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Department of Transportation

Federal Aviation Administration

14 CFR Part 33

Airworthiness Standards; Aircraft Engine Standards for Engine Life-Limited Parts; Proposed Rule

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No. FAA–2006–23732; Notice No. 06–03]

RIN 2120–AI72

Airworthiness Standards; Aircraft Engine Standards for Engine Life-Limited Parts

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA is proposing to amend the certification standards for original and amended type certificates for aircraft engines by modifying the standards for engine life-limited parts. The proposed rule would establish new and uniform standards for the design and testing of life-limited parts for aircraft engines certificated by the FAA, the European Aviation Safety Agency (EASA), and the Joint Aviation Authorities (JAA). Additionally, the proposal would add new standards for the design of reciprocating engine turbocharger rotors. The proposed rule would harmonize part 33 requirements with EASA and JAA requirements.

DATES: Send your comments on or before May 3, 2006.

ADDRESSES: You may send comments [identified by Docket Number FAA–2006–23732] using any of the following methods:

- DOT Docket Web site: Go to *http://dms.dot.gov* and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC 20590–001.
- Fax: 1–202–493–2251.
- Hand Delivery: Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For more information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

Privacy: We will post all comments we receive, without change, to http://dms.dot.gov, including any personal information you provide. For more information, see the Privacy Act discussion in the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: To read background documents or comments received, go to *http://dms.dot.gov* at any time or to Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Tim Mouzakis, Engine and Propeller Directorate Standards Staff, ANE–110, Engine and Propeller Directorate, Aircraft Certification Service, FAA, New England Region, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (781) 238–7114; fax (781) 238–7199, e-mail: *timoleon.mouzakis@faa.gov*.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested persons to participate in rulemaking by submitting written data, views, or arguments on this proposed rule. We also invite comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also review the docket using the Internet at the Web address in the **ADDRESSES** section.

Privacy Act: Using the search function of our docket Web site, anyone can find and read the comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78) or you may visit *http://dms.dot.gov*.

Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

If you want the FAA to acknowledge receipt of your comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it to you.

Proprietary or Confidential Business Information

Do not file in the docket information that you consider to be proprietary or confidential business information. Send or deliver this information directly to the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this document. You must mark the information that you consider proprietary or confidential. If you send the information on a disk or CD ROM, mark the outside of the disk or CD ROM and also identify electronically within the disk or CD ROM the specific information that is proprietary or confidential.

Under 14 CFR 11.35(b), when we are aware of proprietary information filed with a comment, we do not place it in the docket. We hold it in a separate file to which the public does not have access, and place a note in the docket that we have received it. If we receive a request to examine or copy this information, we treat it as any other request under the Freedom of Information Act (5 U.S.C. 552). We process such a request under the DOT procedures found in 49 CFR part 7.

Availability of Rulemaking Documents

You can get an electronic copy using the Internet by:

(1) Searching the Department of Transportation's electronic Docket Management System (DMS) Web page (*http://dms.dot.gov/search*);

(2) Visiting the FAA's Regulations and Policies Web page at *http://www.faa.gov/regulations_policies/*; or

(3) Accessing the Government Printing Office's Web page at *http://www.gpoaccess.gov/fr/index.html*.

You can also get a copy by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267–9680. Make sure to identify the docket number, notice number, or amendment number of this rulemaking.

Executive Summary

The FAA, along with the Aerospace Industries Association (AIA), which represents turbine engine manufacturers, conducted a review of technologies available to reduce uncontained rotor events in response to the crash of a DC–10 airplane at Sioux City, Iowa, on July 19, 1989. The DC–10 crash was caused by the presence of a material anomaly in the disk titanium forging. Additional accidents, along with industry studies that show a link between manufacturing induced anomalies and rotor cracking, demonstrated the need for damage tolerance requirements and closer cooperation between Engineering and Manufacturing elements of engine manufacturers.

