DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee (ARAC); Engine Harmonization Working Group

AGENCY: Federal Aviation Administration (FAA), DOT.

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

SUMMARY: Notice is given of new task assignments for the Engine Harmonization Working Group of the Aviation Rulemaking Advisory Committee (ARAC). This notice informs the public of the activities of the ARAC.

FOR FURTHER INFORMATION CONTACT: Mr. Michael Borfitz, Assistant Executive Director for Transport Airplane and Engine Issues, Aviation Rulemaking Advisory Committee, FAA Engine & Propeller Directorate, 12 New England Executive Park, Burlington, Massachusetts 01803; telephone (617) 238–7110, fax (617) 238–7199.

SUPPLEMENTARY INFORMATION: On January 22, 1991 (56 FR 2190), the Federal Aviation Administration (FAA) established the Aviation Rulemaking Advisory Committee (ARAC). The committee provides 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.

In order to develop such advice and recommendations, the ARAC may choose to establish working groups to which specific tasks are assigned. Such working groups are comprised of experts from those organizations having an interest in the assigned tasks. A working group member need not be a representative of a member of the full committee. One of the working groups established by the ARAC is the Engine Harmonization Working Group.

The FAA announced at the Joint Aviation Authorities (JAA)—Federal Aviation Administration (FAA) Harmonization Conference in Toronto, Canada, (June 2–5, 1992), that it would consolidate within the ARAC structure an ongoing objective to "harmonize" the Joint Aviation Requirements (JAR) and the Federal Aviation Regulations (FAR).

Tasks

The Engine Harmonization Working Group new tasks are as follows:

Task 1, Fire Perventior—Review FAR and JAR requirements and create one set of common requirements (FAR 33.17; JAR–E–530).

Task 2, FAR 35—Conduct a comparison of FAR Park 35 and JAR–P requirements and advisory material and identify significant differences. This comparison should clarify and redefine existing requirements to include new standards to reflect recent advancements in design and construction of composite material propellers, propeller control systems (such as dual acting control systems) and electronic controls.

Reports

For each task listed, the Engine Harmonization Working Group should develop and present to the ARAC:

1. A recommended work plan for completion of the tasks, including the rationale supporting such as a plan, for consideration at the meeting of the ARAC to consider transport airplane and engine issues held following publication of this notice;
2. A detailed conceptual presentation on the proposed recommendation(s), prior to proceeding with the work stated in item 3. below;
3. A draft Notice of Proposed Rulemaking, 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; and
4. A status report at each meeting of the ARAC held to consider transport airplane and engine issues.

Participation in Working Group Task

An individual who has expertise in the subject matter and wishes to become a member of the working group should write to the person listed under the caption FOR FURTHER INFORMATION CONTACT expressing that desire, describing his or her interest in the task(s), and stating the expertise he or she would bring to the working group. The request will be reviewed with the assistant chair and working group chair, and the individual will be advised whether or not the request can be accommodated.

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

Meetings of the Aviation Rulemaking Advisory Committee will be open to the public, except as authorized by section 10(d) of the Federal Advisory Committee Act. Meetings of the 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 August 10, 1994.

Chris A. Christie,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 94–20151 Filed 8–16–94; 8:45 am]

BILLING CODE 4910–13–M

400 Main Street
East Hartford, Connecticut 06108

Pratt & Whitney
A United Technologies Company

May 4, 1999

Federal Aviation Administration
Department of Transportation
800 Independence Ave. S.W.
Washington, D.C. 20591

Attn: Ms. Brenda Courtney, Acting Director – Office of Rulemaking

Dear Ms. Courtney:

The Transport Airplane and Engine Issues Group is pleased to provide the attached draft Advisory Circular, AC 33.17, Fire Protection to the FAA for formal legal review. This draft AC has been prepared by the Engine Harmonization Working Group.

Craig R. Bolt

Craig R. Bolt
Assistant Chair, TAEIG
boltcr@pweh.com
(Ph: 860-565-9348/Fax: 860-557-2277)

CRB/amr

Attachment

cc: Marc Bouthillier – FAA-NER
Kristin Larson – FAA-NWR
Jerry McRoberts, Allison

U.S. Department
of Transportation

**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

JUL 22 1999

Mr. Craig R. Bolt
Assistant Chair, Aviation Rulemaking
Advisory Committee, TAEIG
Pratt & Whitney
400 Main Street
East Hartford, CT 06106

Dear Mr. Bolt:

We have received your May 4 request for formal legal review of the draft advisory circular and your May 14 request for formal and economic review of the draft rulemaking, both of which address the fire protection requirements for compliance with Title 14 Code of Regulations, Part 33.

Copies of the draft rulemaking have been transmitted to the Office of Aviation Policy and Plans (APO), Washington headquarters office, as well as the Regional Counsel, New England Region (ANE). The advisory circular (AC) was forwarded only to the ANE regional counsel. We expect the regulatory evaluation associated with the draft rulemaking to be completed by November 19 and we expect the legal reviews of the draft rulemaking and the proposed AC to be completed by December 19.

Thank you for the time and continued support that the aviation community provides through the Aviation Rulemaking Advisory Committee.

Sincerely,

Ida M. Klepper
Acting Director, Office of Rulemaking

FIRE PROTECTION - ADVISORY CIRCULAR

Date: 27 NOV 1998

File: fireac8.doc

Subject: Fire Protection **Initiated by ANE-110** **AC No. 33.17**

1. PURPOSE. This advisory circular (AC) provides definitions, guidance, and acceptable methods, but not the only methods, that may be used to demonstrate compliance with the fire protection requirements of part 33 of the Federal Aviation Regulations (FAR). This AC may be incorporated into AC 33.2, Aircraft Engine Type Certification Handbook at a later date.

2. RELATED FAR SECTIONS. The primary FAR Section addressed by this AC is 33.17. Other Part 33 sections which address fire protection issues may also be applicable. Other related FAR Parts and sections are listed in AC 20-135, Powerplant Installation and Propulsion System Component Fire Protection Methods, Standards and Criteria, Appendix 1.

The cognizant ACO and engine manufacturer should review the overall FAR 33 compliance plan, to be sure that the fire protection intent and objective of each FAR 33 section are met. With respect to the aircraft level (Part 23/25/27/29) FARs listed in AC 20-135, the applicant should be encouraged to review these sections with the installer early in the program, so as to minimize the potential of experiencing installation problems after engine certification.

