



Federal Aviation Administration

Memorandum

Date: July 7, 2011

To: SEE DISTRIBUTION

From: Manager, Engine and Propeller Directorate, Aircraft Certification Service

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Subject: **ACTION:** Policy for Aviation Fuel and Oil Operating Limitations, § 33.7 [ANE-2010-33.7-5]

1. Purpose. This policy memorandum provides guidance for aircraft certification offices (ACOs) and the Engine Certification Office (ECO) when evaluating compliance with the standards for aviation fuel and oil operating limitations of Part 33 of Title 14 of the Code of Federal Regulations (14 CFR part 33). This policy specifically addresses compliance with paragraphs (b)(2), (b)(3), (c)(2), and (c)(3) of § 33.7 for engine type certification, major design change, and supplemental type certification projects. This policy is derived from extensive Federal Aviation Administration (FAA) cooperation with industry to evaluate compliance with the relevant regulations. This policy does not create any new requirements, and is not specifically limited to new model type certification.

2. Background.

a. Recent environmental, cost, and supply pressures have generated aviation industry interest in developing alternative aviation fuels. New and revised lubricating oils are periodically developed to accommodate advancements in aircraft and aircraft engines. ACOs and the ECO are being approached by applicants who are interested in approving new fuel or oil formulations for use on certificated aircraft and engines. In response to this increased activity, the FAA has determined that policy is necessary to clarify how we are going to evaluate certification compliance for the approval of new fuels or oils.

b. Paragraphs (b)(2), (b)(3), (c)(2), and (c)(3) of § 33.7 require that operating limitations be established for fuel and oil for each type certificated design. These operating limitations must be defined with sufficient specificity to ensure the certificated performance and durability of the engine is maintained when the engine enters service.

c. Federal law requires government agencies to focus on increasing their use of voluntary consensus standards (refer to Section 12(d) of Public Law 104-113, the “National Technology Transfer and Advancement Act of 1995”). In response to this law, the U.S. Office of Management and Budget (OMB) issued Circular A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities,” which promotes the use of voluntary consensus standards and encourages federal agencies to benefit from the expertise of the private sector. The FAA has determined this guidance is applicable to the establishment of policy for evaluating compliance with the standards for aviation fuel and oil operating limitations of paragraphs (b)(2), (b)(3), (c)(2), and (c)(3) of § 33.7.

d. Aviation fuels and oils have traditionally been defined in a variety of ways. However, those definitions have always relied on industry voluntary consensus or military standards to ensure the products met performance and quality expectations as a widely produced commodity. Historically, and almost without exception, applicants have presented fuels and oils with grade or brand designations that were endorsed by industry as meeting those voluntary consensus or military standards. Likewise, historically the FAA has acknowledged that those voluntary consensus or military standards met FAA’s requirements for establishing fuel and oil operating limitations.

e. With the recent proliferation of new fuels and oils, the voluntary consensus standards have become more important. This policy recognizes the importance that those voluntary consensus standards have achieved in the aviation industry, and states the agency’s long standing acceptance and use of those standards. The voluntary consensus standards include, but are not limited to:

(1) ASTM International Standards specifications D1655 for turbine engine fuels and D910 for aviation gasolines; and

(2) SAE International specifications AS5780 for turbine engine oil and J1899 or J1966 for reciprocating engine oil.

3. Related Documents.

a. U.S. Government Office of Management and Budget (OMB) Circular No. A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities,” dated February 10, 1998.

b. Advisory Circular 20.24B, “Qualification of Fuels, Lubricants and Additives for Aircraft Engines,” dated December 20, 1985.

c. ASTM International Standard D1655, “Standard Specification for Aviation Turbine Fuels.”

d. ASTM International Standard D6615, “Standard Specification for Jet B Wide-Cut Aviation Turbine Fuels.”

- f. ASTM International Standard D910, “Standard Specification for Aviation Gasolines.”
- g. ASTM International Standard D6227, “Standard Specification for Grade 82 Unleaded Aviation Gasoline.”
- h. ASTM International Standard D7566, “Standard Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons.”
- i. SAE International Surface Vehicle Standard J1899, “Lubricating Oil, Aircraft Piston Engine (Ashless Dispersant),” dated August 9, 2005.
- j. SAE International Surface Vehicle Standard J1966, “Lubricating Oils, Aircraft Piston Engine (Non-Dispersant Mineral Oil),” dated July 31, 2005.
- k. SAE International Aerospace Standard AS5780, “Specification for Aero and Aero-Derived Gas Turbine Engine Lubricants,” dated October 14, 2005.

4. Policy.

a. We determined that ASTM International Standards for aviation fuel specifications meet the intent of paragraphs (b)(2) and (c)(2) of § 33.7. Therefore, applicants who present an ASTM aviation fuel specification for a proposed fuel have defined the fuel sufficiently to meet the requirements of paragraphs (b)(2) and (c)(2) of § 33.7. ASTM International standards for aviation fuel include, but are not limited to, the ASTM International specifications referenced in paragraph 3 of this policy.

b. We determined that SAE International aviation standards for aircraft lubricants meet the intent of paragraphs (b)(3) and (c)(3) of § 33.7. Therefore, applicants who present an SAE standard for a proposed lubricant, or a specific lubricant brand that has been qualified to an SAE standard, have defined the lubricant sufficiently to meet the requirements of paragraphs (b)(3) and (c)(3) of § 33.7. SAE International aviation standards for aircraft lubricants include, but are not limited to, the SAE International standards referenced in paragraph 3 of this policy.

c. When evaluating an applicant’s proposal to add a fuel or lubricant to an engine operating limitation, we will accept as an adequate demonstration of compliance with § 33.7, paragraphs (b)(2) and (c)(2) (for fuels) or (b)(3) and § 33.7(c)(3) (for lubricants):

- (1) ASTM International standard specification; or
- (2) SAE International standard; or
- (3) Equivalent governmental, military, or industry voluntary consensus standard(s) or specification(s).

d. The FAA designates projects to add a fuel or lubricant as an operating limitation as significant in accordance with FAA Order 8110.4. Consequently, compliance findings cannot be delegated to FAA designees and must be made by the EPD.

5. Effect of Policy. The general policy stated in this document does not constitute a new regulation or create what the courts refer to as a “binding norm.” The office that implements policy should follow this policy. Whenever an applicant's proposed method of compliance is outside the scope of this policy, it must be coordinated with the policy issuing office. Similarly, if the implementing office becomes aware of reasons an applicant's proposal that meets this policy should not be approved, the office must coordinate its response with the policy issuing office.



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Attachment(s)

cc:

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