Anomalies of any type are not addressed in determining the proposed life of a rotor, although experience with gas turbine engines has shown that these anomalies can degrade the integrity of high-energy rotors. This proposed rule would supplement existing methodologies for determining proposed life by adding a requirement for a damage tolerance assessment of life-limited parts. The requirement would provide an additional margin of safety and reduce the number of life-limited parts failure due to material, manufacturing, and service induced anomalies. The proposed rule would establish new uniform standards for the design and testing of engine life-limited parts for aircraft engines (§ 33.70) and for the design and construction of reciprocating engine turbocharger rotors (§ 33.34). The proposed rule would also strengthen cooperation between Engineering, Manufacturing, and Service elements of turbine engine manufacturers by requiring that the Manufacturing and Service plans be consistent with the Engineering plan. Finally, this action would harmonize FAA part 33 requirements with the EASA and JAA requirements for aircraft engines (§ 33.70).

Background

Part 33 of Title 14 of the Code of Federal Regulations (14 CFR part 33) prescribes airworthiness standards for original and amended type certificates for aircraft engines. The Joint Aviation Requirements–Engines (JAR–E) and the Certification Specifications–Engines (CS–E) prescribe corresponding airworthiness standards for the certification of aircraft engines by the JAA and EASA respectively. CS–E and JAR–E airworthiness standards are the same. While part 33, JAR–E, and CS–E are similar, they differ in several respects. For applicants seeking certification under both part 33 and CS–E or JAR–E, these differences result in additional costs and delays in the time required for certification.

In August 1989, the FAA Engine and Propeller Directorate met with the JAA, the AIA, and the European Association of Aerospace Industries (AECMA). The purpose of the meeting was to establish a philosophy, guidelines, and a working relationship for the resolution of issues identified as needing harmonization, including the identification of the need for new standards. All parties agreed to work in a partnership to address the harmonization of United States and European engine requirements. This partnership was later expanded to include Transport Canada, the airworthiness authority of Canada.

As part of these harmonization efforts, the FAA assigned the task of evaluating the current standards for § 33.14 as they pertain to the current rotor life methodology to the Aviation Rulemaking Advisory Committee (ARAC) in November 2001. Notice of the task was published in the **Federal Register** on November 7, 2001 (66 FR 56367). Details are in the notice that we cite here.

The current rotor life methodology (safe life method) typically determines the approved life based on the minimum number of cycles required to initiate a crack approximately .030 inches in length. The safe life methodology is founded on the assumption that rotor components are anomaly-free (nominal condition). Consequently, the methodology does not explicitly address the occurrence of anomalies, although some level of tolerance to anomalies is implicitly built in by using design margins, and incorporating factory and field inspections. Under nominal conditions, the safe life method provides a structured process for the design and life management of high-energy rotors, which results in the assurance of structural integrity throughout the life of the rotor.

Service experience with gas turbine engines has demonstrated, however, that material, manufacturing, and service-induced anomalies occur and that these anomalies can degrade the structural integrity of high-energy rotors. Undetectable material processing, manufacturing and service-induced anomalies represent a departure from the assumed nominal conditions. The proposed rule would supplement the existing methodologies with a damage tolerance requirement to provide an added margin for material, manufacturing and service-induced anomalies. The intent of the proposed rule is to remove rotor life-limited parts from service when they reach the life limits based on the safe life methodology. Rotor components would not be allowed to remain in service with cracks.

In 1990, the FAA requested that the Society of Automotive Engineers (SAE) reconvene the Committee on Uncontained Turbine Engine Rotor Events to determine the number and the root cause of uncontained rotor events. The statistics pertaining to uncontained rotor events are reported in the SAE Committee Report Nos. AIR 1537, AIR 4003, and SP–1270. While the committee did not identify any adverse trends, it expressed concern that the projected five percent increase in airline passengers each year could lead to a noticeable increase in the number of aircraft accidents from uncontained rotor events.

