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April 2, 2021

Donald Scata, Noise Division Manager
Office of Environment and Energy
Federal Aviation Administration
800 Independence Ave. SW
Washington, DC 20591

Re: Overview of FAA Aircraft Noise Policy and Research Efforts: Request for Input on Research Activities to Inform Aircraft Noise Policy (Docket No. FAA-2021-0037)

Dear Mr. Scata:

Airlines for America¹ (A4A) appreciates the opportunity to comment on FAA's aircraft noise research activities to inform aircraft noise policy. With a strong track record of deploying new, quieter technology and implementing noise abatement operational procedures, the U.S. airlines have played a critical role in the tremendous reductions in aircraft noise exposure achieved in the United States to date. Indeed, FAA data confirm that the number of people exposed to significant levels of aircraft noise in the United States has dropped by 94 percent between 1975 and 2019, even as enplanements increased by 379 percent. At the same time, A4A and our members appreciate that any particular person experiencing aircraft sound may have a negative experience, and we strongly support the array of aircraft noise management regulations and procedures in place to address this.

A4A and our members support FAA's research activities outlined in this most recent request for comment. We believe robust data and analysis leads to appropriate evidence-based policy making and support FAA's pursuit of these ends. We further appreciate FAA's strategy in taking a stepwise approach to make informed decisions about its aviation noise policy. To that end, A4A does have concerns about FAA's recent Neighborhood Environmental Survey (NES) and looks forward to working with FAA to ensure that the NES and other aircraft noise research are appropriately considered as FAA deliberates on its noise policy.

As a preface to our comments, we emphasize that A4A and our member airlines recognize that aircraft noise can be an issue for certain communities, and we remain committed to further advancing the tremendous record of aircraft noise reduction we have achieved. Our members are continuing to address aircraft noise by deploying new, quieter technology, implementing additional noise abatement operational procedures, and supporting research and development programs to achieve additional breakthroughs. Indeed, prior to the COVID-19 pandemic, the industry purchased over 1,000 new planes from 2017 to 2019. As FAA is well aware, while the pandemic has severely impacted the industry, it has also accelerated the turnover of our industry's fleet as older, noisier, and less efficient planes have been grounded and will ultimately be replaced by quieter and more efficient aircraft as we emerge from the current crisis. Further, as you know, the latest International Civil Aviation Organization (ICAO) noise certification standard (codified as the Stage 5 noise standard in the United States) went into effect for large aircraft at the end of 2017 and the new standard for small aircraft in 2020, continuing to bring noise

¹ A4A's members are: Alaska Airlines, Inc., American Airlines, Inc., Atlas Air, Inc., Delta Air Lines, Inc., Federal Express Corporation, Hawaiian Airlines, JetBlue Airways Corp., Southwest Airlines Co., United Airlines Holdings, Inc., and United Parcel Service Co. Air Canada, Inc. is an associate member.

reductions at the source. A4A and our members also are proud partners with FAA and others in the Aviation Sustainability Center (ASCENT) and projects under the Continuous Lower Energy, Emissions and Noise (CLEEN) program, which are advancing the state of the science on aircraft noise exposure and research on and development of technology and operational measures to achieve further reductions.

In addition to taking action to further reduce aircraft noise, as FAA is aware, A4A and our members have and continue to be active participants in the NextGen Advisory Committee and supported the task group that developed recommendations and best practices for community engagement for large and small NextGen projects, much of which centered on engaging with the community regarding aircraft noise exposures. We appreciate the effort FAA has put in to updating its community engagement policies to reflect these recommendations and understand the many facets of aircraft noise impacts that must be weighed against the myriad benefits aviation brings to society when addressing these issues at a local level and also when used to help inform and develop national policy. A4A and its members continue to support and actively engage with the FAA and communities when airspace modifications are being considered and believe it is an effective process for addressing all stakeholder concerns and developing solutions to help mitigate noise impact.

To that end, we commend FAA for stating that it “will not make any determinations on implications from the[] 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.”² At the same time, A4A has concerns regarding the NES and the underlying analysis as presented in FAA’s Final Report vis à vis national aviation noise policy.

Neighborhood Environmental Survey

As A4A and our members work to reduce noise exposure, we recognize FAA’s directive to conduct research into the impacts of aircraft noise exposure and appreciate the importance of improving the scientific understanding of the dose-response relationship between aircraft noise and annoyance; however, certain attributes of the NES as described in FAA’s Final Report raises questions about the reliability of the dose-response curve that was developed and how it should be used to inform FAA decision making.

First, the NES does not include a “control group” in its survey methodology. In scientific experiments, control groups are used to ensure the independent variable being tested does not influence the results. This is done to assist in ruling out alternative explanations for the experimental results. It is well established that control groups can also be important in survey research intended to assess potential correlation and/or causation between survey recipients’ exposures or experiences with their psychological impact. As noise exposures are myriad throughout the country, the NES should have included a control group outside an area in the vicinity of an airport to understand how the independent variable, here aircraft noise exposure expressed as DNL, affects a population’s annoyance level, and the degree to which other factors – including preconceived notions or perception – may influence the public’s annoyance level. While we do not dispute that aircraft noise exposure in general influences an individual’s annoyance level, the responses of people in areas away from airports to the same set of questions as posed to those near airports would have provided a basis for comparing responses and understanding whether other factors may confound results regarding the relationship between exposure to aircraft noise and reported annoyance. Notably, the reported results of the NES appear to confirm that aircraft noise exposure alone cannot account for reported annoyance as the difference in the percent of the population determined to be highly annoyed varies widely (anywhere from 5 to 40 percent of the population) at the same noise exposure level across the airports surveyed. It is particularly important to be able to assess how much factors aside from actual aircraft noise exposure may influence the public’s annoyance level

² 86 Fed. Reg. 2722, 2728 (Jan. 13, 2021).

when the NES's final dose-response curve results in such a large shift in annoyance across all DNL values compared to the Schultz curve, which several federal agencies rely on for policy making and which has been repeatedly validated for national policy use.

