

structions, schematic diagrams, and installation procedures shall be furnished to the Chief, Engineering and Manufacturing Branch, Flight Standards Division, Federal Aviation Administration, in the region in which the manufacturer is located.

(d) *Previously approved equipment.* Airborne VOR radio receiving equipment approved prior to September 1, 1959, may continue to be manufactured under the provisions of its original approval. [Doc. No. 5065, 29 F.R. 15317, Nov. 17, 1964, as amended by Doc. No. 8084, 32 F.R. 5769, Apr. 11, 1967]

§ 37.139 Airborne radio receiving and direction finding equipment TSO-C41c.

(a) *Applicability.* This technical standard order prescribes the minimum performance standards that airborne radio receiving and direction finding equipment must meet in order to be identified with the applicable TSO marking. New models of equipment that are to be so identified, and that are manufactured on or after August 14, 1972, must meet the requirements of Radio Technical Commission for Aeronautics Document No. DO-142 entitled "Minimum Performance Standards—Airborne Radio Receiving and Direction Finding Equipment Operating within the Radio Frequency Range of 200–850 Kilo-hertz" dated January 8, 1970, and Radio Technical Commission for Aeronautics Document No. DO-138 entitled "Environmental Conditions and Test Procedures for Airborne Electronic/Electrical Equipment and Instruments" dated June 27, 1968. RTCA Documents Nos. DO-142 and DO-138 are incorporated herein in accordance with 5 U.S.C. 552(a)(1) and § 37.23. Additionally, RTCA Documents Nos. DO-142 and DO-138 may be examined at any FAA regional office of the Chief of Engineering and Manufacturing Branch (or in the case of the Western Region, the Chief, Aircraft Engineering Division), and may be obtained from the RTCA Secretariat, Suite 655, 1717 H Street NW., Washington, DC 20006, at a cost of \$6 per copy for Document No. DO-142 and \$8 per copy for Document No. DO-138.

(b) *Marking.* In addition to the markings specified in § 37.7 the equipment must be permanently and legibly marked with the following:

(1) The equipment must be marked to indicate the environmental categories over which it has been designed to operate in accordance with Appendix B of RTCA Document DO-138.

(2) The equipment must be marked to indicate its class as follows:

Class A. Equipment intended for operation in the European-Mediterranean area (EUM) and in other areas where the frequency separation and geographical separation of ground facilities and their output powers are similar to the EUM area.

Class B. Equipment intended for operation in the United States of America and its possessions, and in other areas where the frequency and geographical separation of ground facilities and their output powers are similar to the U.S.A. areas.

Equipment which complies with both Class A and Class B requirements need only be marked as Class A equipment.

(3) Each separate component of the equipment (antenna, receiver, indicator, etc.) must be identified with at least the name of the manufacturer, the TSO number, and the environmental categories over which the component is designed to operate. Where an environmental test procedure described in DO-138 is not applicable to that component and the test is not conducted, an "X" should be placed in the space assigned for that environmental category.

(c) *Data requirements.* In accordance with § 37.5, the manufacturer must furnish to the Chief, Engineering and Manufacturing Branch, Flight Standards Division (or in the case of the Western Region, the Chief, Aircraft Engineering Division), Federal Aviation Administration, in the region in which the manufacturer is located, the following technical data:

(1) One copy of the manufacturer's operating instructions and equipment limitations including a statement specifying the class of the equipment.

(2) One copy of the installation procedures with applicable schematic drawings, wiring diagrams, and specifications, and a list of components (by part number) or possible combinations thereof, which make up a system complying with

this TSO. The procedures, limitations, restrictions pertinent to this TSO.

(3) One copy of test report.

(d) One copy of the procedures with the data graph (c)(2) of this TSO. The procedures, limitations, restrictions pertinent to this TSO be furnished with each manufactured under this TSO.

(e) *Previously approved equipment.* Airborne radio receiving equipment approved prior to the effective date of this TSO may continue to be manufactured under the provisions of its original approval. [Amdt. 37-33, 37 F.R. 13317, Apr. 11, 1967]

§ 37.140 Propeller assemblies (rubber construction)—TSO-C41d.

(a) *Applicability—performance standards.* This technical standard order prescribes the performance standards that propeller assemblies of the following types are to be used in aircraft in the United States:

(i) Type 1 (pressurized) propeller assemblies which are intended to be used in the line connecting the propeller outlet to the propeller hub.

(ii) Type 2 (support hose) propeller assemblies which are intended to be used in the line connecting the oil supply to the propeller where this entire line is located wholly or partially behind the firewall.

(iii) Type 3 (support hose) propeller assemblies which are intended to be used in the line connecting the oil supply to the propeller where this entire line is located wholly or partially behind the firewall.

