood Environmental Survey

To review and improve the agency's understanding of community response to aircraft noise, the FAA initiated the *Neighborhood Environmental Survey* (NES) to help inform ongoing research and policy priorities on aviation noise. Section 187 of the FAA Reauthorization Act of 2018¹¹ requires the Administrator of the FAA to "conclude the Administrator's ongoing review of the relationship between aircraft noise exposure and its effects on communities around airports . . . [and] submit to Congress a report containing the results of the review."

Due to the interest from Congress and other stakeholders in the findings of this research, an expanded summary is provided in this notice below. The full text of the NES report, including a detailed description of the methodology and findings, as well as additional background material to help inform readers, is available on the FAA's website at: www.faa.gov/go/aviationnoise.

Overview of the Survey

Working with statisticians and noise experts,¹² the FAA worked with other Federal agencies that have statutory, regulatory, or other policy interests in aviation noise, to conduct a nationwide survey to update the scientific evidence on the relationship between aircraft noise exposure and its annoyance effects on communities around airports, based on today's aircraft fleet and operations. The NES included a range of questions on a variety of environmental concerns, including aviation noise exposure.

The team of expert consultants, under direction from the FAA, surveyed residents living around representative U.S. airports, drawing upon well-established research methods in order to

⁹EPA, 1973, Public Health and Welfare Criteria For Noise, <https://nepis.epa.gov/>.

¹⁰ Provided through Airport Improvement Program funding since 1994.

¹¹ Public Law 115-254.

¹² The FAA contracted with Westat, a leading statistics firm, and HMMH, a leading noise consultancy, to conduct the survey.

ensure scientific integrity and historical continuity with prior studies, while also employing advancements in techniques for noise modeling and social surveys. The NES consisted of over 10,000 mail responses from residents in communities around 20 statistically representative airports across the Nation, making it the single largest survey of this type undertaken at one time. In addition to the mail responses, the consultants also conducted a follow-up phone survey, which included over 2,000 responses to a series of more detailed questions. The FAA is now considering the full NES results, in conjunction with additional research findings as they become available, to determine how they may inform its noise policy considerations.

Overview of Community Response to Noise

Historically, two of the main types of information considered by the FAA and other Federal agencies in relating noise exposure to community response have been: (1) Case studies analyzing individual and group actions (*e.g.*, complaints or legal action) taken by residents of communities in response to noise; and (2) social surveys (such as the NES) that elicit information from community residents regarding their level of noise-induced annoyance. Annoyance is defined as a “summary measure of the general adverse reaction of people to noise that causes interference with speech, sleep, the desire for a tranquil environment, and the ability to use the telephone, radio, or television satisfactorily.”¹³ The results of social surveys of noise-induced annoyance are typically plotted as “dose-response curves” on a graph showing the relationship between the level of DNL¹⁴ cumulative noise exposure and the percentage of the population that is “highly annoyed.”

Current FAA noise policy is informed by a dose-response curve initially created in the 1970s known as the *Schultz Curve*.¹⁵ This dose-response curve is generally accepted as a representation of noise impacts and has been revalidated by subsequent analyses

over the years.¹⁶ The dose-response relationship it depicts has provided the best tool available to predict noise-induced annoyance for several decades. In 1992, the Federal Interagency Committee on Noise (FICON) reviewed the use of the *Schultz Curve*, and created an updated version of the curve using additional social survey data.¹⁷ The updated dose response curve was found to agree within one to two percent of the original curve, leading FICON to conclude that “the updated *Schultz Curve* remains the best available source of empirical dosage-effect to predict community response to transportation noise.”¹⁸ According to the 1992 FICON Report, the DNL-annoyance relationship depicted on the *Schultz Curve* “is an invaluable aid in assessing community response as it relates the response to increases in both sound intensity and frequency of occurrence.” Although the predicted annoyance, in terms of absolute levels, may vary among different communities, the *Schultz Curve* can reliably indicate changes in the level of annoyance for defined ranges of sound exposure for any given community.¹⁹ While the validity of the dose-response methodology used to create the *Schultz Curve* remains well supported, its underlying social survey data, including the additional data used by FICON to update the curve, is now on average more than 40 years old and warrants an update. The NES was conducted to create a new nationally representative dose-response curve to understand how community response to aircraft noise may have changed.

The NES’s collection of a nationally representative dataset on community annoyance in response to aircraft noise provides a contemporary update to the *Schultz Curve*, including technical refinements to improve its reliability. As with the *Schultz Curve*, the NES describes community annoyance in

terms of the percentage of people who are “highly annoyed” and describes aircraft noise exposure in terms of the DNL noise metric. Based on the 1992 FICON Report, discussed previously, both the percentage of population highly annoyed and the DNL noise metric have continued to be recognized for this purpose including by FICON’s successor, the Federal Interagency Committee on Aviation Noise in its 2018 report.²⁰

NES Results

Compared with the *Schultz Curve* representing transportation noise, the NES results show a substantially higher percentage of people highly annoyed over the entire range of aircraft noise levels (*i.e.*, from DNL 50 to 75 dB) at which the NES was conducted. This includes an increase in annoyance at lower noise levels. The NES results also show proportionally less change in annoyance from the lower noise levels to the higher noise levels.

Comparing the percent of population highly annoyed due to noise exposure between the updated *Schultz Curve* for transportation noise in the 1992 FICON Report and the NES:

- At a noise exposure level of DNL 65 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 12.3 percent of people were highly annoyed, compared to between 60.1 percent and 70.9 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 60 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 6.5 percent of people were highly annoyed, compared to between 43.8 percent and 53.7 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 55 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 3.3 percent of people were highly annoyed, compared to between 27.8 percent and 36.8 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 50 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 1.7 percent of people were highly annoyed, compared to between 15.4 percent and 23.4 percent within a 95 percent confidence limit from the NES.

Graphics comparing the updated *Schultz Curve* from the 1992 FICON Report and the curve from the NES are provided on the FAA website at www.faa.gov/go/aviationnoise.

¹³Federal Agency Review of Selected Airport Noise Analysis Issues (FICON), 1992.

¹⁴The Day-Night Average Sound Level (DNL or Ldn) is the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between midnight and 7 a.m., and between 10 p.m., and midnight, local time. See 14 CFR 150.7.

¹⁵See Schultz, T.J. 1978, “Synthesis of Social Surveys on Noise Annoyance,” *Journal of the Acoustical Society of America* 64(2): 377–405.

¹⁶See Fidell, S., D. Barber, “Updating a Dosage-Effect Relationship for the Prevalence of Annoyance Due to General Transportation Noise,” *Journal of the Acoustical Society of America*, 89, January 1991, pp. 221–233; also see Finegold, L.S., C.S. Harris, and H.E. von Gierke, 1992, Applied Acoustical Report: Criteria for Assessment of Noise Impacts on People, *Journal of the Acoustical Society of America*, June 1992; also see Finegold, L.S., C.S. Harris, and H.E. von Gierke, 1994, Community Annoyance and Sleep Disturbance: Updated Criteria for Assessing the Impacts of General Transportation Noise on People, *Noise Control Engineering Journal*, Volume 42, Number 1, January–February 1994, pp. 25–30.