3. BACKGROUND. The subject of fire protection was identified as one where differences existed between the Joint Aviation Requirements - Engines (JAR-E) and part 33 of the FAR. A study group composed of representatives of the Federal Aviation Administration (FAA), the Joint Aviation Authorities (JAA), Transport Canada and industry worked to produce a set of improved and harmonized fire protection requirements that was subsequently incorporated into part 33 (as a revision of Section 33.17) of the FAR. This AC is intended to provide guidance relating to these revised requirements, and is considered a supplement to AC 20-135.

4. DEFINITIONS. For the purposes of this AC, the following definitions apply:

a. Hazardous Quantity: An amount of flammable fluid which could sustain a fire of sufficient severity and duration so as to result in a hazardous effect. In the absence of a suitable determination of hazardous quantity, 0.25 litres or more of fuel (or a quantity of flammable material of equivalent heat content) will be considered hazardous.

b. External Lines, Fittings and Other Components: Engine parts conveying flammable fluids and which are external to the main engine casings, frames and other major structure. These parts include, but are not limited to, fuel or oil tubes/lines, accessory gearbox, pumps, heat exchangers, valves, and engine fuel control units..

c. Drain and Vent Systems: Components which are used to convey unused or unwanted quantities of flammable fluid and vapor away from the engine.

d. Fireproof: The capability of a part or component to withstand as well as or better than steel, a 2000 F (+-150 F) flame for 15 minutes minimum, while still performing those functions intended to be performed in the case of fire. The term fireproof, when applied to materials and parts used to confine fires within designated fire zones, means that the material or part will perform this function under conditions likely to occur in such zones and will withstand a 2000 F (+-150 F) flame for 15 minutes minimum.

e. Fire Resistant: The capability of a part or component to perform those functions intended to be performed under the heat and other conditions likely to occur at the particular location and to withstand a 2000 F (+-150 F) flame for 5 minutes minimum.

f. Hazardous Effect: Any condition noted in FAR 33.75, or any other result of exposure to fire which would preclude the continued safe operation or shutdown of the engine.

g. Fire Hazard: (1) The unintentional release or collection of a hazardous quantity of flammable fluid, vapor or other materials; or (2) a failure or malfunction which results in an unintentional ignition source within a fire zone; or (3) the potential for a hazardous effect as the result of exposure to a fire.

5. GENERAL.

a. Intent: The intent of section 33.17 is to give assurance that the design, materials, and construction techniques utilized will minimize the probability of the occurrence, the consequences, and the spread of fire.

b. Objectives: With respect to the above intent, the primary objectives are to (1) contain, isolate and withstand a fire, and prevent any source of flammable material or air from feeding an existing fire, and (2) increase the probability that the engine control system and accessories will permit a safe shutdown of the engine or feathering of the propeller (if the control system is part of the engine design), and subsequently maintain that condition..

c. Fire Protection Capability - Determination of Fireproof vs. Fire Resistant: Section 33.17(b) requires that all flammable fluid conveying parts or components be at a minimum, at least fire resistant, whereas 33.17(c) requires flammable fluid tanks and associated shutoff means to be fireproof. It must be determined which level of capability must be shown for each component requiring a fire protection evaluation. In general, components which convey flammable fluids can be evaluated to a fire resistant standard provided the normal supply of flammable fluid is stopped by a shutoff feature (also see Section 33.71(c)(8)). For example, the fire resistant criteria has been applied to engine fuel system components because the 5 minute exposure provides a reasonable time period for the flight crew to recognize a fire condition, close the appropriate fuel shutoff valve(s), and shut down the appropriate engine. This cuts off the fuel source. Oil system components of turbine engines however, may continue to flow oil after the engine has been shutdown because of continued rotation. These effects include the rotation of gearbox mounted oil pump(s), and subsequent oil flow through the lubrication system. The supply of oil to the fire might exist for as long as the continued rotation effects are present, or until the oil supply is depleted. Therefore, oil system components may need to be evaluated from the standpoint of fire hazard (quantity, pressure, flow rate, etc.) to determine whether fire resistant or fire proof standards should apply. It should be noted that historically, most oil system components have been evaluated to a fireproof standard.

Other flammable fluid conveying components (except flammable fluid tanks), such as hydraulic and thrust augmentation systems should be evaluated in a similar manner. Flammable fluid tanks must be fireproof as discussed in paragraph (a) above.

d. Pass/Fail Criteria: In general, the following fire test acceptance criteria have been accepted: (1) maintain the ability to perform those functions intended to be provided in the case of fire; (2) no leakage of hazardous quantities of flammable fluids, vapors or other materials; (3) no support of combustion by the constituent material of the article being tested; (4) no burn through of firewalls; and (5) no other hazardous effects should result.

With respect to 5d(1) above, the functions intended to be provided in the case of fire will be determined on a case by case basis. Examples: Engine controls must not cause a hazardous effect while continuing to operate, but must allow or may cause a safe shutdown of the engine at any time within the required exposure time period. A safe engine shutdown at any time during the fire resistant test is an acceptable

outcome for this type of component, provided the safe shutdown can be shown to be maintained for the full 5 minutes fire resistant test. For a flammable fluid tank shutoff valve, the valve must be operable (to close) or should default closed, and be capable of maintaining this position without leakage of a hazardous quantity for the full 15 minute fireproof test. The above examples are included to illustrate the case by case nature of making this determination. The applicant and cognizant ACO should coordinate early in the program in this regard.

With respect to 5d(2) above, at no time during or at the end of the test should the test article leak a hazardous amount of flammable fluid in any manner. Hazardous quantity is defined in Section 4 of this AC.

With respect to 5d(3) above, consideration must be given to non-self- extinguishing fire test events. In general, these events should continue to be cause for failure of the test, unless it can be shown that the constituent material supporting combustion is not a hazardous quantity of flammable fluid, vapor, or material as defined in this AC. An example of such a situation has been certain electronic components. Current technology electronic components often use circuit board potting compounds internal to the control housings that may support combustion when heated sufficiently, or when exposed to fire. These compounds can also flow under high heat, and may leak through the control housings. Therefore, such materials may support a fire internal and/or external to the housing for a limited period of time after the test flame is removed. If this result occurs during test, then the constituent material supporting combustion should be evaluated against the criteria for leakage of a hazardous quantity of flammable material.

