

Resolution A.763(18)

*Adopted on 4 November 1993
(Agenda item 11)*

**PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EMERGENCY
POSITION-INDICATING RADIO BEACONS (EPIRBs)
OPERATING ON 406 MHz**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING ALSO regulations IV/7.1.6 and IV/14.1 of the 1988 amendments to the 1974 SOLAS Convention concerning radiocommunications for the global maritime distress and safety system (GMDSS), which require respectively that ships be provided with a satellite emergency position-indicating radio beacon (EPIRB) and that such EPIRBs shall conform to appropriate performance standards not inferior to those adopted by the Organization,

RECOGNIZING the need to prepare performance standards for float-free satellite EPIRBs operating through a polar-orbiting satellite system on 406 MHz to be used in the GMDSS in order to ensure the operational reliability of such equipment and to avoid, as far as practicable, adverse interaction between such equipment and other communication and navigation equipment on board ship,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its sixty-second session,

1. ADOPTS the Recommendation on Performance Standards for Float-Free Satellite Emergency Position-Indicating Radio Beacons (EPIRBs) Operating on 406 MHz, set out in the annex to the present resolution;
2. RECOMMENDS Governments to ensure that float-free satellite EPIRBs operating on the frequency 406 MHz, which form part of the GMDSS, installed:
 - .1 on or after 4 November 1994 conform to performance standards not inferior to those specified in the annex to the present resolution; and
 - .2 before 4 November 1994 conform to performance standards not inferior to those specified in the annex to the present resolution except that they need not be provided with a 121.5 MHz homing beacon required in paragraph 2.3.14 of part A thereof.
3. INVITES the COSPAS-SARSAT partners to ensure that any amendments to the specification for COSPAS-SARSAT 406 MHz distress beacons be agreed with the Organization prior to their adoption;
4. REQUESTS the Maritime Safety Committee to ensure that any proposed amendments to this resolution be agreed with the COSPAS-SARSAT partners prior to their adoption;
5. REQUESTS ALSO the Maritime Safety Committee to review the code assignment method recommended in paragraph 4, part B, of the annex to this resolution prior to 1 February 1995;
6. REVOKES resolution A.695(17).

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR FLOAT-FREE
SATELLITE EMERGENCY POSITION-INDICATING RADIO
BEACONS (EPIRBs) OPERATING ON 406 MHz**

Part A – General

1 INTRODUCTION

The satellite emergency position-indicating radio beacon (EPIRB) should, in addition to meeting the requirements of the Radio Regulations, the relevant CCIR Recommendations and the general requirements set out in resolution A.694(17), comply with the following performance standards.

2 GENERAL

2.1 The satellite EPIRB should be capable of transmitting a distress alert to a polar-orbiting satellite.

2.2 The EPIRB should be of an automatic float-free type. The equipment, mounting and releasing arrangements should be reliable and operate satisfactorily under the most extreme conditions likely to be met with at sea.

2.3 The satellite EPIRB should:

- .1 be fitted with adequate means to prevent inadvertent activation;
- .2 be so designed that the electrical portions are watertight at a depth of 10 m for at least 5 min. Consideration should be given to a temperature variation of 45°C during transitions from the mounted position to immersion. The harmful effects of a marine environment, condensation and water leakage should not affect the performance of the beacon;
- .3 be automatically activated after floating free;
- .4 be capable of manual activation and manual deactivation;
- .5 be provided with means to indicate that signals are being emitted;
- .6 be capable of floating upright in calm water and have positive stability and sufficient buoyancy in all sea conditions;
- .7 be capable of being dropped into the water without damage from a height of 20 m;
- .8 be capable of being tested, without using the satellite system, to determine that the EPIRB is capable of operating properly;
- .9 be of highly visible yellow/orange colour and be fitted with retro-reflecting material;
- .10 be equipped with a buoyant lanyard suitable for use as a tether, which should be so arranged as to prevent its being trapped in the ship's structure when floating free;
- .11 be provided with a low-duty-cycle light (0.75 cd) active during darkness to indicate its position to nearby survivors and rescue units;
- .12 not be unduly affected by seawater or oil;
- .13 be resistant to deterioration in prolonged exposure to sunlight; and
- .14 be provided with a 121.5 MHz beacon primarily for homing by aircraft.

2.4 The battery should have sufficient capacity to operate the satellite EPIRB for a period of at least 48 h.

2.5 The satellite EPIRB should be so designed as to operate under any of the following environmental conditions:

- .1 ambient temperatures of -20°C to $+55^{\circ}\text{C}$;
- .2 icing;
- .3 relative wind speeds up to 100 knots; and
- .4 after stowage at temperatures between -30°C and $+70^{\circ}\text{C}$.

2.6 The installed satellite EPIRB should:

- .1 have local manual activation; remote activation may also be provided from the navigating bridge, while the device is installed in the float-free mounting;
- .2 be capable, while mounted on board, of operating properly over the ranges of shock and vibration and other environmental conditions normally encountered above deck on seagoing vessels; and
- .3 be designed to release itself and float free before reaching a depth of 4 m at a list or trim of up to 45° .

3 LABELLING

In addition to the items specified in resolution A.694(17) on general requirements, the following should be clearly indicated on the exterior of the equipment:

- .1 brief operating instructions;
- .2 expiry date for the primary battery used; and
- .3 the identity code programmed into the transmitter.

Part B – Satellite signals

1 The satellite EPIRB distress alerting signal should be transmitted on the frequency of 406.025 MHz using G1B class of emission.

2 The technical characteristics of the transmitted signal and the message format should be in accordance with CCIR Recommendation 633.

3 Provisions should be included for storing the fixed portion of the distress message in the satellite EPIRB using non-volatile memory.

4 A unique beacon identification code shall be made part of all messages.

Until 1 February 1999, this identification code shall include a 3-digit code for the country of registration followed by either:

- .1 the trailing 6 digits of the ship station identity in accordance with appendix 43 of ITU Radio Regulations; or
- .2 a unique serial number; or
- .3 a radio call sign.

Preference is given to method .1.

After 1 February 1999, all new beacon installations should be in accordance with method .1*.

5 The 121.5 MHz homing signal should:

- .1 have a continuous duty cycle, except that it may be interrupted for up to a maximum of 2 seconds during the transmission of the 406 MHz signal;
- .2 with the exception of the sweep direction, meet the technical characteristics from Appendix 37A of the Radio Regulations. The sweep may be either upward or downward.

* The code assignment method is to be reviewed prior to 1 February 1995.