



[4910-13]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Parts 36 and 91**

[Docket No.: FAA–2015–3782; Amdt. Nos. 36-31; 91-349]

**RIN 2120–AK52**

**Stage 5 Airplane Noise Standards**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new noise standard for certain newly certificated subsonic jet airplanes and subsonic transport category large airplanes. This noise standard, known as Stage 5, applies to any person submitting an application for a new airplane type design with a maximum certificated takeoff weight of 121,254 pounds (55,000 kg) or more on or after December 31, 2017; or with maximum certificated takeoff weight of less than 121,254 pounds (55,000 kg) on or after December 31, 2020. This change will set a lower noise limit for newly certificated airplanes and harmonize the noise certification standards for those airplanes certificated in the United States with those certificated under international standards.

**DATES:** This rule is effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For information on where to obtain copies of rulemaking documents and

other information related to this final rule, see “How To Obtain Additional Information” in the SUPPLEMENTARY INFORMATION section of this document.

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**SUPPLEMENTARY INFORMATION:**

**Authority for this Rulemaking**

The FAA’s authority to issue rules on aviation safety is found in title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency’s authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44715 Controlling aircraft noise and sonic boom. Under that section, the FAA is charged with prescribing regulations to measure and abate aircraft noise. This regulation is within the scope of that authority since it would establish stricter noise limits for certain newly certificated airplanes. Applicants for type certificates and changes in type design made after the dates in this rulemaking will be required to comply with the new regulation.

**I. Overview of Final Rule**

This rulemaking adopts a new noise standard for newly certificated subsonic jet airplanes and subsonic transport category large airplanes. By lowering the noise limit, this standard requires quieter designs and encourages manufacturers to adopt the latest available noise reduction technology into their aircraft designs. This rulemaking adopts

new noise certification standards for airplanes certificated in the United States (known as Stage 5) that are equivalent to the International Civil Aviation Organization (ICAO) Annex 16, Volume I standard known as Chapter 14.

## **II. Background**

In a Notice of Proposed Rulemaking (NPRM) titled Stage 5 Airplane Noise Standards, the FAA proposed a new noise standard for certain aircraft to (81 FR 1923, January 14, 2016). A brief history of the FAA's regulation of aircraft noise since 1969 was presented in the preamble to that NPRM.

The new Stage 5 noise standard applies to any person submitting an application for a new airplane type design that has a maximum certificated takeoff weight (MTOW) of 121,254 pounds (maximum certificated takeoff mass (MTOM) 55,000 kg) or more on or after December 31, 2017; or that has a MTOW of less than 121,254 pounds (MTOM less than 55,000 kg) on or after December 31, 2020. This change reduces the noise that may be produced by newly certificated airplanes and harmonizes the noise certification standards for airplanes certificated in the United States with the standard adopted by the International Civil Aviation Organization in Annex 16, Volume 1 Chapter 14, effective July 14, 2014.

Much of the development of a Stage 5 noise standard took place in the international arena through ICAO. The Committee on Aviation Environmental Protection (CAEP) is a technical committee of the ICAO Council. The CAEP assists the Council specifically in formulating new policies and adopting new standards for aircraft noise and emissions, and more generally on matters of the environmental impacts of aviation. The development of ICAO standards follows a structured, transparent and multi-staged process involving a number of technical and non-technical working groups. These working groups are either

part of the ICAO or closely associated with it. The activities of the CAEP working groups are guided by the CAEP Steering Group as their oversight committee.

The United States is an active member in CAEP, and has at least one member on each of the five working groups of CAEP. These working groups are named for their focus areas: WG1 for Noise, WG2 for Airports and Operations, WG3 for Emissions, MDG for Modeling and Databases, and FESG for Forecast Economic Analysis Support.

In 2010, the CAEP Working Group for Noise (WG1) was tasked to develop options that would further reduce permissible airplane noise levels. The group met several times over the following two years. Representatives from WG3, the MDG, and the FESG participated in the WG1 meetings to become familiar with the noise stringency options that would be considered when future noise standards were set, and to assist WG1 in setting up databases for comparing the options for costs and benefits.

In coordination with the other participating working groups, WG1 chose five options for reduced noise limits that were more stringent than Chapter 4. The group noted that the stringencies of earlier Chapter 2 and Chapter 3 standards could be described as based on the “traditional” concept of specified reductions at each noise certification measurement point (flyover, lateral, and approach). Chapter 4, however, had adopted a “cumulative margin” concept under which reduction was expressed as a total and could be spread across the three measurement points as chosen by an applicant. The stringency options presented to CAEP for analysis continued to be based on the “cumulative margin” concept of Chapter 4. The options analyzed were cumulatively 3, 5, 7, 9, and 11 decibels lower than Chapter 4 levels. As the lead technical working group, WG1 prepared the results for the 2014 CAEP meeting. In reaching a recommendation for a new noise

standard for subsonic jet and large transport airplanes, the CAEP considered estimates of comprehensive costs and benefits associated with the five options.

The activities of the working groups were overseen by the CAEP Steering Group. The Steering Group met in July 2012 to review the results of the analyses prepared by the working groups in order to formulate specific recommendations on the new standard, and on applicability options that were forwarded to the full CAEP.

In February 2013, the comprehensive costs and benefits analyses for the five stringency options that were prepared by the working groups, as well as a parallel analysis of the same five options prepared by the United States, were presented at the ninth meeting of CAEP (CAEP9). After lengthy discussion, the CAEP9 agreed to an increase in stringency of 7 EPNdB<sup>1</sup> (cumulative) relative to Chapter 4 levels. The new standard, known as Chapter 14<sup>2</sup>, introduced a condition in addition to the cumulative stringency requirement, one that requires a margin of not less than 1.0 dB below Chapter 3<sup>3</sup> limits at each certification point.

Similar to Chapter 4 requirements, the noise margins for Chapter 14 are calculated by subtracting the measured noise levels at the three microphone locations from the three corresponding noise limits in Chapter 3. However, Chapter 14 includes a mandatory

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<sup>1</sup> Effective Perceived Noise Level in decibels as described in ICAO Annex 16, Volume 1, Appendix 2, Section 4 or section A36.4.1 of appendix A to part 36.