With respect to 5d(4) above, at no time during or at the end of the test should a firewall component fail to contain the fire within the intended zone or area. Implied with this outcome is the expectation that the firewall component will not develop a burn through hole, and will not fail in any manner at its attachment or fire seal points around the periphery of the component.

With respect to 5d(5) above, at no time during or at the end of the test should a hazardous effect result. Hazardous effect is defined in Section 4 of this AC.

6. MATERIALS. Experience has shown that when using materials such as magnesium and titanium alloys, appropriate design precautions may be required to prevent an unacceptable fire hazard. Consideration should be given to the possibility of fire as a result of rubbing or contact with hot gases. Any material used for abradable linings needs to be assessed to ensure that fire or explosion hazards are avoided. Consideration should also be given to the effects of mechanical failure of any engine component and to the effects of dimensional changes (e.g.., rotor/case clearances) resulting from thermal effects within the engine.

a. Use of Titanium: Many titanium alloys used in the manufacture of engine components will ignite and sustain combustion under certain conditions. In general, titanium fires burn very fast and are extremely intense. The molten particles in titanium fires generate highly erosive hot sprays which have burned through compressor casings with resulting radial expulsion of molten or incandescent metal.

In showing compliance with Section 33.17(a), the applicant should assess the overall design for vulnerability to titanium fires. If this assessment cannot rule out the possibility of a sustained fire, then it should be shown that a titanium fire does not result in a hazardous effect.. Additional information on the use of titanium parts in aircraft engines can be found in Reference 3.

b. Use of Magnesium: Many magnesium alloys used in the manufacture of engine components are highly combustible when in finely divided form, such as chips or powder. Therefore, magnesium use in thin sections or where rubbing or high scrubbing speeds are considerations, should be carefully evaluated.

In showing compliance with Section 33.17(a), the applicant should assess the overall design for vulnerability to magnesium fires. If this assessment cannot rule out the possibility of a sustained fire, then

it should be shown that a magnesium fire will be confined to areas within the engine such that it does not result in a hazardous effect.

c. Abradable Linings: Many fan, compressor, and turbine modules have abradable linings between rotating blade tips and stator casings. Depending upon the material used in the abradable lining, experience has shown that fire or explosion can occur in the presence of an ignition source if a significant amount of lining is removed during rubs between rotor and stator. Under certain conditions, auto ignition can occur in the mixture of small abradable particles and hot flowpath gases. These situations should be evaluated by the applicant for each fan, compressor, and turbine stage with abradable linings.

d. Absorbent Materials: Absorbent materials should not be used in close proximity to flammable fluid system components, unless they are treated or covered to prevent the absorption of a hazardous quantity of such fluid.

7. CONDUCT of FIRE TESTS.

a. Test Equipment: Guidance on acceptable burner types and configuration, and other test hardware can be found in References 1 and 2. Pre and post test calibrations of burner equipment are required. Measured burner flame temperature fluctuations during the test are acceptable provided that the pre and post test calibrations are within prescribed limits, and test burner controlling parameters are constant during the test. Experience has shown that the measured temperature of the flame could be affected by the presence of the component under test, although the physical value of the flame temperature is not changed.

b. Flame Impingement Location: The test flame generally should be applied to the test article feature that is determined by analysis or test to be the most critical with respect to surviving the effects of the fire. For this approach, determination of the flame impingement location should consider, as a minimum, the following potential factors: materials; geometry; part features; local torching effects; vibration; internal fluid level/pressure/flow rate; surface coatings; fire protection features; etc.. Other factors not listed may apply. Alternatively, the test plan may consider all potential sources of fire in the intended installation when determining test flame impingement location requirements. The intent is to identify locations or features which cannot be directly impinged by fire, and choosing the most critical from other locations which can be directly impinged. If the applicant chooses this installation analysis approach, it should be based on the actual intended installation, and should consider, as a minimum, the factors noted above, plus the following potential installation specific factors: cowling and nacelle structure; adjacent structure shielding; undercowl airflow; aircraft engine build up (EBU) hardware; fuel sources; air sources; etc.. Other factors not listed may apply. Such installation analyses should avoid simple generalities, such as "the most likely flame direction is vertical assuming fuel collects at the bottom of the cowl," and most properly should be coordinated with the installer before the test plan is submitted. Lastly, due consideration should be given to fire protection features such as fire shields, fire protective coatings, or other methods, so as not to discourage or invalidate their use with respect to compliance with Section 33.17.

c. Operating Parameters for Test Articles: The operating characteristics and parameters of the test article should be consistent, but conservative, with respect to the conditions which might occur during an actual fire situation. For example, where a high internal fluid flow increases the heat sink effect, and is less conservative with respect to fire susceptibility, a minimum flow condition should be specified for the test. The same is true for examples relating to internal fluid temperatures or quantity, or other parameters.

d. Other Guidance: Guidance on acceptable methods of conducting fire tests can be found in References 1 and 2.

8. OTHER CONSIDERATIONS.

a. Flammable Fluid Tanks:

1) Flame Impingement Location: In the absence of an acceptable installation assessment, the fire test flame should be applied to the tank location or feature that has been determined by analysis or test to be the most critical with respect to fire susceptibility (i.e., the location or feature least likely to survive the test conditions or meet the test pass/fail criteria). In selecting the flame application location, all features of the tank assembly must be considered. Typical tank installations include, but are not limited to: tank body, inlet and outlet assemblies, sightglass, drain plug, magnetic chip detector, quantity sender assembly, vent line assembly, fill cap and scupper, mounts, shutoff valve, temperature sensor, and air/fluid separator assembly. Tanks can be designed and manufactured with any combination of the above features, or other features not listed, and of varying materials. Therefore, in some instances, compliance with Section 33.17 may need to be supported by data from other fire tests, multiple location testing, subcomponent level tests, or service experience, to cover all tank assembly features. Also, other aspects of determining impingement location should be considered, such as vent system performance (oil tank fire tests have failed due to high internal pressure and inadequate venting); the lack of heat sink effect for tank features at/above the operating level of the tanks fluid contents; and the affect of any special protective features (shields, coatings, feature placement, etc.) incorporated into the design when developing the fire test plan.

2) Other Test Parameters: With respect to fluid quantity, the tank quantity at the start of the test should be no greater than the minimum dispatchable quantity, unless a greater quantity is more severe. Relative to flow rate, the first 5 minutes of the test should be conducted at the most critical operating condition (typically a minimum flight idle flow rate), and the subsequent 10 minutes should be conducted at an engine shutdown flow rate (continued rotation considered). The test may be run, at the applicant's option, for 15 minutes at the most critical condition (worst case of engine operating or inflight shutdown conditions).

