DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 21

[Docket No. 22334; Notice No. 95–15]

RIN 2120–AF10

Proposed Amendment of the Type Certification Procedures for Changes in Helicopter Type Design To Attach or Remove External Equipment

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes to amend the existing helicopter noise certification procedures with respect to certain changes in type designs. This proposal would amend the applicability of the noise certification procedures to exclude those changes in type design that involve the attachment or removal of external equipment, floats and skis, and certain airframe and operational changes made to accommodate such changes in type design (acoustical change requirements). This proposal would also exclude helicopter flight operations with doors and/or windows removed or in an open position from the applicability of the acoustical change requirements. This change would reconcile 14 CFR part 21 with the procedural treatment of external equipment in the original helicopter noise certification rulemaking effort and would make U.S. helicopter noise certification regulations more consistent with the International Civil Aviation Organization (ICAO) standards.

DATES: Comments must be submitted on or before November 20, 1995.

ADDRESSES: Send comments on this proposal to: Federal Aviation Administration, Office of the Chief Counsel, Attn.: Rules Docket (AGC–10), Docket No. 28334, 800 Independence Avenue, S.W., Room 915G, Washington, DC 20591 or deliver comments in triplicate to: FAA Rules Docket, Room 915G, 800 Independence Avenue, S.W., Washington, DC 20591. Comments may also be submitted electronically to the following Internet address: nprmcmts@mail.hq.faa.gov. Comments may be inspected in Room 915G between 8:30 a.m. and 5 p.m., weekdays, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Mr. Kenneth E. Jones, Research and Engineering Branch (AEE–110), Technology Division, Office of Environment and Energy, FAA, 800 Independence Avenue, SW., Washington, D.C. 20591; telephone (202) 267–8933, facsimile (202) 267–5594.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in this rulemaking by submitting written data, views, or arguments and by commenting on the possible environmental, energy, or economic impacts of this proposal. Comments should identify the regulatory docket or notice number and be submitted in triplicate to the address above. All comments received, as well as a report summarizing any substantive public contact with Federal Aviation Administration (FAA) personnel on this rulemaking will be filed in the docket, and will be considered by the Administrator before taking action on this proposed rulemaking. The docket is available for public inspection both before and after the closing date for comments. The FAA will acknowledge the receipt of a comment if the commenter includes a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. 28334''. When the comment is received by the FAA, the postcard will be dated, time stamped, and returned to the commenter.

Availability of the NPRM

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Information Center, APA–230, 800 Independence Avenue, SW, Washington, DC 20591, or by calling (202) 267–3474. Requests should be identified by the docket number of this proposed rule.

Persons interested in being placed on a mailing list for future notices of proposed rulemaking should also request a copy of Advisory Circular No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

Background

Statement of the Problem

The certification procedures for aeronautical products and parts are contained in 14 CFR part 21. Under part 21, an applicant for approval of a change to a helicopter type certificate must show compliance with the noise regulations in 14 CFR part 36 (part 36) if the change in type design may increase the noise level of the helicopter (an acoustical change). Section 21.93 defines an ''acoustical change'' and classifies the aircraft which must demonstrate compliance with part 36 following an acoustical change. Section 21.93(b)(4) described helicopters required to demonstrate compliance with part 36 for an acoustical change, and specifically excludes helicopters designated exclusively for ''agricultural aircraft operations,'' ''dispensing firefighting materials,'' or ''carrying external loads.'' The intent of the existing § 21.93(b)(4) is to exclude helicopters designated exclusively to carry external loads from the requirement to demonstrate compliance with part 36.

This proposal addresses type certification (including noise requirements) procedures for changes to helicopter type designs to configure helicopters for carriage of external equipment. External equipment is defined herein as any instrument, mechanism, part, apparatus, or accessory that is attached to or extends from the helicopter exterior but is not used nor is intended to be used in operating or controlling a helicopter in flight and is not part of an airframe or engine. Examples of external equipment are spotlights, cameras, airborne signs, and cargo tanks and baskets.

