



Technical Standard Order

**Subject: TSO-C121, UNDERWATER LOCATING DEVICES (ACOUSTIC)
(SELF-POWERED)**

a. Applicability.

(1) Minimum Performance Standard. This technical standard order (TSO) prescribes the minimum performance standard that underwater locating devices (acoustic) (self-powered) must meet in order to be identified with the applicable TSO marking. Underwater locating devices that are to be so identified and that are manufactured on or after the date of this TSO must meet the minimum performance standard for the Society of Automotive Engineering (SAE), Aerospace Standard (AS) 8045, "Minimum Performance Standard for Underwater Locating Devices (Acoustic) (Self-Powered)," dated May 16, 1988, Sections 4 through 7.

(2) Environmental Standard. SAE Document AS 8045 incorporates as a reference RTCA Document No. DO-160C, "Environmental Conditions and Test Procedures for Airborne Equipment," dated December 4, 1989.

(3) Salt Water Immersion. American Society Testing Materials (ASTM) Document D.1141-75, "Standard Specification for Substitute Ocean Water," dated 1980.

b. Marking. In addition to the marking specified in Federal Aviation Regulations (FAR) Section 21.607(d), the following information shall be legibly and permanently marked on the major equipment components:

(1) Each separate component of equipment that is manufactured under this TSO (antenna, receiver, sensors, display panels, etc.) must be permanently and legibly marked with at least the name of the manufacturer, the TSO number, and part number.

c. Data Requirements.

(1) In addition to FAR Section 21.605, the manufacturer must furnish the Manager, Aircraft Certification Office (ACO), Federal Aviation Administration, having purview of the manufacturer's facilities, one copy each of the following technical instructions:

- (i) Operating instructions.
- (ii) Equipment limitations.
- (iii) Installation procedures and limitations.
- (iv) Schematic drawings as applicable to the installation procedures.
- (v) Wiring diagrams as applicable to the installation procedures.
- (vi) Specifications.
- (vii) List of the major components (by part number) that make up the equipment complying with the standards prescribed in this TSO.
- (viii) An environmental qualification form as described in RTCA Document No. DO-160C.
- (ix) Manufacturer's TSO qualification form as described in RTCA Document No. DO-160C.
- (x) Nameplate drawings.

(2) In addition to those data requirements that are to be furnished directly to the FAA, each manufacturer must have available for review by the Manager of the ACO having purview of the manufacturer's facilities, the following technical data:

- (i) A drawing list, enumerating all the drawings and processes that are necessary to define the article's design.
- (ii) The functional test specification to be used to test each production article to ensure compliance with this TSO.
- (iii) Equipment calibration procedures.
- (iv) Corrective maintenance procedures (within 12 months after TSO authorization).
- (v) Schematic drawings.
- (vi) Wiring diagrams.
- (vii) The results of the environmental qualification tests conducted in accordance with RTCA Document No. DO-160C.

d. Data to be furnished with manufactured units. One copy of the data and information specified in paragraphs (c)(1)(i) through (viii) of this TSO, and instructions for periodic maintenance and calibration which are necessary for continued airworthiness must go to each person receiving for use one or more articles manufactured under this TSO.

e. Availability of Reference Documents.

(1) Copies of SAE Document No. 8045 may be purchased from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

(2) Copies of RTCA Document No. DO-160C may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, 1425 K Street, NW, Suite 500, Washington, DC 20005.

(3) Copies of ASTM Document No. D1141-75 may be purchased from the University Microfilm International, 300 North Zeeb Road, Auburn, Michigan 48106.

(4) Federal Aviation Regulations Part 21, Subpart O, and Advisory Circular 20-110E, "Index of Aviation Technical Standard Orders," may be reviewed at the FAA Headquarters in the Aircraft Certification Service, Aircraft Engineering Division (AIR-120), and at all regional ACO's.

/S/ William J. Sullivan
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Certification Service