3) With respect to fluid temperature, this should be at its maximum value (greater of steady-state or transient limit) at the start of the test, unless a lower temperature is more severe. The tank internal pressure should be the normal working pressure for the operating conditions at the start of the test. It is understood that these values may change due to the test conditions.

The tank design and its intended application should be reviewed, and provide reasonable assurance that the test set-up reflects the most critical flame impingement orientation and operating conditions for the intended application. Note that the aircraft requirements of Parts 23/25/27/29 rely heavily upon the fireproof determination of Part 33. Failure to adequately test may result in aircraft installibility issues.

b. Drain and Vent Systems: Certain drain and vent systems may be exempt from the requirements of Section 33.17(b) if it can be shown that they do not typically contain or convey flammable fluids during normal engine operation. In this context, normal operation is the taxi and flight portions of a typical flight. An example of a drain line which might be exempted is a combustor drain line which typically drains off residual fuel after an aborted engine start. This might also be the case for the majority of individual drains and vents. An example of a tube or line which would not be exempt is a shrouded fuel manifold. Such a line is considered a single assembly which cannot be separated into its main fuel line and its outer drain line (which would flow if the main manifold failed). In this particular case, after exposure to the test flame, the external envelope may be destroyed provided the pass/fail criteria of Section 33.17(b) are complied with. In the case of a drain and vent system line which would flow a hazardous quantity of flammable fluid during continued rotation, then a fireproof standard may be appropriate. The function of each drain or vent should be carefully reviewed in making these determinations

c. Electrical Bonding: The overall intent of Section 33.17(g) is to show that an electrical current path exists between certain components that are mounted externally to the engine and the engine carcass. These components are those which (with respect to fire protection) are susceptible to, or are potential sources of static discharge or electrical fault current. To comply with this subparagraph, the applicant must show that the modules, assemblies, components, and accessories installed in or on the engine are

electrically grounded to the engine reference. This may be accomplished by examination of the type design drawings, electrical continuity check, or actual inspection of an engine. The type design should provide protection for probable failure cases.

d. Air Sources: In accordance with Section 33.17(a), the applicant should evaluate the effect of fire on components conveying bleed air, and evaluate whether failure of such components could further increase the severity or duration of a fire within a fire zone.

e. Engine Mounts: The fire protection requirements for engine mounts are governed by the aircraft regulations, and compliance is shown as part of the aircraft certification. The engine manufacturer should coordinate with the installer in this regard to minimize the possibility of installation issues.

f. Hot Surface Ignition (HSI): Information concerning hot surface ignition sources is available in References 8 and 9.

g. Firewalls: The overall intent of Section 33.17(d)2 is to provide requirements for the proper functioning of a firewall. In no case should a hazardous quantity of fuel or fuel/air mixture pass around or through the firewall. Also, the firewall should contain the fire without resulting in a hazardous effect.

9. TEST PLANS. Certification test plans should include, but are not limited to, the following information: 1) Component name(s); 2) part number(s); 3) installation drawings or sketches; 4) description of component operation;5) definition and range of component operating parameters; 6) flame direction/impingement analysis; 7) test equipment and set-up; 8) test methods and procedures; 9) test criteria; 10) data recording methods; 11) industry standard references as applicable; 12) applicable FARs; and 13) time and place of test. The proposed certification test plan, including at least that information described above, should be submitted to the FAA office responsible for the project for coordination and approval prior to conducting the fire testing.

TABLE OF REFERENCES

1. FAA Advisory Circular AC 20-135, "Powerplant Installation and Propulsion System Component Fire Protection Methods, Standards, and Criteria", dated February 6, 1990.

2. FAA Powerplant Engineering Report No. 3A, "Standard Fire Test Apparatus and Procedures", Revised March 1978.

3. FAA Advisory Circular AC 33-4, "Design Considerations Concerning the Use of Titanium in Aircraft Turbine Engines," dated July 28, 1983.

4. SAE AS1055B, "Fire Testing of Flexible Hose, Tube Assemblies, Coils, Fittings, and Similar System Components," dated March 1, 1978.

5. SAE AIR 1377A, "Fire Test Equipment for Flexible Hose and Tube Assemblies," dated January 1980.

6. FAA Report No. FAA-RD-76-213, "Re-evaluation of Burner Characteristics for Fire Resistance Tests," dated January 1977.

7. SAE Report No. 690436, "Ignition of Aircraft Fluids on High Temperature Engine Surfaces," by W.T. Westfield of the FAA.

8. FAA Report No. FAA-RD-75-155, "Ignition and Propagation Rates for Flames in a Fuel Mist," dated October 1975, by C.E. Polymeropoulos

REVISION: 14

[Includes Changes thru June 98 EHWG @ CAA Gatwick]

Date: 21 July 98

File: firrul14.doc

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

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

RIN: 2120-XXXX

Airworthiness Standards; Fire Protection.

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of Proposed Rulemaking (NPRM).

SUMMARY: This notice proposes to change the fire protection standards for the issuance of original and appropriate amended type certificates for aircraft engines. This proposal resulted from an effort to harmonize the Federal Aviation Regulations with European requirements being proposed by the Joint Aviation Authorities (JAA). The proposed changes, if adopted, would provide uniform fire protection certification standards for engines certificated in the United States under 14 CFR part 33 and in the JAA countries under the Joint Aviation Requirements for engines (JAR-E), and would simplify international type certification.

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

ADDRESSES: Comments on this notice should be mailed in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC-10), Docket No._____, 800 Independence Avenue, SW., Washington, DC 20591. Comments delivered must be marked Docket No._____. Comments may be inspected in Room 915G weekdays between 9:00 a.m. and 5:00 p.m., except on Federal holidays.

FOR FURTHER INFORMATION CONTACT: Marc Bouthillier, Engine and Propeller 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) 238-7120; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to submit written data, views, or arguments on this proposed rule. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice are also invited. Substantive comments should be accompanied by cost estimates. Comments should identify the regulatory docket number and should be submitted in triplicate to the Rules Docket address

specified above. All comments received on or before the closing date for comments specified will be considered by the Administrator before taking action on this proposed rulemaking. The proposals contained in this notice may be changed in light of comments received. All comments received will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each substantive public contact with Federal Aviation Administration (FAA) personnel concerned with this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a pre addressed, stamped postcard on which the following statement is made: "Comments to Docket No._____." The postcard will be date stamped and mailed to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attn: Public Inquiry Center, APA-200, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267-3484. Communications must identify the notice number of this NPRM.