As a result of the accident at Sioux City in 1989, which was caused by a material (hard alpha) anomaly in a disk titanium forging, the FAA requested that turbine engine manufacturers, through the AIA, review available technologies to determine if a damage tolerance requirement could be introduced which, if appropriately implemented, would reduce the occurrence of uncontained rotor events. In response to our request, the AIA Rotor Integrity Subcommittee, an industry working group, concluded that the technology existed to address anomalous conditions, although additional development and research would be required. The FAA and AIA also initiated the Rotor Manufacturing (RoMan) project to develop a ''Best Manufacturing Practices'' document to address manufacturing-induced anomalies in high energy rotating components.

Manufacturing induced anomalies have caused other accidents. The crash of an MD–88 aircraft in Pensacola, Florida, in July 1996, was the result of a fan disk rupture. The cause of the fan disk rupture was traced to a severely worked material surface layer in one tie rod bolt hole, introduced during the machining process. Notably, industry data shows that post-forging manufacturing induced anomalies have caused about 25 percent of recent rotor cracking and failure events. SAE Report SP–1270 contains data indicating that manufacturing and material causes account for 5.6 percent of category 1–4 events [1] and 4 percent of category 3 & 4

[1] Category 1: Nacelle damage only; Category 2: Minor aircraft damage; Category 3: Significant aircraft damage or minor injuries; Category 4: Crash landing, hull loss, critical injuries or fatalities.

events, reinforcing the need to conduct damage tolerance assessments and for stronger links between Engineering and Manufacturing.

General Discussion of the Proposals

Rotor disk fracture is the major contributor to propulsion risk (risk of engine failure). The primary causes of turbine engine rotor disk failures are material, manufacturing, and operationally induced anomalies (for example, improper repair, fretting, or corrosion). While compliance with the current requirements has resulted in significant improvements in rotor uncontained failure rates, incorporation of recently developed technologies and methodologies should provide further improvement.

Experience with several types of static parts has demonstrated that fatigue failures have the potential to result in hazardous effects. In the context of this proposed rule, hazardous engine effects are the conditions listed in § 33.75. For example, some high-pressure casing fatigue failures have resulted in uncontained high-energy fragments and fire. In addition, the operating pressures of engines continue to rise, which also increases the potential for hazardous effects. In some instances, the Engine Certification Office has used ''issue papers'' to direct engine manufacturers to evaluate the fatigue capabilities of engine static structures. These ''issue papers'' are based on § 33.19(a), which requires the engine to be designed and constructed to minimize the development of an unsafe condition between overhaul periods. Despite this action, engine case ruptures continue to contribute to propulsion risk. Based on the CAAM (Continued Airworthiness Assessment Methodologies) data, case ruptures is the tenth leading cause of level 3 or 4 events and represents a significant hazard from engines installed on part 25 airplanes.

We are introducing the term ''engine life-limited parts'' in this proposed rule to cover all parts, rotating and static, that rely on meeting prescribed integrity requirements to avoid their primary failure which is likely to result in a hazardous engine effect. The current rules for control of engine life-limited parts are deficient in a number of areas. They do not contain:

- A concise and coherent rule for the overall control of life-limited rotating parts in terms of design, manufacture and service/maintenance;
- Fatigue life and integrity requirements for static parts that meet the definition of an engine life-limited part; or
- Requirements to account for the potential degrading effects of anomalous materials and manufacturing or usage-induced anomalies.

As mentioned earlier, the FAA initiated action to harmonize JAR–E 515 with § 33.14 to eliminate differences and to improve design requirements (for example, the introduction of damage tolerance). Presently, the part 33 and JAR–E requirements for ''engine life-limited parts'' differ in the following aspects:

- Part 33 does not require that engineering assumptions be linked to the manufacturing processes used to produce the part, and
- Part 33 does not require that engineering assumptions be linked to the maintenance processes used in service, and
- Part 33 does not require life limits to be maintained during service operation.

The proposed rule establishes explicit structural integrity requirements for engine life-limited parts, adopting the general intent of JAR–E 515 for both static and rotating engine life-limited parts.

