



AEROSPACE STANDARD

AS6254™

REV. A

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Superseding AS6254

Minimum Performance Standard for Low Frequency Underwater Locating Devices (Acoustic) (Self-Powered)

RATIONALE

Technology exists to increase the minimum Low Frequency Underwater Locating Devices (ULD) operating life without changes to the form, fit or general function of an installed ULD. For aircraft search and recovery in extremely remote areas, a Low Frequency ULD operating for 30 days may not be sufficient. This revision includes an increase of the minimum operating life in 4.7 from 30 to 90 days along with an added reference to the recently published ARINC Standard 677 regarding the installation of the ULD on aircraft.

1. SCOPE

This SAE Aerospace Standard (AS) covers ULDs utilized in finding submerged aircraft. Such ULDs are installed within the aircraft in a manner that they are unlikely to become separated during crash conditions. The low frequency ULD should be attached to the airframe in accordance with the manufacturer's recommendations in order to maximize the underwater detection range. ARINC Standard 677 also provides installation guidance for Low Frequency ULDs.

1.1 Purpose

This Aerospace Standard specifies minimum performance standards for low frequency acoustic ULDs which are primarily intended for use with both fixed and rotary wing civil aircraft.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AS8045 Minimum Performance Standard for Underwater Locating Devices (Acoustic) (Self-Powered)

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D1141-98 Standard Practice for the Preparation of Substitute Ocean Water

2.1.3 RTCA Publications

Available from Radio Technical Commission for Aeronautics Inc., 1150 18th Street, NW, Suite 910, Washington, DC 20036, Tel: 202-833-9339, www.rtca.org.

RTCA/DO-160G Environmental Conditions and Test Procedures for Airborne Equipment

2.1.4 ARINC Publications

Available from ARINC Industry Activities, 16701 Melford Blvd., Suite 120, Bowie, MD 20715, Tel: 240-334-2578, www.aviation-ia.com.

ARINC 677 Installation Standards for Low Frequency Underwater Locator Beacon (LF-ULB)

2.2 Definitions

The word "shall" is used to express an essential requirement where compliance is mandatory.

3. GENERAL STANDARDS

3.1 Material

Material shall be of a quality which experience or tests, or both, have demonstrated to be suitable and dependable for use in aircraft. The correct functioning of the ULD shall not be impaired by any change of material properties arising from the tests defined in Sections 5 and 6.

3.2 Workmanship

Workmanship shall be consistent with high grade aircraft instrument manufacturing practice.

3.3 Compatibility

If components are individually acceptable but require matching for proper operation, they shall be identified in a manner that shall ensure performance to the requirements of this AS.

3.4 Interchangeability

Components or systems which are identified with the same manufacturer's part or model number shall be physically and functionally interchangeable.

3.5 Flammability and Fire Test

The exposed surfaces of the ULD and mounting shall be non-flammable. The ULD shall be incapable of sustaining or initiating a fire or rupturing, or both, with or without fragmentation, due to a dead short of the power source.

3.6 Power Source

Means shall be provided to enable the ULD power source to be checked for voltage and longevity in its installed position. Such checks shall be defined in the ULD manufacturer's instruction manual.

3.7 Identification

The following information shall be legible and, with the exception of battery replacement date, be indelibly marked on the ULD or on the nameplate attached. Markings on the ULD are to be as large as is practical.

- a. Name of instrument.
- b. Manufacturer's part number.
- c. Manufacturer's serial number.
- d. Federal Aviation Administration (FAA) Technical Standard Order (TSO) number, if applicable (or SAE AS number/revision or equivalent approval identification).
- e. Manufacturer's name or trademark.
- f. Battery replacement information.

4. MINIMUM PERFORMANCE STANDARDS

The manufacturer shall conduct sufficient tests to prove compliance with this Aerospace Standard.

4.1 Actuation

The Low Frequency ULD shall activate automatically when submerged in either fresh or salt water, at a depth no greater than 9 m (29.5 feet) within 4 hours after immersion. The ULD shall remain activated to a depth of at least 6,096 m (20,000 feet).

NOTE: If the ULD is subjected to negligent or accidental contamination with water, either immersed or sprayed, (that is, other than in its operational mode) it shall, on drying out, revert to its original dormant state. If the ULD is intentionally or unintentionally exposed to activation pressure (for example during aircraft pressurization testing), it shall revert to its original dormant state when the pressure is reduced below the activation threshold.

4.2 Operating Temperature

-2 °C (28 °F) to +38 °C (100 °F).

4.3 Radiation Pattern

80% of a spherical pattern (4.8.1 and 4.8.2 apply).

4.4 Operating Frequency

8.8 kHz ± 1 kHz.