Persons interested in being placed on the mailing list for future NPRMs should request, from the above office, a copy of Advisory Circular No. 11-2A, Notice of Proposed

Rulemaking Distribution System, which describes the application procedure.

Background

The FAA is committed to undertake and support harmonization of the Federal Aviation Regulations (FAR) Part 33 (14 CFR part 33) with the Joint Aviation Requirements-Engines (JAR-E). As a result of that commitment, the Engine and Propeller Directorate.in cooperation with the JAA, established an engine certification study group to compare Part 33 with JAR-E. The original Part 33/JAR-E Authorities Engine Group was composed of five members, representing airworthiness authorities of the following countries: France, Canada, Germany, the United Kingdom, and the United States. The group established procedures that included meeting at alternating locations three times a year.

The initial task of the group was to compare JAR-E with Part 33, using Part 33, Amendment 11, and JAR-E, Change 7, as the basis for the comparison. The group focused only on gas turbine engines for the initial effort and produced a comparison that noted those JAR-E requirements that appeared to be more stringent than Part 33. The identified differences were grouped into two categories, noted as List 1 and List 2. List 1 contained those requirements where the differences appear to be sufficiently significant to cause the JAA to apply additional technical conditions to United States manufacturers seeking JAA

certification. List 2 contained those requirements that may be considered equivalent based on current FAA practice and interpretations of Part 33. Twenty items were classified as List 1, and twenty-four items were classified as List 2.

During August 1989, the FAA and JAA participated in a joint meeting between industry and the airworthiness authorities as requested by the Aerospace Industries Association of America (AIA), and the Eurpoean Association of Aerospace Industries (AECMA). The purpose of the meeting was to establish a process for resolving List 1 comparison issues.

At the June 1992 FAA/JAA management meeting in Toronto, Canada, seven engine "Harmonization Terms of Reference" items were introduced. These items identified potential harmonization projects. Four of these initiatives were included in the original FAA/JAA List 1 of twenty items. Six of these seven items have since been selected as Aviation Rulemaking Advisory Committee (ARAC) projects.

One of these initiatives, "fire prevention/precaution" was contained in the FAA/JAA List 1 of twenty items. In August 1994, the FAA requested the Aviation Rulemaking Advisory Committee (ARAC) to further evaluate the proposal (59 FR 42323). This task was assigned to the Engine Harmonization Working Group (EHWG) of ARAC. On [insert date], the working group reported to the ARAC, which recommended to the FAA that the FAA proceed with rulemaking.

This NPRM and a corresponding Notice of Proposed Amendment (NPA) to JAR-E reflect the ARAC recommendations.

General Discussion of the Proposals

This proposal would harmonize U.S. regulations with existing and proposed requirements of JAR-E, codify current industry practices, and clarify existing requirements. The proposal is not the result of an inadequate level of safety provided by the current regulation.

Section 33.17 Fire Protection

Section 33.17 currently contains fire protection design and construction standards for aircraft engines. This proposal would modify the existing text as follows: (1) Modifies the title of the section to read ※Fire Protection※; (2) Paragraph (a) remains the same as the present regulation; (3) In paragraph (b) the reference to paragraphs (d) and (e) are deleted, and the word ※normally※ is inserted into the first sentence. The purpose of inserting this word is to differentiate between drain lines and other components. It is the intent of this rule to exempt certain drain lines from the requirements of paragraph (b). This revision is consistent with the requirements of FAR parts 23/25/27/29, Section 1183(b)(2), "Flammable Fluid Carrying Components". (4) Paragraph (c) adds "associated shut-off means" to the first sentence, changes ※must be fireproof or be enclosed by a fireproof shield※ to ※must be fireproof by construction or protection, and incorporates the term ※hazardous

quantity"; (5) Paragraph (d) requirements for supersonic aircraft applications is deleted; (6) The current Paragraph (e) is reidentified as paragraph (f), and the word "Unwanted" is changed to "Unintentional". (7) Adds new paragraph (d) which specifies requirements for components acting as firewalls; (8) Adds new paragraph (e) which specifies requirements for engine control systems; and (9) Adds new paragraph (g) which specifies requirements for electrical bonding.

The addition of the term "shutoff means" to paragraph (c) provides additional margin against feeding a fire from a flammable fluid tank due to failure of a tank shutoff device, if installed. This change also adopts wording common with current JAR-E.

The deletion of current paragraph (d) requirements is the result of a review by the FAA and the EHWG of an industry study concerning supersonic transports, which concluded that the maximum temperature levels of controls and accessories installed in supersonic aircraft are not expected to be significantly greater than for components installed in current subsonic applications. Therefore, it is believed that these components will not require additional fire protection because the severity, frequency, and duration of fire is not expected to be different than for current subsonic applications. This study was completed in cooperation with a current supersonic aircraft feasibility study.

The addition of new text for paragraph (d) dealing with firewall components addresses the concern that even though these components do not contain or convey flammable fluids, by their definition, they must be fireproof. This change adopts wording common with current JAR-E, and also adopts requirements which are consistent with FAR parts 23/25/27/29, Section 1191, "Firewalls".

The requirements of proposed paragraph (e) were added to address engine control system effects when associated components are exposed to a fire. It was determined that control system components (e.g., electronic, fiberoptic, hydromechanical, etc.) should not cause any hazardous effects when exposed to a fire, and should therefore be addressed in the fire protection section. These new requirements are also intended to be consistent with the associated aircraft requirements. It should also be noted that the designated fire zones noted in this new section are those defined by Sections 23.1181, 25.1191, and 29.1181. This change also adopts wording similar to current JAR-E.

The requirements of proposed paragraph (g) were added to minimize static discharge sources of ignition for flammable fluids or vapors. This change also adopts wording similar to current JAR-E.

This proposal was developed by the EHWG, and is concurred with by industry. The proposal is based on common language that will be included in both Part 33 and JAR-E; thereby establishing equivalency of regulatory language, and

helping to promote consistency of application of this regulation.

