RESOLUTION A.812(19) adopted on 23 November 1995
PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EMERGENCY
POSITION-INDICATING RADIO BEACONS OPERATING THROUGH THE
GEOSTATIONARY INMARSAT SATELLITE SYSTEM ON 1.6 GHZ

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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 14.1 of the 1988 amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, 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 the geostationary Inmarsat satellite system on 1.6 GHz 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-fifth session,

1.   ADOPTS the Recommendation on Performance Standards for Float-Free Satellite EPIRBs Operating through the Geostationary Inmarsat Satellite System on 1.6 GHz set out in the Annex to the present resolution;

2.   RECOMMENDS Governments to ensure that float-free satellite EPIRBs operating through the geostationary Inmarsat satellite system on 1.6 GHz, which form part of the GMDSS;

(a)   if installed on or after 23 November 1996, conform to performance standards not inferior to those specified in the Annex to the present resolution;

(b)   if installed before 23 November 1996, conform to performance standards not inferior to those specified in the Annex to resolution A.661(16);

3.   INVITES Inmarsat to ensure that any amendments in the specification for Inmarsat 1.6 GHz distress beacons are agreed with the Organization prior to their adoption;

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4.   REQUESTS the Maritime Safety Committee to ensure that any proposed amendments to this resolution are agreed with Inmarsat prior to their adoption;

5.   REQUESTS ALSO the Maritime Safety Committee to keep these Performance Standards under review and to adopt amendments thereto, as necessary.

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ANNEX

RECOMMENDATION ON PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EPIRBs OPERATING THROUGH THE GEOSTATIONARY INMARSAT SATELLITE SYSTEM ON 1.6 GHZ

PART A - GENERAL

1   INTRODUCTION

The satellite emergency position-indicating radiobeacon (EPIRB) should, in addition to meeting the requirements of the Radio Regulations, the relevant ITU-R Recommendations, the relevant Inmarsat technical requirements, 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 geostationary satellite.

2.2   The satellite EPIRB should be of an automatic float-free type. The equipment should be reliable even under extreme conditions.

2.3   The performance of the float-free arrangements should be in accordance with the requirements of the performance standards for float-free release and activation arrangements for emergency radio equipment set out in resolution A.662(16).

2.4   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 continuously provided with the ship's position data for automatic inclusion in the distress message when activated;

.5   be equipped with a search and rescue radar transponder unless integral facilities are included for automatic position updating after activation;

.6   be capable of manual activation and manual deactivation;

.7   be provided with means to indicate that signals are being emitted;

.8   be capable of floating upright in calm water and have positive stability and sufficient buoyancy in all sea conditions;

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.9   be capable of being dropped into the water without damage from a height of 20 m;

.10   be capable of being tested without using the satellite system to determine that the EPIRB is capable of operating properly;

.11   be of highly visible yellow/orange colour and be fitted with retroreflective material;

.12   be equipped with a buoyant captive 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;

.13   be provided with a low duty cycle light (0.75 cd), active during darkness, to indicate its position to nearby survivors and to rescue units;

.14   not be unduly affected by seawater, or oil, or both; and

.15   be resistant to deterioration by prolonged exposure to sunlight.

2.5   The battery should have sufficient capacity to operate:

.1   the distress alerting transmitter for 4 h in accordance with Recommendation ITU-R M.632 or for at least 48 h if integral facilities are included for automatic position updating; and

.2   any other facilities (e.g. SART and flashing light) for at least 48 h.

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

.1   ambient temperature of -20°C to +55°C;

.2   icing;

.3   relative wind speeds up to 100 knots; and

.4   after stowage at temperature between -30°C and +70°C.

2.7   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 range of shock and vibrations 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 any angle.

2.8   Any connection to the EPIRB, e.g. for the purpose of supply of data or power, should be corrosion-resistant and protected against accidental disconnection.

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3   DISTRESS FUNCTION

3.1   When the satellite EPIRB is manually operated, a distress alert should be initiated only by means of a dedicated distress alert activator.

3.2   The dedicated activator should:

.1   be clearly identified; and

.2   be protected against inadvertent operation.

3.3   Manual distress alert initiation should require at least two independent actions.

3.4   The satellite EPIRB should not be automatically activated after being manually removed from the release mechanism.

4   LABELLING

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

.1   brief operating instructions; and

.2   expiry date for the primary batteries used.

PART B - SATELLITE SIGNAL

1   The satellite EPIRB should include facilities to transmit in the 1,644.3-1,644.5 MHz frequency band and, after full implementation of the second generation Inmarsat space segment, in the frequency band 1,645.5-1,646.5 MHz only. Alternatively, the satellite EPIRB distress alert could be transmitted sequentially in the 1,644.3-1,644.5 MHz frequency band and the frequency band 1,645.5-1,646.5 MHz. After full implementation of the second generation Inmarsat space segment, the emission should be limited to the frequency band 1,645.5-1,646.5 MHz only.

2   The technical characteristics of the transmitted signal and the message format should be in accordance with Recommendation ITU-R M.632[1]. The binary system codes on the satellite radiopath and its decimal representations are used for in-system control, commissioning and registration. The system code is fixed into the Inmarsat-E EPIRB and protected through its entire life against any unauthorized change.

3   The system code should be made part of all messages. The Inmarsat-E registration database, which is maintained by Inmarsat, matches the applicant identity and any alphanumeric form of national identity to the unique system code.

Note

1.   Substitution of the term "ship station indentity" by "system code" in Recommendation ITU-R M.632 is being considered by the ITU. This note should be disregarded after the above amendment to Recommendation ITU-R M.632 has received formal approval by ITU.

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