



Department of Transportation  
Federal Aviation Administration  
Aircraft Certification Service  
Washington, DC

TSO-C127

Date 3/30/92

# Technical Standard Order

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Subject: TSO-C127, ROTORCRAFT AND TRANSPORT AIRPLANE SEATING SYSTEMS

(a) Applicability.

(1) Minimum Performance Standards. This Technical Standard Order (TSO) prescribes the minimum performance standards that rotorcraft and transport airplane seating systems of the following types must meet to be identified with the applicable TSO marking:

Type A - Transport Airplane  
Type B - Rotorcraft

Seating systems that are to be so identified and that are manufactured on or after the date of this TSO must meet:

(i) The minimum performance standards, qualification requirements, and minimum documentation requirements set forth in Sections 3.2, 3.3, 3.4 (excluding Section 3.4.2 for a certain Type B seating system), 3.5, 4.1, 4.2, 5, 5.1, 5.2, 5.3 (excluding Sections 5.3.1 through 5.3.9.2.1), and 5.4 of Society of Automotive Engineers, Inc. (SAE), Aerospace Standard AS8049, "Performance Standard for Seats in Civil Rotorcraft and Transport Airplanes," dated July 1990;

(ii) The guidance for features outlined in Sections 3.1.8, 3.1.11, 3.1.14 (passenger seats only), and 3.1.15 of SAE AS8049;

(iii) One of the options outlined in subparagraph (a)(2) of this TSO; and

(iv) The applicable addition(s) outlined in subparagraph (a)(4) of this TSO.

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DISTRIBUTION: ZVS-326;A-W(WS)-3;A-X(FS)-3;A-X(CD)-4;A-FFS-1,2,7,8 (LTD);  
A-FAC-0 (MAX);AVN-1 (2 cys)

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(2) Options for Dynamic Test Procedures and Documentation. The applicant shall comply with one of the following:

(1) Required procedures outlined in Sections 5.3.1 through 5.3.9.2.1 of SAE AS8049; or

(ii) Equivalent procedures to those outlined in Sections 5.3.1 through 5.3.9.2.1 of SAE AS8049 that are established by the applicant and accepted in advance by the Manager, Aircraft Certification Office (ACO), Federal Aviation Administration (FAA), having geographic purview of the applicant's facilities.

(3) Option for Certain Type B Seating Systems. The applicant may comply with the fire protection requirements of Section 3.4.2 of SAE AS8049. Type B seating systems (excluding flight crewmember seating systems) for transport rotorcraft must comply with the fire protection requirements of Section 3.4.2 of SAE AS 8049.

(4) Additions. At least 30 days before an application is submitted per section 21.605(a) of the Federal Aviation Regulations (FAR), the applicant shall submit to the ACO manager:

(1) A proposed plan for demonstrating compliance with Sections 3.1.8, 3.1.11, 3.1.14 (passenger seats only), and 3.1.15 of SAE AS8049 and for providing the required documentation, and

(ii) If an option in subparagraph (a)(2)(ii) or (a)(3) of this TSO is selected, a proposed plan for demonstrating compliance and providing the required documentation.

(b) Marking.

(1) Required.

(1) In addition to the marking requirements specified in FAR section 21.607(d) and in Section 5.5 of SAE AS8049, each easily removable (without hand tools) and interchangeable element of the seating system shall be legibly and permanently marked in an accessible location with its part number and "Type A" or "Type B," as applicable.

(ii) The following information must be shown when tested in accordance with Appendix F, Part II, of FAR Part 25, or equivalent (See Section 3.4.2 of SAE AS8049):

Type A: "Complies with FAR Section 25.853(c), effective 11/26/84."

Type B: "Complies with FAR Section 29.853(b), effective 11/26/84."

(2) Optional.

(i) The "AS8049" marking is not required.

(ii) If a seating system is qualified for static ultimate and limit load factors greater than the minimums required by this TSO, each easily removable (without hand tools) and interchangeable element of the seating system may be legibly and permanently marked in an accessible location with either the static load factors tested and occupant weight or the static load used for the element.

(c) Data Requirements. In addition to the documentation specified in FAR section 21.605(a), the applicant shall furnish the ACO manager one copy of the following technical data:

(1) A drawing list, enumerating all of the drawings, specifications, and process specifications that are necessary to define the seating system's design.

(2) The applicant's seating system operating instructions and limitations.

(3) The applicable installation instructions indicating restrictions or other conditions pertinent to installation in an aircraft (See Sections 3.5, 5.3.10.3j, 5.3.10.3k, and 5.4.3 of SAE AS8049).

(4) The applicant's special cleaning and maintenance instructions.

(5) The applicant's report(s) of the results of tests required by Sections 4 and 5 of SAE AS8049, the data generated for compliance with subparagraph (a)(2) of this TSO, and the results of testing used for compliance with subparagraph (a)(4) of this TSO.

(6) The applicant's test report of the results of testing for compliance with the fire protection provisions of Appendix F, Part II, of FAR Part 25, or equivalent provisions.

(d) Data to be Furnished with Manufactured Articles.

(1) One copy of the technical data specified in subparagraphs (c)(2), (c)(3), and (c)(4) of this TSO and any other data that are necessary for continued airworthiness must go to each person receiving for use one or more articles manufactured under an authorization of this TSO.

(2) The existence of TSO approval with the article displaying required marking does not automatically constitute the authority to install and use the article. Each article must include a note that states the following:

"The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install this article on or within a specific type or class of aircraft to determine that the aircraft operating conditions are within the TSO standards. The article may be installed only if further evaluation by the user/installer documents an acceptable installation and is approved by the Administrator."

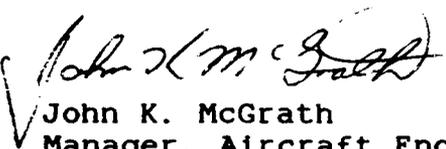
(e) Previously Approved Articles. A seat or berth approved prior to the date of this TSO may continue to be manufactured under the provisions of its original approval. (NOTE: Operational requirements may prevent the use of certain Type I seats and berths after [effective date of Type A seating system retrofit rule].)

(f) Availability of Reference Documents.

(1) Copies of SAE AS8049 and SAE J211, "Instrumentation for Impact Tests," may be purchased from the Society of Automotive Engineers, Inc., Department 331, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

(2) Federal Aviation Regulations (14 CFR Part 21, Subpart O; 14 CFR Part 25; 14 CFR Part 27; and 14 CFR Part 29) and 49 CFR Part 572, Anthropomorphic Test Dummies, may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325.

(3) Advisory Circular No. 20-110, "Index of Aviation Technical Standard Orders," may be obtained from the U.S. Department of Transportation, Utilization and Storage Section, M-443.2, Washington, DC 20590.

  
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