The FAA uses the term ''engine life-limited parts'' while the JAR and EASA rules use the term ''engine critical parts.'' The FAA has decided against using ''engine critical parts'' because a substantial number of FAA documents that deal with PMA (Parts Manufacturer Approval) and repair use the term ''critical.'' ''Critical'' in the context of existing FAA documents has a broader definition that can apply to items other than parts, such as processes, appliances, and characteristics.

The FAA has used industry experience to identify issues that need to be addressed in this rulemaking. The new harmonized proposal defines engine life-limited parts as structural parts whose primary failure is likely to result in a hazardous engine effect. As noted above, current regulations do not contain fatigue life and integrity requirements for engine static parts, yet some of these parts meet the definition of an engine life-limited part. The new harmonized proposal addresses all parts, rotating or static, that meet the definition of an engine life-limited part. The integrity of engine life-limited parts will be established by linking the Engineering, Manufacturing and Service Management Plans.

The current requirement for rotors primarily addresses low-cycle fatigue (LCF), with life limits based on crack initiation using a procedure approved by the FAA. In addition, the applicant is expected to conduct sufficient analysis and testing to evaluate the effects of elevated temperatures and hold times as well as the interaction with other failure mechanisms (for example, high cycle fatigue, creep, and cold-dwell). The new harmonized proposal, through the Engineering Plan, would continue to address LCF in the same manner as the existing rule, but would also introduce new requirements to conduct damage tolerance assessments to limit the potential for failure from material, manufacturing and service-induced anomalies. The proposed rule requires FAA approval of the procedures used to establish life limits and address anomalies. In addition, applicants must identify and control attributes that are critical to the integrity of the part. In the context of this proposed rule, attributes are inherent characteristics of the finished part that determine its capability.

The Manufacturing and Service Management Plans would be developed to ensure that the attributes identified within the Engineering Plan are consistently manufactured and maintained throughout the lifetime of the part.

The general methods and approaches that are used to establish the approved lives for static engine life-limited parts are similar to those used for engine life-limited rotating parts. The life limits of engine life-limited rotating parts are based on the initiation of a crack. However, for some static parts, such as high-pressure casings, the approved life may use a portion of the residual crack growth life in addition to the crack initiation life. The use of residual crack growth life specifically does *not* apply to rotor components. If the approved life includes reliance on the detection of cracks prior to reaching the life limit, the reliability of the crack detection technique should be considered. Any dependence upon crack detection should result in mandatory inspection and be part of the Service Management Plan and included in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness.

Some static part construction techniques may require the use of damage tolerance techniques to determine the life limit. For life-limited static parts that utilize construction techniques that inherently contain anomalies, such as welds and castings, the anomalies should be considered as part of the methodology to establish the approved life. Fracture mechanics is a common method for such assessments.

To ensure a complete understanding of the proposed rule, the following definitions are provided, but are not part of the rule itself:

• *Primary failure:* Failure of a part that is not the result of a prior failure of another part or system.

• *Failure:* Separation of the part into two or more pieces such that the part is no longer whole or complete.

• *Likely to result:* Given that the part has failed regardless of its probability of occurrence, what are the possible effects on the engine and aircraft?

• *Anomalies:* The presence of abnormal material forms or physical shapes that are not permitted by the engineering specifications. Nicks, dings, and dents are examples of physically shaped anomalies. Hard Alpha in titanium is an example of a material anomaly. Cracks that are the result of fatigue are not considered an anomaly because they are the result of normal service usage.

The FAA considers it necessary to completely replace the existing § 33.14 ''Start-stop cyclic stress (low-cycle-fatigue)'' with proposed § 33.70. Section 33.14 is in ''Subpart B—Design and Construction; General'' of part 33 and is applicable to a broad range of products including reciprocating engines, turbo superchargers, and turbine aircraft engines. The FAA developed the new proposed rule, § 33.70, based on principles and experience applicable to turbine aircraft engines, and it is not considered applicable to other products.

Removal of § 33.14 from Subpart B eliminates turbocharger rotor life requirements from part 33. Showing compliance to § 33.14 has been accomplished concurrently with § 23.909(c) by performance of a turbocharger rotor containment test. This shows that failure of these rotors does not produce a hazard to the aircraft, thus satisfying the requirements of § 33.14 without the need to calculate the LCF life. The FAA proposes a new § 33.34 to replace the turbocharger rotor life requirements removed by elimination of § 33.14.

