

IMO Guidelines on Annual Testing of 406MHz satellite EPIRBs for compliance with SOLAS Regulation IV/15.9

In accordance with IMO MSC/Circ.1040 (reproduced on Page 4)

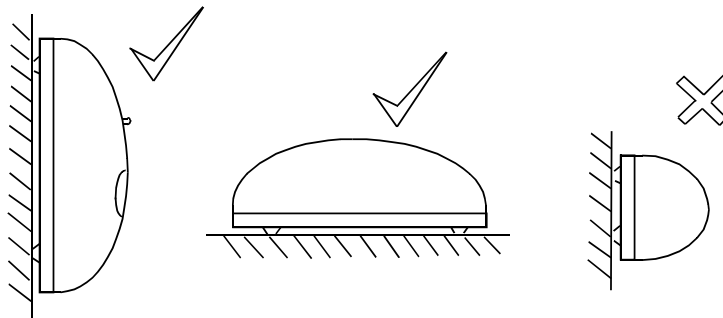
Purpose From July 2002 all EPIRBs must be tested annually to comply with IMO regulations. This document explains how to perform the tests on the specified products in order to satisfy the requirement.

Recording The results from these tests should be recorded on the McMurdo form QA4211 "406MHz EPIRB Annual Test Record".

McMurdo E3 & G4 Pains Wessex Rescue & Precision Sailor Satellite 406 & GPS 406

Section 3.1 Checking positioning and mounting for float-free operation

The enclosure should be mounted upright against a vertical bulkhead or horizontally on a flat surface, such as a cabin roof. No other orientations are recommended; an expanse of flat surface is required to allow the enclosure lid to eject. The released EPIRB **must not get trapped by overhangs, rigging, antennas** etc, should the vessel ever sink.



DO:

- Mount on the outside of the vessel's structure, as high as possible.
- Mount close to the vessel's navigation position.
- Consider ease of access in an emergency.

AVOID:

- Positions with insufficient space for lid ejection and maintenance.
- Positions within 1m (3') of any compass equipment or within 2m (6') of any Radar antenna.
- Siting where damage is likely eg direct impact from waves
- Exhaust fumes, chemical and oil sources.

Sections 3.2 & 3.3 Refer to the IMO Guidelines (attached)

Section 3.4 Self test

Pressing and holding the ready button (for about 10 seconds) runs the self-test. When the button is held down the red lamp will come on for 4 seconds, then go off. During this time both the 121.5MHz homer and the 406MHz satellite transmitter make "safe" transmissions. If both of these test transmissions arrive at the antenna with sufficient power then the strobe light will flash 3 times to confirm a successful self-test. If the red lamp does not come on, or the strobe light does not flash within 10 seconds, then there is a fault; the EPIRB should be taken to a service agent.

In case of difficulty, contact:

McMurdo Limited

Silver Point, Airport Service Road, Portsmouth, Hants, United Kingdom PO3 5PB

Telephone: Int + 44 (0)23 9262 3900

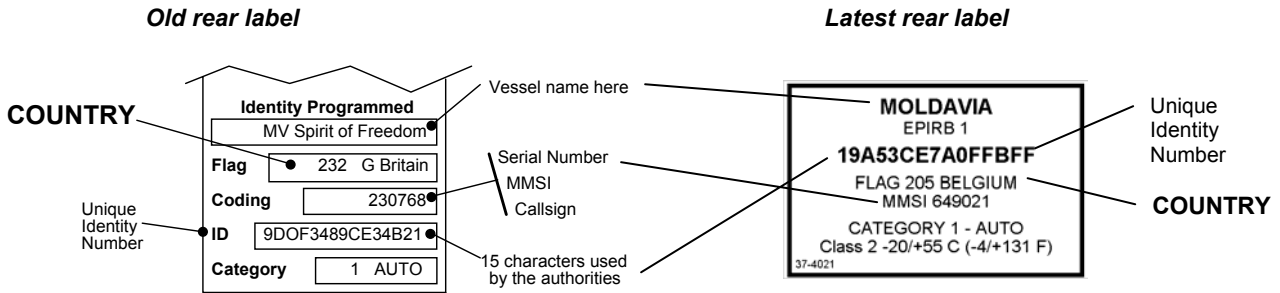
Email: customerservice@mcmurdo.co.uk

Website: www.mcmurdo.co.uk



Section 3.5 EPIRB identification

The EPIRB is identified by a label fitted to the rear surface. Two varieties of this label exist:



In the case of a Category 1 EPIRB fitted in a float-free enclosure, the label fitted to the enclosure must carry the same identification as the EPIRB.

