



Technical Standard Order

Subject: TSO-C50c, AUDIO SELECTOR PANELS AND AMPLIFIERS

a. Applicability.

(1) Minimum Performance Standard. This Technical Standard Order (TSO) prescribes the minimum performance standard that audio selector panels and amplifiers must meet in order to be identified with the applicable TSO marking. This TSO has been prepared in accordance with the procedural rules set forth in Subpart O of the Federal Aviation Regulations (FAR) Part 21. New models of audio selector panels and amplifiers that are to be so identified and that are manufactured on or after the date of this TSO must meet the applicable standard set forth in Radio Technical Commission for Aeronautics (RTCA) Document No. DO-170, "Audio Systems Characteristics and Minimum Performance Standards Aircraft Microphones (Except Carbon), Aircraft Headsets and Speakers, Aircraft Audio Selector Panels and Amplifiers," dated January, 1980, as amended and supplemented by this TSO.

(2) Additions.

(i) In addition to paragraph 1.0, General Standards, of RTCA Document No. DO-170, all materials used except small parts (such as knobs, fasteners, seals, grommets and small electrical parts) that would not contribute significantly to the propagation of a fire, must be self-extinguishing when tested in accordance with applicable requirements of §§ 25.853 and 25.1359(d) and Part 25, Appendix F of the Federal Aviation Regulations effective May 1, 1972.

(ii) If the equipment design implementation includes a digital computer, the computer software package must be validated and verified in a manner acceptable to the Administrator. An acceptable means of compliance for validation and verification of the computer software package is contained in RTCA/DO-178, "Software Considerations in Airborne Systems and Equipment Certification", November 18, 1981.

(3) Exception. The conditions and procedures prescribed in RTCA Document No. DO 160A, "Environmental Conditions and Test Procedures for Airborne Equipment," dated January 1980 are to be utilized for this TSO.

b. Marking.

(1) In addition to the marking specified in FAR § 21.607(d), the environmental categories in which it has been qualified to operate in accordance with the RTCA document DO-160A shall be legibly and permanently marked on the major equipment component.

(2) Each separate component of equipment that is TSO'd (headset, amplifier, etc.) with at least the name of the manufacturer and the TSO number.

(3) With regard to 21 607(d)(2), the part number is to include hardware and software identification or a separate part number may be utilized for hardware and software. Either approach must include a means for showing modification status. If a digital computer is not used, software identification obviously is not required.

NOTE: If unit is too small to include such marking, the requirements of FAR § 21.607(d), may be met by placing the information on an attached tag.

c. Data Requirements. In accordance with FAR § 21.605, the manufacturer must furnish the Aircraft Certification Office in the region in which the manufacturer is located, one copy each of the following technical data:

- (1) Operating instructions.
- (2) Equipment limitations.
- (3) Installation procedures and limitations.
- (4) Schematic drawings.
- (5) Wiring diagrams.
- (6) Specifications.

(7) Equipment calibration and maintenance procedures which may be submitted within 6 months after production or within 6 months after TSO authorization is granted whichever occurs first.

(8) List of major components (by part number) that make up the equipment system complying with standards prescribed in this TSO.

(9) A drawing list, enumerating all the drawings and processes that are necessary to define the article design.

(10) Manufacturer's TSO qualification test report.

(11) The functional test specification to be used to test each production article to

ensure compliance with this TSO.

(12) Copy of nameplate drawing.

d. Data to be furnished with manufactured units. One copy of the data and information specified in paragraphs (c)(1) through (3), and furnished upon request (c)(4) through (8) of this TSO must go to each person receiving, for use, one or more articles manufactured under this TSO.

e. Previously Approved Equipment. Aircraft microphones (except carbon) approved prior to the date of this TSO may continue to be manufactured under the provisions of the original approval.

f. Availability of Reference Documents.

(1) Copies of RTCA Document Nos. DO-170, DO-178 and DO-160A may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, Suite 500, 1425 "K" Street, N.W., Washington, D.C. 20005.

(2) Federal Aviation Regulations 21, Subpart O and Advisory Circular 20-110, Index of Aviation Technical Standard Orders may be reviewed at the FAA Headquarters in the Office of Airworthiness, Aircraft Engineering Division (AWS-130), and at all Aircraft Certification Offices.

/S/ M. C. BEARD
Director of Airworthiness