

Federal Aviation Administration
Aviation Rulemaking Advisory Committee

Transport Airplane and Engine Issue Area
Engine Harmonization Working Group

Task 13 – Fatigue Pressure Analysis

Task Assignment

[Federal Register: October 20, 1998 (Volume 63, Number 202)]
[Notices]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee; Transport Airplane and
Engine Issues--New Tasks

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

ACTION: Notice of new task assignments for the Aviation Rulemaking
Advisory Committee (ARAC).

SUMMARY: Notice is given of new tasks assigned to and accepted by the
Aviation Rulemaking Advisory Committee (ARAC). This notice informs the
public of the activities of ARAC.

FOR FURTHER INFORMATION CONTACT:

Stewart R. Miller, Transport Standards Staff (ANM-110), Federal
Aviation Administration, 1601 Lind Avenue, SW., Renton, WA 98055-4056;
phone (425) 227-1255; fax (425) 227-1320.

SUPPLEMENTARY INFORMATION:

Background

The **FAA** has established an Aviation Rulemaking Advisory Committee
to provide advice and recommendations to the **FAA** Administrator, through
the Associate Administrator for Regulation and Certification, on the
full range of the **FAA**'s rulemaking activities with respect to aviation-
related issues. This includes obtaining advice and recommendations on
the **FAA**'s commitment to harmonize its Federal Aviation Regulations
(FAR) and practices with its trading partners in Europe and Canada.

One area ARAC deals with is Transport Airplane and Engine Issues.
These issues involve the airworthiness standards for transport category
airplanes and engines in 14 CFR parts 25, 33, and 35 and parallel
provisions in 14 CFR parts 121 and 135.

The Tasks

This notice is to inform the public that the **FAA** has asked ARAC to
provide advice and recommendation on the following harmonization tasks:

Task 11: Safety and Failure Analysis

1. JAR-E requires a summary listing of all failures which result in
major or hazardous effects and an estimate of the probability of

occurrence of these major and hazardous effects. Part 33 requires an assessment of failures which lead to four specified hazards.

2. JAR requires a list of assumptions and the substantiation of those assumptions. Most of the JAR-E assumptions are covered by other Part 33 paragraphs.

3. JAR-E includes a unique hazard, ``toxic bleed air''.

4. While both regulations require analysis to examine malfunctions and single and multiple failures. Part 33 also requires an examination of improper operation.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by January 31, 2000.

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Task 12: Endurance Test Requirements Study

Review and evaluate the feasibility and adequacy of harmonizing: (1) FAR 33.87 and JAR-E 740 endurance test requirements, including thrust reverser operation during endurance testing, in consideration of changes in engine technology; and (2) FAR 33.88 and JAR-E 700 overtemperature/excess operating conditions. The Aviation Rulemaking Advisory Committee (ARAC) is specifically tasked to study these issues and document findings in the form of a report.

The **FAA** expects ARAC to submit the report by December 31, 1999.

The report must include industry-provided data for an **FAA** economic analysis. This data should include the effects on small operators and small businesses. The report also should include industry-provided data regarding the record-keeping burden on the public.

Task 13: Fatigue Pressure Test/Analysis

JAR-E 640(b)(2) requires fatigue pressure testing of major engine casings. The FAR's do not have a specific requirement for fatigue pressure tests of major engine casings.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by January 31, 1999.

Task 14: Overtorque

JAR-E 820 requires testing at maximum over-torque in combination with maximum turbine-entry and the most critical oil-inlet temperatures for the power turbine to validate transient overtorque values. The **FAA** does not have a specific requirement. Note: The 33.87 endurance test includes requirements that can be used to satisfy JAR-E requirements.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by January 31, 1999.

Task 15: Compressor/Fan and Turbine Shafts

1. JAR-E 850 establishes probability limits for shaft failures based on the consequences of the failure. If the consequences of a shaft failure are not readily predictable, a test is required to determine the consequences. FAR 33.27(c)(2)(vi) requires all shaft failures, regardless of failure probability, to be considered when determining rotor integrity requirements.