¹⁷The FICON 1992 analysis added to the *Schultz Curve*’s original database of 161 survey data points and calculated an updated dose-response curve using the same methodology but with a total of 400 survey data points.

¹⁸FICON, 1992.

¹⁹*Ibid.*, vol. 1, p. 2–6.

²⁰Federal Interagency Committee on Aviation Noise Research Review of Selected Aviation Noise Issues (FICAN), 2018.

Advancements in Survey Methodology

Earlier work to understand community response to noise, including Schultz's dose-response analysis, was based on the premise that the annoyance from any source of noise would be the same for a given DNL noise level. However, more recent work has shown that aircraft noise often results in higher levels of annoyance compared to the same level of noise from ground transportation sources.²¹ There have been relatively few surveys of communities in the United States about aircraft noise undertaken over the last four decades. However, other countries around the world have conducted aircraft noise surveys during this time considering aircraft noise separately from noise from other modes of transportation. The results of these surveys, as reflected in a dose-response relationship published by the International Organization for Standardization,²² have consistently shown higher levels of annoyance than exhibited by the *Schultz Curve*. Informed by these results, the national dose-response curve in the NES report reflects only responses to the question about aircraft noise exposure.

Other Factors

In addition to enhancements in survey techniques and changes to the way aircraft operate, there are likely other factors contributing to a change in the way communities respond to aircraft noise. Future work is needed to fully understand the specific drivers behind these reasons, but several possibilities include:

- Changes to where people are choosing to live, including societal migration to increasingly urban environments.²³ Additionally, growth and changes to the makeup of suburban communities and their proximity to urban hubs may also be influencing factors on community expectations for aircraft noise exposure.
- How people work and live, including influencing factors such as increased in-home business and

teleworking in today's economy.²⁴ Changes in expectations for spending time outdoors versus indoors and the associated aircraft noise exposure may also be a factor.

- The rise of social media, the internet, and other national and global information sources, leading to an increased awareness and perception of local and national noise issues.
- Overall societal response to noise due to a combination of these or other factors.

In addition to the NES, which focuses on annoyance, the FAA is also engaged in a range of research initiatives aimed at providing information on other impacts of aircraft noise, including effects on children's learning, sleep disturbance, and potential health effects. Each of these research initiatives focuses on a distinct type of potential adverse effect associated with aviation noise exposure. The potential adverse effects explored by these initiatives may also be factors influencing the annoyance reported by the NES. However, research in these areas is still ongoing and therefore was not specifically addressed by the NES. Additional details on these research programs is provided below.

(2) Noise Modeling, Noise Metrics, and Environmental Data Visualization

As a core component of FAA's work to address aircraft noise, as well as a requirement of its environmental regulatory commitments, the FAA must maintain the ability to accurately quantify aircraft noise exposure around airports and throughout the National Airspace System. High-fidelity modeling is the only practical method to accomplish this objective, as aircraft noise needs to be quantified over relatively large scales in an efficient and consistent manner. For more than four decades, the FAA has worked closely with industry, academic, and governmental stakeholders to advance research and development in aircraft noise modeling. This effort advances the analytical tools, metrics, data, and standards required to provide high quality results to inform the public and other stakeholders about noise exposure levels. The FAA has also been actively exploring ways to use emerging technologies to visualize environmental data including noise exposure.

²⁴Work to explore changes to how population distribution throughout the day are related to aircraft noise exposure is planned under Airport Cooperative Research Project (ACRP) 02-84 [Anticipated] <http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4421>.

Aviation Environmental Design Tool

The Aviation Environmental Design Tool (AEDT) is the FAA's required noise and environmental modeling application for all U.S. domestic regulatory analyses requiring FAA review. The AEDT also provides analysis support for the International Civil Aviation Organization—Committee on Aviation Environmental Protection, and is used as a research and assessment tool by other Federal agencies, universities, and industry stakeholders.

Through collaborations with government, university, and industry partners, the FAA actively manages AEDT to ensure that features and capabilities are developed to meet expanding environmental analysis needs, and to ensure that as new data and technologies become available they are incorporated in order to enhance modeling accuracy and efficiency. The AEDT builds on a legacy of noise modeling development, and is based on detailed aircraft-specific noise measurements and internationally accepted aircraft performance models and standards. A dynamic development process is used to create new versions of AEDT. This process allows for new features and capabilities to be added as needed, for example, when required by policy updates or informed by emerging research findings.

Noise Screening

Building from the high-fidelity noise modeling capabilities available through AEDT, the FAA is also working to develop an updated noise screening tool. This updated noise screening tool will use a simplified noise modeling process to facilitate an expedited review of proposed Federal actions where significant noise impacts are not expected. Such an approach is beneficial where a proposed Federal Action is limited in scope and could qualify for a categorical exclusion under the FAA's procedures for implementing the National Environmental Policy Act (NEPA).²⁵ The primary goal of updating the noise screening tool is to decrease the amount of time that an analyst will need to conduct an assessment while also ensuring a fully validated result that is readily understandable by the public. While the output from a noise screening tool cannot provide the same level of detail as a comprehensive

modeling tool, the simplified process provides for an expedited initial view of

²⁵ See FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Chapter 5 ("Categorical Exclusions").

²¹ See, for example: Janssen, S., & Vos, H. (2011). Dose-Response Relationship between DNL and Aircraft Noise Annoyance: Contribution of TNO. Retrieved from TNO Report TNO-060-UT-2011-00207.

²² International Organization for Standardization. (2016, March 1, 2016). International Standard 1996-1, Acoustics—Description Measurement and Assessment of Environmental Noise—Part 1: Basic Quantities and Assessment Procedures, 3rd edition.

²³ The U.S. Census Bureau indicates that the percentage of the population living in urban areas has increased from 73.6 percent in 1970 to 80.7 percent in 2010, an increase of 7.1 percent.

any potential changes in aircraft noise exposure.

Environmental Data Visualization

The FAA has been developing ways to utilize geospatial data to improve the agency's ability to communicate environmental data to the public. For example, the FAA has designed an Environmental Visualization Tool to take advantage of the availability of high quality geospatial data to deliver an agency-wide resource using a consistent, common visual language. Once fully implemented, this common visualization platform will serve the needs of multiple environmental programs within the FAA, including those presenting aircraft noise data to the public.

Supplemental Noise Metrics

The FAA's primary noise metric, DNL, was developed and validated to identify significant aviation noise exposure for land use and mitigation planning as well as for determining significant change in noise exposure under NEPA review. In some cases, however, it can be useful to supplement DNL with the use of other noise metrics. While other noise metrics may not provide as complete an understanding of the cumulative noise exposure from activity around an airport and its associated airspace, they often can provide opportunities to communicate the specific characteristics of noise changes due to the unique aspects of a proposed action. The FAA's NEPA procedures address the use of supplemental noise metrics.²⁶ To assist the public in understanding noise impacts, and to better facilitate communication among communities interested in systematic departure flight track dispersion, the FAA is working to assess the use of potential supplemental metrics. For a supplemental metric to be effective in evaluating potential means of achieving flight track dispersion, and to ensure that communities understand the impacts of dispersion (*i.e.*, that dispersion does not eliminate noise but rather it may move noise to other neighborhoods), the supplemental metric will need to effectively communicate the changes in noise exposure that will occur in all of the communities affected by the change, both those that would be exposed to less noise and those that would be exposed to more noise.²⁷

²⁶ See FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Appendix B, paragraph B-1.6; *1050.1F Desk Reference*, Section 11.4.