External equipment may be attached to a helicopter as a Class A Rotorcraft External Load Combination under 14 CFR part 133 (part 133) ''Rotorcraft External Load Operations'', or alternatively, the external equipment may be attached to the helicopter as a change in type design under Subpart D of part 21. The noise certification requirements do not apply to any helicopter, regardless of airworthiness certification category, that is designated exclusively for carrying external loads pursuant to part 133. Section 133.51 states that ''[a] Rotorcraft External-Load Operator Certificate is a current and valid airworthiness certificate for each rotorcraft . . . listed by registration number on a list attached to the certificate, when the rotorcraft is being used in operations conducted under [part 133].'' However, when the original helicopter noise certification rules were adopted in part 21, external equipment was not excluded from the acoustical change provisions of § 21.93. Thus, except for helicopters operated under part 133, the addition of external equipment is currently subject to the acoustical change provisions of § 21.93. This proposed change to § 21.93 would reconcile the procedural treatment of external equipment added to helicopters with the intent of § 21.93(b)(4) by expanding the acoustical change

exception to include carriage of external equipment.

While many helicopter operators would like to use their aircraft to perform specialized operations that require the use of external equipment, many of these operations do not take place because the cost of complying with the noise regulations is financially impractical; i.e., the cost of demonstrating compliance with the noise regulations would substantially deplete any profit the operation might generate. Some helicopter operators suggest that the current acoustical change type certification procedures are hampering the growth of their industry because compliance costs deter them from performing certain operations that require the addition of external equipment.

History of Aircraft Noise Certification Regulations Relevant to This Proposed Amendment

On November 3, 1969, the Administrator of the FAA adopted part 36 entitled ''Noise Standards: Aircraft Type Certification.'' That action implemented the FAA's regulatory noise abatement program by prescribing type certification noise standards for subsonic turbojet powered airplanes. Procedural changes were concurrently made to part 21, ''Certification Procedures for Products and Parts,'' to provide criteria and requirements for demonstrating compliance with the specifications in part 36 (34 FR 13855, November 18, 1969). The noise certification requirements of parts 21 and 36 are designed to promote the incorporation of noise abatement technology into aircraft design. Parts 21 and 36 have been amended as appropriate to add new aircraft types to the certification requirements or change the technical specifications as necessary. Subsequently, helicopter noise certification requirements were adopted with amendment 36–14 to part 36 and amendment 21–61 to part 21 (53 FR 3534, February 5, 1988).

The first amendment to part 21 relevant to the original aircraft noise certification regulation was amendment 21–27 (34 FR 18355, November 10, 1969). That amendment established the general requirement that an applicant must demonstrate compliance with the applicable provisions of the part 36 procedures prior to issuance of an original, amended, or supplemental type certificate. The same amendment to part 21 included the addition under § 21.93(b) that specified an ''acoustical change'' as any voluntary change in type design of a transport category or turbojet-powered airplane that may increase the noise levels of that airplane. Section 21.93 was subsequently amended in response to the promulgation of part 36 noise standards for propeller-driven small airplanes (Amdt. 21–42; 40 FR 1029, January 6, 1975), supersonic airplanes (Amdt. 21–47; 43 FR 28406, June 29, 1978), commuter category airplanes (Amdt. 21–59; 52 FR 1806, January 15, 1987), and helicopters (Amdt. 21–61; 53 FR 3534, February 5, 1988).

Section 21.93 has also been amended to exclude certain changes in aircraft type design from the acoustical change requirements. The necessity for exempting these changes in type design became apparent only after experience was gained from implementation of the original noise certification regulations for the aircraft type in question. For turbojet-powered airplanes, amendment 21–56 (47 FR 756, January 7, 1982) excludes time-limited engine and/or nacelle changes, where the change in type design specifies that the airplane may not be operated for a period of more than 90 days, and amendment 21–62 (53 FR 16360, May 6, 1988) excludes both gear down flight with one or more retractable landing gear down during the entire flight and spare engine and nacelle carriage external to the skin of the aircraft. For propeller-driven commuter category and propeller-driven small airplanes, amendment 21–63 (53 FR 47394, November 22, 1988) excludes ''antique'' airplanes (i.e., those airplanes that have flight time before January 1, 1955) and land configured aircraft reconfigured with floats and skis.

Synopsis of the Proposal

The FAA has determined that this proposed rulemaking would provide benefits in the form of regulatory relief to the helicopter industry and to individual helicopter operators. From a number of noise certification studies, the FAA has concluded that this rulemaking will result in little or no increase of public exposure to helicopter noise emissions. The portion of the existing helicopter regulations relevant to this rulemaking imposes an undue financial burden on the helicopter industry and operators without providing any measurable benefit to the public.