<sup>2</sup> The ICAO publishes its aircraft noise standards in the Standards and Recommended Practices of Annex 16, Volume 1. Each new ICAO standard is published as a new chapter, and the chapter number becomes the shorthand designation of the new stringency. In the United States, the adoption of a new standard in 14 CFR Part 36 is identified as the next 'Stage' number in sequence. Using this system, the U.S. and ICAO stringency levels tracked each other numerically, e.g., Stage 3 was the equivalent of Chapter 3, and Stage 4 was the equivalent of Chapter 4. However, ICAO had already used Chapter 5 for a different standard, and the next number available was Chapter 14. Accordingly, while these noise stringency standards are known as Chapter 14 by ICAO, they are being adopted in the United States as Stage 5.

<sup>3</sup> As discussed, while Chapter 4 increased stringency, it did not contain a requirement for a minimum reduction at any of the measurement points; the gains could have been at one, two or all three points. Chapter 14 includes a minimum reduction of 1dB at each point (7dB overall), but since it was not a requirement in Chapter 4, the base level for decrease is referenced at Chapter 3 levels.

minimum reduction in the noise limits applicable to subsonic jet airplanes with MTOM less than 8,618 kg (MTOW 19,000 pounds). Figure 1 is a graphical representation of the reduction of noise limits at MTOM lower than 8,618 kg for each of the three measurement points. The figure includes the modified Chapter 3 noise limits that use the same gradient of the limit line at lower masses as the higher masses, and transitions to a flat limit line for airplanes with MTOM less than 2,000kg (MTOW 4,409 pounds). This figure is not included in the regulation since the actual limits are calculated based on the MTOM of the aircraft at certification. This figure is an illustration of how the noise limits compare for airplanes of different weights under Chapter 14.

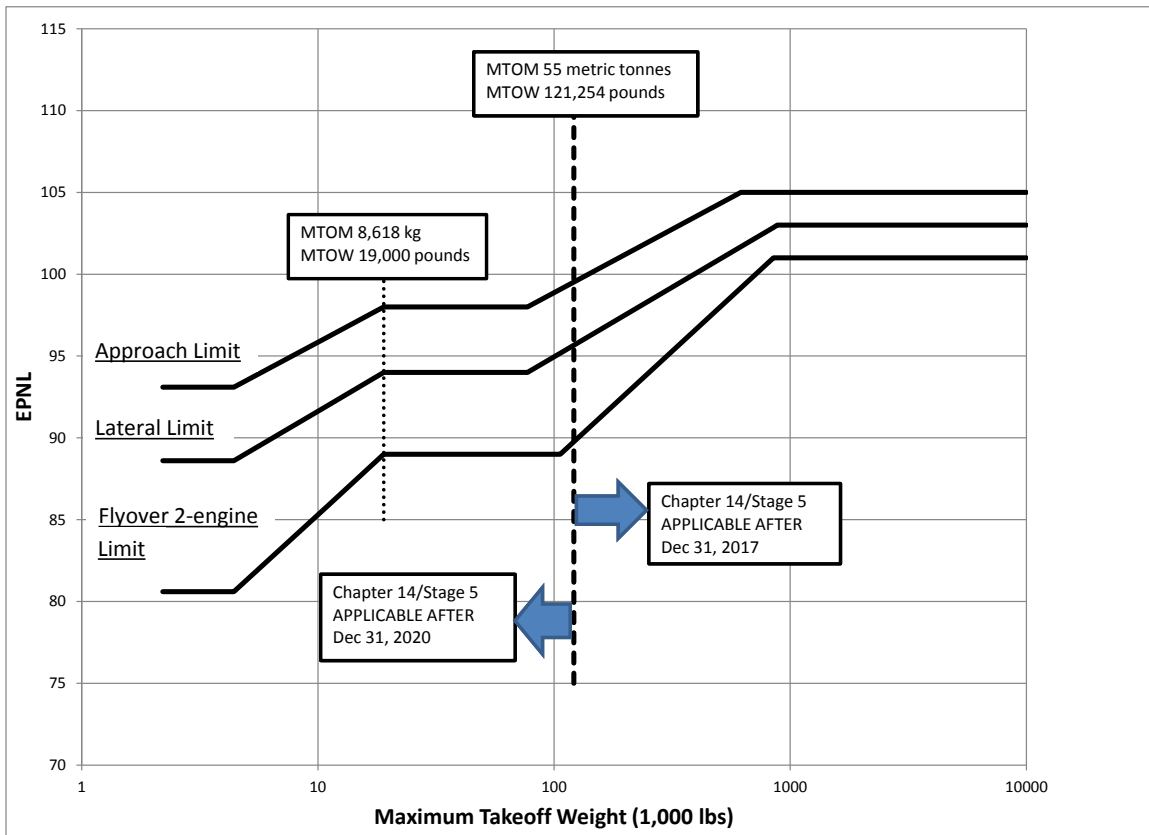


Figure 1. Representation of noise limits as calculated using Chapter 14 noise margins at each microphone location.

In March 2014, the 201st Session of the ICAO Council adopted the Chapter 14 noise standards for new airplane type designs. Chapter 14 will apply to new type certificates for airplanes with an MTOM of 55,000 kg (MTOW of 121,254 pounds) or more for which applications are submitted on and after December 31, 2017. For airplanes with an MTOM of less than 55,000 kg (MTOW less than 121,254 pounds) the limits apply to certification applications submitted on and after December 31, 2020.

It was noted in the NPRM, and restated for emphasis here, that the adoption of the Stage 5 noise standard for new airplane type designs does not signal the start of any action by the FAA to change the current operational noise limits for any aircraft in the United States. The current U.S. operating rules require that jet aircraft meet at least Stage 3 noise limits (see 14 CFR 91.853 and 91.881). The current noise limit applicable to new type designs is Stage 4 (see § 36.103(c)). The adoption of the Stage 5 noise standard for new airplane type designs does not affect either of these requirements. Changes to the noise operating rules in the United States would be subject to full notice and comment rulemaking procedures, and have not been proposed. The adoption of Stage 5 does not affect either the operation of the current U.S. fleet or new type designs submitted before the applicable compliance date for Stage 5.