²⁷ FAA, 2020, Report to Congress: FAA Reauthorization Act of 2018 (Pub. L. 115-254)

(3) Reduction, Abatement, and Mitigation of Aviation Noise

To directly address noise concerns, the FAA sponsors multiple research programs to explore different concepts for aircraft noise reduction. As aircraft noise is a complex issue, no single concept is capable of providing a universal solution. However, by conducting research across different areas, the FAA is developing solutions to reduce noise at its source, abate noise through operations, and mitigate the effects of noise on communities. The intent of this approach is to have a variety of options to reduce the noise being experienced by those living near airports around the country and to have options that could be tailored to specific airports.

Aircraft Source Noise Reduction

As noted previously, the single most influential factor in the historical decline in noise exposure was the phased transition to quieter aircraft. Through the public-private partnership of the Continuous Lower Energy, Emissions, and Noise (CLEEN) Program, the FAA and industry are working together to develop technologies that will enable manufacturers to create aircraft and engines with lower noise and emissions as well as improved fuel efficiency.²⁸ The technologies being accelerated by the CLEEN Program have relatively large technological risk. Government resources help mitigate this risk and incentivize aviation manufacturers to invest and develop these technologies. By cost-sharing the development with the FAA, industry is willing to accept the greater risk and can better support the business case for this technological development. Once entered into service, the CLEEN technologies will provide societal benefits in terms of reduced noise, fuel burn, and emissions throughout the fleet for years to come. In addition to the benefits provided by technologies developed under the CLEEN, the program leads to advances in the analysis and design tools that are used on every aircraft or engine product being made by these companies; this extends the benefits of the CLEEN Program well beyond the individual technologies being matured.

Section 188 and Sec 173, https://www.faa.gov/about/plans_reports/congress/media/Day-Night_Average_Sound_Levels_COMPLETED_report_w_letters.pdf.

²⁸ See, for example, information on the FAA's "Continuous Lower Energy, Emissions, and Noise" (CLEEN) Program at: https://www.faa.gov/about/office_org/headquarters_offices/apl/research/aircraft_technology/cleen/.

As new aircraft and engine technologies lead to quieter aircraft over time, the FAA works to establish aircraft certification standards based on noise stringency requirements. These standards are a requirement of the airworthiness process and are described in 14 CFR part 36. These requirements do not force manufacturers to develop new technology. However, as new noise reduction technologies emerge they do ensure that new aircraft continue to meet increasingly quieter standards within the bounds of what is technologically feasible and economically reasonable.

Noise Abatement

The FAA is also supporting multiple efforts to identify means to abate noise through changes in how aircraft are operated in the airspace over communities. In the immediate vicinity of an airport, use of voluntary noise abatement departure procedures (NADP) has been a longstanding technique available to reduce noise. Recent research is examining the effectiveness of these procedures and identifying means of improving their use.

As the FAA works to modernize the National Airspace System, new aircraft flight procedures have been designed to take advantage of PBN technologies. To better understand both the environmental benefits and challenges posed by PBN, the FAA is working to re-examine ways to routinely consider noise during flight procedure design. This effort includes an exploration of how PBN can better control flight paths and move them away from noise-sensitive areas, how changes in aircraft performance could be safely managed to reduce noise, and how systematic departure flight track dispersion can be implemented to abate noise concerns.

In a recent partnership with the Massachusetts Port Authority (Massport) and MIT, the FAA jointly contributed to research considering how Area Navigation (RNAV) PBN procedures could be designed and implemented to reduce noise. Multiple concepts were explored that highlighted how collaborations between the FAA, airport operators, and community members can produce innovative noise abatement strategies.

A recently completed analysis of operational procedures that resulted from the Massport-MIT-FAA partnership shows that for modern aircraft on departure, changes in aircraft climb speed have minimal impact on the overall aircraft departure noise. The current best practice for NADP, using International Civil Aviation Organization distant community or

“NADP-2” departure procedure, has been shown to minimize modeled noise impacts. This analysis also shows that for modern aircraft on arrival, changes in approach airspeed could have a noticeable impact (reductions of 4–8 dBA) on the overall aircraft noise at relatively large distances from touching down (between 10 and 25 nautical miles from the runway). While NADP procedures have the potential to reduce community noise, they may also have implementation challenges that will need to be overcome. Research is ongoing at MIT to address these challenges.²⁹

In addition to airplane operations, the FAA is also examining the potential for helicopter noise abatement through changes in operational procedures. The FAA has partnered with the Volpe Center, the National Aeronautics and Space Administration, the Pennsylvania State University, and operator organizations to explore new ways to safely fly rotorcraft while also reducing noise through the Fly Neighborly Program.³⁰

Noise Mitigation Research

Noise mitigation is the effort to take actions to reduce the impact of aircraft noise exposure that occurs. The primary mitigation strategies involve encouraging responsible land use planning in airport communities and, where appropriate, the application of sound insulation treatments to eligible homes or other noise-sensitive public buildings (e.g., schools or hospitals). In extreme cases where sound insulation technologies cannot provide adequate mitigation, the acquisition of residential homes and conversion to non-residential land use is also an option.

As sound insulation treatment costs have continued to rise and new research on the human impacts from noise becomes available, the FAA is exploring the cost-benefit calculus of existing noise mitigation strategies and technologies in order to better direct where and how limited mitigation resources should be applied. Recent academic research³¹ and internal assessments have raised questions about the benefits of sound insulation relative to the costs. While the relative benefits of sound insulation for noise exposures above DNL 65dB will depend on the

²⁹ <https://ascent.aero/project/analytical-approach-for-quantifying-noise-from-advanced-operational-procedures/>, <https://ascent.aero/project/aircraft-noise-abatement-procedure-modeling-and-validation/>.

³⁰ <https://www.rotor.org/initiatives/fly-neighborly>.

³¹ Wolfe, Malina, Barrett & Waitz 2016, Cost and benefits of US Aviation noise land-use policies, Transportation Research Part D.

individual home treatment costs, minimal benefit can be expected for sound insulation treatments applied for noise exposures below DNL 65dB.

Aircraft Noise Policy Background

Community response to noise has historically been a primary factor underlying the FAA’s noise-related policies, including the establishment of DNL 65 dB as the threshold of “significant” aircraft noise exposure. The FAA has been using a DNL of 65 dB as the basis for: (1) Setting the agency’s policy goal of reducing the number of people exposed to significant aircraft noise;³² (2) the level of aircraft noise exposure below which residential land use is “normally compatible,” as defined in regulations implementing the Aviation Safety and Noise Abatement Act of 1979,³³ and (3) the level of aircraft noise exposure below which noise impacts of FAA actions in residential areas are not considered “significant” under section 102(2)(C) of the National Environmental Policy Act of 1969.³⁴

Research results, as reflected in the programs and studies described in this notice, will provide new information on how aircraft noise in communities near airports may be effectively managed and will inform future decision making on the FAA’s aircraft noise policies.