Section 3.6 Decoding the EPIRB message and checking the frequencies

A major IMO requirement is that the EPIRB message is decoded and verified as being correct. This can be done with a "Message Reader". A typical instrument is the ARG5410 or ARG 5411. This model will be used to describe the process. Operation of the Reader is detailed in its handbook and will not be repeated here. The procedure is as follows:

1. On the Reader select RECV mode
2. Position the Reader approx. 1m (3 feet) from the EPIRB
3. On the EPIRB press and hold the READY button (ie do a self test)
4. After about 4 seconds the Reader should emit three bursts of sound
This proves the 121.5MHz homer is radiating and modulating correctly. If the ARG 5410 Reader is not used, then another suitable facility for detecting the 121.5MHz swept tone must be provided (an air band receiver for example).
5. The Reader should then beep and report S'TEST OK
6. The Reader will revert to its Menu. Select VIEW mode
7. Use ← → keys to view the decoded 406MHz message content
8. Confirm the frequency was within 406.020 – 406.030
This proves the 406MHz transmitter is radiating within the correct frequency band. If the ARG5410 Reader is not used, then another facility for measuring the 406MHz frequency must be provided (a spectrum analyser for example).
9. Confirm the 15 digit ID agrees with EPIRB rear identity label UIN
This proves the 406MHz transmitter is modulating correctly and the EPIRB is programmed with the correct identity. If the ARG5410 is not used then another facility for message decoding must be provided (other message readers).
10. Confirm the Flag state and the Serial No / MMSI / Callsign agrees

Common problems

121.5MHz audio tone	If not heard then reduce range from 1m to 0.3m to help.
406MHz frequency	If outside limits, repeat self-test (up to 10 times, if necessary). (Provides a warm up time).
Bad frame	This error message occurs if the Reader fails to synchronize. This occurs approx. 10% of the time. Repeat test as above.

Also note that an exhausted Reader battery causes bad frames.

NOTE Reader ARG5411 (and some early versions of ARG5410) cannot decode GPS position information transmitted by EPIRBs. However, the Hex ID will always be decoded correctly.

Section 3.7 Refer to the IMO guidelines (attached)

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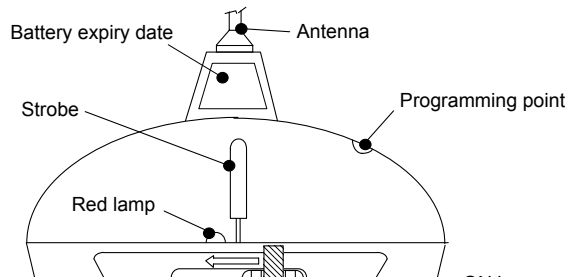
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Section 3.8 Battery expiry date



The battery expiry date is also shown on the automatic release housing, where this is fitted.

Section 3.9 HRU release and expiry date

Automatic bracket (enclosure)

Cover intact	Confirm the following items are intact: sinker weight, metal block, foam pads, window, magnet Check cover retaining pin is present and attached to cover.
Lever arm	Release HRU (press down and slide upward) Confirm lever arm moves freely and U-clamps are secure.
HRU expiry date	Side of HRU should be marked with expiry date. Confirm date is acceptable. Confirm HRU expiry date is marked on cover side label.

Press lever arm down and refit the HRU. Ensure washer engages.

Section 3.10 & 3.11 **Refer to Section 3.6**

Sections 3.12 to 3.14 **Refer to the IMO Guidelines (attached)**

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Ref T2/6.01

MSC/Circ. 1040
28 May 2002

GUIDELINES ON ANNUAL TESTING OF 406 MHZ SATELLITE EPIRBs

- 1 The Maritime Safety Committee, at its seventy-fifth session (15 to 24 May 2002), approved the annexed Guidelines on annual testing of 406 MHz satellite EPIRBs, as required by new SOLAS regulation IV/15.9, which enters into force on 1 July 2002.
- 2 Member Governments are invited to bring these Guidelines to the attention of shipping companies, shipowners, ship operators, equipment manufacturers, classification societies, shipmasters and all parties concerned.
- 3 This circular supersedes MSC/Circ.882.

MSC/Circ. 1040

ANNEX

GUIDELINES ON ANNUAL TESTING OF 406 MHZ SATELLITE EPIRBs

- 1 The annual testing of 406 MHz satellite EPIRBs is required by new SOLAS regulation IV/1 5.9 entering into force on 1 July 2002.
- 2 The testing should be carried out using suitable test equipment capable of performing all the relevant measurements required in these guidelines. All checks of electrical parameters should be performed in the self-test mode, if possible.
- 3 The examination of the installed 406 MHz satellite EPIRB should include:
 - .1 checking position and mounting for float-free operation;
 - .2 verifying the presence of a firmly attached lanyard in good condition; the lanyard should be neatly stowed, and must not be tied to the vessel or the mounting bracket;
 - .3 carrying out visual inspection for defects;
 - .4 carrying out the self-test routine;
 - .5 checking that the EPIRB identification (15 Hex ID and other required information) is clearly marked on the outside of the equipment;
 - .6 decoding the EPIRB 15 Hexadecimal Identification Digits (15 Hex ID) and other information from the transmitted signal, checking that the decoded information (15 Hex ID or MMSI/callsign data, as required by the Administration) is identical to the identification marked on the beacon;
 - .7 checking registration through documentation or through the point of contact associated with that country code;
 - .8 checking the battery expiry date;
 - .9 checking the hydrostatic release and its expiry date, as appropriate;
 - .10 checking the emission in the 406 MHz band using the self-test mode or an appropriate device to avoid transmission of a distress call to the satellites;
 - .11 if possible, checking emission on the 121.5 MHz frequency using the self-test mode or an appropriate device to avoid activating the satellite system;
 - .12 checking that the EPIRB has been maintained by an approved shore-based maintenance provider at intervals required by the Administration;
 - .13 after the test, remounting the EPIRB in its bracket, checking that no transmission has been started; and
 - .14 verifying the presence of beacon operating instructions.

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