2. ACJ E 850 provides guidance to determine the likelihood of a failure at a given location on a shaft and also provides guidance for

conducting tests to determine the dynamic characteristics and fatigue capability of the shaft. The FAR's do not provide any guidance material.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by January 31, 2000.

Task 16: Electrical and Electronic Engine Control Systems

1. Advisory material exists for JAR-E (AMJ 20X-1). Advisory material does not exist for Part 33, which has caused difficulty during certification programs.

2. AMJ 20X-1 clearly defines the engine/airframe substantiation responsibilities, while FAR material does not define these requirements.

3. JAR-E states that an electronic control system ``should provide for the aircraft at least the equivalent safety, and the related reliability level, as achieved by Engines/Propellers equipped with hydromechanical control and protection systems.'' Part 33 does not state a desired reliability level. Part 33 states that failures must not result in unsafe conditions.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by January 31, 2000.

For the above tasks the working group is to review airworthiness, safety, cost, and other relevant factors related to the specified difference, and reach consensus on harmonization of current Part 33/JAR-E regulations and guidance material.

The **FAA** requests that ARAC draft appropriate regulatory documents with supporting economic and other required analyses, and any other related guidance material or collateral documents to support its recommendations. If the resulting recommendation(s) are one or more notices of proposed rulemaking (NPRM) published by the **FAA**, the **FAA** may ask ARAC to recommend disposition of any substantive comments the **FAA** receives.

Working Group Activity

The Engine Harmonization Working Group is expected to comply with the procedures adopted by ARAC. As part of the procedures, the working group is expected to:

1. Recommend a work plan for completion of the tasks, including the rationale supporting such a plan, for consideration at the meeting of ARAC to consider transport airplane and engine issues held following publication of this notice.

2. Give a detailed conceptual presentation of the proposed recommendations, prior to proceeding with the work stated in item 3 below.

3. Draft appropriate regulatory documents with supporting economic and other required analyses, and/or any other related guidance material or collateral documents the working group determines to be appropriate; or, if new or revised requirements or compliance methods are not recommended, a draft report stating the rationale for not making such recommendations. If the resulting recommendation is one or more notices of proposed rulemaking (NPRM) published by the **FAA**, the **FAA** may ask ARAC to recommend disposition of any substantive comments the **FAA** receives.

4. Provide a status report at each meeting of ARAC held to consider transport airplane and engine issues.

The Secretary of Transportation has determined that the formation and use of ARAC are necessary and in the public interest in connection with the performance of duties imposed on the **FAA** by law.

Meetings of ARAC will be open to the public. Meetings of the Engine Harmonization Working Group will not be open to the public, except to the extent that individuals with an interest and expertise are selected to participate. No public announcement of working group meetings will be made.

Issued in Washington, DC, on October 13, 1998.
Joseph A. Hawkins,
Executive Director, Aviation Rulemaking Advisory Committee.
[FR Doc. 98-28038 Filed 10-19-98; 8:45 am]
BILLING CODE 4910-13-M

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No. XXXXX; Notice No. XX-XXX]

RIN 2120-XXXX

Airworthiness Standards; Aircraft Engine Standards for Critical Static Parts

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to amend the certification standards for original and amended type certificates for aircraft engines by adding standards for engine critical static parts under pressure loading. The proposed rule would establish new standards for the design and tests of critical static parts for aircraft engines certificated by the FAA that are nearly uniform to the standards the Joint Aviation Authorities (JAA) uses.

DATE: Comments to be submitted on or before [insert date 90 days after the date of publication in the Federal Register].