However, as previously stated, the FAA will not make any determinations on implications from these emerging research results for FAA noise policies until it has carefully considered public and other stakeholder input, and assesses the factors behind any increases in community impacts from aircraft noise exposure. Unless and until any changes become effective, all existing FAA regulations, orders, and policies remain in effect. The FAA is committed to informing and involving the public, and to giving meaningful consideration to community concerns and views as the FAA makes aviation decisions that affect them.

³² See “Aviation Environmental and Energy Policy Statement,” 77 FR 43137, 43138 (July 23, 2012), available on the FAA website at [URL]. The “noise goal” identified in this document includes “[r]educ[ing] the number of people exposed to significant noise around U.S. airports.”

³³ 49 U.S.C. 47502. The regulations implementing this section are codified at 14 CFR part 150.

³⁴ 49 U.S.C. 4332(2)(C). See FAA Order 1050.1F, “Environmental Impacts: Policies and Procedures” (2015), Exhibit 4–1. The significance threshold for noise used for NEPA purposes in FAA Order 1050.1F is also used by the FAA for determining significant adverse noise effects under 49 U.S.C. 47106(c)(1)(B) for airport development projects involving the location of an airport or runway or a major runway extension. See 80 FR 44209, 44223 (July 24, 2015) (preamble to FAA Order 1050.1F).

Comments Invited

The FAA recognizes that a range of factors may be driving concerns due to aircraft noise. However, as outlined in this notice, a broad understanding of aircraft noise and its potential impacts is needed in order to better manage and reduce concerns from aviation noise.

The FAA is inviting comments on these concerns to assist the agency in assessing how resources should be directed to better understand and manage the factors underlying the concern from aircraft noise exposure.

Comments that focus on the questions listed below will be most helpful. The more specific the comments, the more useful they will be in the FAA’s considerations.

(1) What, if any, additional investigation, analysis, or research should be undertaken in each of the following three categories as described in this notice:

- Effects of Aircraft Noise on Individuals and Communities;
- Noise Modeling, Noise Metrics, and Environmental Data Visualization; and
- Reduction, Abatement, and Mitigation of Aviation Noise?

(2) As outlined in this notice, the FAA recognizes that a range of factors may be driving the increase in annoyance shown in the Neighborhood Environmental Survey results compared to earlier transportation noise annoyance surveys—including survey methodology, changes in how commercial aircraft operate, population distribution, how people live and work, and societal response to noise. The FAA requests input on the factors that may be contributing to the increase in annoyance shown in the survey results.

(3) What, if any, additional categories of investigation, analysis, or research should be undertaken to inform FAA noise policy?

Authority: National Environmental Policy Act (NEPA) 42 U.S.C. 4321 *et. seq.*, Aviation Safety and Noise Abatement Act (ASNA) 49 U.S.C. 47501 *et. seq.*, Federal Aviation Act, 49 U.S.C. 44715.

Issued in Washington, DC.

Kevin Welsh,

Director, Office of Environment and Energy.

[FR Doc. 2021–00564 Filed 1–12–21; 8:45 am]

BILLING CODE 4910–13–P

On behalf of the National Organization to Insure a Sound-Controlled Environment (N.O.I.S.E.), we thank the FAA for the opportunity to provide comment on the historic, long awaited Neighborhood Environmental Study (NES), released in January, 2021.

N.O.I.S.E. has served for over five decades as America's only nationwide, community-based organization committed to reducing the impact of excessive aviation noise on local communities. Our member communities are diverse in size and geography, but are all dedicated to working with their residents, airports and the FAA to find reasonable solutions to the impacts of aviation noise. We believe the release of this study and its finding, that an increased percentage of people are highly annoyed by aviation noise, is a vital first step in that important task.

Our organization has long supported NextGen and its goal of modernizing the air traffic control system. We understand the need to improve the efficiency and capacity of the national airspace while decreasing emissions and the impact on our environment. However, with increased air traffic volume over the last decade as well as the enhance navigational capabilities that enable aircraft to fly more precisely, the resulting concentrated traffic corridors have a more noticeable effects on the ground that must be considered thoroughly and as a priority concern.

Aviation noise impacts are a health and an economic issue. In order to adequately understand and address the impacts of aviation noise on residents, the FAA must first establish adequate metrics to measure those impacts. N.O.I.S.E. has maintained that DNL does not represent and account for additional factors resulting from today's aircraft operations that add to annoyance. Thus it appears that residents today are more sensitive to average noise (as measured by DNL) when in reality they are also reacting to new annoying factors. The recently released NES supports this assertion in the strongest terms.

N.O.I.S.E. would like to offer considerations for the types of metrics that should be evaluated to adequately measure true noise impacts.

As DNL is an average and humans do not perceive noise in averages but rather as individual events, we believe it is time to investigate alternative metrics that could measure impacts such as:

- The psychological impact of concentrated, extended noise
- The physiological /cardiovascular impact of infrequent, significant noise spikes during nighttime hours
- Impact of less audible low frequency noise who's vibration induces audible noise
- The length of each period of frequent, regular noise spikes "rush hours" due to over-flights
- The number of rush hours per day
- The average dB of a rush hour's noise—not day-night average
- The intensity of spikes above the ambient dB during rush hour noise
- The intensity and number of spikes above the ambient, for non-rush hours from 10 PM to 7 AM

Investigating a more appropriate metric to measure aviation noise impacts is crucial and will supplement efforts to greater engage the community to understand their concerns. We believe the FAA has taken strong measures to improve community engagement when implementing NexGen and other NAS changes. This culture should extend to each regional office and control tower in the most robust manner. In relation to the next steps of this study, this public comment period should represent the first step in a public engagement process. We know that the FAA sees value in communicating with airport noise roundtables and we also have long advocated for the establishment and support of functioning roundtables. We believe the FAA should invest resources and transparent communication practices with healthy roundtables and empower communities to create frameworks that represent the real needs of their unique local dynamics and experiences. This sets up the FAA-Community engagement efforts to become successful.

We know our National Airspace System is very large and complex and understand that the study, testing, and implementation of new metrics to measure noise impact is a large-scale, expensive undertaking. We do not ask lightly that this be a main focus of the FAA over the next decade and beyond because we believe that now is time to shape the next 50 years of federal policy that includes noise mitigation and abatement as a strong pillar. The stakeholder community should not miss this opportunity to address this very serious need.

Our members and Board wish to be an ally and partner to the FAA in this endeavor. We believe that communication and transparency will only aid this effort, not slow it down. We understand and are ready to advocate to Congress to fully fund the study and use of new metrics and look forward to a meaningful partnership as the FAA contends with the next steps of this policy change.