Paperwork Reduction Act

Information collection requirements

Regulatory Evaluation Summary

International Trade Impact Analysis

Regulatory Flexibility Determination

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 Flexibility Determination and the International Trade Impact Analysis, the FAA has determined that this proposed regulation is not major under Executive Order 12291. 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 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 Trade Impact Analysis, 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

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend Part 33 of the Federal Aviation 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. App. 1354(a), 1421, 1423; and 49 U.S.C. 106(g).

2. Section 33.17 is revised to read as follows:

§ 33.17 Fire Protection

(a) The design and construction of the engine and the materials used must minimize the probability of the occurrence and spread of fire during normal operation and failure conditions, and must minimize the effect of such a fire. In addition, the design and construction of turbine engines must minimize the probability of the occurrence of

an internal fire that could result in structural failure or other hazardous effects.

(b) Except as provided in paragraph (c) of this section, each external line, fitting, and other component, which contains or conveys flammable fluid during normal engine operation must be at least fire resistant. Components must be shielded or located to safeguard against the ignition of leaking flammable fluid.

(c) Tanks which contain flammable fluids and any associated shut-off means and supports which are part of and attached to the engine must be fireproof either by construction or by protection unless damage by fire will not cause leakage or spillage of a hazardous quantity of flammable fluid. For a reciprocating engine having an integral oil sump of less than 23.7 liters capacity, the oil sump need not be fireproof nor be enclosed by a fireproof shield.

(d) An engine component designed, constructed, and installed to act as a firewall must be:

1. Fireproof; and,
2. Constructed so that no hazardous quantity of air, fluid or flame can pass around or through the firewall; and,
3. Protected against corrosion.

(e) In addition to the requirements of paragraphs (a) and (b) of this section, engine control system components

which are located in a designated fire zone must be at least fire resistant.

(f) Unintentional accumulation of hazardous quantities of flammable fluid within the engine must be prevented by draining and venting.

(g) Any components, modules, equipment and accessories which are susceptible to or are potential sources of static discharges or electrical fault currents must be designed and constructed so as to be properly grounded to the engine reference, in order to minimize the risk of ignition in external areas where flammable fluids or vapors could be present.

Issued in Washington, DC, on

{AE1}

Mr. Ron Priddy
President, Operations
National Air Carrier Association
1100 Wilson Blvd., Suite 1700
Arlington, VA 22209

Dear Mr. Priddy:

The Federal Aviation Administration (FAA) recently completed a regulatory program review. That review focused on prioritizing rulemaking initiatives to more efficiently and effectively use limited industry and regulatory rulemaking resources. The review resulted in an internal Regulation and Certification Rulemaking Priority List that will guide our rulemaking activities, including the tasking of initiatives to the Aviation Rulemaking Advisory Committee (ARAC). Part of the review determined if some rulemaking initiatives could be addressed by other than regulatory means, and considered products of ARAC that have been or are about to be forwarded to us as recommendations.

The Regulatory Agenda will continue to be the vehicle the FAA uses to communicate its rulemaking program to the public and the U.S. government. However, the FAA also wanted to identify for ARAC those ARAC rulemaking initiatives it is considering to handle by alternative actions (see the attached list). At this time, we have not yet determined what those alternative actions may be. We also have not eliminated the possibility that some of these actions in the future could be addressed through rulemaking when resources are available.

If you have any questions, please feel free to contact Gerri Robinson at (202) 267-9678 or gerri.robinson@faa.gov.

Sincerely,

Anthony F. Fazio
Executive Director, Aviation Rulemaking Advisory Committee

Enclosure

cc:
William W. Edmunds, Air Carrier Operation Issues
Sarah MacLeod, Air Carrier/General Aviation Maintenance Issues
James L. Crook, Air Traffic Issues
William H. Schultz, Aircraft Certification Procedures Issues
Ian Redhead, Airport Certification Issues

Billy Glover, Occupant Safety Issues
John Tigue, General Aviation Certification and Operations Issues
David Hilton, Noise Certification Issues
John Swihart, Rotorcraft Issues
Roland B. Liddell, Training and Qualification Issues
Craig Bolt, Transport Airplane and Engine Issues

ARAC Projects that will be handled by Alternative Actions rather than Rulemaking

(Beta) Reverse Thrust and propeller Pitch Setting below the Flight Regime (25.1155)
Fire Protection (33.17)
Rotor Integrity--Overspeed (33.27)
Safety Analysis (33.75)
Rotor Integrity – Over-torque (33.84)
2 Minute/30 Second One Engine Inoperative (OEI) (33.XX)
Bird Strike (25.775, 25.571, 25.631)
Casting Factors (25.621)
Certification of New Propulsion Technologies on Part 23 Airplanes
Electrical and Electronic Engine Control Systems (33.28)
Fast Track Harmonization Project: Engine and APU Loads Conditions (25.361, 25.362)
Fire Protection of Engine Cowling (25.1193(e)(3))
Flight Loads Validation (25.301)
Fuel Vent System Fire Protection (Part 25 and Retrofit Rule for Part 121, 125, and 135)
Ground Gust Conditions (25.415)
Harmonization of Airworthiness Standards Flight Rules, Static Lateral-Directional Stability, and Speed Increase and Recovery Characteristics (25.107(e)(1)(iv), 25.177©, 25.253(a)(3)(4)(50)). Note: 25.107(a)(b)(d) were enveloping tasks also included in this project—They will be included in the enveloping NPRM)
Harmonization of Part 1 Definitions Fireproof and Fire Resistant (25.1)
Jet and High Performance Part 23 Airplanes
Load and Dynamics (Continuous Turbulence Loads) (25.302, 25.305, 25.341 (b), etc.)
Restart Capability (25.903(e))

Standardization of Improved Small Airplane Normal Category Stall Characteristics Requirements (23.777, 23.781, 23.1141, 23.1309, 23.1337, 25.1305)

ATTC (25.904/App I)
Cargo Compartment Fire Extinguishing or Suppression Systems (25.851(b), 25.855, 25.857)
Proof of Structure (25.307)
High Altitude Flight (25.365(d))
Fatigue and Damage Tolerance (25.571)
Material Prosperities (25.604)

Rules and Regulations

Federal Register
Vol. 74, No. 145
Thursday, July 30, 2009

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No. FAA–2007–28503; Amendment No. 33–29]

RIN 2120–AJ04

Airworthiness Standards; Fire Protection

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA amends the airworthiness standards for issuance of original and amended aircraft engine type certificates for fire protection. The new standard will change aircraft engine fire protection certification standards to update and harmonize them with European Aviation Safety Agency (EASA) fire protection requirements, thereby simplifying airworthiness approvals for import and export purposes.