ADDRESSES: Address your comments to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW., Washington, DC 20590-0001. You must identify the docket number FAA-XXXX-XXXXX at the beginning of your comments, and you should submit two copies of your comments. If you wish to receive confirmation that FAA received your comments, include a self-addressed, stamped postcard. Currently, however, the Department of Transportation (DOT) is not receiving United States Postal Service (USPS) deliveries. It is unclear how

long this will continue. We wish to advise the public that we will take this into account, with respect to DOT rulemakings documents that have comment periods that may close before mail delivery resumes. We will do everything that we can to ensure that we consider comments that would otherwise have been received before the close of the comment period. (For example, we generally have the authority to consider late-filed comments and will do so to the extent that we can; we will also take note of the date of the postmark for late-filed comments.) Although U.S. mail delivery by the USPS is not being accepted, deliveries are accepted from alternate delivery carriers. In addition, when appropriate, filers are encouraged to use the Electronic Submission system on the Dockets web page (dms.dot.gov) by clicking on ES Submit and following the online instructions.

You may also submit comments through the Internet to <http://dms.dot.gov>. You may review the public docket containing comments to these proposed regulations in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Dockets Office is on the plaza level of the NASSIF Building at the Department of Transportation at the above address. Also, you may review public dockets on the Internet at <http://dms.dot.gov>.

FOR FURTHER INFORMATION CONTACT: Tim Mouzakis, Federal Aviation Administration, Engine and Propeller Standards Staff, ANE-110, Engine and Propeller Directorate, Aircraft Certification Service, 12 New England Executive Park, Burlington, Massachusetts 01803-5299; telephone: (781) 238-7114; facsimile: (781) 238-7199; email: timoleon.mouzakis@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. 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 9:00 a.m. and 5:00 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.

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.

Availability of Rulemaking Documents

You can get an electronic copy using the Internet by taking the following steps:

(1) Go to the search function of the Department of Transportation's electronic Docket Management System (DMS) web page (<http://dms.dot.gov/search>).

(2) On the search page type in the last four digits of the Docket number shown at the beginning of this notice. Click on "search."

(3) On the next page, which contains the Docket summary information for the Docket you selected, click on the document number of the item you wish to view.

You can also get an electronic copy using the Internet through the Office of Rulemaking's web page at <http://www.faa.gov/avr/armhome.htm> or the Federal Register's web page at http://www.access.gpo.gov/su_docs/aces/aces140.html.

You can also get a copy by submitting 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.

Background

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

The FAA is committed to undertaking and supporting the harmonization of part 33 and the JAR-E requirements. In August 1989, the FAA Engine and Propeller

Directorate participated in a meeting with the JAA, the Aerospace Industries Association (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 jointly address the harmonization effort task. This partnership was later expanded to include the airworthiness authority of Canada, Transport Canada.

This proposal has been selected as an Aviation Rulemaking Advisory Committee (ARAC) project. This task was assigned to the Engine Harmonization Working Group (EHWG) of the Transport Airplane and Engine Issues Group (TAEIG); notice of the task was published in the Federal Register on October 20, 1998 (63 FR 56059). On December 13, 1999, the TAEIG recommended to the FAA that it proceed with the rulemaking. This proposed rule reflects the ARAC recommendations.

Discussion of the Proposed Rule

Currently, the FAA does not have explicit standards in part 33 for the approval of engine static parts under pressure loading. The proposed rule establishes: (a) strength requirements for pressurized parts that are required to be air, gas, or liquid tight; and (b) fatigue requirements of pressurized critical static parts. Engine critical static parts are those parts whose failure could create a hazardous condition, as identified in §33.75. In some instances, the Engine Certification Office (ECO) has requested an engine manufacturer to evaluate the fatigue capabilities of engine static structures under §33.19(a), which requires the engine be designed and constructed to minimize the development of an unsafe condition between overhaul periods. Engine case ruptures

continue to contribute to propulsion risk. The Continued Airworthiness Assessment Methodologies (CAAM) data shows that case ruptures are the tenth leading cause of a significant (CAAM level 3 or 4) hazard to the aircraft for turbofan engines installed on airplanes certificated under part 25. The proposed rule would establish explicit structural integrity requirements for engine static parts. Since the JAR-E does contain specific standards of this type, U.S. aircraft engine manufacturers who have sought JAA validation for their engines have generally had to comply with the intent of the proposed regulation.

