



MALDIVES CIVIL AVIATION AUTHORITY
Republic of Maldives

Air Safety Circular
ASC M-3

Installation, Maintenance And Registration Of Emergency Locator
Transmitter (ELT) And Aviation-Use Personal Locator Beacons (PLB)

Issue 1.00, ~~10-20~~ January 2021

1. Regulatory compliance

The paragraphs 7 to 14 and 16 are mandatory and all other material in the circular are for guidance only.

2. Related regulations

This Circular relates specifically to MCAR-Air Operations, MCAR-M and MCAR-145. This circular also address the requirements of ICAO Annex 10, Volume 3, Chapter 5.

3. Applicability

Any aircraft required to carry an emergency locator transmitter (ELT) or personal locator beacon (PLB) in accordance with MCAR-Air Operations or any other Maldives Civil Aviation Regulation.

4. Purpose

The circular serves the following purposes:

- a. Provide direction to aircraft operators, pilots and maintenance personnel regarding installation, and continuing airworthiness aspects of ELT and PLB.
- b. Provide direction for coding and registering 406 MHz ELTs and aviation use PLBs when installed or used in Maldivian-registered aircraft.

5. Abbreviations

MHz	Megahertz
AMC	Acceptable Means of Compliance
GM	Guidance Material

6. Definitions

ELT	Refer to MCAR-1 and AMC/GM to MCAR-Air Operations
PLB	Refer to GM 1 of Annex I to MCAR-Air Operations

7. Technical Standard for ELT

Maldivian registered civil aircraft must be equipped with a 406 MHz ELT meeting the performance standards specified in Federal Aviation Administration (FAA) Technical Standard Order (TSO)-C126() or equivalent European Technical Standard Order (ETSO).

8. ELT installation

ELT installation shall be accomplished in accordance with the manufacturer instructions. In the absence of manufacturer instructions, a major change or a minor change or a standard change that meets the requirements of MCAR-21 shall be developed and used.

9. Accidental activations.

- a. If an ELT is inadvertently activated, shut it off immediately and notify the nearest air traffic control facility of the event.

Note: Deactivating the beacon alone does NOT cancel the distress alert that already has been transmitted by the beacon and received by Cospas-Sarsat. That is why you must call the air traffic control facility.

- b. Maintenance may be required before the ELT is returned to the "armed" condition.

10. Beacon Testing

General

- a. Ensure the beacon is registered before beginning any testing.
- b. In all cases, procedures for testing ELTs should be based on the manufacturer's instructions and, where applicable should be performed using their recommended test equipment unless this would result in unshielded testing.

Live testing

- a. Live testing of the 406 MHz transmission which will result in sending a distress signal to COSPAS-SARSAT satellites is not permitted at any time.
- b. Notwithstanding paragraph (a), it is accepted that aircraft operators do need to test their ELTs on a regular basis to demonstrate their continued serviceability. Therefore, testing while adhering to the warnings, cautions and instructions of the aircraft type certificate holder and / or beacon manufacturer is permitted. In case the aircraft type certificate holder or beacon manufacture does not provide guidance on testing. The CAA has established that it can be done provided the following precautions are taken:
 - i. For ELTs that can be removed for the aircraft (e.g. Survival ELTs and Automatic Portable ELTs) the owner can remove the ELT from their aircraft and test it either in a shielded room or a shielded bag. Shielded bags can be obtained from most ELT manufacturers.
 - ii. For ELTs that cannot be removed from aircraft (or those which the owner wishes to test in situ) an antenna cap should be used to prevent the ELT transmission going beyond the aircraft. Antenna caps can be obtained from either the antenna manufacturer or in some cases from the ELT manufacturer.

Self-testing

- a. There are no restrictions on performing the self-test transmission.

- b. All beacons that are approved in accordance with TSO or ETSO-C126 at revision A or higher, have a self-test capability by activating the self-test using the dedicated switch or position of the beacon or remote controls. This will result in the transmission to the COSPAS-SARSAT satellites of a test signal, composed of a 406 MHz single burst, with a specific pattern that will be not transmitted to SAR services. During the self-test, the ELT will transmit up to 3 sweeps audible on the 121.5 MHz frequency.