A. Summary of the NPRM

On January 14, 2016, the FAA proposed a new noise standard for certain subsonic jet airplanes and subsonic transport category large airplanes, to be known as Stage 5. As proposed, the new certification standard would apply to any person submitting an application for a new airplane type design that has an MTOW of 121,254 pounds (MTOM 55,000 kg) or more on and after December 31, 2017; or with an MTOW of less than 121,254 pounds (MTOM 55,000 kg) on and after December 31, 2020. The change is

intended to reduce the noise produced by new airplanes and harmonize the noise certification standards for those airplanes certificated in the United States with the new Chapter 14 ICAO noise standard that was effective July 14, 2014. Failure to harmonize the standards could result in a certification applicant having to show compliance with two different standards, unnecessarily adding to the cost of noise certification without any benefit.

The proposed rule also included a change to appendix B to part 36, section B36.1(b), which allows the use of Annex 16 standards as an alternative for noise testing. The FAA found that the regulation adopted in 2005 inadvertently omitted the phrase “to paragraph (a) of this section” to designate what the Annex was an alternative to. This phrase is added into section B36.1(b) in this rule so that paragraph (b) and the new paragraph (c) (the alternative for Stage 5) will read the same.

The NPRM invited interested persons to participate in the rulemaking by submitting written comments, data, or views. It also invited comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in the NPRM.

#### B. Response to Comments

The FAA received seven comments in response to the NPRM. Two commenters supported the rule as proposed, four suggested changes to the rule, and one identified a typographical error in the NPRM.

The Boeing Company and Airlines for America (A4A), an association of U.S. air carriers, supported all aspects of the proposal, with A4A including extensive comments supporting the process of working with ICAO in setting noise standards.



Two organizations, the Los Angeles International Airport/Community Roundtable (Roundtable) and the City of Culver City, California requested that the FAA include a phaseout of existing Stage 3 airplanes as part of the adoption of the new Stage 5 noise standards. The Roundtable is a voluntary organization with members from civil associations and government that work to identify and mitigate noise issues that affect the residential communities surrounding Los Angeles International Airport (LAX). Culver City is a municipality in close proximity to LAX.

Culver City considered the lack of a phaseout for Stage 3 airplanes a notable omission from the NPRM, stating that the Airport Noise and Capacity Act of 1990 (ANCA) mandated the implementation of Stage 3 technology by the end of 1999 along with the phase-out of all Stage 2 aircraft over 75,000 pounds. Culver City requested that the FAA promulgate a staged phaseout of Stage 3 aircraft beginning contemporaneously with the implementation of Stage 5 regulations.

The Roundtable requested the same action as Culver City, stating that a phaseout would reduce aircraft noise in a shorter time frame.

The FAA considers the requests to initiate a phaseout of Stage 3 jet aircraft to be beyond the scope of the proposed rule. The NPRM indicated that the proposed certification action was not to be considered a harbinger of a new operational standard. The previous eliminations of Stage 2 jet operations in the contiguous United States were required under two separate statutory provisions by Congress. For larger jets, the phaseout and ultimate prohibition on operation were mandated in ANCA. For jets under 75,000 pounds, Congress mandated a cessation of operations as of January 1, 2015; that statutory ban did not include a phaseout nor did it require any action by the FAA other than to enforce the operational prohibition. The NPRM noted for this rule that the proposal was limited to the adoption of

a Stage 5 certification standard, in part to harmonize domestic U.S. certification standards with those of ICAO. These certification actions are sequential, reflect advances in technology, and serve to prevent backsliding by manufacturers. An operational phaseout, such as the one that took place in the 1990's following Congressional direction, is a significant undertaking affecting a different segment of the aviation industry. The ANCA phaseout had no effect on the noise certification basis of airplanes -- Stage 3 had been adopted as the noise certification standard effective in 1975 (see § 36.106(b)) and was the standard included by Congress in the 1990 statute. The comments suggesting a new phaseout of Stage 3 jets did not address the significant differences between certification changes and operational restrictions, the length of time any suggested phaseout should take, nor did they present any indication of the significant costs and benefits that would necessarily form the basis of such an action. The proposed Stage 5 rule does not provide any basis to attach an operational restriction, and none is included in the final rule.

An individual commenter suggested five changes to the proposed rule. First, the commenter suggested that section B36.6 of appendix B to part 36 specify that noise tradeoffs are available only for Stage 1, 2 and 3 airplanes. The FAA disagrees in part. For a Stage 1 airplane, tradeoffs would be available only after recertification to Stage 2 (or higher) noise levels; there were no noise levels established for Stage 1 airplanes from which there could be tradeoffs. While the FAA agrees that the notation might be a helpful clarification for Stage 2 and 3 airplanes, the suggestion is outside the scope of the changes proposed in the NPRM. The FAA will keep note of the comment as a suggested change for any future cleanup rule for part 36.

The second suggestion, which was also made by an anonymous commenter, stated that regardless of the applicable noise stringency level, part 36 should specify the latest versions of referenced documents instead of one or more earlier versions.

The FAA disagrees. There are legal requirements attached to the use of non-FAA standards such as ICAO Annex 16. These requirements for Incorporation by Reference (IBR) allow for a specific document to be incorporated, and it must be submitted at the time IBR is requested. It must be identifiable, dated, and meet a certain level of availability. This ensures that a standard can be referenced as complete at the time a regulation is adopted. The IBR rules of the Office of the Federal Register do not allow for a nebulous “current version” to be referenced, since it would then depend on the time a person read a regulation and would present a shifting requirement. Changes to standards based on incorporated documents, such as a later version, can only be made by rulemaking. While this final rule makes changes to the IBR section of part 36 as discussed in the following section, no changes have been made to the final rule based on this comment. Persons interested in how IBR works can learn more by consulting the Office of the Federal Register’s handbook that explains the process at <https://www.archives.gov/federal-register/write/handbook>.