The proposed rule would adopt the general intent of the current JAR-E 640 for engine static parts under pressure loading and would add clarification of fatigue requirements. The proposed rule has been harmonized with the proposed revision of JAR-E 640.

The proposed rules were developed by the EHWG and concurred with by those industry representatives that participated in the ARAC discussions of this proposal. The proposal is based on common language that will be included in both part 33 and JAR-E in an effort to harmonize U.S. regulations with existing and proposed requirements of the JAA. This common language would codify current industry practices and clarify existing requirements.

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 new information collection requirements associated with this proposed rule.

Regulatory Evaluation Summary

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 (19 U.S.C. §§ 2531-2533) 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 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 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, in any one year (adjusted for inflation).

In conducting these analyses, the FAA has determined that this proposal has benefits, but no costs, and that it is not “a significant regulatory action” under section 3(f) of Executive Order 12866. This proposal would not have a significant economic impact on a substantial number of small entities, reduces barriers to international trade, and imposes no unfunded mandates on state, local, or tribal governments, or the private sector.

Because there are no apparent costs associated with this proposal, it does not warrant the preparation of a full economic evaluation for placement in the docket. The basis of this statement and the above determinations is summarized in this section of the

preamble. The FAA requests comments, with supporting documentation, regarding the conclusions contained in this section.

Presently, engine manufacturers must demonstrate compliance with both part 33 and the JAR-E certification standards to market turbine engines in both the U.S. and Europe. Meeting two sets of certification requirements raises the cost of developing a new turbine engine, often with no increase in safety. In the interest of fostering international trade, lowering the cost of engine development, and making the certification process more efficient, the FAA, JAA, and engine manufacturers have been working to create to the maximum extent possible a single set of certification requirements accepted in both the U.S. and Europe. These efforts are referred to as harmonization.

Currently, the JAR contains section JAR-E 640-Strength. The current part 33 has no equivalent. This proposal would add the provisions of the current JAR-E- 640 – Strength to part 33 as a new §33.64, Static parts, to Subpart E – Design and Construction; Turbine Aircraft Engines. The FAA has concluded for the reasons previously discussed in the preamble that the adoption of these JAR requirements into part 33 is the most efficient way to harmonize these section(s) and, in so doing, to preserve the existing level of safety.

The FAA estimates that there are no incremental costs associated with this proposal. A review of current manufacturers of turbine aircraft engines certificated under part 33 revealed that all such future engines are expected to be certificated under the existing JAR-E-640 requirements. As this rule simply adopts this JAR requirement, manufacturers would incur no additional costs resulting from this proposal.

In fact, U.S. engine manufacturers are expected to receive cost-savings by a reduction in the FAA/JAA certification requirements for new turbine engines. The cost-savings of this proposed rule would be that U.S. manufacturers could conduct procedures in the U.S. that are now done in Europe to obtain European certification. By harmonizing part 33 and JAR-E requirements, one set of certification procedures would allow certification under the harmonized part 33 and JAR-E. The FAA, however, has not attempted to quantify the cost savings that may accrue due to this specific proposal, beyond noting that while it may be minimal, it contributes to a large potential harmonization saving. The agency concludes that because there is consensus among potentially impacted turbine engine manufacturers that savings will result, further analysis is not required.

Regulatory Flexibility Determination

The Regulatory Flexibility Act (RFA) of 1980, as amended, 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 size of the business, organizations, and governmental jurisdictions subject to regulation. To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that the rule will, the Agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a proposed or final 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.

The FAA believes that this proposed rule would not have a significant economic impact on a substantial number of small entities for two reasons.

First, the net effect of the proposed rule is minimum regulatory cost relief. The proposed rule requires that new turbine aircraft engines meet the European certification requirements of JAR –E-640, in addition to the U.S. standards. The current situation requires that U.S. engine manufacturers perform some procedures in Europe. The cost-savings of this proposed rule would be that U.S. manufacturers could conduct procedures in the U.S. that must now be done in Europe to obtain European certification.

