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Airport Noise Report



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FAA Noise Policy Review

COMMUNITIES CALL CLAIM OF SIGNIFICANT REDUCTION IN NOISE EXPOSURE MISLEADING

Community groups are challenging an assertion by airline and airport trade groups that they have made “remarkable progress” in reducing the number of people exposed to significant levels of aircraft noise.

In comments submitted Sept. 29 to FAA’s docket on its aviation noise policy review, Airlines for America, the International Air Transport Association, the Airport Council International – North America, and the American Association of Airport Executives, wrote:

“As the FAA itself emphasizes, since the mid-1970s, the number of people affected by significant aviation noise levels has plummeted by 94 percent, even as the number of enplanements has more than quadrupled.”

But the leaders of the Aviation-Impacted Communities Alliance (AICA) call this claim “misleading” and use Department of Transportation data to explain why.

The DOT data show there was a downward trend in the number of people exposed to 65 DNL from the mid-1970s until 2010 but after the number of people exposed to 65 DNL began to increase.

Between 2010 and 2019 (pre-COVID), the number of people exposed to 65 DNL increased by 39 percent (from 318,000 people in 65 DNL in 2010 to 440,000 people in 65 DNL in 2019, the DOT data show.

But the DOT data also show that the 5.2 million people living within the 65 DNL contour in 1980 dropped to 430,000 by 2019.

So the DOT data supports arguments being made by both the airport and airline trade groups as well as the community groups. What the trade groups leave out, however, is the increasing numbers of people within the 65 DNL contour beginning in 2010 and the DOT’s assessment of the weaknesses in the estimates of the numbers of people within the 65 DNL contour.

Drop Based on ‘Invalid’ 65 DNL

Darlene Yaplee, co-founder of the AICA, which represents over 70 grassroots community groups, told ANR: A4A, IATA, ACI-NA, and AAAE assert in their comment

to FAA, "We have taken our responsibility to address aircraft noise very seriously and are extremely proud of our stellar record of reducing impacts on local communities..."

Unfortunately, communities have not experienced the "stellar record of reducing impacts." The often-used proof point of reducing the number of people exposed to significant levels of aircraft noise since 1975 by 94 percent is based on the invalid metric and threshold, DNL 65.

The 94 percent reduction claim uses the outdated DNL 65 (based on the Schultz Curve, 1992) instead of the recent Neighborhood Environmental Survey (NES, National Curve 2021). The NES shows that 12.3% of people are highly annoyed at DNL 46. Even using the invalid DNL 65, between 2010 and 2019 (pre-COVID), the number of people exposed to DNL 65 has increased by over 100,000 people, a 39% increase, not a decrease in noise impacts.

This is not surprising given FAA's posted 4,839 comments for the Noise Policy Review underscored an overarching theme from communities that the current noise policy and its definition of Significant Impact (DNL 65) is inadequate and does not reflect the real and true impacts experienced by residents.

Why are we having a noise policy review? Because we should have a noise policy that reflects the lived experience of communities. We deserve nothing less.

Claims Must Be Backed by Robust Analysis

Jennifer Landesmann, a member of Sky Posse Palo Alto (CA), told ANR:

Airlines for America's input to the FAA's Noise Policy Review suggests that there has been progress in optimizing procedures and routes to reduce noise, when the FAA's success criteria is limited to addressing noise in the 65 DNL contour.

Most, if not all, airspace procedures and routes are processed by the FAA with Categorical Exclusions, which deny transparency, but we do know that the FAA's method of "reducing the number of people in the 65 DNL" suspends analysis of the full scope of potential environmental risks or benefits from noise reduction optimization actions.

And the DOT Inspector General is currently undertaking another audit of the business case for Nextgen which has yet to include the costs of noise and air quality pollution. Moreover, some routes and procedures don't work in congested airspace or the designs themselves cause more noise.

A4A asks what is a realistic outcome of the FAA's Noise Policy Review. I believe a priority for the noise policy review must be that sustainability claims be backed by appropriate, robust, and transparent analysis to prevent potentially misleading representations about noise reduction.

DOT Data Report

The data AICA is relying on to dispute the airline and airport trade groups' assertion of significant progress in reducing noise impact in the 65 DNL noise contour is from the *National Transportation Statistics 2021 50th Anniversary Edition* report from

the U.S. DOT Office of the Secretary of Transportation Bureau of Transportation Statistics and the U.S. DOT Volpe Center.

