Federal Aviation Administration

Memorandum

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To: All Aircraft Certification Offices

From: For David W. Hempe, Manager, Aircraft Engineering Division, AIR-100

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Memo No.: AIR100-2010-120-002

Subject: Clarification of TSO-C127a and TSO C39c Flammability Requirements

As part of a recent investigation regarding a manufacturer of TSO-approved seats, the FAA discovered there was confusion regarding the flammability requirements identified in TSO-C127a, *Rotorcraft, Transport Airplane, and Normal and Utility Airplane Seating Systems* and TSO-C39c, *9g Transport Airplane Seats Certified by Static Testing*. Both TSO-C127a and TSO-C39c reference Society of Automotive Engineers (SAE) Aerospace Standard 8049 revision A (AS8049A) as the base performance document for the TSO. Paragraph 3.4.1 of the AS8049A reads as follows:

> *3.4.1 The cushion system, covering and upholstery and all other exposed material used in the seat shall have self-extinguishing properties as specified in the applicable Federal Regulations.*

A literal reading of AS8049A would require that all materials in the seat meet the vertical burn test requirement identified in Title 14 of the Code of Federal Regulations (14 CFR) parts 23 and 25, Appendix F. The airworthiness regulations themselves do not require this.

The FAA asked the SAE SEAT Committee for confirmation on the intent of AS8049A paragraph 3.4.1. The SAE SEAT Committee promptly responded as follows:

The terms *"exposed", "all materials" and "self-extinguishing"* and *"...all other exposed materials used in passenger seats..."* is only intended to extend the applicable flammability requirements in 14 CFR 23.853, 25.853, 27.853 and 29.853 regulations to other materials used on the seat. The current language in Section 3.4.1 incorrectly limits the requirements to only certain categories or test standards associated with "*self-extinguishing*" properties.

The intent of AS 8049 (Revisions A and B) is that the language and categories listed in 14 CFR 23.853, 25.853, 27.853 and 29.853 be applied to all materials where material properties, size and quantity would not create or propagate a cabin fire on or around the seat.

Therefore, all defined material categories as well as means of compliance established in the applicable parts of 14 CFR 23.853 (Type C General Aviation) , 25.853 (Type A Transport), 27.853(Type B Normal Rotorcraft) and 29.853 (Type B Transport Rotorcraft) continues to be satisfactory for meeting the specific language in Section 3.4.1 of this SAE document (AS8049 A & B).

With the understanding that the intent of AS8049A is to prevent the use of materials that would create or propagate a cabin fire, the FAA has assessed the effect of this clarification and finds that compliance with paragraph 3.4.1 of AS8049A as described above is acceptable in meeting the requirements of TSO-C39c and TSO-C127a that reference paragraph 3.4.1 of AS8049A.

The SAE SEAT Committee plans to modify this section in the next release of AS8049 (revision C) to correct the wording. The FAA will also revise the applicable wording in the next release of TSO-C127 and TSO-C39.

If you have any questions, please contact Jan Risheim (AIR-120) at 425-227-2209.