Second, we question FAA's use of the five-point scale and the significant weighting of the top 40% of it as "highly annoyed." The Final Report provides in Appendix A copies of the mail survey FAA relies on to derive the percent of the population "highly annoyed" at given aircraft noise exposure levels. The survey uses a five-point scale for annoyance, and FAA's analysis interprets the survey data such that respondents selecting the fourth or fifth options are considered "highly annoyed." Using a five-point scale means that FAA's analysis assumes that the top 40% of the annoyance scale represents "highly annoyed." Yet, there is no support for including such a significant percentage of the scale in the "highly annoyed" category. Furthermore, this directly contradicts the Schultz curve's reliance on the top 27-29% of survey scales and could easily overestimate the number of survey respondents "highly annoyed." Consequently, the national and individual airport dose-response curves could well overestimate the percent of the population that is "highly annoyed" across any and all DNL values. This issue is particularly salient again because of the new dose-response curve's implication; namely, the assertion that there has been a substantial increase in the portion of people "highly annoyed" by aircraft noise exposure relative to the research relied upon in developing the Schultz curve.

The comparison, however, is not apples to apples. We recognize that other social surveys on aviation noise have indicated people may be more sensitive to aircraft noise exposure than other modes of transport. However, it is impossible to discern from the NES analysis whether the increase in the portion of the population "highly annoyed" at a given noise exposure level is attributable to the Survey's exclusive focus on aircraft noise exposure (as compared with the Schultz curve's multi-modal focus) or whether it is attributable to the decision to consider that 40% of the survey scale would be deemed "highly annoyed" rather than the 27-29% used in Schultz' work. As a result, neither of the factors can be isolated in the analysis further muddying the assessment of whether and how other factors are at play.

Third, while appreciating that FAA will consider the implications of the NES results relative to potential changes to the long-established thresholds for noise exposure policy response in a later step, we note that none of the NES's dose-response curves that FAA postulated contain natural inflection points that could assist FAA in assigning thresholds of significance in national noise policy. As such, any determination of a significance threshold could be arbitrary without additional research into co-determinants of adverse community response to aircraft noise exposure or research that could otherwise provide evidence of an appropriate threshold.

As FAA well knows, aviation is the safest mode of transport and provides a highly efficient means of moving people and goods across our country. While it may be logical to use an aviation-specific dose-response relationship between noise exposure and individual annoyance in setting aviation noise policy, there remains a question how FAA should assign an aviation-specific threshold of significance for noise exposure, which could inappropriately penalize aviation activity relative to other modes of transport.

Other Research Considerations

Regulatory policy is intended to balance societal interests. Additional research is needed to support a more reliable system that demonstrates the relationship between noise exposure and community response, thereby allowing for a data-driven rationale for FAA decision making. It is evident from FAA's *Federal Register* Notice on this request for comments that FAA is undertaking appropriate research and development to better inform aviation noise impacts, but care must be taken in interpreting any research outcomes when assessing them for policy purposes.

A4A supports FAA's current Research, Engineering & Development portfolio regarding noise policy research and agrees that future work to better understand communities' response to aircraft noise continues to be an important research endeavor. In addition to the factors FAA highlights in its Notice,³ FAA should consider research into visual cues of noise exposure. While other transportation noise sources necessarily have visual cues of their presence, i.e., roads, expressways, railroad tracks; individuals are only aware of flight paths if aircraft are flying overhead, or the individual is aware of a proximate airport. Individual expectations of noise exposure therefore could be reflected in the individual's expectations about the source of noise exposure as provided by the visual environment. Better understanding this relationship, if there is one, could lead to disclosure policies that would better set community expectations around aircraft noise exposure, as local land use policy is a major factor in managing aircraft noise exposure issues.

As the industry has made tremendous strides to reduce aircraft noise exposure through technological and operational advances, haphazard development of incompatible land uses near airports allowed through poor land use planning has unfortunately eroded these gains. Airline and passenger charges have provided several billion dollars over the last several years for sound insulation and other noise mitigation for those in the vicinity of airports; however, studies show that individuals continue to move into existing noise contours around airports. As FAA considers its national noise policy, it should therefore ensure proper integration of the role more effective land use management and zoning provisions can play in preventing aircraft noise exposure in the first place.

Lastly, A4A would like to express support for FAA's determination that DNL continues to be the appropriate single system for setting noise policy pursuant to the Aviation Safety and Noise Abatement Act of 1979 and per FAA's 2020 Report to Congress.⁴ DNL is appropriate for use in national policy as a tool to predict an individual's cumulative noise exposure. And, by its very definition DNL incorporates a penalty for effects associated with noise exposure during nighttime hours. Improved understanding of the impacts of aircraft noise exposure on human health may not therefore necessitate a complete overhaul of FAA's national noise policy where research outcomes provide further support of current policies, like the use of DNL.

* * *

Thank you in advance for your consideration of these comments. We would be pleased to provide any additional information or answer any questions FAA may have as it considers its decision in this matter.

Sincerely,



Veronica Bradley
Director, Environmental Affairs



Nancy N. Young
Vice President, Environmental Affairs

³ 86 Fed. Reg. at 2726.

⁴ Federal Aviation Administration, Report to Congress: FAA Reauthorization Act of 2018 (Pub. L. 115-254) Section 188 and Sec 173 (Apr. 14, 2020).