The third suggestion by the individual commenter is to remove the proposed requirement in § 36.106 to include a Chapter 14 equivalency statement in an Airplane Flight Manual (AFM). The comment did not include any justification for this suggested change, nor state any reason it is inappropriate or ineffective in U.S. regulations. Starting with Stage 4, the equivalency statement became standard in the AFM pages. Over the years, noise-related information in the AFM (including the equivalency statements and other supporting documents) developed into an effective resource in demonstrating

certificated noise levels of a U.S. registered aircraft operating outside the United States. The FAA plans to keep the equivalency statements for both Stage 4 and 5. No change was made based on this comment.

For reasons unrelated to this comment, we are amending § 36.105 to remove the reference to an IBR at the end of the paragraph. The required language for the flight manual, indicated by quotes in the rule, is not itself an IBR.

The fourth and fifth comments by the individual commenter requested changes to § 36.6, the IBR section for part 36 for matters of “presentation” and identification of ICAO Annex 16. The FAA is adopting a change to the format of § 36.6 as required by the Office of the Federal Register to update its use as a centralized IBR section. As adopted, the content of the IBR paragraph, including the order of the material as stated, complies with the publication requirements of the Office of the Federal Register. The FAA anticipates that the required update of the section will address the commenters concerns.

An anonymous commenter noted that the website address given for the availability of ICAO documents no longer works. The FAA will replace the website address in the final rule. The updated address for the ICAO website is:

<http://www.icao.int/publications/Pages/default.aspx>

The same anonymous commenter asked why Chapter 4 and Stage 4 (or Chapter 14 and Stage 5) do not have the same definitions in part 91, suggesting that they should all be referenced “as described in part 36 of this chapter.”

The U.S. regulations cannot be used to determine what Chapter 4 or Chapter 14 contains or requires. Since the standards are incorporated by reference, their definitions necessarily cite back to the official source in ICAO Annex 16. Further, the FAA is not authorized to make findings of legal compliance to Chapter 4 or Chapter 14; it only

certificates aircraft to Stage 4 or 5 (for example). This has led to the IBR references and eventually to the equivalency statements in AFMs since the U.S. does not make findings under ICAO standards. These equivalency statements are meant to assist operators of U.S.-certificated aircraft when they operate in ICAO countries and need to show the noise compliance of their aircraft.

However, we did find that the addition of the definition of Chapter 14 to part 91 is not necessary since part 91 is limited to domestic operating rules and references aircraft by stage. Accordingly, we are adding that definition only to part 36.

Other than the corrections noted, no changes are being made in this final rule based on the comments received. The rule is adopted as proposed.

#### C. Changes from the NPRM

The FAA was notified by the Office of the Federal Register that the centralized IBR section for part 36 (§ 36.6) needed to be updated to the new format published in 2016. Accordingly, this final rule includes format changes to § 36.6 and to various sections of part 36 and its appendices that reference incorporated documents. In no case is the content or intent of any regulation to be considered changed by this reformatting. Any changes to the substantive effect of any rule would be preceded by full notice and comment rulemaking.

In revising § 36.6 we discovered materials that are no longer referenced in the regulations and have removed them from that section. Within the text of regulations, we have reformatted the identified documents, removed two IBR references that were incorrect, updated website references where available and corrected other minor formatting errors discovered on review.

Also, as part of this review, the FAA discovered that § 36.5 contained an outdated

reference to statutory authority. That section is amended to replace the old citation to the authority with the current one.

#### D. Incorporation by Reference

This final rule incorporates by reference the aircraft noise standards for Chapter 14 of the International Civil Aviation Organization (ICAO) Annex 16, Volume 1, Aircraft Noise, Seventh Edition, July 2014, Amendment 11-B, applicable January 1, 2015. These standards are incorporated into § 36.6, and are referenced in various sections as noted in the amendments. As explained in this document, these standards were developed by the ICAO with the participation of the United States. Airplanes that meet Stage 5 noise standards in the United States are considered equivalent of airplanes that meet the Chapter 14 standards.

The incorporated document is available for purchase through the ICAO website: <http://www.icao.int/publications/Pages/default.aspx>. Contact information for ICAO is also available on that website. The document may be inspected at FAA Headquarters, Office of Environment and Energy. Please contact the person listed in FOR FURTHER INFORMATION CONTACT in this document.

### **IV. Regulatory Notices and Analyses**

#### A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96-39) (Trade Act) prohibits

agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with the base year of 1995).

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect and the basis for it being included in the preamble if a full regulatory evaluation of the costs and benefits is not prepared. Such a determination has been made for this final rule. The reasoning for that that determination follows.

Based on the requirements in Executive Order (EO) 13771, the FAA has completed a further analysis of this rule and determined that this action is expected to be an EO 13771 deregulatory action as it will result in cost-savings. Without this rule, the industry will have to show compliance with two different noise standards - one in the United States and the other in EASA. This double noise certification standard will require revising type certification records, aircraft flight manuals, airline operational specifications that will generate unnecessary costs for both industry and the FAA.

This final rule will establish a new Stage 5 noise standard for subsonic jet airplanes and subsonic transport category large airplanes. The final noise standard will apply to new type designs for applications made on or after December 31, 2017, for airplanes with an

MTOW of 121,254 pounds (MTOM of 55,000 kilograms) or more; and after December 31, 2020, for airplanes with an MTOW of less than 121,254 pounds (MTOM 55,000 kilograms).

The final noise standard will provide more stringent noise certification standards for Stage 5 airplanes certificated in the United States and will be consistent with those for airplanes certificated under the new ICAO Annex 16 Chapter 14 noise standards.

Documents describing the development of the new ICAO rule in more detail, including cost analyses used by ICAO, are available in the docket. These documents include:

1. Cost-benefit Analysis of CAEP9 Noise Stringency Options, presented by U.S. CAEP Member, COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION (CAEP), NINTH MEETING, Montreal, 4 to 15 February 2013.
2. Report of the Ninth Meeting, COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION (CAEP), NINTH MEETING, Montreal, 4 to 15 February 2013.

Several airplanes currently in production that have an MTOW of more than 121,254 pounds already meet the final Stage 5 noise limits. These airplanes include the Airbus models A-380 and A-350, and Boeing models 747-8 and 787. The FAA received a comment from Boeing supporting the proposed rule.