This proposal would amend the acoustical change provisions of § 21.93 to exclude helicopters that have been modified by the addition or removal of external equipment mounted on the helicopter airframe or floats (rigid or bag) and skis. The proposal would also exclude certain changes in helicopter type design from the acoustical change requirements to certain airframe changes made to accommodate the external equipment, and to helicopter flight operations with doors and/or windows removed or in an open position. The proposal also applies to any operating limitations placed on, or removed from, the helicopter as a consequence of the addition or removal of external equipment, floats, and skis.

The FAA recognizes the utility aspect of the helicopter as an aerial platform for external equipment. It is a common practice in the helicopter industry to add or remove external equipment as mission requirements vary. Although external equipment may be offered by the original manufacturer of the helicopter, it is usually added as an after-market addition by individual operators to meet specific mission needs. Given the potential variety of external equipment, the nature of the external equipment is not considered part of the basic design of a given helicopter and does not influence the basic aerodynamic design or the incorporation of noise abatement technology into the helicopter design. As stated in the preamble of the final rule (cited previously) for the original helicopter noise certification rulemaking, ''* * * the [helicopter] noise standards apply [only] to internal load configurations.''

This proposed rule is consistent with a similar provision in the applicability section of the helicopter noise certification standard approved by the ICAO under its International Standards and Recommended Practices: Environmental Protection; Annex 16, Volume 1, Chapters 8 and 11 (Third Edition-July 1993). The proposed rule change would bring the acoustical change provision in the U.S. noise certification regulations into closer harmony with that used by foreign noise certification authorities.

Details of the proposed amendment and limitations of the amendment are provided in the following analysis.

Section 21.93 Classification of Changes in Type Design

Part 21 prescribes that certain types of aircraft, including helicopters, must demonstrate compliance with the applicable requirements of part 36 if a change in type design results in an acoustical change. Section 21.93 specified an ''acoustical change'' as any voluntary change in type design (including operational limitations) that may increase the noise levels of an aircraft. The proposed rule, applicable only to helicopters, would exclude the installation or removal of external equipment from being considered an acoustical change. The proposed rule

would specifically exclude from the acoustical change provision the addition or removal of all external equipment where ''external equipment'' means any instrument, mechanism, part, apparatus, appurtenance, or accessory (e.g., spotlights, cameras and other optical devices, public address systems, hoists, airborne signs, tow banners, cargo tanks and baskets, emergency flotation gear, personnel platforms, wire strike kits, crop spraying equipment, scientific apparatus and their accessories) that is not used or intended to be used in operating or controlling an aircraft in flight, that is attached to the helicopter, and is not part of an airframe or engine. The proposed rule would apply to changes in the airframe made to:

(1) Accommodate the addition or removal of external equipment;

(2) facilitate the use of external equipment; or

(3) facilitate the safe operation of the helicopter with external equipment mounted on the helicopter.

Examples of airframe changes that would be excepted include fairings, attachment hardware, cavities constructed in the airframe to accommodate conformally attached equipment, and bubble windows. The proposed rule would also exclude from the acoustical change provision external load attaching means, the airworthiness certification of which is specified in §§ 27.865 and 29.865.

The proposed rule change would also exclude the addition or removal of floats and skis on helicopters from the acoustical change provision. The proposal would also make it clear that any changes in the operating limitations placed on the helicopter as a consequence of the addition or removal of external equipment, floats, and skis is not an acoustical change. Similarly, it would also exclude flight operations conducted with one or more doors and/or windows removed or in an open position.

The FAA has included addition or removal of floats and skis on helicopters under this proposed rule change in order to provide the same provision for helicopters as is currently provided small propeller driven airplanes and propeller driven commuter category airplanes under § 21.93(b)(3). The acoustical change requirements of § 21.93 do not require a noise certification compliance demonstration for such airplanes, and would not for helicopters under this proposal, because the FAA did not have a rational basis to consider such design configurations in the original rulemaking that established noise certification requirements for these aircraft. While the additions of floats and skis adversely affects the aerodynamic performance, and consequently the noise levels, of both small airplanes and helicopters, the FAA lacks the acoustical and performance data necessary to develop noise certification regulations relevant to small airplanes and helicopters that are reconfigured by the addition of floats or skis.