Overview of the Federal Aviation Administration's Neighborhood Environmental Survey

By: Mary Ellen Eagan, HMMH President & CEO

For: SFO Community Roundtable

January 2021

Outline

- Motivation and Goal
- Methodology
- Primary Results
- Comparisons to other studies/standards
- Next Steps



Motivation and Goal

Motivation:

Outdated and not-quite-applicable data

Research outside of the US indicating higher levels of annoyance than FICON curve

Goal: Produce an updated and nationally representative dose-response curve for noise from civil aircraft operations (primarily fixed-wing), relating annoyance to aircraft noise exposure (re DNL)



Airport Selection



Neighborhood Environmental Survey

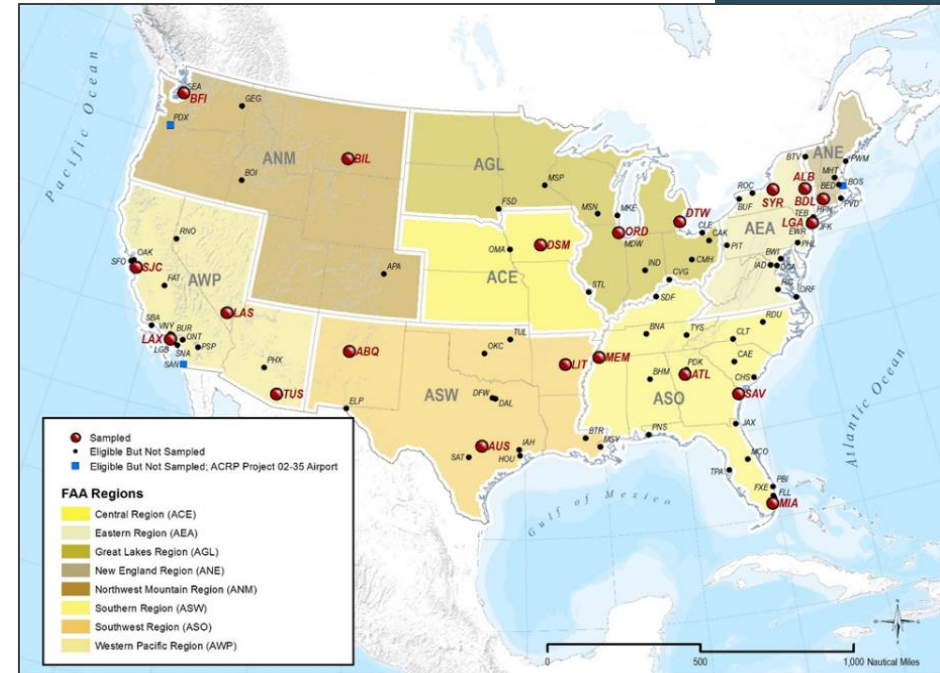


Noise Levels and Statistical Analysis

Methodology

Airport Selection

- 95-airport sampling frame
- FAA designated three high-tempo airports
- FAA specified the final sample to include 1 of 3 New York City-area airports
- Balanced sampling resulted in 20 airports



Neighborhood Environmental Survey

- 13-item questionnaire sent via mail October 2015-October 2016
- Embedded question about aircraft noise -- "Thinking about the last 12 months or so..."

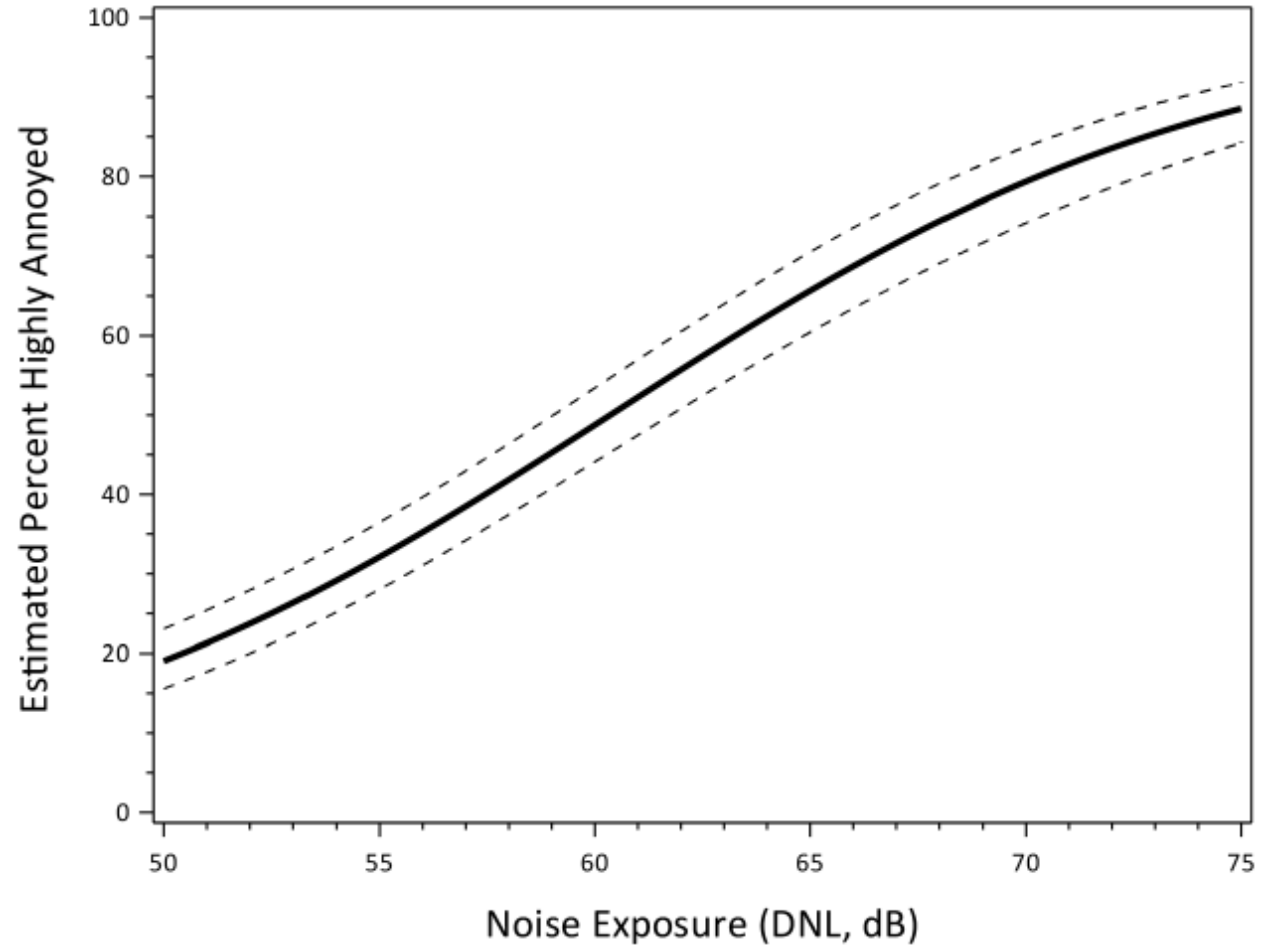
	Not at all ▼	Slightly ▼	Moderately ▼	Very ▼	Extremely ▼
a. Noise from cars, trucks or other road traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Smells or dirt from road traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Smoke, gas or bad smells from anything else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Litter or poorly kept up housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Noise from aircraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Your neighbors' noise or other activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Any other noises you hear when you are here at home If this bothers or annoys you, what is the noise? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Undesirable business, institutional or industrial property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. A lack of parks or green spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Inadequate public transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. The amount of neighborhood crime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Poor city or county services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Any other problems that you notice when you are here at home If this bothers or annoys you, what is the problem? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