The applicability date of December 31, 2020, for airplanes with an MTOW of less than 121,254 pounds (MTOM 55,000 kg) was adopted by the ICAO to accommodate the requests of the manufacturers of lighter jet and propeller-driven airplanes for more time to meet the new requirements. For many of the proposed airplane programs announced prior to CAEP9 (2013), analysis shows that such airplanes will be able to meet the proposed Stage 5 standard without any additional cost.

Technological advances that decrease noise are already being adopted on airplanes



in the lower weight class, including the geared turbofan engine and quieter control surfaces. These technological advances support the FAA expectation that all manufacturers will be able to meet the new standards after the December 31, 2020, date. This expectation was crucial to the minimal cost determination in the proposed rule, and the FAA specifically requested comments regarding whether existing and expected technological advancements would be sufficient to achieve compliance with the provisions after December 31, 2020. The FAA received no comments on these regulatory estimates for any size airplanes. Accordingly, the FAA has determined that the final rule will have minimal cost and due to the reduced requirements from a single accepted noise certification standard, rather than two standards, this rule will lower industry and government costs. As these cost savings are clearly evident, the cost estimate of these future actions is too uncertain to provide quantified estimate.

**B. Final Regulatory Flexibility Determination**

The Regulatory Flexibility Act of 1980 (Pub. L. 96-354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA covers a wide range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it

will, the agency must prepare a regulatory flexibility analysis as described in the RFA. However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

In either 2017 or 2020, depending on the maximum certificated takeoff weight of the airplane, when the more stringent noise certification requirements in this final rule become effective, all new type design subsonic transport category jet airplanes and transport category large airplanes will be required to meet the Stage 5 noise limits. In the proposed rule, the FAA stated that all manufacturers of subsonic transport category jet airplanes and transport category large airplanes would be able to meet the new noise standards at minimal cost. The FAA invited industry comments on this determination and requested that all comments be accompanied with clear and detailed supporting data. The FAA received no responses to this request for comments on this determination. Accordingly, the FAA has determined that this rule will result in minimal cost.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under section 605(b) of the RFA. Therefore, as provided in section 605 (b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

### C. International Trade Impact Assessment

The Trade Agreement Act of 1979 (Pub. L. 96-39), as amended by the Uruguay Round Agreements Act (Pub. L. 103-465), prohibits Federal agencies from establishing

standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

The FAA has assessed the potential effect of this final rule and determined that it will reduce impediments to international trade by aligning United States standards with ICAO standards.

#### D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of \$155 million in lieu of \$100 million.

For the reasons stated above regarding the expected minimal cost of complying with these standards, this final rule does not contain such a mandate. Therefore, the requirements of Title II of the Act do not apply.

#### E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the

public. The more stringent noise requirements adopted in this final rule will not require any new collection of information and none is associated with this final rule. The FAA has determined that there will be no new requirement for information collection associated with this final rule.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and Recommended Practices and has identified no differences with these regulations.

G. Environmental Analysis

FAA Order 1050.1F identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 5-6.6d of the Order and involves no extraordinary circumstances.

H. Regulations Affecting Intrastate Aviation in Alaska

The agency did not receive any comments, and has determined, based on the administrative record of this rulemaking, that there is no need to make any regulatory distinctions applicable to intrastate aviation in Alaska.

**V. Executive Order Determinations**

A. Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs

Executive Order (EO) 13771 titled “Reducing Regulation and Controlling Regulatory Costs,” directs that, unless prohibited by law, whenever an executive

department or agency publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed. In addition, any new incremental costs associated with new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs. Only those rules deemed significant under section 3(f) of Executive Order 12866, “Regulatory Planning and Review,” are subject to these requirements.

This rule is expected to be an EO 13771 deregulatory action. Details on the estimated costs savings of this rule can be found in the rule’s economic analysis.

**B. Executive Order 13132, Federalism**

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

**C. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use**

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it is not a “significant energy action” under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

**VI. How To Obtain Additional Information**

**A. Rulemaking Documents**

An electronic copy of a rulemaking document may be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (<http://www.regulations.gov>);
2. Visit the FAA's Regulations and Policies Web page at [http://www.faa.gov/regulations\\_policies/](http://www.faa.gov/regulations_policies/) or
3. Access the Government Printing Office's Web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request (identified by notice, amendment, or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9677.

**B. Comments Submitted to the Docket**

Comments received may be viewed by going to <http://www.regulations.gov> and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

**C. Small Business Regulatory Enforcement Fairness Act**

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the

preamble. To find out more about SBREFA on the Internet, visit [http://www.faa.gov/regulations\\_policies/rulemaking/sbre\\_act/](http://www.faa.gov/regulations_policies/rulemaking/sbre_act/).

## **List of Subjects**

### 14 CFR Part 36

Aircraft, Aviation safety, Incorporation by reference, Life-limited parts, Reporting and recordkeeping requirements.

### 14 CFR Part 91

Aircraft, Aviation safety, Incorporation by reference, Life-limited parts, Reporting and recordkeeping requirements.

## **The Amendment**

In consideration of the foregoing, the Federal Aviation Administration amends chapter I of title 14, Code of Federal Regulations as follows:

### **PART 36—NOISE STANDARDS: AIRCRAFT TYPE AND AIRWORTHINESS CERTIFICATION**

1. The authority citation for part 36 continues to read as follows:  
42 U.S.C. 4321 *et seq.*; 49 U.S.C. 106(g), 40113, 44701-44702, 44704, 44715; sec. 305, Public Law 96-193, 94 Stat. 50, 57; E.O. 11514, 35 FR 4247, 3 CFR, 1966-1970 Comp., p. 902.

2. Amend § 36.1 by adding paragraphs (f)(12) through (14) to read as follows:

#### **§ 36.1 Applicability and definitions.**

\* \* \* \* \*

(f) \* \* \*

(12) A “Stage 5 noise level” means a noise level at or below the Stage 5 noise limit prescribed in section B36.5(e) of appendix B to this part.

(13) A “Stage 5 airplane” means an airplane that has been shown under this part not to exceed the Stage 5 noise limit prescribed in section B36.5(e) of appendix B to this part.

(14) A “Chapter 14 noise level” means a noise level at or below the Chapter 14 maximum noise level prescribed in Chapter 14 of the ICAO Annex 16, Volume 1, Seventh Edition, Amendment 11-B (Incorporated by reference, see § 36.6).

