

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
**Office of the Attorney General**



**ATTORNEY GENERAL**  
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March 15, 2021

Docket Operations, M-30  
U.S. Department of Transportation  
1200 New Jersey Ave., SE  
Room W12-140,  
West Building, Ground Floor  
Washington, D.C. 20590-0001

RE: Docket No. FAA-2021-0037

**Comments of the Attorney General for the District of Columbia on the Federal Aviation Administration’s Request for Input on Research Activities to Inform Aircraft Noise Policy (86 Fed. Reg. 2722, Jan. 13, 2021).**

To the FAA Administrator:

The District of Columbia, by its Attorney General (“District” or “DCAG“) respectfully submits the following comments regarding the Federal Aviation Administration’s (FAA) Request for Input on Research Activities to Inform Aircraft Noise Policy. The District supports the FAA’s efforts to improve its understanding of aircraft noise impacts and noise policy including commissioning of the Neighborhood Environmental Survey (NES). For many who continue to endure the impacts of the FAA’s Performance Based Navigation process and the advent of area navigation procedures (RNAV), including changes to historic arrival and departure routes to and from DC National Airport, this study is long overdue. In fact, the last comprehensive survey was performed by the U.S. Environmental Protection Agency (EPA) in the 1970s.

The District urges the FAA to: (1) use its research activities to provide evidence-based updates to its Noise Policy; (2) incorporate existing and on-going research on human health impacts of aircraft noise in its Noise Policy; and 3) apply that Policy equitably in evaluating arrival and departure flight patterns at issue.

## **1. Current Noise-Level Data and FAA Noise Policy are Inadequate.**

One over-arching conclusion from the NES is that the noise level data and Noise Policy that the FAA has been relying on for decades are woefully inadequate. As the FAA points out, the FAA's current Noise Policy is informed by the Schultz Curve (FICON), a dose-response curve initially created in the 1970s, revalidated in 1992, that relies on data more than 40 years old.<sup>1</sup> The new "National" NES dose-response curve demonstrates that the percentage of people who are "highly annoyed" by aircraft noise increases by a factor of nearly 10 times at the lower end of the noise spectrum (2% vs. 19% @ DNL<sup>2</sup> 50dBa) and nearly 3 times at the higher end of the spectrum (36% vs. 89% @ DNL 75 dBa) as compared to FICON predictions.<sup>3</sup>

## **2. The FAA Needs to Incorporate Existing and On-Going Research in its Noise Policy.**

The FAA's Noise Policy is deficient for other reasons. The FAA routinely relies on the DNL as a single metric when making aircraft routing decisions. In the public notice, the FAA concedes that it needs "[a] broad understanding of aircraft noise and any potential impacts, from many different perspectives" to guide Agency decision-making. Included in the FAA's list of other perspectives the FAA is pursuing is current on-going collaborative research on speech interference and children's learning, human health impacts such as cardiovascular health and sleep disturbance, and economic productivity impacts. Yet, there have been numerous studies and research performed in the past several decades regarding the effect of environmental and aircraft noise in these areas; e.g., on children's learning:

- Children exposed to chronic environmental noise have been found to have poorer auditory discrimination and speech perception as well as poorer memory deficits in sustained attention and visual attention and poorer reading ability and school performance on national standardized tests.<sup>4</sup>
- A 5 dB difference in aircraft noise was equivalent to a 2-month reading delay in the UK.<sup>5</sup>

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<sup>1</sup> Final Report: Analysis of the NES (Feb. 2021), p. 1.

<sup>2</sup> DNL is the day-night average sound level over a 24-hour period. The noise level measurements between the hours of 10pm and 7am are artificially increased by 10 dB before averaging due to more profound effects of night-time noise impacts.

<sup>3</sup> *Id.* at Fig. 8-4.

<sup>4</sup> Johnson, C. E. (2000). Children's phoneme identification in reverberation and noise. *J. Speech Lang. Hear. Res.* 43, 144–157; Yacullo, W. S., and Hawkins, D. B. (1987). Speech recognition in noise and reverberation by school-age children. *Audiology* 26, 235–246; Ziegler, J. C., Pech-Georgel, C., George, F., Alario, F., and Lorenzi, C. (2005). Deficits in speech perception predict language learning impairment. *Proc. Natl. Acad. Sci. U.S.A.* 102, 14110–14115.

<sup>5</sup> SA Stansfeld, et al. "Aircraft and Road Traffic Noise and Children's Cognition and Health: A Cross-National Study" (2005) [RANCH Study] *Lancet*, 1946.

- The association between the effects of aircraft noise and student test scores is statistically significant. Up to a 12 percent decrease in a school's state ranking (based on standardized testing) was estimated for schools impacted by aircraft noise.<sup>6</sup>

On human health impacts like cardiovascular health and sleep disturbance of night-time noise exposure, the World Health Organization recommends noise impacts be limited to less than 40 dB to prevent adverse health effects.<sup>7</sup> The American National Standards Institute (ANSI) developed a procedure to predict sleep disturbance based on research data on aircraft flyover awakenings from several independent studies.<sup>8</sup> The FAA can and should draw from this current research, knowledge and understanding on noise impacts to revise its Noise Policy.

### 3. **The FAA Must Apply its Noise Policy Consistently and In Accordance with Law.**

Finally, the FAA's Noise Policy must be applied consistently and in accordance with existing law. One poignant example of unlawful application of the FAA's Noise Policy is the FAA's decision in 2013 to change departure routes from National Airport (DCA). Since 1941 until 2011, aircraft departing the northbound route from DCA Runway 33 (NATIONAL), followed a straight compass azimuth of 328° (328 radial) over the Pentagon, Arlington National Cemetery and the commercial district in Rosslyn, Virginia before intersecting the Potomac River northwest of the 14<sup>th</sup> Street Bridge.