Second, all U.S. turbine-aircraft engine manufacturers exceed the Small Business Administration small-entity criteria of 1,000 employees for SIC 3724, aircraft engines and engine parts manufacturers. Given that this proposed rule provides minimal cost-relief and that there are no small entity manufacturers of part 33 turbine aircraft engines, the FAA certifies that this proposed rule would not have a significant economic impact on a substantial number of small entities.

International Trade Impact

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or 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. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

In accordance with the above statute and policy, the FAA has assessed the potential effect of this proposed rule and determined that it supports the Administration's free trade policy because this proposed rule would incorporate a European international standard into the U.S. standards.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year.

This proposal does not contain a Federal intergovernmental or private sector mandate that exceeds \$100 million in any year; therefore, the requirements of the act 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 notice of proposed rulemaking would not have federalism implications.

Environmental Assessment

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental impact statement. In accordance with FAA Order 1050.1D, appendix 4, paragraph 4(j), this proposed rulemaking action qualifies for a categorical exclusion.

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 (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. 106(g), 40113, 44701-44702, 44704

2. Add §33.64 to Subpart E to read as follows:

§33.64 Static parts.

(a) Strength. It must be established by test, validated analysis, or combination of both that all static parts subject to significant gas or liquid pressure loads will not, for a stabilized period of one minute:

(1) Exhibit permanent distortion beyond serviceable limits or exhibit leakage that could create a hazardous condition when subjected to the greatest of the following pressures:

- (i) 1.1 times the maximum working pressure;
- (ii) 1.33 times the normal working pressure; or
- (iii) 35 kPa above the normal working pressure.

(2) Exhibit fracture or burst when subjected to the greatest of the following pressures:

- (i) 1.15 times the maximum possible pressure;
- (ii) 1.5 times the maximum working pressure; or
- (iii) 35 kPa above the maximum possible pressure.

(b) Fatigue. A fatigue life operating limitation must be established by test, validated analysis, or combination of both for any static part subject to cyclic pressure loads the failure of which would lead to a hazardous condition identified in §33.75.

(c)(1) Compliance with paragraphs (a) and (b) of this section must take into account:

- (i) The operating temperature of the part;
- (ii) Any other static loads in addition to pressure loads;
- (iii) Minimum properties representative of both the material and the processes used in the construction of the part; and

(iv) Any adverse geometry conditions allowed by the type design of the engine.

(2) In addition, compliance with paragraph (b) of this section must take into account temperature gradients and any vibratory loads, in addition to pressure loads.

Issued in Washington, DC, on

[Name of Office Director]

Director, Aircraft Certification Service

FAA Action: Airworthiness Standards; Aircraft Engine Standards for Pressurized Engine Static Parts; NPRM – [FAA-2007-28501](#)

Federal Deposit Insurance Corporation.
Valerie J. Best,
Assistant Executive Secretary.
 [FR Doc. E8–22327 Filed 9–24–08; 8:45 am]
 BILLING CODE 6714–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No.: FAA–2007–28501; Amendment No. 33–26]

RIN 2120–AJ05

Airworthiness Standards; Aircraft Engine Standards for Pressurized Engine Static Parts

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is amending the aircraft engine type certification standards by adding standards for pressurized engine static parts that are equivalent to those already adopted by the European Aviation Safety Agency. This rule establishes uniform standards for the certification of these parts in the United States and in Europe. U.S. manufacturers already meet the European requirements.

DATES: This amendment becomes effective November 24, 2008.

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:

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 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 pressurized static parts.

Summary of the NPRM

A Notice of Proposed Rulemaking (NPRM) was published on September 6, 2007 (72 FR 18136) that proposed changes to requirements for pressurized engine static parts in Title 14 Code of Federal Regulations part 33. The comment period for the NPRM closed on December 5, 2007.