The Foreword to the report explains that *National Transportation Statistics* is a tabular summary of trends in transportation, first published 50 years ago by the U.S. DOT when it was less than five years old.

The publication has evolved from its first edition, a printed annual report with 19 displays, tables, and modal profiles, to a digital product with 230 tables and modal profiles, each updated as soon as data are available and made publicly accessible at www.bts.gov/nts. The report is at:

<https://www.bts.gov/sites/bts.dot.gov/files/2021-12/NTS-50th-complete-11-30-2021.pdf>

Both FAA and the community alliance drew on the data in the DOT report's Table 4-57: Number of People Residing in Areas of Significant Noise Exposure Around U.S. Airports (within 65 dB DNL noise-level contours), which is on page 301 of the report.

Uncertainties in Noise Exposure Data

Cindy Christiansen, PhD, also a co-founder of the AICA community alliance, stressed that the *National Transportation Statistics 2021 50th Anniversary Edition* report "explains that the numbers [in Table 4-57] are estimated but with all kinds of problems, including missing data from several important airports. The FAA never reports these uncertainties with their data when they proudly show their graphic," she told ANR.

"So, again, all I did was use the same data that the FAA uses to show that exposure over the last 10 pre-covid years has increased by 39% (318,000 in 2010 to 440,000 in 2019).

[Attached to the email that brought you this week's issue of ANR is a presentation Christiansen made to the NextGen Advisory Committee that includes graphs made by AICA and FAA based on the DOT data. It is striking how dissimilar they are.]

Following is an excerpt beginning on page 475 of the DOT report explaining how the data in Table 4-57 came to be. ANR added the Subhead:

TABLE 4-57 Number of People Residing in Areas of Significant Noise Exposure Around U.S. Airports

The number of the people exposed to aircraft noise around airports is estimated by computer modeling rather than by actual measurements.

The U.S. Department of Transportation (USDOT), Federal Aviation Administration's (FAA's) Integrated Noise Model (INM) has been the primary tool for assessing aircraft noise around airports for nearly 30 years. This model uses information on aircraft mix, average daily operations, flight tracks, and runway distribution to generate and plot contours of Day Night Sound Level (DNL). With the addition of a digitized population census database, the model can estimate the number of residents exposed to noise levels of 65 decibels (db) DNL.

The U.S. Environmental Protection Agency (EPA) produced the first estimate of airport noise exposure in 1975. It reported that 7 million residents were exposed to significant levels of aircraft noise in 1978. This number became the "anchor point" for all future estimates of the nationwide noise impacts.

In 1980, FAA developed another methodology for estimating the change in the number of people impacted by noise (from the 1975 anchor value) as a function of changes in both the national fleet and in the FAA's Terminal Area Forecast (TAF). In 1990, the FAA created an improved method of estimating the change in number of people impacted (relative to the 1980 estimates).

In 1993 the FAA began using its newly developed Nationwide Airport Noise Impact Model (NANIM) to estimate the impact of airplane noise on residential communities surrounding U.S. airports that support jet operations. FAA uses this model to determine the relative changes in number of people and land area exposed to 65 db DNL as a result of changes in nationwide aircraft fleet mix and operations.

NANIM uses data on air traffic patterns found in the Official Airline Guide (OAG), air traffic growth projections found in FAA's TAF, population figures from the U.S. Census Bureau, and information on noise contour areas for the top 250 U.S. civil airports with jet operations.

NANIM Model's Accuracy Not Evaluated

The methodology used in NANIM has been peer reviewed and approved. However, a formal evaluation of the model's accuracy has not been conducted.

Some data used in NANIM are updated manually thus the possibility of data entry errors does exist. Entries are reviewed and then corrected as appropriate. The aircraft mix and operations files from FAA's TAF and OAG are updated automatically.

Changes to either of the sources could introduce errors. For example, it was recently discovered that OAG redefined some aircraft codes and altered some data fields in its database. These changes make it impossible for the NANIM utility program to accurately read the current OAG database.

A rewrite of the source code is necessary to eliminate this error. Also, because airport authorities are not required to produce noise exposure maps and reports unless they intend to apply for Federal grants, 14 of the 50 busiest commercial airports, including JFK and LaGuardia, have not produced (for public consumption) noise exposure maps in several years. In the absence of actual data, the NANIM database contains approximations of the noise contours areas based on airports of comparable size and similar operation. Without actual airport data, it is impossible to quantify the error introduced by the approximation.