\* \* \* \* \*

### **§ 36.5 [Amended]**

3. Amend § 36.5 by removing “49 U.S.C. 1431 (b)(4)” and adding “49 U.S.C. 44715” in its place.

4. Revise § 36.6 to read as follows:

### **§ 36.6 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved material is available for inspection at the locations in this paragraph (a) and may be obtained from the sources detailed in paragraphs (a)(1) through (12) of this section.

(1) The U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590.

(2) Federal Aviation Administration New England Regional Headquarters, 12 New England Executive Park, Burlington, MA 01801.

(3) Federal Aviation Administration Eastern Region Headquarters, Federal Building, John F. Kennedy International Airport, Jamaica, NY 11430.

(4) Federal Aviation Administration Southern Region Headquarters, 1701 Columbia Avenue, College Park, GA 30337.



(5) Federal Aviation Administration Great Lakes Region Headquarters, O'Hare Lake Office Center, 2300 East Devon Avenue, Des Plaines, IL 60018.

(6) Federal Aviation Administration Central Region Headquarters, Federal Building, 601 East 12<sup>th</sup> Street, Kansas City, MO 64106.

(7) Federal Aviation Administration Southwest Region Headquarters, 2601 Meacham Boulevard, Fort Worth, TX 76137.

(8) Federal Aviation Administration Northwest Mountain Region Headquarters, 1601 Lind Avenue, SW, Renton, WA 98055.

(9) Federal Aviation Administration Western Pacific Region Headquarters, 15000 Aviation Boulevard, Hawthorne, CA 92007.

(10) Federal Aviation Administration Alaskan Region Headquarters, 222 West 7<sup>th</sup> Avenue, #14, Anchorage, AK 99513.

(11) Federal Aviation Administration European Office Headquarters, 15 Rue de la Loi, Third Floor, B-1040, Brussels, Belgium.

(12) The National Archives and Records Administration (NARA). For information on the availability of this information at NARA, call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(b) International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec, H3C 5H7, Canada.

<http://www.icao.int/publications/Pages/default.aspx>

(1) International Standards and Recommended Practices, Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume I, Aircraft Noise, Third Edition, July 1993, Amendment 7 effective March 21, 2002, IBR approved for § 36.1(f), and appendices A and B to part 36.

(2) International Standards and Recommended Practices, Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume I, Aircraft Noise, Seventh Edition, July 2014, Amendment 11-B, applicable January 1, 2015, IBR approved for § 36.1(f) and appendices A and B to part 36.

(c) International Electrotechnical Commission (IEC) 3 Rue de Varembe, Case Postale 131, 1211 Geneva 20, Switzerland,  
<http://www.iec.ch/standardsdev/publications/?ref=menu>.

(1) Publication No. 179, Precision Level Sound Meters, (IEC 179) 1973, IBR approved for appendix F to part 36.

(2) Publication No. 561, Electro-acoustical Measuring Equipment for Aircraft Noise Certification, first edition, 1976, (IEC 561), IBR approved for appendices G and J to part 36.

(3) Publication No. 651, Sound Level Meters, first edition, 1979, (IEC 651), IBR approved for appendices G and J to part 36.

(4) Publication No. 804, Integrating-averaging Sound Level Meters, first edition, 1985, (IEC 804), IBR approved for appendix J to part 36.

(5) Publication No. 61094-3, Measurement Microphones—Part 3: Primary Method for Free-Field Calibration of Laboratory Standard Microphones by the Reciprocity Technique, edition 1.0, 1995 (IEC 61094-3) IBR approved for appendix A to part 36.

(6) Publication No. 61094-4, Measurement Microphones—Part 4: Specifications for Working Standard Microphones, edition 1.0, 1995, (IEC 61094-4) IBR approved for appendix A to part 36.

(7) Publication No. 61260, Electroacoustics-Octave-Band and Fractional-Octave-Band Filters, edition 1.0, 1995, (IEC 61260), IBR approved for appendix A to part

36.

(8) Publication No, 60942, Electroacoustics-Sound Calibrators, edition 2.0, 1997, (IEC 60942) IBR approved for appendix A to part 36.

(d) Society of Automotive Engineers, Inc. (SAE), 400 Commonwealth Drive, Warrentown, PA 15096, <http://www.sae.org/pubs/>.

(1) ARP 866A, Standard Values at Atmospheric Absorption as a Function of Temperature and Humidity for use in Evaluating Aircraft Flyover Noise, March 15, 1975, IBR approved for appendix H to part 36.

(2) [Reserved]

5. Amend § 36.7 by adding paragraph (e)(5), revising paragraph (f), and adding paragraph (g) to read as follows:

**§ 36.7 Acoustical change: Transport category large airplanes and jet airplanes.**

\* \* \* \* \*

(e) \* \* \*

(5) If an airplane is a Stage 3 airplane prior to a change in type design, and becomes a Stage 5 airplane after the change in type design, the airplane must remain a Stage 5 airplane.

(f) *Stage 4 airplanes.* (1) If an airplane is a Stage 4 airplane prior to a change in type design, the airplane must remain a Stage 4 airplane after the change in type design.

(2) If an airplane is a Stage 4 airplane prior to a change in type design, and becomes a Stage 5 airplane after the change in type design, the airplane must remain a Stage 5 airplane.

(g) *Stage 5 airplanes.* If an airplane is a Stage 5 airplane prior to a change in type design, the airplane must remain a Stage 5 airplane after the change in type design.

6. Amend § 36.103 by revising paragraph (c) and adding paragraphs (d) and (e) to read as follows:

**§ 36.103 Noise limits.**

\* \* \* \* \*

(c) Type certification applications between January 1, 2006, and the date specified in paragraph (d) or (e) of this section, as applicable for airplane weight. If application is made on or after January 1, 2006, and before the date specified in paragraph (d) or (e) of this section (as applicable for airplane weight), it must be shown that the noise levels of the airplane are no greater than the Stage 4 noise limit prescribed in section B36.5(d) of appendix B of this part. If an applicant chose to voluntarily certificate an airplane to Stage 4 prior to January 2006, then the requirements of § 36.7(f) apply to that airplane.

