

Resolution A.697(17)
Adopted on 6 November 1991
(Agenda item 10)

**PERFORMANCE STANDARDS FOR SURVIVAL CRAFT RADAR
TRANSPONDERS FOR USE IN SEARCH AND RESCUE OPERATIONS**

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,

RECOGNIZING the need to prepare performance standards for survival craft radar transponders for use in search and rescue operations to be used in the global maritime distress and safety system (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 aboard ship,

NOTING the results of operational trials on 9 GHz SAR transponders reported by Governments to the CCIR and being aware that the IEC is preparing a technical standard for a 9 GHz SAR transponder,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its fifty-eighth session,

1. ADOPTS the Recommendation on Performance Standards for Survival Craft Radar Transponders for Use in Search and Rescue Operations, set out in the annex to the present resolution;
2. RECOMMENDS Governments to ensure that survival craft radar transponders for use in search and rescue operations, which will form part of the GMDSS, conform to performance standards not inferior to those specified in the annex to this resolution;
3. REVOKES resolution A.604(15).

Annex

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR SURVIVAL CRAFT
RADAR TRANSPONDERS FOR USE IN SEARCH AND RESCUE OPERATIONS**

1 INTRODUCTION

The 9 GHz SAR transponder (SART), in addition to meeting the requirements of the relevant CCIR Recommendation and the general requirements set out in resolution A.694(17), should comply with the following performance standards.

2 GENERAL

The SART should be capable of indicating the location of a unit in distress on the assisting units' radars by means of a series of equally spaced dots (see resolution A.530(13)).

2.1 The SART should:

- .1 be capable of being easily activated by unskilled personnel;
- .2 be fitted with means to prevent inadvertent activation;
- .3 be equipped with a means which is either visual or audible, or both visual and audible, to indicate correct operation and to alert survivors to the fact that a radar has triggered the SART;
- .4 be capable of manual activation and deactivation; provision for automatic activation may be included;*
- .5 be provided with an indication of the stand-by condition;
- .6 be capable of withstanding without damage drops from a height of 20 m into water;
- .7 be watertight at a depth of 10 m for at least 5 min;
- .8 maintain watertightness when subjected to a thermal shock of 45°C under specified conditions of immersion;
- .9 be capable of floating if it is not an integral part of the survival craft;
- .10 be equipped with buoyant lanyard, suitable for use as a tether, if it is capable of floating;
- .11 not be unduly affected by seawater or oil;
- .12 be resistant to deterioration in prolonged exposure to sunlight;
- .13 be of a highly visible yellow/orange colour on all surfaces where this will assist detection; and
- .14 have a smooth external construction to avoid damaging the survival craft.

2.2 The SART should have sufficient battery capacity to operate in the stand-by condition for 96 h and, in addition, following the stand-by period, to provide transponder transmissions for 8 h when being continuously interrogated with a pulse repetition frequency of 1 kHz.

2.3 The SART should be so designed as to be able to operate under ambient temperatures of –20°C to +55°C. It should not be damaged in stowage throughout the temperature range of –30°C to +65°C.

2.4 The height of the installed SART antenna should be at least 1 m above sea-level.

2.5 The vertical polar diagram of the antenna and hydrodynamic characteristics of the device should permit the SART to respond to search radars under heavy swell conditions. The polar diagram of the antenna should be substantially omnidirectional in the horizontal plane. Horizontal polarization should be used for transmission and reception.

2.6 The SART should operate correctly when interrogated at a distance of up to at least 5 nautical miles by a navigational radar complying with resolutions A.477(XII) and A.222(VII), with an antenna height of 15 m. It should also operate correctly when interrogated at a distance of up to 30 nautical miles by an airborne radar with at least 10 kW peak output power at a height of 3,000 ft.

3 TECHNICAL CHARACTERISTICS

Technical characteristics of the SART should be in accordance with CCIR Recommendation 628.

4 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; and
- .2 expiry date for the primary battery used.

* If an on-board test is performed using a shipborne 9 GHz radar, activation of the SART should be limited to a few seconds to avoid harmful interference with other shipborne radars and excessive consumption of battery energy.