Rulemaking Analyses and Notices

Authority for This Rulemaking

The FAA's authority to issue rules regarding 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 44701, ''General Requirements.'' Under that section, the FAA is charged with prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce, including minimum safety standards for aircraft engines. This regulation is within the scope of that authority because it updates the existing regulations for aircraft engine life-limited parts.

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. We have determined that there are no current new information collection requirements associated with this proposed rule.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with 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 proposed regulations.

Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, ''Regulatory Planning and Review,'' dated September 30, 1993 (58 FR 51736), directs the FAA to assess both the costs and the benefits of a regulatory change. We are not allowed to propose or adopt a regulation unless we make a reasoned determination that the benefits of the intended regulation justify the costs. Our assessment of this rulemaking indicates that its economic impact is minimal because U.S. turbine engine manufacturers are already manufacturing turbine engines according to European joint aviation requirements that are equivalent to these proposed requirements. Because the costs and benefits of this action do not make it a ''significant regulatory action'' as defined in the Order, we have not prepared a ''regulatory evaluation,'' which is the written cost/benefit analysis ordinarily required for all rulemaking under the DOT Regulatory Policies and Procedures. We do not need to do a full evaluation where the economic impact of a rule is minimal.

Economic Assessment, Regulatory Flexibility Determination, Trade Impact Assessment, and Unfunded Mandates Assessment

Proposed changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs 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 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act of 1979 prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires Federal agencies to consider international standards and, where appropriate, that they be the basis for U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 requires Federal 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 (adjusted annually for inflation) in any one year.

In conducting these analyses, the FAA has determined that this proposed rule (1) has benefits that justify its costs, is not ''a significant regulatory action'' as defined in section 3(f) of Executive Order 12866, and is not ''significant'' as defined in DOT's Regulatory Policies and Procedures; (2) would not have a significant economic impact on a substantial number of small entities; (3) would reduce barriers to international trade; and (4) does not impose an unfunded mandate on state, local, or tribal governments, or the private sector. These analyses, available in the docket, are summarized below.

Presently, U.S. turbine engine manufacturers must satisfy the certification requirements of both the FAA and the European joint aviation requirements to market turbine engines in both the United States and Europe. Meeting two different sets of certification requirements can increase the costs of developing turbine engines often with no associated safety benefits. In the interests of fostering international trade, lowering the cost of aircraft and/or engine development, and making the certification process more efficient, the FAA, the European Aviation Safety Agency, and equipment manufacturers have been working to create, to the maximum extent possible, a uniform set of certification requirements accepted in both the United States and Europe. This endeavor is referred to as ''harmonization.''

This proposal replaces § 33.14 with new §§ 33.34 and 33.70 to reflect the ''more stringent'' requirements in JAR–

E 515 or CS–E 515, ''Engine Critical Parts.'' The FAA has concluded (for the reasons previously discussed in the preamble) that the adoption of these JAR–E or CS–E requirements into the federal aviation regulations is the most efficient way to harmonize the separately derived requirements. In so doing, the existing level of safety is preserved.

The FAA estimates that there would be minimal (if any) costs associated with this proposed rule. The major turbine engine manufacturers were members of the ARAC working group that developed the proposed requirements. These manufacturers indicate that all such engines sold overseas are currently certificated under JAR–E 515 or CS–E 515; thus, U.S. engine manufacturers would incur no additional costs resulting from this proposal.

There are, however, potential safety benefits in codifying what is now ''industry practice'' into a permanent U.S. standard. This action assures that any current or future U.S. turbine engine manufacturer choosing not to market its engines overseas would nevertheless be required to meet ''new'' (in federal aviation regulations) more stringent standards. As noted earlier, fatigue failures have the potential to result in hazardous effects (some high-pressure casing fatigue failures have led to uncontained high-energy fragments and fire), with potential for loss of lives and/or serious injuries.