New models of propeller assemblies manufactured on or after August 22, 1965, must meet the "performance standards" specified in the Military Specification 47400, dated January 6, 1965, and dated August 22, 1965, with exception and as follows:

1 Copies of these specifications may be obtained by addressing the commanding General, Air Wright-Patterson Air Base, Dayton, Ohio.

In addition to the d in § 37.7 the equipment permanently and legibly following:

ment must be marked environmental category. It has been designed in accordance with Appendixment DO-138. ment must be marked class as follows:

nt intended for operation Mediterranean area (EUM) where the frequency separation of ground output powers are similar

nt intended for operation of America and its proper areas where the frequency separation of their output powers are areas.

complies with both Class B requirements need as Class A equipment. ate component of the na, receiver, indicator, ified with at least the manufacturer, the TSO nmental category component is de. where an environmental procedure described in applicable to that component is not conducted. e placed in the space environmental cate-

ments. In accordance manufacturer must furnish Engineering and Manufacturing, Flight Standards e case of the Western Aircraft Engineering Aviation Administration in which the manufacturer, the following tech-

of the manufacturer's tions and equipment ng a statement specifying the equipment.

f the installation procedure schematic drawings, and specifications, onents (by part number combinations thereof, system complying with

this TSO. The procedures must show all limitations, restrictions, or other conditions pertinent to the installation.

(3) One copy of the manufacturer's test report.

(d) One copy of the installation procedures with the data identified in paragraph (c) (2) of this section, including limitations, restrictions, or other conditions pertinent to the installation must be furnished with each equipment manufactured under this TSO.

(e) *Previously approved equipment.* Airborne radio receiving and direction finding equipment approved prior to the effective date of this section may continue to be manufactured under the provisions of its original approval.

[Amdt. 37-33, 37 F.R. 13974, July 15, 1972]

§ 37.140 Propeller feathering hose assemblies (rubber and wire braid construction)—TSO-C42.

(a) *Applicability*—(1) *Minimum performance standards.* Minimum performance standards are hereby established for propeller feathering hose assemblies of the following types which are to be used in civil aircraft of the United States:

(i) Type 1 (pressure line) hose assemblies which are intended to be used in the line connecting the feathering pump outlet to the propeller governor.

(ii) Type 2 (supply line "fire-resistant") hose assemblies which are intended to be used in the line connecting the oil supply to the feathering pump where this entire line is located aft of the firewall.

(iii) Type 3 (supply line "fireproof") hose assemblies which are intended to be used in the line connecting the oil supply to the feathering pump where this line is located wholly or in part forward of the firewall.

New models of propeller feathering hose assemblies manufactured for use in civil aircraft on or after March 1, 1957, shall meet the "performance" section of Military Specification MIL-H-8795 (ASG) dated January 6, 1956,¹ or MIL-H-8790 dated August 22, 1956,¹ with the following exception and shall also meet the

¹ Copies of these specifications may be obtained by addressing a request to the Commanding General, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio.

appropriate fire test requirements listed below.

(2) *Exception.* The hydraulic impulse test requirements in MIL-H-8795 (ASG) and MIL-H-8790 need not be met for the purposes of this section.

(3) *Pressure line (type 1) hose assembly fire test*—(i) *Test setup and flame requirements.* (a) For the purpose of this test, a length of hose five times the outside diameter or longer shall be subjected to a flame of the size and temperature specified in (d) and (e) of this subdivision while the hose is in a horizontal position. The entire end fitting shall also be subjected to this flame.

(b) The hose assembly shall be installed horizontally in the test setup in such a manner that it includes at least one full 90° bend so that the pressure existing inside the hose will exert an axial force on the end fitting equal to the inside area of the hose multiplied by the internal pressure.

(c) During the test the end fitting which is subjected to flame shall be vibrated at the rate of 2,000 cycles per minute through a total amplitude of not less than 1/8 inch, i. e., a displacement of 1/16 inch on each side of the neutral position.

(d) The flame temperature shall be 2,000° F., plus or minus 50° F. as measured within 1/4 inch of the surface of the hose and end fitting at the point nearest the flame. Suitable shielded thermocouples or equivalent temperature measuring devices shall be used for measuring the flame temperature. A sufficient number of these shall be used to assure that the specified temperature exists at least along the entire end fitting and along the hose for a distance of not less than three times its outside diameter.

(e) The flame diameter shall not be less than three times the maximum diameter of the hose or three times the maximum diameter of the end fitting (whichever is greater). The length of the flame shall be such that it extends beyond the end fitting and hose when they are in place during the test, for a distance of not less than three times the maximum diameter of the hose or three times the maximum diameter of the end fitting, whichever is greater.