DATES: This amendment becomes effective September 28, 2009.

FOR FURTHER INFORMATION CONTACT: Marc Bouthillier, Engine and Propeller Directorate Standards Staff, ANE–111, Engine and Propeller Directorate, Aircraft Certification Service, FAA, New England Region, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (781) 238–7120; fax (781) 238–7199; e-mail *marc.bouthillier@faa.gov*. For legal questions concerning this final rule contact Vincent Bennett, Office of the Chief Counsel—Operations, New England Regional Counsel, ANE–7, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (781) 238–7044; e-mail *vincent.bennett@faa.gov.*

SUPPLEMENTARY INFORMATION:

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 as described in Subtitle VII, Part A, Subpart III, Section 44701, ''General requirements.'' Under that section, the Administrator is charged with promoting safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards 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 fire protection.

Background

In 1989, the FAA met with the European Joint Aviation Authorities, United States (U.S.) and European aviation industry representatives to harmonize U.S. and European certification standards. Transport Canada subsequently joined this effort. The FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) through its Engine Harmonization Working Group to review existing regulations and recommend changes to remove differences in U.S. and European engine certification fire protection standards.

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 certificated in the United States. The Certification Specifications for Engines (CS–E) prescribe corresponding airworthiness standards for aircraft engine certification in Europe by the European Aviation Safety Agency (EASA).

While part 33 and the European regulations are similar, they differ in several respects. These differences can result in additional costs and delays. This final rule is based on Aviation Rulemaking Advisory Committee (ARAC) recommendations to the FAA to harmonize the differences.

Summary of the Rulemaking

The FAA published a notice of proposed rulemaking (NPRM) on February 21, 2008 (73 FR 9494) that proposed changes to § 33.17. We proposed to change aircraft engine fire protection certification standards to update and harmonize them with European Aviation Safety Agency (EASA) requirements. The comment period for the NPRM closed on May 21, 2008. The new rule will harmonize fire protection certification standards for engines certificated in the United States under 14 CFR part 33 and in European countries under EASA Certification Specifications for Engines (CS–E) and will simplify international type certification procedures. The rule will also reflect current industry design and FAA certification practices. This final rule adopts the proposed rule with minor changes.

Summary of Comments and Discussion of Final Rule

Two domestic engine manufacturers, General Electric and Pratt & Whitney, and two private individuals responded to the NPRM request for comments. The commenters supported the proposed rule, suggested minor changes to improve clarity, and requested that certain information be included in the companion Advisory Circular (AC).

An individual commenter stated that proposed § 33.17(f) should specify drain line flow capacity equal to the maximum flow rate possible. We believe specifying flow rate would be overly design restrictive and is unnecessary. The rule is clear that no hazardous quantity of flammable fluid may accumulate unintentionally, and any tube or line intended to drain flammable fluids must be sized properly to meet this requirement. Therefore, the rule as proposed already addresses the commenter's concern about flow rate capacity. However, the companion AC will include guidance for § 33.17(f), and will highlight the need for proper drain and vent line flow capacity.

Pratt & Whitney, General Electric and an individual commenter suggested a specific definition for the term ''hazardous quantity'' in § 33.17(c), (d)(2), and (f) be included in the companion AC. The commenters believe this definition would make FAA's guidance ''consistent with EASA AMC E–130(1).'' This comment relates to the

companion AC and not the rule. The public will have the opportunity to comment on the companion AC, and the FAA will consider these comments in finalizing the revised AC.

Pratt & Whitney and General Electric commented on the use of the phrase ''fire resistant and fireproof'' in the revised rule. Pratt & Whitney stated that proposed § 33.17(b) would be more clear if it did not specify that ''each external line, fitting, and other component, which contains or conveys flammable fluid during normal engine operation must be fire resistant or fireproof, as applicable.'' The commenter prefers the current language that requires a fire resistant standard. The commenter stated that while an advisory circular could provide clarification on when a fire resistant or fireproof standard is applicable, maintaining the current wording would prevent potential confusion.

We believe the text of § 33.17(b) is consistent with FAA, EASA and industry accepted standard certification practice of testing varying component types to fire resistant or fireproof standards. However, we have replaced the term ''as applicable'' with ''as determined by the Administrator'' to reflect the existing practice of requiring the applicant to comply with the standard which provides an acceptable level of fire protection based on the product design. Additionally, the existing AC provides guidance on when a fire resistant or fireproof determination is appropriate. The companion AC for this new rule will also provide guidance on making fire resistant or fireproof determinations, and it will be consistent with current industry standard certification practices.

General Electric and an individual commented on the requirement for ''fire resistant or fireproof'' protection in proposed § 33.17(e); specifically, General Electric stated that the phrase, ''engine control system components that are located in a designated fire zone must be fire resistant or fireproof, as applicable'' does not state which, if any, of the control system components must be fireproof. Although this is a new requirement within § 33.17, fire protection requirements have been applied to control system components for some time. Historically, engine control components have included flammable potting materials, and in some applications, fluid cooling circuits have been considered. This amendment provides a regulatory standard for a fire resistant or a fireproof demonstration, as appropriate for a given engine control component design and accommodates varying designs as technology evolves over time. The companion AC for this rule will provide guidance on making fire resistant or fireproof determinations for control systems components and will be consistent with current industry standard certification practice.

One individual suggested that costs would be incurred. We believe the individual is referring to the cost of certification, as this is a certification requirement, and not a manufacturing requirement. In this final rule, as in the NPRM, we have determined there will be a decrease in the overall cost of certification for manufacturers. By codifying standard certification practices in the United States and in Europe, manufacturers will receive cost-savings from eliminating duplicate documentation and the need to comply with two separate testing and certification standards.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires the FAA to consider the impact of paperwork and other information collection burdens imposed on the public. We have determined 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 determined there are no ICAO Standards and Recommended Practices that correspond to 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, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more yearly (adjusted for inflation with base year of 1995).

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected 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:

Under current regulations, aircraft engine manufacturers must satisfy both the FAA and EASA engine certification standards to market aircraft in the United States and Europe. Meeting two different sets of certification requirements can raise the cost of developing a new aircraft engine without increasing safety. This final rule harmonizes FAA type certification standards for fire protection with the requirements already in existence in Europe, thus simplifying airworthiness approvals for import and export. A more streamlined and common set of certification standards lowers the cost of airplane engine development and fosters international trade.

