



July 8, 2020

Federal Aviation Administration
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

Subject: Comments to Notice of Proposed Rulemaking: Agency/Docket Number
FAA-2020-0316 Notice no. 20-06 Supersonic Aircraft Certification

To Whom It May Concern:

The LAX/Community Noise Roundtable (Roundtable) is focused on addressing noise issues associated with aircraft operations and recommending courses of action to reduce noise over affected communities. As such, the Roundtable is extremely concerned with the subject Notice of Proposed Rulemaking (NPRM), specifically with the intent of the NPRM to allow this new class of aircraft not to meet Stage 5 noise requirements that are already imposed on all other classes of currently manufactured aircraft.

The communities represented on the Roundtable have benefitted over the years from the reduction of noise resulting from legislation continuing to require manufacturers to produce quieter and quieter aircraft. In addition, our communities have received noise relief from the phase-out of Stage 2 aircraft, the industry retirement of planes retrofitted to meet Stage 3, and most recently the retirement of the noisiest of the Stage 3 aircraft, e.g., the MD-80. Allowing supersonic aircraft not to meet the currently legislated Stage 5 noise requirements will result in a step backward for our communities.

The Roundtable supports and encourages the FAA in allowing the use of Variable Noise Reduction Systems (VNRS) and the Program Lapse Rate (PLR) system for supersonic aircraft to limit thrust in order to minimize noise generation. However, it is vital that these technologies not only be used for certifying these aircraft, but also be used to actually operate them at airports with the goal of reducing overall noise exposure to communities. The Roundtable is supportive of noise reduction technologies that help aircraft meet current and future noise standards. Not requiring supersonic aircraft to meet the current Stage 5 noise standards will have the potential of creating more noise for residential communities. Therefore, the Roundtable requests that the FAA consider revising this NPRM to require supersonic aircraft meet Stage 5 and future noise standards as part of its aircraft noise certification process.

The Roundtable has other concerns with noise related to supersonic aircraft, but we believe this NPRM is only addressing the noise certification of arrival and takeoff operations (aircraft at subsonic speeds). Therefore, we have limited our comments in this letter to aircraft

arriving and departing airports. The Roundtable's additional concerns are attached.

Thank you for the opportunity to voice our concerns regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis J. Schneider". The signature is fluid and cursive, with a large initial "D" and "S".

Dennis J. Schneider, Chair
LAX/Community Noise Roundtable

Attachment: Additional Noise Concerns

Additional Noise Concerns: FAA Notice Agency/Docket Number FAA-2020-0316 No. 20-06 Supersonic Aircraft Certification

1. The FAA referenced a list of 2018 noise characteristics questions and noted that the answers by varied groups are considered proprietary. The notice states, “The FAA anticipates that the new supersonic airplane designs will produce LTO cycle noise similar to the fleet of subsonic airplanes currently in operation.” We don’t know how the proprietary answers will impact people on the ground and therefore can’t comment. However, any increased ground-level noise over that caused by subsonic aircraft remains unacceptable.
2. The FAA expects wing and fuselage design to be more streamlined and narrow. Will these supersonic aircraft then have to operate during LTO at higher speeds with an attendant change in noise impacts? Will these aircraft produce noise in terms of the A, C, and low-frequency noise metrics equivalent to subsonic aircraft?
3. The FAA says that it expects engine design to be different for supersonic aircraft with higher thrust/weight ratio and lower bypass ratio. If higher bypass engines result in more low-frequency noise can the supersonic aircraft be designed to reduce low-frequency noise? What limits will be set? If engines must be smaller diameter to reduce drag will there be noise requirements imposed to ensure that noise levels remain at least as low as subsonic aircraft? How can noise at new frequency levels be mitigated?
4. The FAA stated that it planned to evaluate aircraft using a weight-noise ratio calculation. Is this valid for a new, more streamlined aircraft? The FAA stated further that “higher thrust and lower bypass ratio both contribute to higher lateral noise levels.” Will the noise spread off the aircraft at a different than 45° angle and does modeling take this into consideration? Can noise-canceling be effective for the new aircraft? Will the integral of noise exposure change perception?
5. Since the FAA represents the US among International standards how will the FAA justify LTO and other standards used by other countries to qualify new designs?
6. When the FAA stated in its Analysis of Proposed Rule Text, “Part 21, §21.93 Classification of changes in type design. The FAA is proposing to add supersonic airplanes to the list of aircraft in §21.93(b). This section provides...design that may increase noise levels...must meet the applicable requirements...” How will the noise changes be correlated to other aircraft and especially those “exceptions” such as prop aircraft, helicopters, and others? Will the FAA insist on empirical data measurement or allow the use of theoretical modeling?
7. The FAA further noted that there is an Appendix A change for supersonic aircraft to adjust test results to reflect nominal atmospheric conditions. We ask that the FAA verify the correctness of its integrated noise model (Aviation Environmental Design Tool – AEDT) and demonstrate the continued validity of the effective perceived noise evaluation metric level (EPNL) as the basis for these noise certification results. We also agree that the newly proposed Appendix C for supersonic aircraft noise testing procedures will include corresponding measurement points (lateral, flyover, and approach).

8. Page 14 of the FAA proposed procedures descriptions speaks to continued use of the existing paradigm allowing for weight being divided into two categories. We would like validation of the FAA statement, “The FAA does not propose to deviate from this paradigm for supersonic aircraft. Weight remains the correlating factor, without reference to the shape or thrust or other capacities of an individual model.” It appears that the FAA is calling for maximum noise measurements in each of the three conditions regardless of whether the aircraft has two or three engines. The FAA should verify its assumption that using a cumulative noise exposure value for the three conditions.
9. The FAA also referenced §C36.7 which will address requirements for VNRS and when those requirements are applicable for certification. We ask that the FAA address how VNRS will be applicable for go-arounds and other LTO conditions as well.
10. Under their “Benefits and Costs” section the FAA asked for suggestions on how the noise effects can be analyzed. We suggest that the FAA build upon its recent studies of noise metrics and use multiple metrics beyond DNL. The FAA should also include the health costs imposed upon people on the ground.
11. Under “Unfunded mandate Assessment” the FAA states that it includes no mandate. However, when the aircraft noise is concentrated over small areas causing health effects on people the various levels of government must pay a portion of the total health care costs. This, to us, appears to be an unfunded mandate. Additionally, depending on what noise levels are determined there may be increased mitigation costs beyond the local airport area. One suggestion: the FAA should investigate the use of foam board in the construction of roofs instead of plywood. Foam board is less expensive and provides an effective R factor to reduce noise inside buildings. If the FAA provides foam board to an extended area around airports (ie 55 DNL levels) only when new roofs are constructed or refurbishment construction then an entire area can be mitigated—not 100%—but improved for very little cost.