(d) For airplanes with a maximum certificated takeoff weight of 121,254 pounds (55,000 kg) or more, type certification applications on or after December 31, 2017. If application is made on or after December 31, 2017, it must be shown that the noise levels of the airplane are no greater than the Stage 5 noise limit prescribed in section B36.5(e) of appendix B of this part. Prior to December 31, 2017, an applicant may seek voluntary certification to Stage 5. If Stage 5 certification is chosen, the requirements of § 36.7(g) will apply.

(e) For airplanes with a maximum certificated take-off weight of less than 121,254 pounds (55,000 kg), type certification applications on or after December 31, 2020. If application is made on or after December 31, 2020, it must be shown that the noise levels of the airplane are no greater than the Stage 5 noise limit prescribed in section B36.5(e) of appendix B of this part. Prior to December 31, 2020, an applicant may seek

voluntary certification to Stage 5. If Stage 5 certification is chosen, the requirements of § 36.7(g) will apply.

**§ 36.105 [Amended]**

7. Amend § 36.105 by removing “[Incorporated by reference, see §36.6].” from the end of the paragraph.

8. Add § 36.106 to subpart B to read as follows:

**§ 36.106 Flight Manual statement of Chapter 14 noise level equivalency.**

For each airplane that meets the requirements for Stage 5 certification, the Airplane Flight Manual or operations manual must include the following statement: “The following noise levels comply with part 36, appendix B, Stage 5 maximum noise level requirements and were obtained by analysis of approved data from noise tests conducted under the provisions of part 36, Amendment [insert part 36 amendment number to which the airplane was certificated]. The noise measurement and evaluation procedures used to obtain these noise levels are considered by the FAA to be equivalent to the Chapter 14 noise levels required by the International Civil Aviation Organization (ICAO) in Annex 16, Volume 1, Aircraft Noise, Seventh Edition, July 2014, Amendment 11-B, applicable January 1, 2015.”

9. Amend appendix A by revising paragraph A36.1.4, adding paragraph A36.1.5, and revising paragraphs A36.3.1.3, A36.3.7.3, and A36.3.8.1 to read as follows:

**Appendix A to Part 36—Aircraft Noise Measurement and Evaluation Under § 36.101**

\* \* \* \* \*

*Section A36.1 Introduction*

\* \* \* \* \*

A36.1.4 For Stage 4 airplanes, an acceptable alternative for noise measurement and evaluation is Appendix 2 to ICAO Annex 16, Volume I, Amendment 7 (incorporated by reference, see § 36.6).

A36.1.5 For Stage 5 airplanes, an acceptable alternative for noise measurement and evaluation is Appendix 2 to ICAO Annex 16, Volume 1, Amendment 11-B (incorporated by reference, see § 36.6).

\* \* \* \* \*

*Section A36.3 Measurement of Airplane Noise Received on the Ground*

\* \* \* \* \*

A36.3.1.3 *Sound incidence angle* means in degrees, an angle between the principal axis of the microphone, as defined in IEC 61094-3 and IEC 61094-4, as amended and a line from the sound source to the center of the diaphragm of the microphone (incorporated by reference, see § 36.6).

\* \* \* \* \*

A36.3.7.3 The minimum standard for the one-third octave band analysis system is the class 2 electrical performance requirements of IEC 61260 as amended, over the range of one-third octave nominal midband frequencies from 50 Hz through 10 kHz inclusive (incorporated by reference, see § 36.6).

NOTE: IEC 61260 specifies procedures for testing of one-third octave band analysis systems for relative attenuation, anti-aliasing filters, real time operation, level linearity, and filter integrated response (effective bandwidth).

\* \* \* \* \*

*A36.3.8 Calibration systems.*

A36.3.8.1 The acoustical sensitivity of the measurement system must be determined using a sound calibrator generating a known sound pressure level at a known frequency. The minimum standard for the sound calibrator is the class 1L requirements of IEC 60942 as amended (incorporated by reference, see § 36.6).

\* \* \* \* \*

10. In appendix B:

a. Amend section B36.1 by revising paragraph (b) and adding paragraph (c);

and

b. Amend section B36.5 by adding paragraph (e).

The revision and additions read as follows:

**Appendix B to Part 36—Noise Levels for Transport Category and Jet Airplanes**

**Under § 36.103**

\* \* \* \* \*

*Section B36.1 Noise measurement and evaluation*

\* \* \* \* \*

(b) For Stage 4 airplanes, an acceptable alternative to paragraph (a) of this section for noise measurement and evaluation is Appendix 2 to ICAO Annex 16, Volume I, Amendment 7 (Incorporated by reference, see § 36.6).

(c) For Stage 5 airplanes, an acceptable alternative to paragraph (a) of this section for noise measurement and evaluation is Appendix 2 to ICAO Annex 16, Volume 1, Amendment 11-B (Incorporated by reference, see § 36.6).

\* \* \* \* \*

*Section B36.5 Maximum Noise Levels*

\* \* \* \* \*

(e) For any Stage 5 airplane, the flyover, lateral, and approach maximum noise levels are prescribed in Chapter 14, Paragraph 14.4, Maximum Noise Levels of ICAO Annex 16, Volume I, Amendment 11-B (Incorporated by reference, see § 36.6).

\* \* \* \* \*

11. In appendix F, amend section F36.105 by revising paragraph (b) to read as follows:

**Appendix F to Part 36—Flyover Noise Requirements for Propeller-Driven Small Airplane and Propeller-Driven Commuter Category Airplane Certification Tests Prior to December 22, 1988**

\* \* \* \* \*

*Section F36.105 Sensing, Recording and Reproducing Equipment.*

\* \* \* \* \*

(b) The characteristics of the system must comply with the recommendations in IEC 179 (incorporated by reference, see § 36.6).

\* \* \* \* \*

12. In appendix G, amend section G36.105 by revising paragraphs (b), (c), and (e) to read as follows:

**Appendix G to Part 36—Takeoff Noise Requirements for Propeller-Driven Small Airplane and Propeller-Driven Commuter Category Airplane Certification Tests On or After December 22, 1988**

\* \* \* \* \*

*Section G36.105 Sensing, Recording and Reproducing Equipment.*

\* \* \* \* \*



(b) The characteristics of the complete system must comply with the requirements in IEC 651 and IEC 561 (incorporated by reference, see § 36.6). Sound level meters must comply with the requirements for Type 1 sound level meters as specified in IEC 651.