The FAA has not attempted to quantify the cost savings that may occur, only noting that harmonized standards will contribute to cost savings for all part 33 engine manufacturers who seek certification in both the United States and in Europe. There is also potential for increased safety by having more clear and explicit regulations.

In the NPRM, we used this same justification to determine that costs were minimal and the benefits justified the costs. Although we received a comment from an individual questioning the cost savings to manufacturers, we received no comments from manufacturers about our determination. As manufacturers worked with aviation authorities to remove differences in fire protection certification standards, we stand by our original determination that the costs are minimal.

This final rule incorporates EASA certification standards, while

maintaining the existing level of safety. The benefits of this rule justify the costs and existing level of safety will be preserved. The Office of Management and Budget has determined that this final rule is a ''significant regulatory action'' because it harmonizes U.S. aviation standards with those of other civil aviation authorities.

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 large number of small entities. If the agency determines that it will, the agency must prepare an initial 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.

Our initial determination showed the requirements would not have a significant impact on a substantial number of small entities, and we received no comments about this determination. We conclude that this final rule will not have a significant impact on a substantial number of small entities for two reasons. First, as noted earlier, the net effect of the rule will provide regulatory cost relief in the certification process. Second, all United States turbine aircraft engine manufacturers but one, exceed the Small Business Administration small-entity criteria of 1,500 employees for aircraft engine manufacturers. United States turbine aircraft engine manufacturers include: General Electric, CFM International, Pratt & Whitney, International Aero Engines, Rolls-Royce Corporation, Honeywell, and Williams International. Williams International is the only one of these manufacturers that is a U.S. small business.

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

International Trade Analysis

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standards have a legitimate domestic objective, such as the protection of safety, and do not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA notes the purpose is to ensure the safety of the American public, and has assessed the effects of this rule to ensure it does not exclude imports that meet this objective. As a result this final rule does not create unnecessary obstacles to international trade.

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 the spending 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 instead 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 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 Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have federalism implications.

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 Chapter 3, 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 while it is a ''significant regulatory action'' 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/regulationspolicies/rulemaking/sbre_act/*.

List of Subjects in 14 CFR Part 33

Air transportation, Aircraft, Aviation safety, Safety.

The Amendment

■ In consideration of the foregoing, the Federal Aviation Administration amends part 33 of the Federal Aviation 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. Section 33.17 is revised to read as follows:

§ 33.17 Fire Protection.

(a) The design and construction of the engine and the materials used must minimize the probability of the occurrence and spread of fire during normal operation and failure conditions, and must minimize the effect of such a fire. In addition, the design and construction of turbine engines must minimize the probability of the occurrence of an internal fire that could result in structural failure or other hazardous effects.

(b) Except as provided in paragraph (c) of this section, each external line, fitting, and other component, which contains or conveys flammable fluid during normal engine operation, must be fire resistant or fireproof, as determined by the Administrator. Components must be shielded or located to safeguard against the ignition of leaking flammable fluid.

(c) A tank, which contains flammable fluids and any associated shut-off means and supports, which are part of and attached to the engine, must be fireproof either by construction or by protection unless damage by fire will not cause leakage or spillage of a hazardous quantity of flammable fluid. For a reciprocating engine having an integral oil sump of less than 23.7 liters capacity, the oil sump need not be fireproof or enclosed by a fireproof shield.

(d) An engine component designed, constructed, and installed to act as a firewall must be:

(1) Fireproof;

(2) Constructed so that no hazardous quantity of air, fluid or flame can pass around or through the firewall; and,

(3) Protected against corrosion;

(e) In addition to the requirements of paragraphs (a) and (b) of this section, engine control system components that are located in a designated fire zone must be fire resistant or fireproof, as determined by the Administrator.

(f) Unintentional accumulation of hazardous quantities of flammable fluid within the engine must be prevented by draining and venting.

(g) Any components, modules, or equipment, which are susceptible to or are potential sources of static discharges or electrical fault currents must be designed and constructed to be properly grounded to the engine reference, to minimize the risk of ignition in external areas where flammable fluids or vapors could be present.

Issued in Washington, DC, on July 17, 2009.

Lynne A. Osmus,

Acting Administrator.

[FR Doc. E9–18192 Filed 7–29–09; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2009–0052; Airspace Docket No. 09–AGL–1]

Amendment of Class E Airspace; Ironwood, MI

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action amends Class E airspace at Ironwood, MI. Additional controlled airspace is necessary to accommodate Area Navigation (RNAV) Standard Instrument Approach Procedures (SIAP) at Gogebic Iron County Airport, Ironwood, MI. This action also makes a minor change to the airspace description, removing the reference to the Ironwood ILS. The FAA is taking this action to enhance the safety and management of Instrument Flight Rule (IFR) operations at Gogebic Iron County Airport.

DATES: *Effective Date:* 0901 UTC, October 22, 2009. The Director of the Federal Register approves this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA Order 7400.9 and publication of conforming amendments.

FOR FURTHER INFORMATION CONTACT: Scott Enander, Central Service Center, Operations Support Group, Federal Aviation Administration, Southwest Region, 2601 Meacham Blvd., Fort Worth, TX 76193–0530; telephone (817) 321–7716.

SUPPLEMENTARY INFORMATION:

History

On February 12, 2009, the FAA published in the **Federal Register** a notice of proposed rulemaking to amend Class E airspace at Ironwood, MI, adding additional controlled airspace at Gogebic Iron County Airport, Ironwood, MI. (74 FR 7011, Docket No. FAA–2009–0052). Interested parties were invited to participate in this rulemaking effort by submitting written comments on the proposal to the FAA. No comments were received. Subsequent to publication the National Aeronautical Charting Office notified the FAA that the extension defined by the Ironwood ILS was not needed. With the exception of editorial changes, and the changes described above, this rule is the same as that proposed in the NPRM. Class E airspace designations are published in paragraph 6005 of FAA Order 7400.9S signed October 3, 2008, and effective October 31, 2008, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document will be published subsequently in the order.

The Rule

This action amends Title 14 Code of Federal Regulations (14 CFR) part 71 by amending Class E airspace at Ironwood, MI, adding additional controlled airspace extending upward from 700 feet above the surface at Gogebic Iron County Airport, Ironwood, MI, and removes reference to the Ironwood ILS in the airspace description. This action is necessary for the safety and management of IFR aircraft operations at the airport.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. Therefore, this regulation: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a