If a noise compliance demonstration is otherwise required for compliance with part 36, the noise flight test must be conducted without any external equipment, floats, or skis mounted to the helicopter and with doors and windows mounted and closed (i.e., aerodynamically clean configuration) unless otherwise approved or required by the FAA. In granting exemptions and establishing conditions of exemptions, the rationale for the FAA's decision will be based on whether or not the measured helicopter noise levels from a proposed noise compliance demonstration would be representative of a ''clean configured'' helicopter. For example, assume a cavity was created in the fuselage (as a related airframe change) to accommodate a conformally (flush) fitted camera. Under the proposed rule change, both the camera and the cavity would be exempt from the acoustical change requirements of part 21. However, in the event of any future noise testing of that helicopter for a change in type design unrelated to the camera and cavity, such a noise test without the camera mounted and the cavity exposed would likely lead to unrepresentative noise levels due to alteration of the aerodynamic performance of the helicopter. In this example, during the actual noise test for the unrelated change in type design, the FAA would probably require that the flush-mounted camera be inserted in its associated fuselage cavity or that the fuselage cavity be covered in a manner that would return the fuselage to its original aerodynamic shape. Similarly, any analysis for the purpose of demonstrating a ''nonacoustical change'' under § 21.93 must assume performance levels consistent with an aerodynamically clean helicopter (relative to the changes in type design excepted under this proposed rulemaking). That is, a decrease in a noise certification level effected by the addition of equipment exempted under this proposed rulemaking may not be used to ''mathematically' offset an increase in noise from a change in type design not affected by this proposed rulemaking. For example, assuming the certification basis for a given helicopter is part 36 Appendix J, an increase in flyover noise certification level caused by the upgrade of a transmission may not be offset by the decrease in noise from the assumed addition of external equipment, floats or skis as part of the change in type design for the transmission.

The FAA also proposed to delete the current text in § 21.93(b)(4) (i) and (ii). These paragraphs indicate examples of design changes which would be considered acoustical changes. Since § 21.93(b) already makes it clear that ''any voluntary change in the type design of an aircraft that may increase the noise levels of the aircraft is an 'acoustical change' * * *'' existing paragraphs § 21.93(b)(4) (i) and (ii) may be erroneously interpreted to indicate that (any) change to a muffler (including a change to a quieter muffler) is by regulation an acoustical change. The existing paragraphs (i) and (ii) do not represent a regulatory requirement and add nothing toward the interpretation of the acoustical change requirements for helicopters. The proposed new text addresses the definition of external equipment and the exclusions discussed earlier in this synopsis.

During development of this proposed rule change, the FAA has examined such factors as the utility aspect of the helicopter mission, the necessity for the addition or removal of external equipment to meet mission needs, the relevance of such equipment with regard to the incorporation of noise abatement technology in the design of the helicopter, and the desire for commonality of U.S. noise certification regulations with relevant international standards and foreign national regulations. After consideration of these factors, the Administrator has determined that the proposed rule change is consistent with the criteria set forth for proposing and amending aircraft noise abatement regulations under the authority of § 611(d) of the Federal Aviation Act of 1958.

International Compatibility

The FAA has reviewed corresponding ICAO standards and JAA regulations, where they exist. These proposed amendments would make U.S. helicopter noise certification regulations more consistent with the ICAO standards.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980 (Pub. L. 96–511), there are no requirements for information collection associated with this proposed rule.

Regulatory Evaluation Summary

Three principal requirements pertain to the economic impacts of changes to the Federal Regulations. First, Executive Order 12866 directs Federal agencies to promulgate new regulations or modify existing regulations only if the expected benefits to society outweigh the expected costs. Second, the regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Finally, the Office of Management and Budget directs agencies to assess the effect of regulatory changes on international trade. In conducting these analyses, the FAA has determined that this rule: (1) will generate benefits exceeding costs; (2) is not ''significant'' as defined in the Executive Order and DOT's policies and procedures; (3) will not have a significant impact on a substantial number of small entities; and (4) will lessen restraints on international trade. These analyses, available in the docket, are summarized below.

Benefits

The proposed rule would provide regulatory relief and a cost savings of $31,690,468 (non-discounted) or $23,409,159 discounted, over a ten year period, to helicopter manufacturers, modifiers, and operators. Of this amount, the projected cost savings for part 36 noise certification testing under Appendix H for major helicopter manufacturers is $4,800,000 (non-discounted) or $4,264,244 discounted; Appendix J Testing for light helicopter manufacturers, $3,000,000 (non-discounted) or $2,330,305 discounted; and Appendix J Testing for modifiers, $22,500,000 (non-discounted) or $15,803,025 discounted. The FAA would also realize a cost savings under these appendices: Appendix H, $222,460 (non-discounted) or $178,312 discounted; Appendix J, $231,740 (non-discounted) or $173,525 discounted; and Appendix J (for modifiers), $936,268 (non-discounted) or $659,748 discounted.