Precautions

~~Owners of ELTs should carefully follow the manufacturer's instructions and when possible limit testing to the self test function.~~

~~Care should be taken to prevent accidentally triggering a search and rescue response. Regardless of where the ELT is, or the duration of activation, a 406 MHz beacon broadcast will be detected by at least one Geostationary Local User Terminal (GEOLUT) and possibly every Low Earth Orbit Local User Terminal (LEOLUT) in the Cospas-Sarsat System. This signal cannot be distinguished from that of an actual emergency and could lead to expensive and frustrating searches.~~

11. Continuing Airworthiness

Self-test

- a. Perform the self-test function in accordance with the manufacturer's instructions but at a frequency of no less than once every six months.
- b. Follow the precautions related to self-test specified in the manufacturer's instructions and in paragraph 10.

Annual testing and inspection

- a. Test and inspect ELTs and PLBs once every 12 calendar months, unless aircraft type certificate holder or ELT manufacturer gives a different interval.
- b. The testing and inspection should address the following aspects:
 - i. ELT installation has not degraded (attachment to the aircraft structure, connectors, cables, antennas);
 - ii. absence of battery defects (absence of leak, vent, deformation, trace of heating);
 - iii. If the ELT is fitted in or attached to an article intended for floatability, absence of wear, puncture of the article fabrics that may affect the floating capability;
 - iv. g-switch operation;
 - v. transmitted power and frequencies.
- c. The annual testing and inspection should be accomplished in accordance with the manufacturer instructions. Owners may use the instructions contained in section 9 of FAA Advisory Circular 91-44A Change 1 or those contained in section 7.2.4 of EUROCAE ED-62B in the absence of manufacturer instructions or if those instructions do not cover the aspects specified in paragraph (b).

- d. Follow the precautions related to annual testing and inspection specified in the manufacturer's instructions and in paragraph 10.

Actions for failed Beacon

- a. Owners shall ensure beacons are removed from service and returned to the manufacturer or an approved maintenance organisation if a beacon is found failed or inoperative as a result of a self-test or annual test.
- b. The unit must be disabled according to the manufacturer instructions, before shipping, and registrations shall be updated.

12. Marking

- a. ELT shall be permanently and legibly marked as per MCAR-21.A.807. In addition, the battery expiry date and the 15 digit version of the Hex ID (15-Hex ID) shall be legibly marked on the outside of the beacon.
- b. The location of beacon(s) shall be identified in the aircraft emergency equipment layout.

13. Beacon Registration

- a. All 406 MHz ELTs and aviation-use PLBs must be registered with the Maldives CAA, even if not fitted to an aircraft.
- b. Beacon owners and operators shall use CAA Form ELT in order to register a beacon, update registration information or cancel a registration.
- c. Maldives CAA will provide the registration information to Search and Rescue service providers through updating the information in International Beacon Registration Database (IBRD) or by other means.

14. Beacon Coding

- a. The permitted coding protocols for an ELT installed on a Maldivian registered aircraft are specified in the tables below.

Table 1A: ELT Coding Methods – User Protocols

These protocols provide identification data only

Serial User			Aviation User
<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>	<u>Option 4</u>
ELT with Serial Number	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address	Aircraft Nationality and Registration Marking

Table 1B: ELT Coding Methods – Location Protocols

These protocols provide location data in addition to identification data

User Location				Standard Location		
Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
ELT with Serial Number	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address	Aircraft Nationality and Registration Marking	ELT with Serial Number	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address

- b. Aviation-use PLBs must be coded as an ELT.

Note: Refer to Appendix to Chapter 5 of ICAO Annex 10, Volume III for detailed descriptions of the ELT coding protocols referred to in paragraph (a).

15. Repealing regulations

Air Safety Circular AW 12 Issue 3 dated 3 August 2000 is repealed from the date this Circular becomes effective.

16. Effectivity

- a. This circular comes into force on ~~10-20~~ January 2021.
- b. Following the effective date of this Circular, a Maldivian registered aircraft, not equipped with a beacon certified to TSO-C126() requirements, shall not continue to operate.
- ~~c. Notwithstanding paragraph (a), for beacons already installed in aircraft or carried onboard as of the effective date of this Circular, use of any coding option which meets Cospas-Sarsat requirements is permitted until the need arises to replace the beacon due to a continuing airworthiness requirement. For those beacons in storage, the coding has to meet the requirements of paragraph 14 prior being put into use.~~
- ~~c. Notwithstanding paragraph (a), the annual test and inspection required under paragraph 11 shall be accomplished on ELTs installed or carried on board the aircraft within six months from the date of entry into force of this circular.~~

Commented [IH1]: This para is not necessary now as this para was needed when we originally thought of giving only ONE coding protocol (i.e. coding with aircraft nationality and registration).

For the Civil Aviation Authority
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