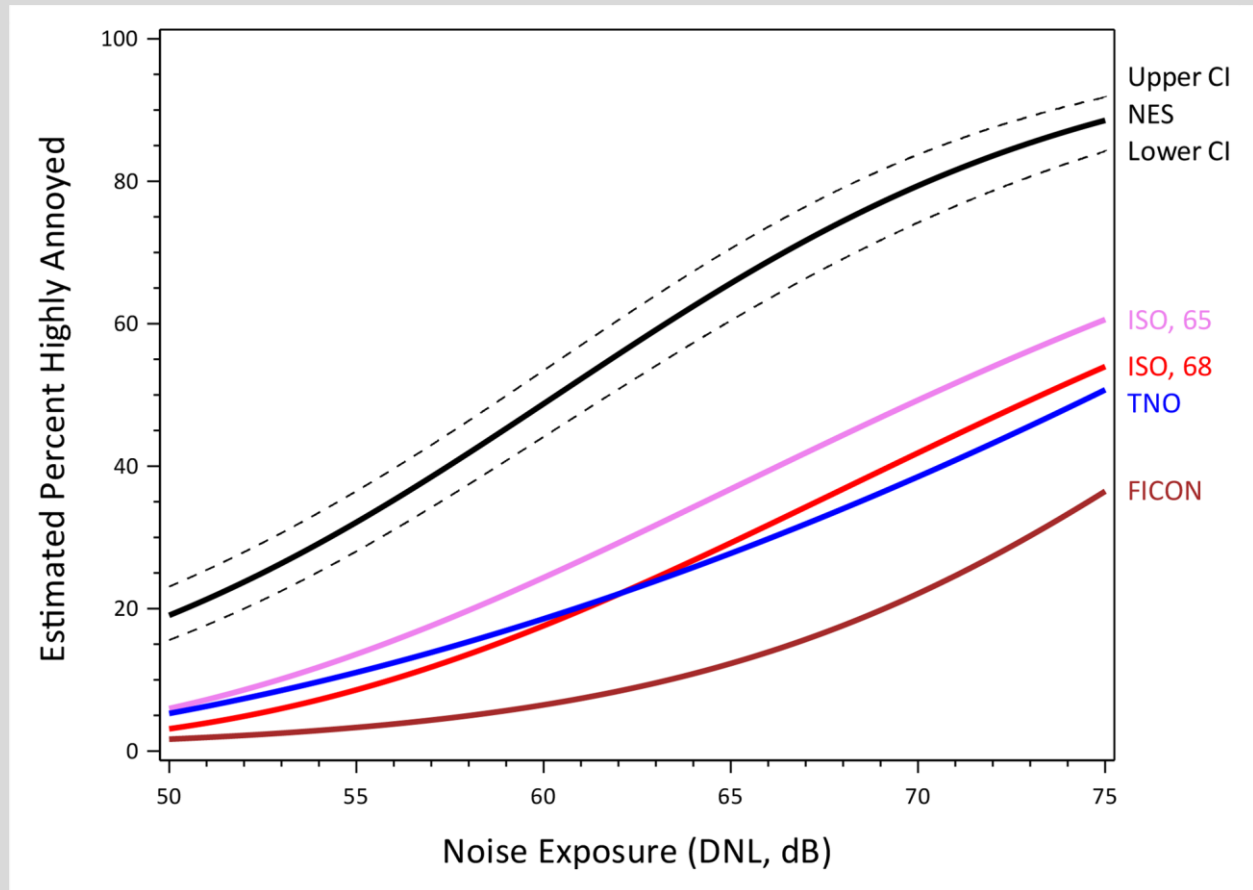
Noise Levels and Statistical Analysis

- Detailed aircraft noise modeling with FAA's Integrated Noise Model for each airport
- DNL computed for each potential respondent
- Regression analysis computed for noise level vs. percent highly annoyed to compute “dose-response” curves

Primary Results



Comparisons to Other Curves



Next Steps

The Neighborhood Environmental Survey (NES) Report is available here:

www.faa.gov/regulations_policies/policy_guidance/noise/survey

The full text of the NES report, including a detailed description of the methodology and findings, as well as additional background material to help inform readers, is available at: www.faa.gov/go/aviationnoise

The final technical report is available at:

<https://www.airporttech.tc.faa.gov/Products/AirportSafety-Papers-Publications/Airport-Safety-Detail/>

Federal Register Notice: [federalregister.gov/d/2021-00564](https://www.federalregister.gov/d/2021-00564)
Comment on this notice using Docket Number FAA-2021-0037 at www.regulations.gov by March 15, 2021.

Email questions to: NoiseResearchFRN@faa.gov.

Thank you!

Mary Ellen Eagan

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Federal Aviation Administration Neighborhood Environmental Survey

The Federal Aviation Administration (FAA) undertook a multi-year research effort to quantify the impacts of aircraft noise exposure on communities around commercial service airports in the United States. The goal of the research was to provide an updated and nationally representative curve showing the relationship between aircraft noise exposure and community annoyance for the US. HMMH conducted the study for the FAA, with Westat, Inc. providing statistical support.

The Neighborhood Environmental Survey (NES) Report is available here:

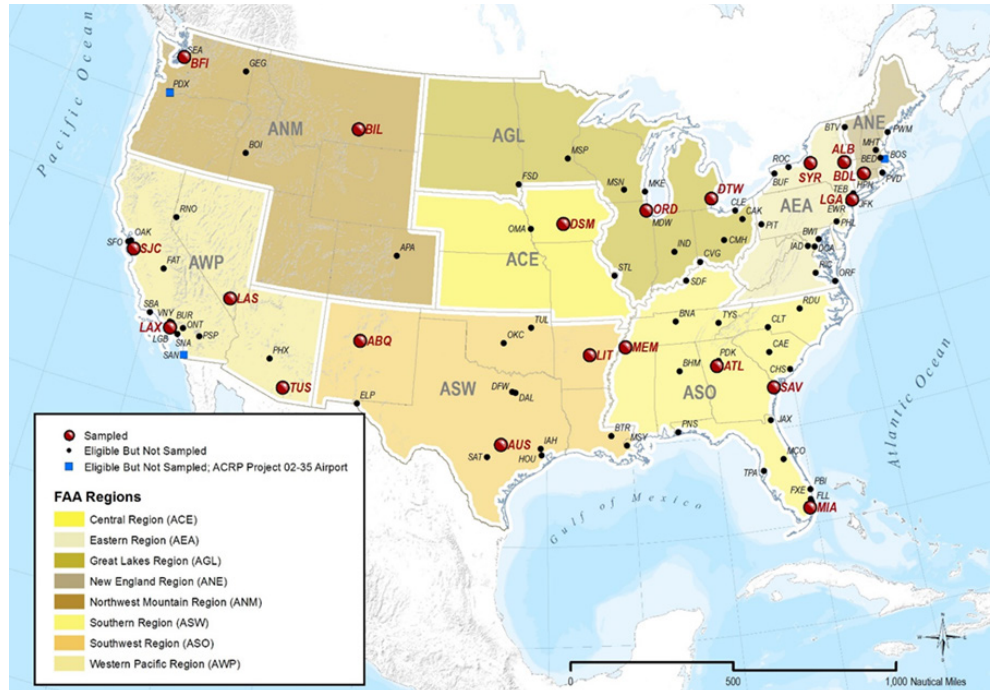
www.faa.gov/regulations_policies/policy_guidance/noise/survey

The survey included 10,000 people near 20 airports across the US — See Section 3 of NES Report for airport selection criteria.

