



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: ACTION: Application of Amendment 25-102;
Fuel Tank Ignition Prevention and Flammable Vapor
Minimization

Date: April 17, 2002

From: Manager, Transport Airplane Directorate,
Aircraft Certification Service, ANM-100

Reply to
Attn. of: ANM-02-113-011

To: SEE DISTRIBUTION LIST

Amendment Number 25-102, added changes to Section 25.981, Fuel Tank Ignition Prevention” and Appendix H to Part 25, Section H25.4, “Airworthiness Limitation Section.” These changes became effective June 6, 2001. The question has been asked if Amendment 25-102 should be applied to the certification basis of amended type certificate and supplemental type certificate (STC) projects whose application was submitted after June 6, 2001.

The application of Amendment 25-102 for post June 6, 2001, is justified under 21.101(b), as amended by Amendment 21-69, when:

- “the proposed change consists of a new design or a substantially complete redesign of a component, equipment installation, or system installation,” and
- “the regulations incorporated by reference in the type certificate for the product do not provide adequate standards with respect to the proposed change...”

Each Aircraft Certification Office should do a cursory review of those projects whose application was submitted after June 6, 2001. If the proposed change consists of a new design or a substantially complete redesign of a component, equipment installation, or system installation, that might increase the risk of ignition of fuel vapors or make fuel tank vapors more flammable, then provisions of § 21.101(b)(1) require incorporation of Amendment 25-102 in the certification basis. Note that in adopting Special Federal Aviation Regulation (SFAR) 88 and Amendment 25-102, the Federal Aviation Administration determined that earlier regulations incorporated by reference in type certificates for products applied for before June 6, 2001, do not provide adequate standards with respect to proposed changes that may affect the airplane fuel tank system.

If the proposed change is not a new design or not a complete redesign of a component, equipment installation, or system installation (such as rerouting of wiring and plumbing), but the change is perceived to increase the risk of producing a fuel tank ignition source, or increase the risk of having flammable vapors in a fuel tank, that proposed change may be

considered an unsafe design feature (§ 21.21(b)(2)). The proposed change should not be approved until the applicable provisions of Amendment 25-102 are met.

When the changed product rule (CPR) becomes effective (currently scheduled for June 10, 2003), use § 21.101 as revised by Amendment 21-77, and the associated guidance, in determining the application of Amendment 25-102. [Reference: Amendment 21-77 (65 FR 36244, June 7, 2000), and Amendment 21-77B (66 FR 56989, Nov.14, 2001)] Prior to the CPR rule becoming effective the Transport Airplane Directorate will evaluate the need for additional guidance with respect to the means of applying Amendment 25-102 under the provisions of Amendment 21-77.

The applicant may not easily recognize that their amended type certificate or STC installation may affect fuel system safety because the installation's function is not related to fuel systems at all. Amendment 25-102 addresses preventing fuel tank ignition from normal operation and failures, including operation and failures of systems or equipment that may not function as part of a fuel system. Refer the applicant to Advisory Circular 25.981-1B "Fuel Tank Ignition Sources Prevention Guidelines," which provides guidance in determining if an installation may have an effect on fuel tank safety.

Note that § 25.981 (a) and (b) address "ignition sources" while subparagraph (c) addresses "minimization of flammable vapors". Design changes that affect ignition sources need only comply with § 25.981 (a) and (b). Design changes that affect the generation of flammable vapors need to comply with § 25.981 (c).

Amendment 25-102 should be applied to all transports, unlike the SFAR 88, which applies to transport category airplanes with a passenger capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more. The regulations contained in Amendment 25-102 do not reference passenger capacity or payload.

If you have any questions regarding this memorandum, contact Mark Quam, ANM-113, at 425-227-2145.

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