

Federal Aviation Administration
Aviation Rulemaking Advisory Committee

Transport Airplane and Engine Issue Area
Powerplant Installation Harmonization Working Group

**Task 6 – Prohibition of Inflight Operation for Turbo propeller Reversing
System**

Task Assignment

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[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 5: Power Plant Fire Mitigation Requirements

Specific Tasks--Phase I

1. Rule Harmonization

- (a) JAR 25.1183 has a (c) paragraph that adds the requirement for

components to be fireproof where, if damaged, fire could spread or essential services could be adversely affected.

(b) FAR/JAR 25.1187, 25.1189(a) and 25.1193(c) are considered equivalent--no harmonization is required.

2. Advisory Material (AC/AMJ) Harmonization

(a) FAR 25.1187--Drainage and Ventilation of Fire Zones. **FAA** regulation requires the provisions for flammable fluid drainage, including the drainage path and drainage capacity, be demonstrated to be effective under anticipated conditions. Draft AC 25.1187, published for comments, describes the methodology to be used. **FAA** and JAA agreement on an acceptable means of demonstrating compliance is required. The Advisory Material to be developed should provide guidance on an acceptable means of demonstrating compliance for ``drainage of flammable fluids''.

(b) FAR 25.1189(a)--Shutoff Means. This paragraph requires shutoff valves to prevent a hazardous quantity of flammable fluid entering a fire zone following detection of a fire. The central issue to be resolved is associated with **FAA**/JAA agreement of the definition of ``hazardous quantity'' of flammable fluid. The working group should provide guidance to the **FAA** and JAA to define what is considered a ``Hazardous Quantity of Flammable Fluid'' when showing compliance to this regulation.

(c) FAR 25.1193(c)--Cowling and Nacelle Skin. **FAA** requires the nacelle be fireproof for 360 degrees, unless aerodynamic testing shows that fire exiting the nacelle poses no additional hazards to the airframe. JAA reportedly accepts 90 degrees (45 degrees from pylon centerline) without additional testing. JAA NPA proposes to provide guidance (JAA PNPA 25E-266). **FAA** and JAA should document current practices for use by Task Group consideration towards development of harmonized guidance regarding this subject. The Guidance Material to be developed should provide guidance on an acceptable means of demonstrating that the extent of fire proof cowling assures ``no additional hazard to the airframe'' for all types of transport category airplane engine installations.

The **FAA** expects ARAC to submit its recommendation(s) resulting from Phase I by November 30, 2000.

Specific Tasks--Phase II

1. Rule Harmonization

(a) Harmonize the definitions of the terms ``fire resistant'' and ``fire proof'' in FAR 1 and JAR 1.

2. Advisory Material (AC/AMJ) Harmonization

(a) Draft additional advisory material for 25.903(d)(1) related to minimizing the hazard associated with engine case burnthrough.

(b) Validate and harmonize the Fire Test Guidance Material in Paragraph 8 of AC 20-135 (may be transferred to be included in burnthrough advisory material).

(c) Validate and Harmonize the FAR/JAR Advisory Material for Engine Case Burnthrough and/or Related Engine Fire Test Guidance material such as an ISO standard.

The **FAA** expects ARAC to submit its recommendation(s) resulting from Phase II by April 1, 2001.

Task 6: Prohibition of Inflight Operation for Turbopropeller Reversing System and Turbojet Thrust Reversing System Intended for Ground Use Only

Recommend harmonized changes to FAR/JAR 25.1155 which would require

a means to prevent the flight crew of turbine powered airplanes from inadvertently or intentionally placing the propellers into beta, deploying the thrust reverser while inflight, or otherwise commanding reverse thrust, unless the airplane has been certified for such operation. In addition to the harmonized rule recommendation, harmonized advisory material may also need to be developed in order to further standardize compliance with the recommended rule.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by July 31, 2001.

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Task 7: Powerplant Inflight Restarting

Review FAR 25.903(e) and corresponding JAR requirement related to inflight restarting and generate an amended harmonized requirement that provides a minimum engine restart capability within the airplane operating envelope following loss of all engine thrust. In addition, provide harmonized advisory material that defines the acceptable methods of compliance to the amended regulations. Both of these tasks should take into account and address:

1. Review of the service history.
2. Review of inherent starting capability of the engines at the time the original 25.903(e) rule was promulgated.
3. Alternative design means for restarting main engines.

The **FAA** expects ARAC to submit its recommendation(s) resulting from this task by July 31, 2001.

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 Powerplant Installation 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 Powerplant Installation 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 September 17, 1998.

Joseph A. Hawkins,
Executive Director, Aviation Rulemaking Advisory Committee.
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Recommendation – Not Available