In addition, this proposed rule fosters international trade as it accepts international standards as the basis for U.S. regulation(s). With minimal costs and potential benefits, the FAA finds this proposal to be clearly cost-beneficial.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 directs the FAA to fit regulatory requirements to the scale of the business, organizations, and governmental jurisdictions subject to the regulation. We are required to determine whether a proposed or final action will have a ''significant economic impact on a substantial number of small entities'' as they are defined in the Act. If we find that the action will have a significant impact, we must do a regulatory flexibility analysis.

None of the turbine engine manufacturers in the ARAC Working Group who helped develop the proposed requirements are small entities (they each have 1,500 or more employees). Consequently, we contacted another turbine engine manufacturer that is not an ARAC member but is a small entity. That manufacturer affirmed that meeting the proposed requirements would result in minimal incremental costs. We found that there are no other small entity turbine engine manufacturers who would be affected by this proposal. Therefore, we certify that this proposed action would not have a significant economic impact on a substantial number of small entities.

Trade Impact Assessment

The Trade Agreements Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. 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 effect of this proposed rulemaking and determined that it will reduce trade barriers by reducing differences between the U.S. and European regulations.

Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (the Act) is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act 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 (adjusted annually for inflation) 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 $120.7 million in lieu of $100 million.

This NPRM does not contain such a mandate. The requirements of Title II of the Act, therefore, do not apply.

Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. We determined that this action would not have a substantial direct effect 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, we determined that this proposed rulemaking would not have federalism implications.

Environmental Analysis

FAA Order 1050.1E 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 that this proposed rule qualifies for the categorical exclusion identified in Chapter 3, paragraph 312d and involves no extraordinary circumstances.

Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA has analyzed this NPRM under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). We have determined that it is not a ''significant energy action'' under the executive order because it is not a ''significant regulatory action'' under Executive Order 12866, and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

List of Subjects in 14 CFR Part 33

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend part 33 of Title 14 Code of Federal Regulations 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. 106(g), 40113, 44701–44702, 44704.

§ 33.14 [Removed]

2. Remove § 33.14.

3. Add new § 33.34 to read as follows:

§ 33.34 Turbocharger rotors.

Each turbocharger case must be designed and constructed to be able to contain fragments of a compressor or turbine that fails at the highest speed that is obtainable with normal speed control devices inoperative.

4. Add new § 33.70 to read as follows:

§ 33.70 Engine life-limited parts.

Engine life-limited parts are those parts whose primary failure is likely to result in a hazardous engine effect. Typically engine life-limited parts may include disks, spacers, hubs, shafts, high-pressure casings, and non-redundant mount components. For the purposes of this section, a hazardous

engine effect is any of the conditions listed in § 33.75 of this part. The applicant will establish the integrity of each engine life-limited part by:

(a) An Engineering Plan, the execution of which establishes and maintains that the combinations of loads, material properties, environmental influences and operating conditions, including the effects of parts influencing these parameters, are sufficiently well known or predictable, by validated analysis, test or service experience, to allow engine life-limited parts to be withdrawn from service at an approved life before hazardous engine effects can occur. Applicants must perform appropriate Damage Tolerance assessments to address the potential for failure from material, manufacturing, and service-induced anomalies within the approved life of the part. The FAA must approve the procedures by which the approved life is determined. Applicants must publish a list of the life-limited engine parts and the approved life for each part in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness as required by § 33.4 of this part.

(b) A Manufacturing Plan that identifies the specific manufacturing constraints necessary to consistently produce engine life-limited parts with the attributes required by the Engineering Plan.

(c) A Service Management Plan that defines in-service processes for maintenance and repair of engine life-limited parts that will maintain attributes consistent with those required by the Engineering Plan. These processes will become part of the Instructions for Continued Airworthiness.

Issued in Washington, DC, on January 26, 2006.

Dorenda D. Baker,

Acting Director, Aircraft Certification Service.

[FR Doc. 06–950 Filed 2–1–06; 8:45 am]

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