International Trade Impact Assessment

The proposed rule would not constitute a barrier to international trade, including the export of U.S. aircraft engines to foreign countries and the import of foreign aircraft engines into the United States. Instead, the proposed standards would harmonize with existing and proposed standards of foreign authorities, thereby lessening restraints on trade.

Federalism Implications

The regulations proposed herein would 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 proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

For the reasons discussed above, including the findings in the Regulatory Evaluation and the International Trade Impact Assessment, the FAA has determined that this proposed regulation is not significant under Executive Order 12866. In addition, the FAA certifies that this proposal, if adopted, 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. This proposal is not considered significant under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). An initial regulatory evaluation of the proposal, including a Regulatory Flexibility **Determination and International Trade** Impact Assessment, has been placed in the docket. A copy may be obtained by contacting the person identified under FOR FURTHER INFORMATION CONTACT.

List of Subjects in 14 CFR Part 33

Aircraft, Aviation safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 33 as follows:

PART 33—AIRWORTHINESS STANDARDS: AIRCRAFT ENGINES

1. The authority citation for part 33 continues to read as follows:

Authority: 49 U.S.C. 1344, 1354(a), 1355, 1421, 1423, 1424, 1425; 49 U.S.C. 106(g).

2. Section 33.63 is revised to read as follows:

§33.63 Vibration.

Each engine must be designed and constructed to function throughout its declared flight envelope and operating range of rotational speeds and power/thrust, without inducing excessive stress in any engine part because of vibration and without imparting excessive vibration forces to the aircraft structure.

3. A new section 33.74 is added to read as follows:

§ 33.74 Windmilling.

If the engine continues to windmill after it is shut down for any reason while in flight, continued windmilling of that engine must not result in damage that could create a hazard to aircraft representing a typical installation during the maximum period of flight likely to occur with that engine inoperative.

4. Section 33.83 is revised to read as follows:

§ 33.83 Vibration test.

(a) Each engine must undergo vibration surveys to establish that the vibration characteristics of those components that may be subject to mechanically or aerodynamically induced vibratory excitations are acceptable throughout the declared flight envelope. The engine surveys shall be based upon an appropriate combination of experience, analysis, and component test and shall address, as a minimum, blades, vanes, rotor discs, spacers, and rotor shafts.

(b) The surveys shall cover the ranges of power or thrust, and both the physical and corrected rotational speeds for each rotor system, corresponding to operations throughout the range of ambient conditions in the declared flight envelope, from the minimum rotor speed up to 103 percent of the maximum rotor speed permitted for rating periods of two minutes or longer, and up to 100 percent of all other permitted rotor speeds, including those that are overspeeds. If there is any indication of a stress peak arising at high physical or corrected rotational speeds, the surveys shall be extended in order to quantify the phenomenon and to ensure compliance with the requirements of § 33.63.

(c) Evaluations shall be made of the effects on vibration characteristics of operating with scheduled changes (including tolerances) to variable vane angles, compressor bleeds, accessory loading, the most adverse inlet air flow distortion pattern declared by the

manufacturer, and the most adverse conditions in the exhaust duct(s).

- (d) The effects of likely fault conditions (such as, but not limited to, out-of balance, local blockage or enlargement of stator vane passages, fuel nozzle blockage, incorrectly scheduled compressor variables, etc.) on vibration characteristics, shall be evaluated by test or analysis, or by reference to previous experience and shall be shown not to create a hazardous condition.
- (e) The vibration stresses associated with the vibration characteristics determined under this section must be less than the endurance limits of the materials concerned, after making due allowance for operating conditions and permitted variations in properties of the materials. The suitability of these stress margins must be justified for each part evaluated. If it is determined that certain operating conditions, or ranges, need to be limited, operating and installation limitations shall be established.
- (f) Compliance with this section shall be substantiated for each specific installation configuration that can affect the vibration characteristics of the engine. If these vibration effects cannot be fully investigated during engine certification, the methods by which they can be evaluated and methods by which compliance can be shown shall be substantiated and defined in the installation documents required by § 33.5.
- 5. Section 33.92 is revised to read as follows:

§ 33.92 Rotor locking tests.

If windmilling is prevented by a means to lock the rotor(s), the engine must be subjected to a test that includes 25 operations of this means under the following conditions:

(a) The engine must be shut down from rated maximum continuous thrust or power, and

(b) The means for stopping and locking the rotor(s) must be operated as specified in the engine operating instructions while being subjected to the maximum torque that could result from continued flight in this condition; and

(c) Following rotor locking, the rotor(s) must be held stationary under these conditions for five minutes for each of the 25 operations.

Issued in Washington, DC, on February 22, 1995.

Daniel P. Salvano,

Acting Director of Aircraft Certification Service.

[FR Doc. 95–5419 Filed 3–3–95; 8:45 am] BILLING CODE 4910–13–M