Noise Exposure people data for 2000 and forward was re-estimated using an enhanced version of U.S. MAGENTA Model for Assessing the Global Exposure of Noise because of Transport Airplanes). The enhanced version of the model uses radar-based traffic data to account for unscheduled operations including freight, general aviation, and military operations.

The enhanced U.S. MAGENTA also includes improvements to the acoustical model to account for differences in the sound attenuation characteristics between

wing-mounted and tail-mounted aircraft engines. These enhancements result in computed population noise exposure estimates that are more accurate and larger than previous versions of the model.

Therefore, it is important to note that the "growth" in the number of people exposed from 1999 to 2000 resulted from improvements in measurement, not deterioration in aviation noise trends. In 2013, the Federal Aviation Administration revised the reporting of noise exposure from calendar year to fiscal year going back to 2000 to align with other agency performance metrics.

Comment to NextGen Advisory Committee (NAC)

Friday, February 10, 2023



For the public speak agenda item for the NAC meeting on **February 28, 2023**

The FAA uses the graphic in [Figure 1](#) to show a steep decline in the number of people exposed to significant aviation noise while over the same time, the number of passenger enplanements has skyrocketed.

The graphic is misleading for several reasons.

1. The outdated DNL65 is used to define significant aviation noise and to count the number exposed. From the FAA's Neighborhood Environmental Survey (NES) study we now have scientific evidence that significant exposure to aviation noise occurs at approximately the DNL45 threshold, not 65.
2. The reported exposure covers 45 years – 17 FAA Administrators ago or about the number of years since the first female airline pilots were hired by US airlines.
3. Since 2010, the year that NAC was established, there has been an upward trend in the number exposed, a 39% increase over the last 10 pre-Covid years. See [Figure 2](#).
4. FAA's graphic (Figure 1.) is misleading. It does nothing to help remedy the health and quality of life consequences created by NextGen.

The FAA and the NAC can do better than this. Major societal problems, like exposure to excessive aviation noise, will not be solved without accurate information that is reported scientifically and objectively.

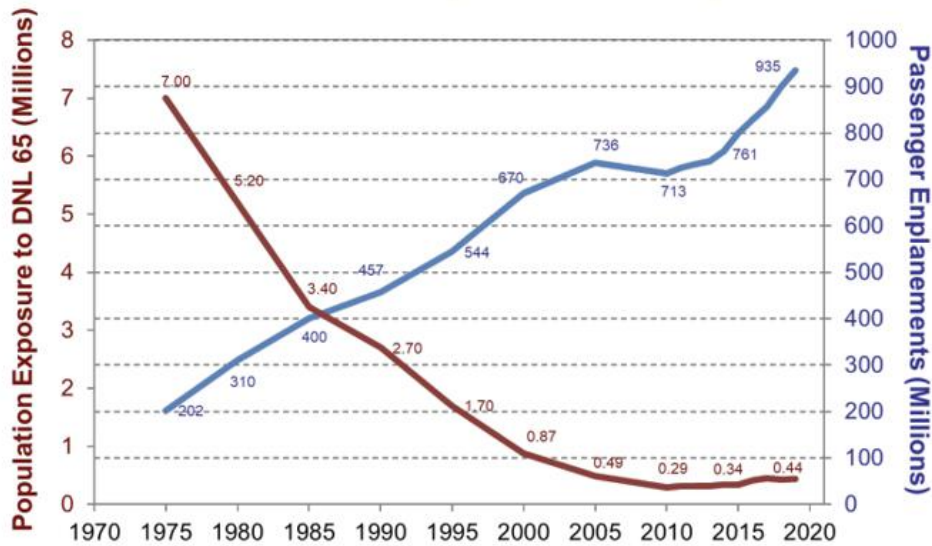
Cindy L. Christiansen, PhD

[Aviation-Impacted Communities Alliance](#)

Figure 1. FAA's Misleading Exposure Graphic

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Historical Trends in Noise Exposure and Enplanements



Over a ninety percent decrease in community noise exposure while increasing enplanements by nearly a factor of five; however, the noise experience is different than it was in decades past

source: FAA enplanement data and noise analyses using AEDT

Federal Aviation Administration 11

Figure 2. Uses the Same Exposure Data as in Figure 1

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