(c) The response of the complete system to a sensibly plane progressive sinusoidal wave of constant amplitude must be within the tolerance limits specified in IEC 651, over the frequency range 45 to 11,200 Hz.

\* \* \* \* \*

(e) The output noise signal must be read through an “A” filter with dynamic characteristics designated “slow” as defined in IEC 651. A graphic recorder, sound level meter, or digital equipment may be used.

\* \* \* \* \*

13. In appendix H, amend section H36.113 by revising paragraph (b) to read as follows:

**Appendix H to Part 36—Noise Requirements for Helicopters Under Subpart H**

\* \* \* \* \*

*Section H36.113 Atmospheric attenuation of sound.*

\* \* \* \* \*

(b) *Attenuation rates.* The procedure for determining the atmospheric attenuation rates of sound with distance for each one-third octave bands must be determined in accordance with SAE ARP 866A (Incorporated by reference, see § 36.6). The atmospheric attenuation equations are provided in both the International and English systems of units in section A36.7 of appendix A to this part.

\* \* \* \* \*

14. In appendix J, amend section J36.109 by revising paragraphs (d)(1)(i) through (iv)

and by adding reserved paragraph (d)(2) to read as follows:

**Appendix J to Part 36—Alternative Noise Certification Procedure for Helicopters  
Under Subpart H Having A Maximum Certificated Takeoff Weight of Not More  
Than 7,000 Pounds**

\* \* \* \* \*

*Section J36.109 Measurement of helicopter noise received on the ground.*

\* \* \* \* \*

(d) \* \* \*

(1) \* \* \*

(i) The SEL values from each flyover test may be directly determined from an integrating sound level meter complying with the standards of IEC 804 (Incorporated by reference, see § 36.6) for a Type 1 instrument set at “slow” response.

(ii) The acoustic signal from the helicopter, along with the calibration signals specified under paragraph (e) of this section and the background noise signal required under paragraph (f) of this section, may be recorded on a magnetic tape recorder for subsequent analysis for an integrating sound level meter identified in paragraph (d)(1)(i) of this section. The record/playback system (including the audio tape) of the tape recorder must conform to the requirements prescribed in section A36.3.6 of appendix A to this part. The tape recorder shall comply with the specifications of IEC 561 (Incorporated by reference, see § 36.6).

(iii) The characteristics of the complete system shall comply with the recommendations given in IEC 651 (Incorporated by reference, see § 36.6) with regard to the specifications concerning microphone, amplifier, and indicating instrument characteristics.

(iv) The response of the complete system to a sensibly plane progressive wave of constant amplitude shall lie within the tolerance limits specified in Table IV and Table V for Type 1 instruments in IEC 651 for weighting curve “A” over the frequency range of 45 Hz to 11500 Hz.

(2) [Reserved]

## **PART 91—GENERAL OPERATING AND FLIGHT RULES**

15. The authority citation for part 91 continues to read as follows:

49 U.S.C. 106(f), 106(g), 1155, 40103, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506-46507, 47122, 47508, 47528-47531, 47534, articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

16. Amend § 91.851 by adding in alphabetical order definitions for the terms “Stage 5 airplane” and “Stage 5 noise level” to read as follows:

§ 91.851 Definitions.

\* \* \* \* \*

*Stage 5 airplane* means an airplane that has been shown not to exceed the Stage 5 noise limit prescribed in part 36 of this chapter. A Stage 5 airplane complies with all of the noise operating rules of this part.

*Stage 5 noise level* means a noise level at or below the Stage 5 noise limit prescribed in part 36 of this chapter.

17. Revise § 91.853 to read as follows:

### **§ 91.853 Final compliance: Civil subsonic airplanes.**

Except as provided in § 91.873, after December 31, 1999, no person shall operate to or from any airport in the contiguous United States any airplane subject to § 91.801(c),

unless that airplane has been shown to comply with Stage 3, Stage 4, or Stage 5 noise levels.

18. Amend § 91.855 by revising paragraph (a) to read as follows:

**§ 91.855 Entry and nonaddition rule.**

\* \* \* \* \*

(a) The airplane complies with Stage 3, Stage 4, or Stage 5 noise levels.

\* \* \* \* \*

19. Amend § 91.858 by revising paragraph (a)(2) to read as follows:

**§ 91.858 Special flight authorizations for non-revenue Stage 2 operations.**

(a) \* \* \*

(2) Obtain modifications to meet Stage 3, Stage 4, or Stage 5 noise levels.

\* \* \* \* \*

20. Revise § 91.859 to read as follows:

**§ 91.859 Modification to meet Stage 3, Stage 4, or Stage 5 noise levels.**

For an airplane subject to § 91.801(c) of this subpart and otherwise prohibited from operation to or from an airport in the contiguous United States by § 91.855, any person may apply for a special flight authorization for that airplane to operate in the contiguous United States for the purpose of obtaining modifications to meet Stage 3, Stage 4, or Stage 5 noise levels.

21. Revise § 91.881 to read as follows:

**§ 91.881 Final compliance: Civil subsonic jet airplanes weighing 75,000 pounds or less.**

Except as provided in § 91.883, after December 31, 2015, a person may not operate to or from an airport in the contiguous United States a civil subsonic jet airplane

subject to § 91.801(e) of this subpart that weighs less than 75,000 pounds unless that airplane has been shown to comply with Stage 3, Stage 4, or Stage 5 noise levels.

22. Amend § 91.883 by revising paragraph (a)(3) to read as follows:

**§ 91.883 Special flight authorizations for jet airplanes weighing 75,000 pounds or less.**

(a) \* \* \*

(3) To obtain modifications to the airplane to meet Stage 3, Stage 4, or Stage 5 noise levels.

\* \* \* \* \*

Issued under authority of 49 U.S.C. 106(f), 44701(a), and 44715 in Washington, DC, on September 11, 2017.

Michael P. Huerta

Administrator

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