Summary of the Final Rule

This final rule on requirements for pressurized engine static parts contains minor changes from the NPRM. We made changes to two sections, §§ 33.71 and 33.91, in response to the comments we received and our own review of the proposed rule. This final rule harmonizes FAA and EASA regulations for part 33 requirements related to pressurized engine static parts.

Summary of Comments

There were five commenters. Rolls-Royce, General Aviation Manufacturers Association (GAMA), and Airbus supported the rule and suggested minor changes, which are discussed below. General Electric and an individual supported the rule and did not suggest changes.

The comments relate to the following general areas:

- Component tests; and
- Examples of static parts.

Discussion of the Final Rule

Component Tests

Pressurized engine static parts operate at significant pressures and § 33.64 prescribes tests for these parts at maximum working and operating pressures. Rolls-Royce and GAMA commented that § 33.91, Engine component tests, should be modified as there was an inconsistency between proposed § 33.64 and existing § 33.91(c), which prescribes testing of pressurized hydraulic fluid tanks. Rolls-Royce and GAMA noted that depending on the maximum possible and maximum working pressures, as described in § 33.64, and the maximum operating pressure as described in § 33.91, the two rules could result in two different testing requirements for a given component.

The FAA agrees that the two rules could be interpreted as separate and distinct test requirements, and that testing pressurized hydraulic fluid tanks falls under the requirements of the new § 33.64. We have also determined that proposed § 33.64 and § 33.71,

Lubrication system, could be interpreted as two distinct testing requirements for a single component. Section 33.71(c)(9) prescribes testing for maximum operating temperature and pressure for pressurized oil tanks. These tanks should be tested under the requirements of the new § 33.64.

In the final rule, therefore, we are modifying §§ 33.71(c)(9) and 33.91(c) by replacing existing testing requirements for pressurized tanks with a reference to meeting the requirements of § 33.64. This change is consistent with EASA regulations for pressurized hydraulic fluid and oil tanks.

Examples of Static Parts

In the NPRM discussion, we noted examples of pressurized engine static parts which include compressor, combustion, diffuser, and turbine cases; heat exchangers; bleed valve solenoids; starter motors; and fuel, oil and hydraulic system components. Airbus commented that the examples of pressurized static parts included in the preamble of the NPRM should be expanded to include associated ducts and fittings.

The purpose of this NPRM discussion was to provide examples to help the applicant identify the type of parts affected by this rule. The examples provided in the NPRM do not represent a complete list of pressurized static parts. It is the applicant's responsibility to ensure all applicable pressurized engine parts are identified. We have made no changes to the rule in response to this comment.

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 is no current or new requirement for information collection associated with this amendment.

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 regulations.

Regulatory Evaluation, Regulatory Flexibility Determination, International Trade Impact Assessment, and Unfunded Mandates Assessment

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 (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) 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 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 base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost 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 be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this final rule. The reasoning for this determination follows.

The NPRM explained that, presently, engine manufacturers must demonstrate compliance with both part 33 and EASA certification standards to market turbine engines in both the United States and Europe. Meeting two sets of certification requirements raises the cost of developing a new turbine engine.

In the NPRM, we explained that EASA has adopted this standard as CS–E 640 Pressure Loads. This final rule adds the provisions of CS–E 640 Pressure Loads to part 33 as a new § 33.64, Pressurized engine static parts, under Subpart E—Design and Construction; Turbine Aircraft Engines.

We estimated that no incremental costs were associated with this rule because our review of U.S. turbine aircraft engine manufacturers revealed that they currently design their engines to meet the standards of CS–E 640 Pressure Loads. Because our rule adopts this standard, manufacturers will incur no additional costs resulting from this final rule.

By creating common part 33 and EASA requirements, turbine engine manufacturers need to design to only one certification standard. We have not attempted to quantify the cost savings from this rulemaking, but note that harmonization in this area will contribute to the overall savings that certification to one standard provides. We have also concluded that further analysis is not required because turbine engine manufacturers are already designing to EASA's CS–E 640 Pressure Loads.