Costs

From the number of noise certification studies, the FAA has learned that allowing applicants to attach external equipment to their helicopters will result in no net increase in helicopter noise or, at worst, insignificant increases in noise levels.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by government regulations. The RFA requires a Regulatory Flexibility Analysis if a rule would have a significant economic impact, either detrimental or beneficial, on a substantial number of small entities. FAA Order 2100.14A, Regulatory Flexibility Criteria and Guidance prescribes standards for complying with RFA review requirements in FAA rulemaking actions. The order defines ''small entities'' in terms of size thresholds, ''significant economic impact'' in terms of annualized cost threshold, and ''substantial number'' as a number that is not less than eleven and that is more than one-third of the small entities subject to the proposed rule.

The FAA has determined that, in accordance to the above order, the proposed rule to part 21 would not have a significant economic impact on a substantial number of small entities. The proposed rule would directly affect two types of entities: (1) Light helicopter manufacturers, and (2) small helicopter modifiers.

For small aircraft and aircraft parts manufacturers, Order 2100.14A specifies a size threshold for classification as a small entity as 75 or fewer employees. Based upon this size threshold, all of the affected U.S. manufacturers are large. For the purpose of the regulatory flexibility determination, an aircraft modifier is considered a small entity if it has 200 or fewer employees.

The FAA concludes that a substantial number of small entities (less than one third) would not be significantly affected by the proposed rule. Therefore, the proposed rule would not impose a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Trade Impact Assessment

The FAA has determined that the proposed rule would neither affect the sale of foreign aviation products and services in the United States nor the sale of U.S. products and services in foreign countries. This determination is based on the FAA's contention that the proposed rule would parallel more closely the U.S. standards with foreign standards for noise certification of external equipment.

Federalism Implications

The regulations herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposed rule would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Environmental Analysis

Pursuant to the Department of Transportation ''Policies and Procedures for Considering Environmental Impacts'' (FAA Order 1050.1D), a draft environmental analysis will be prepared and placed in the docket.

Conclusion

The FAA has determined that this proposed rule: (1) is not a significant regulatory action under Executive Order 12866; (2) is not a significant regulatory action under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. In addition, this proposed rule would have little or no effect on trade opportunities for U.S. firms doing business overseas, or on foreign firms doing business in the United States.

List of Subjects in 14 CFR Part 21

Aircraft, Helicopters, Noise control.

The Proposed Amendment

Accordingly, the Federal Aviation Administration proposes to amend 14 CFR part 21 as follows:

PART 21—CERTIFICATION PROCEDURES FOR PRODUCTS AND PARTS

1. The authority citation for part 21 continues to read as follows:

Authority: 49 U.S.C. App. 1344, 1348(c), 1352, 1354(a), 1355, 1421 through 1431, 1502, 1651(b)(2); 42 U.S.C. 7572; E.O. 11514; 49 U.S.C. 106(g).

2. Section 21.93 is amended by revising paragraph (b)(4) to read as follows:

§ 21.93 Classification of changes in type design.

* * * * *

(b) * * *

(4) Helicopters except:

(i) Those helicopters that are designated exclusively:

(A) For ''agricultural aircraft operations'', as defined in § 137.3 of this chapter, as effective on January 1, 1966;

(B) For dispensing fire fighting materials; or

(C) For carrying external loads, as defined in § 133.1(b) of this chapter, as effective on December 20, 1976.

(ii) Those helicopters modified by installation or removal of external equipment. For purposes of this paragraph, ''external equipment'' means any instrument, mechanism, part, apparatus, appurtenance, or accessory that is attached to, or extends from the helicopter exterior but is not used nor is intended to be used in operating or controlling a helicopter in flight and is not part of an airframe or engine. An ''acoustical change'' does not include:

(A) Addition or removal of external equipment;

(B) Changes in the airframe made to accommodate the addition or removal of external equipment, to provide for an external load attaching means, to facilitate the use of external equipment or external loads, or to facilitate the safe operation of the helicopter with external equipment mounted to, or external loads carried by, the helicopter;

(C) Reconfiguration of the helicopter by the addition or removal of floats and skis;

(D) Flight with one or more doors and/or windows removed or in an open position; or

(E) Any changes in the operational limitations placed on the helicopter as a consequence of the addition or removal of external equipment, floats, and skis, or flight operations with doors and/or windows removed or in an open position.

* * * * *

Issued in Washington, DC, on September 11, 1995.

James D. Erickson,

Director, Office of Environment and Energy.

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