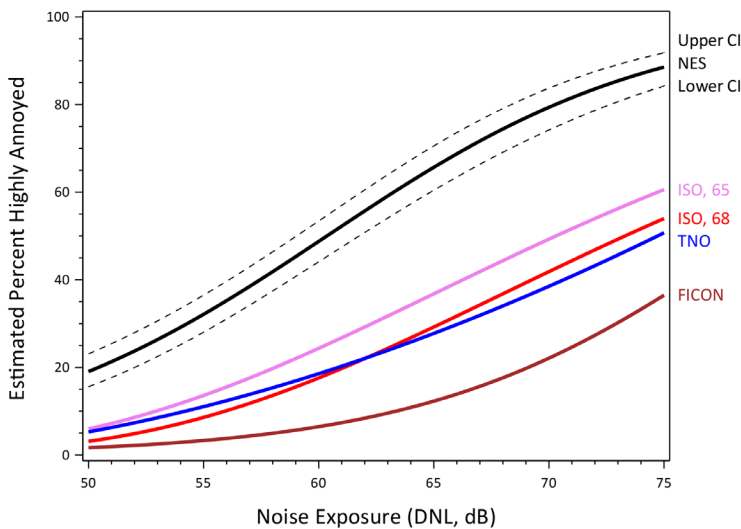
- The survey began in 2015 and was provided in English and Spanish — See Appendix A of NES Report
- The survey asked the respondent how much they were annoyed by aircraft noise and given the choices of: Not at all, Slightly, Moderately, Very, or Extremely
- If they answered “very” or “extremely”, they were classified as being “highly annoyed”
- A follow-up phone survey, which included 2,000 responses, may provide additional direction for further research

Day-Night Average Sound Level (DNL) was modeled with the FAA’s Integrated Noise Model (INM) — See Section 7 of NES Report.

- Flight track data from 2012-2013



Map of Airports Eligible for the Survey and Sampled Airports (Figure 3-1 of NES Report)



National Dose-Response Curve (NES), with 95 Percent Confidence Intervals (CI) on Annoyance for a given DNL. TNO, FICON and ISO Curves with Constants 65 and 68 are Shown Below the National Curve. (Figure 8-4 of NES report)

NES results show more people are “highly annoyed” at a given noise exposure level compared to historical data — See Section 8 of NES Report.

- ~66% of respondents were highly annoyed at 65 DNL
- ~20% of respondents were highly annoyed at 50 DNL

The full text of the NES report, including a detailed description of the methodology and findings, as well as additional background material to help inform readers, is available at: www.faa.gov/go/aviationnoise

The final technical report is available at: <https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/>

Federal Register Notice: federalregister.gov/d/2021-00564

Comment on this notice using Docket Number FAA-2021-0037 at www.regulations.gov by March 15, 2021.

Email questions to: NoiseResearchFRN@faa.gov.

Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 33, Number 6

February 19, 2021

Legislation

AIRCRAFT NOISE AND EMISSIONS LEGISLATION THAT HAS BEEN OR MAY BE REINTRODUCED IN THE 117TH CONGRESS

(Compiled by Airport Noise Report as of Feb. 19, 2021)

Bills that did not pass in the 116th Congress (2019-2020) and have already been reintroduced in the 117th Congress (2021-2022)

Safe and Quiet Skies Act (H.R. 389)

Reintroduced on Jan. 21 by Rep. Ed Case (D-HI)

The bill would:

- Direct the FAA to adopt National Transportation Safety Board (NTSB) recommendations that will increase safety and reduce the community disruption of commercial air tours.
- Require that tour flights fly above the 1,500-foot altitude over actual ground at all times with very limited exceptions for emergencies and takeoff/landing.
- Require tour flights over occupied areas (including residential, commercial and recreational areas) to be no louder than 55 dBA, the same level of noise commonly allowed for residential areas.
- Allow states and localities to impose additional requirements – stricter than the minimum national requirements called for in the act – on tour flights.
- Prohibit tour flights over military installations, national cemeteries, national wilderness areas, national parks and national wildlife refuges.

Air Traffic Noise and Pollution Expert Consensus Act (H.R. 712)

Reintroduced on Feb. 2 by Rep. Stephen Lynch (D-MA)

Text of the bill is not available yet but, as introduced in the 116th Congress (2019-2020), the bill would have:

- Required the FAA to sponsor an Expert Consensus Report issued by the National Academies of Sciences, Engineering and Medicine on the health effects of airplanes flying over residential areas.
- Required the National Academies to convene a committee of health and environmental science experts within 30 days to examine the health impacts of air traffic noise and pollution and issue an Expert Consensus Report with their findings to

(Continued on p. 22)

In This Issue...

Legislation... This special issue of Airport Noise Report provides an update on the status of legislation addressing aircraft noise and emissions that was introduced in the U.S. House of Representatives in the 116th Congress (2019-2020) but did not pass.

Such bills, if reintroduced, would have a better chance of passage now that the Democrats control both the House and Senate in the new 117th Congress (2021-2022).

Included in this issue are three categories of aircraft noise and emissions legislation:

- (1) Bills that have already been reintroduced in the new 117th Congress;
- (2) Bills that have not yet been reintroduced in the new Congress but will be; and
- (3) Bills whose authors have not yet announced whether their bills will be reintroduced in the new Congress.

Legislation, from p. 21

the Secretary of Health and Human Services, the Administrator of the Environmental Protection Agency, and relevant congressional Committees, including the House Committee on Transportation and Infrastructure and the House Committee on Oversight and Government Reform.

Bills that did not pass in the 116th Congress but will be reintroduced soon in the 117th Congress

Aviation Impacted Communities Act

This bill was introduced by Rep. Adam Smith (D-WA) in the 116th Congress and his staff said it is expected to be reintroduced in March. The bill is being reviewed to determine if changes need to be made.

As introduced in the last Congress, the bill would have:

- Authorized \$750 million for fiscal years 2021 to 2030 to fund noise mitigation efforts – including sound insulation – in communities outside the 65 DNL noise contour that are designated as “aviation-impacted.”

- Allowed communities located within one mile of a commercial or cargo jet route that is 3,000 ft or lower to be designated as “aviation impacted,” thus allowing residents to petition the FAA to study and create action plans to solve aircraft noise and emissions impacts.

- Significantly expanded the current limits of FAA-funded sound insulation efforts to allow FAA and airport operators to provide sound insulation for:

- (1) Aviation-impacted communities that are subjected to “substantial increases” in flight frequency or from the adoption of new flight procedures that create noise impacts in neighborhoods that did not previously experience significant impacts from commercial aircraft operations; and

- (2) Neighborhoods within a 55 DNL contour in which an airport operator or the Administrator of the FAA determines “significant numbers” of flight operations are conducted between 10 p.m. and 6 a.m.

- Require FAA to interface directly with and be responsive to residents and locally-nominated leaders on issues of aviation noise and environmental impact.

Protecting Airport Communities from Particle Emissions Act

This bill was introduced by Rep. Adam Smith (D-WA) in the 116th Congress and his staff said it is expected to be reintroduced soon in the 117th Congress.

