



Number: CTSO-C85b

Date of approval: Oct 17, 2017

Approved by: Yang Zhenmei

China Civil Aviation Technical Standard Order

This China Civil Aviation Technical Standard Order (CTSO) is issued according to Part 37 of the China Civil Aviation Regulations (CCAR-37). Each CTSO is a criterion which the concerned aeronautical materials, parts or appliances used on civil aircraft must comply with when it is presented for airworthiness certification.

Survivor Locator Lights

1. Purpose.

This China Civil Aviation Technical Standard Order (CTSO) is for manufacturers applying for survivor locator lights CTSO authorization (CTSOA). This CTSO prescribes the minimum performance standards(MPS) that Survivor locator lights must first meet for approval and identification with the applicable CTSO marking.

2. Applicability.

This CTSO is applicable for new applications after the effective date of this CTSO.

a. The applicant must submit an application according to this CTSO after its effective date. However, up to six months after this CTSO's effective date, if the applicant could show working against the prior MPS before the new change became effective, the application for previous

revision could be accepted.

b. The CTSOA article approved under a previous CTSO may still be manufactured under the provisions of original approval after the effective date of this CTSO.

c. Major design changes to article approved under this CTSO will require a new authorization in accordance with section 21.353 of CCAR-21R4.

3. Requirements.

New models of survivor locator lights identified and manufactured on or after the effective date of this CTSO must meet the MPS qualification and documentation requirements in SAE Standard (AS)4492, Survivor Locator Lights, dated January 1995, reaffirmed November 18, 2004, as amended by appendix 1 of this CTSO.

a. Functionality. This CTSO's standards apply to battery-powered emergency lights intended to be fitted to individual and multiplace flotation devices to mark the location and help marshal aviation accident survivors in bodies of water.

b. Functional Qualification. Demonstrate the required performance under the test conditions in SAE AS4492 and appendix 1 of this CTSO.

c. Deviations. For using alternative or equivalent means of compliance to the criteria in this CTSO, the applicant must show that the

equipment maintains an equivalent level of safety. Apply for a deviation under the provision of 21.368(a) in CCAR-21R4.

4. Marking.

a. Mark at least one major component permanently and legibly with all the information in 21.423(b) of CCAR-21R4. Use the name, type, and part number. Do not use the optional model number

b. Also, mark the following permanently and legibly, with at least the manufacturer's name, subassembly part number, and the CTSO number:

(1) Each component that is easily removable (without hand tools);

(2) Each interchangeable element;

(3) Each subassembly of the article that manufacturer determined may be interchangeable.

c. When applicable, identify the equipment as an incomplete system or state that the article performs functions beyond those described in paragraph 3.a of this CTSO.

5. Application Data Requirements.

The applicant must furnish the responsible certification personnel with the related data to support design and production approval. The application data include a statement of conformance as specified in section 21.353(a)(1) in CCAR-21R4 and one copy each of the following

technical data:

a. Operating instructions and equipment limitations in an installation/instruction manual (IM), sufficient to describe the equipment's operational capability. Describe any deviations in detail. If needed, identify equipment by part number, version, revision, and criticality level of software/hardware, classification for use, and environmental categories.

b. Installation procedures and limitations in an IM, sufficient to ensure that the survivor locator lights, when installed according to the installation procedures, still meet this CTSO's requirements. Limitations must identify any unique aspects of the installation. Finally, the limitations must include a note with the following statement:

“This article meets the minimum performance and quality control standards required by a CTSO. Installation of this article requires separate approval.”

c. Schematic drawings of the installation procedures.

d. Wiring diagrams of the installation procedures.

e. List of components, by part number, that make up the survivor locator lights complying with the standards prescribed under this CTSO. Include vendor part number cross-references, when applicable.

f. A component maintenance manual (CMM), covering periodic maintenance, calibration, and repair, for the continued airworthiness of

installed survivor locator lights. Include recommended inspection intervals and service life. Describe the details of deviations granted, as noted in paragraph 5.a of this CTSO.

g. Material and process specifications list

h. The quality system description required by section 21.358 of CCAR-21R4, including functional test specifications. The quality system should ensure that it will detect any change to the approved design that could adversely affect compliance with the CTSO MPS, and reject the article accordingly.

i. Manufacturer's CTSO qualification test report.

j. Nameplate drawing with the information required by paragraph 4 of this CTSO.

k. List of all drawings and processes (including revision level) that define the article's design. For a minor change, follow the directions in 21.369 of CCAR-21R4. Show any revisions to the drawing list only on CAAC request.

6. Manufacturer Data Requirements.

Besides the data given directly to the authorities, have the following technical data available for review by the authorities:

a. Functional qualification specifications for qualifying each production article to ensure compliance with this CTSO.

- b. Equipment calibration procedures.
- c. Corrective maintenance procedures within 12 months after CTSO authorization.
- d. Schematic drawings.
- e. Wiring diagrams.
- f. Material and process specifications.

7. Furnished Data Requirements.

If furnishing one or more articles manufactured under this CTSO to one entity (such as an operator or repair station), provide one copy of the data in paragraphs 5.a through 5.f of this CTSO. Add any other data needed for the proper installation, certification, use, or for continued airworthiness, of the survivor locator lights.

8. Availability of Referenced Documents.

- a. Order SAE documents from:

Society of Automotive Engineers, Inc.

400 Commonwealth Drive, WARRENDALE, PA 15096-001, USA.

You may also order them online from www.sae.org.

- b. Order RTCA documents from:

Radio Technical Commission for Aeronautics, Inc.

1150 18th Street NW, Suite 910, Washington D.C. 20036.

You may also order them online from www.rtca.org.

Appendix 1. MPS for Survivor Locator Lights

The applicable standard is SAE AS4492, Survivor Locator Lights, dated January 1995, reaffirmed November 18, 2004. It is modified by adding the following:

a. Locator light and battery pack must be constructed of materials that comply with 25.853(a) of CCAR-25R4, Appendix F part I (a)(1)(v). Or, applicant can apply Appendix F part I (a)(1)(ii) instead.

b. Insulation on electrical wire connected to the locator light and battery pack must be self-extinguishing in compliance with 25.1713(c). Apply CCAR-25R4, Appendix F part I (a)(3).

c. Replace any reference to RTCA, Inc. document RTCA/DO-160C with RTCA/DO-160E, Environmental Conditions and Test Procedures for Airborne Equipment, dated December 9, 2004, or the most current revision.