As discussed above, we received comments on the proposed rule and, where appropriate, have made changes in the final rule. However, we received no comments on the economic evaluation of the proposed rule, and the changes made to the final rule, as a result of other comments, did not affect the economic evaluation of the final rule. Therefore, as in the NPRM, the FAA concludes that this rule is expected to have minimal cost with positive net benefits and a complete regulatory evaluation was not prepared.

We have determined that this final rule 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.

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 objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, 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.

The NPRM was expected to be minimal cost and we concluded “* * * that this rule would not have a significant economic impact on a substantial number of small entities.” We certified that a full regulatory flexibility analysis was not required and we requested comments on this determination.

We received no comments on the regulatory flexibility analysis and have made no changes to our initial determination because comments received on the proposal did not affect our regulatory flexibility analysis determination. The final rule, like the NPRM, is minimal cost with positive net benefits.

Therefore, as the Acting FAA Administrator, I certify that this rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96–39) 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 potential effect of this final rule and has determined that it is in accord with the Trade Agreements Act as the final rule uses European standards as the basis for United States regulation.

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 \$136.1 million in lieu of \$100 million.

This final rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. We determined that this action will not have a substantial direct effect on the States, or the relationship between the national 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.

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 this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA has analyzed this final rule 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.

Availability of Rulemaking Documents

You can get an electronic copy of rulemaking documents using the Internet by—

1. Searching the Federal eRulemaking Portal (<http://www.regulations.gov>);
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 amendment number or docket number of this rulemaking.

Anyone is able to search the electronic form of all comments received into any of our 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.). You may review DOT's complete Privacy Act statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit <http://DocketsInfo.dot.gov>.

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. If you are a small entity and you have a question regarding this document, you may contact your local FAA official, or the person listed under the **FOR FURTHER INFORMATION CONTACT** heading at the beginning of the preamble. You can find out more about SBREFA on the Internet at http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects in 14 CFR Part 33

Aircraft, Aviation safety, 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 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.

■ 2. Add § 33.64 to Subpart E to read as follows:

§ 33.64 Pressurized engine static parts.

(a) Strength. The applicant must establish by test, validated analysis, or a combination of both, that all static parts subject to significant gas or liquid pressure loads for a stabilized period of one minute will not:

(1) Exhibit permanent distortion beyond serviceable limits or exhibit leakage that could create a hazardous condition when subjected to the greater of the following pressures:

(i) 1.1 times the maximum working pressure;

(ii) 1.33 times the normal working pressure; or

(iii) 35 kPa (5 p.s.i.) above the normal working pressure.

(2) Exhibit fracture or burst when subjected to the greater of the following pressures:

(i) 1.15 times the maximum possible pressure;

(ii) 1.5 times the maximum working pressure; or

(iii) 35 kPa (5 p.s.i.) above the maximum possible pressure.

(b) Compliance with this section must take into account:

(1) The operating temperature of the part;

(2) Any other significant static loads in addition to pressure loads;

(3) Minimum properties representative of both the material and the processes used in the construction of the part; and

(4) Any adverse geometry conditions allowed by the type design.

■ 3. Amend § 33.71 by revising paragraph (c)(9) to read as follows:

§ 33.71 Lubrication system.

* * * * *

(c) * * *

(9) Each unpressurized oil tank may not leak when subjected to a maximum operating temperature and an internal pressure of 5 p.s.i., and each pressurized oil tank must meet the requirements of § 33.64.

* * * * *

■ 4. Amend § 33.91 by revising paragraph (c) to read as follows:

§ 33.91 Engine component tests.

* * * * *

(c) Each unpressurized hydraulic fluid tank may not fail or leak when subjected to a maximum operating temperature and an internal pressure of 5 p.s.i., and each pressurized hydraulic fluid tank must meet the requirements of § 33.64.

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Issued in Washington, DC, on September 15, 2008.

Robert A. Sturgell,

Acting Administrator.

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