The text of the new bill has not been released yet but, as introduced in the previous Congress, the bill would have:

- Required the FAA to enter into “appropriate arrangements” with the National Academy of Sciences to conduct a

national study on the sources, characteristics, dispersion, and potential health effects of ultrafine particles (UFPs) in communities around airports. The study must:

- (1) Focus on large hub commercial airports in Seattle, Boston, Chicago, New York, the Northern California Metroplex, Phoenix, the Southern California Metroplex, the District of Columbia, Atlanta, and “any other metropolitan large hub airport identified by the FAA Administrator”; and

- (2) Look at potential health effects associated with elevated UFP exposures, including heart and lung diseases, asthma, nervous system disorders, and other health effects, that have been considered in previous studies; and potential UFP exposures, especially to susceptible and vulnerable groups.

Bills that did not pass in the 116th Congress and it is unclear yet whether they will be reintroduced in the 117th Congress

Decrease Noise Levels Act

This bill was introduced by Rep. Grace Meng (D-NY) in the 116th Congress but did not pass. Rep. Meng’s staff has not yet responded to inquiries regarding whether the bill will be reintroduced.

As introduced in the last Congress, the bill would have:

- Required the FAA to lower the level of noise it considers to have “significant” impact in terms of its Part 150 Airport Noise Compatibility program from 65 DNL to 60 DNL immediately and to create a plan to further lower the level of significant impact to 55 DNL in 10 years.

- Required any community outreach FAA conducts on DNL to contain the results of the evaluations of alternative metrics to DNL required under Sections 173 and 188 of the FAA Reauthorization Act of 2018.

Quiet Communities Act of 2019

This bill was introduced by Rep. Grace Meng (D-NY) in the 116th Congress but did not pass. Meng has not said whether she plans to reintroduce the bill.

As introduced in the last Congress, the bill would have:

- Reestablished the Environmental Protection Agency’s Office of Noise Abatement and Control (ONAC) and require the office to study aircraft noise.

- Defined the responsibilities of ONAC as: (1) promoting the development of effective state and local noise control programs, (2) carrying out a national noise control research program, (3) carrying out a national noise environmental assessment program, (4) establishing regional technical assistance centers to assist state and local noise control programs, (5) assessing the effectiveness of the Noise Control Act of

1972, and (6) conducting related outreach and education.

- Amended the Noise Control Act of 1972 to expand the quiet communities grant program to include grants for establishing and implementing training programs on use of noise abatement equipment and implementing noise abatement plans.

Airplane Noise Research and Mitigation Act of 2018

This bill was introduced by Rep. Grace Meng (D-NY) in the 117th Congress but did not pass. Rep. Meng has not announced if the bill will be reintroduced in the new Congress.

As originally introduced, the bill would have

- Amended title 49, Section 44513(b)(1)(A), to require regional centers of air transportation excellence that FAA may establish at institutions of higher learning, to conduct research on the impacts of aircraft noise on humans and on effective methods for mitigating such impacts

Aircraft Noise Reduction Act

This bill was introduced by Rep. Joe Neguse (D-CO) in the 117th Congress but did not pass.

It would have allowed general aviation airports to restrict noise without going through FAA's Part 161 process by giving authority to impose certain restrictions relating to noise concerns, such as limiting the number and type of aircraft that can operate, and setting curfews or specific hours for them to fly.

Rep. Neguse has not announced whether he will reintroduce his bill in the new Congress.

Cleaner, Quieter Airplanes Act

This bill was introduced by Rep. Don Beyer (D-VA) at the end of 2019 and the congressman has not announced yet whether it will be reintroduced.

As originally introduced, the bill would have directed the National Aeronautics and Space Administration to establish an initiative to build upon and accelerate previous or ongoing work to develop and demonstrate new technologies in aircraft concepts that are capable of reducing both greenhouse gas emissions and noise emissions from aircraft by at least 50%.

The goal of the initiative would be to deploy new technologies developed pursuant to the initiative on (1) regional transport aircraft intended to enter into service by 2030, and (2) single-aisle aircraft designed to accommodate more than 125 passengers intended to enter into service by 2040.

Eight Bills Introduced by Rep. Jackie Speier (D-CA) in Last Congress

On Dec. 20, 2019, California Congresswoman Jackie Speier introduced eight bills to mitigate the impact of aircraft noise on communities across the country. None of them passed in the 16th Congress. She has not yet said whether she will reintroduce any or all of the following bills:

Responsive Employees Support Productive Educated Congressional Talk (RESPECT) Act

Would require FAA staff to answer questions submitted in writing by Members of Congress relating to flight procedures or other data affecting their district within 90 days and would require FAA staff to appear at a meeting or town hall with a Member of Congress with 30 days' notice.

Restore Everyone's Sleep Tonight (REST) Act

Would allow airports to impose access restrictions between 10 p.m. and 7 a.m., without seeking approval or comment from the FAA, Secretary of Transportation, air carriers or aircraft operators, "or any other entity." The bill would provide exceptions for military, law enforcements, and Coast Guard flights.

It also would allow airports to impose a "noise deterrence penalty" on an air carrier or aircraft operator for a violation of their access restrictions. The penalty would begin at a base level sufficient to deter future violations of access restrictions and could increase above the base amount "if an aircraft take-off or landing results in noise to residents of any unit of local government exceeding 80 DBA "as evidenced by a noise monitoring device recognized as authoritative by the airport." Penalties collected for violations of airport access rules would be remitted to the unit or units of local governments impacted by the violations.

Serious Noise Reduction Efforts (SNORE) Act

Would establish a program at San Francisco International Airport (SFO) to noise insulate 200+ homes per year in specific areas or provide financial support to the cities impacted by noise.

Southbound HUSSH and NIITE Help Households (SHHH) Act

Would support formally initiating and continuing the standard processing of the proposed San Francisco International Airport (SFO) NIITE Departure Southbound Transition and the Oakland International Airport (OAK) HUSSH Departure Southbound Transition.

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Fairness in Airspace Includes Residents (FAIR) Act

Would amend the FAA's prioritization of U.S. airspace use. Safety in managing U.S. airspace would remain the first priority. Secondary priorities would put noise and health impacts to residents and other environmental concerns on an equal basis with efficiency.

All Participating in Process Reaching Informed Solutions for Everyone (APPRISE) Act

Would ensure that community knowledge and input is represented in the FAA flight procedure design process. An aviation roundtable technical representative will be allowed to fully participate in the FAA procedure design process for procedures affecting their communities.

Notify Officials to Inform Fully and Impel Educated Decisions (NOTIFIED) Act

If a new or modified flight path is proposed through the FAA Procedure Based Navigation (PBN) process, the FAA would be required to notify City Councils, Boards of Supervisors, Members of Congress, and Aviation Roundtables within 5 miles of the flight path in question.

Low-frequency Energetic Acoustics and Vibrations Exasperate (LEAVE) Act

As an airplane leaves from an airport, its takeoff generates significant amounts of ground-based low-frequency noise and vibration impacting residents in the vicinity. The bill would lead to the establishment of standards and remedies related to ground-based noise (GBN). If enacted, the bill would permit a state cause of action for GBN if a state has undertaken a study of GBN at an airport, set a maximum, and the airport then exceeds the maximum, leading to substantial negative impacts on the community.

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