In 1997, the Metropolitan Washington Aviation Authority (MWAA) undertook a 14 CFR Part 150 study<sup>9</sup> to update the noise control program at DCA. The Part 150 Airport Noise Compatibility Planning Study completed in 2004 recommended shifting northbound departures eastward over the River closer to DC to reduce noise impact to Arlington County communities and to provide more precise departure routing using advanced navigational technology.<sup>10</sup> The DCA Part 150 Advisory Committee concluded that the increased noise to DC communities along the River was not significant.<sup>11</sup> This recommendation was ultimately disapproved by the FAA in the

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<sup>6</sup> See, ARCP Project Report No. 02-26, *Assessing Aircraft Noise Conditions Affecting Student Learning*, Wyle Laboratories, Inc. (2013), pp. 5-16; 5-19.

<sup>7</sup>World Health Organization. Regional Office for Europe. (2009). Night noise guidelines for Europe. *World Health Organization. Regional Office for Europe*, p. XVI.

<sup>8</sup> Quantities and Procedures for Description and Measurement of Environmental Sound - Part 4: Noise Assessment and Prediction of Long-Term Community Response. ANSI/ASA S12.9-2005/Part 4 (R2020),

<sup>9</sup> Part 150 Studies are undertaken periodically at major airports to evaluate community noise exposure and recommend noise abatement measures, if necessary.

<sup>10</sup> Ricondo & Associates et al. (2004). *FAA Part 150 Noise Compatibility Program Update* [Online]. Available at: <http://www.mwaa.com/sites/default/files/archive/mwaa.com/file/NCProgramUpdate.PDF>

<sup>11</sup> Based on simplified noise modelling, the Part 150 Study predicted that the change in departure routes would lead to a decrease of 3 dBA over Rosslyn and an increase of 1 dBA over Georgetown.

2008 Record of Approval for the Part 150 study because altering flight routes solely for the purpose of transferring noise from one community to another is contrary to FAA policy.<sup>12</sup>

Two years later, with the implementation of RNAV, the FAA developed the concept for the LAZIR Standard Instrument Departure (SID) route as a noise abatement measure drawing directly from the 2004 Part 150 study. As a matter of process, the FAA was required to complete an environmental review to ensure that the action complies with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. *See*, FAA Order 7100.9. In September 2010, the FAA conducted an elementary noise analysis of the LAZIR SID that revealed two areas exceeding the FAA’s 5 dB significant noise increase criteria – one blanketing a large portion of Georgetown and another the eastern shore of the Potomac. Despite these findings, the FAA used a CATEX (categorical exclusion from NEPA) to determine a finding of no significant impact citing FAA Order 1050.1E. (Environmental Impacts: Policies and Procedures, §311p: “Establishment of new procedures that routinely route aircraft over non-sensitive areas.”). Moreover, the areas impacted included the historic Georgetown area and the National Parks abutting the Potomac, both noise-sensitive areas. Ignoring FAA protocols including NEPA review and employing less than diligent quality assurance checks, the FAA finalized LAZIR in 2013<sup>13</sup> and fully implemented LAZIR in 2015.

In 2018, the District’s Department of Energy and the Environment (DOEE) retained the CSDA Design Group to perform an independent assessment of noise impacts of the LAZIR SID departure route based on field noise monitoring.<sup>14</sup> In its report, CSDA concluded:

1. Aircraft noise exposure has increased substantially in northwest District communities.
  - a. Aircraft noise levels in classrooms exceed the ANSI classroom acoustic standards which may have a detrimental effect on learning.
  - b. Night-time aircraft noise levels in residences are high enough to awaken 12-33% of the population.
  - c. Approximately 400 flights per day from DCA produce noise levels which are at or above 65 dBa, the level at which oral communication is impaired.
2. Noise monitoring results and noise complaints obtained from MWA prior to 2015 are questionable and do not adequately delineate or describe the historical noise environment, nor community attitudes toward noise.

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<sup>12</sup> 73 Fed. Reg. 3794.(Jan. 22, 2008).

<sup>13</sup> CSDA Design Group, DCA Airplane Noise Assessment Final Report, September 2018

3. Noise modeling results for alternative departure routes demonstrate a potential for significant noise reduction in DC communities.

In 2020, the FAA proposed altering LAZIR by moving one of its waypoints 784 feet west to avoid consistent incursions by departing aircraft into Area P-56 restricted airspace over the National Mall. The FAA considered no other alternatives, performed a simplified noise screening model to predict no significant noise impacts and used a CATEX to avoid environmental review even though the route changes continue to impact noise-sensitive areas.

This example demonstrates that effective noise policy must rely not only on accurate noise data, but also must consider other metrics including impacts on childhood learning and human health. Equally important, noise policy must be applied consistently and in accordance with applicable law. Without the integration of each of these elements, the FAA will not achieve a noise policy capable of meeting the concerns of those who may or continue to be impacted by ill-advised and unlawful decision-making.

#### **4. Conclusion**

The District agrees with the FAA that “aircraft noise remains a primary concern of many stakeholders” and that “a broad understanding of aircraft noise and . . . potential impacts, from many different perspectives, is . . . needed.” Current studies and knowledge including those referenced above as well as technological advances capable of producing quieter and more efficient aircraft and navigating more precise routes must be considered to update the FAA’s Noise Policy in order to reduce noise impacts on areas and residents exposed to an ever-increasing expansion of air traffic. The FAA must act swiftly using the results of the NEA and existing and on-going research to revise and modernize its Policy and apply it consistently and in accordance with existing laws including NEPA and the Historic Preservation Act.



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