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Agenda item 8

PERFORMANCE STANDARDS FOR  
ECHO-SOUNDING EQUIPMENT

RESOLUTION A.224(VII)  
adopted on 12 October 1971

THE ASSEMBLY,

NOTING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

BEARING IN MIND Recommendation 36 relating to depth-sounding apparatus and Recommendation 44, relating to electronic aids to navigation, adopted by the International Conference on Safety of Life at Sea, 1960,

HAVING CONSIDERED the Report of the Maritime Safety Committee on its twenty-fourth session,

ENDORSES the Committee's Recommendation on performance standards for echo-sounding equipment which will be required in accordance with the amended Regulation 12 of Chapter V of the International Convention for the Safety of Life at Sea, 1960,

RECOMMENDS Administrations to ensure that shipborne echo-sounding equipment conforms to performance standards not inferior to those shown at Annex to this Resolution.

- 2 -

A VII/Res.224

## ANNEX

### RECOMMENDATION ON PERFORMANCE STANDARDS FOR ECHO-SOUNDING EQUIPMENT

#### 1. Introduction

1.1 The echo-sounding equipment required by Regulation 12 of Chapter V, as amended, should provide reliable information on the depth of water under a ship to aid navigation.

1.2 The equipment should comply with the following minimum performance requirements.

#### 2. Range of depths

Under normal propagation conditions the equipment should be capable of measuring any clearance under the transducer between 2 metres and 400 metres.

#### 3. Range scales

3.1 The equipment should provide a minimum of two range scales one of which, the deep range, should cover the whole range of depth, and the other, the shallow range, one tenth thereof.

3.2 The scale of display should not be smaller than 2.5 mm per metre depth on the shallow range scale and 0.25 mm per metre depth on the deep range scale.

#### 4. Method of presentation

4.1 The primary presentation should be a graphical display which provides the immediate depth and a visible record of soundings. Other forms of display may be added but these should not affect the normal operation of the main display.

- 3 -

A VII/Res.224

4.2 The record should, on the deep range scale, show at least 15 minutes of soundings.

4.3 Either by marks on the recording paper, or by other means, there should be a clear indication when the paper remaining is approximately 10 per cent of the length of the roll.

5. Illumination

Fully adequate illumination should be provided to enable identification of controls and facilitate reading of record and scales at all times. Facilities for dimming should be provided.

6. Pulse repetition rate

The pulse repetition rate should be not slower than 12 pulses per minute.

7. Accuracy of measurement

Based on a sound speed in water of 1500 metres per second, the allowable tolerance on the indicated depth should be:

either

$\pm 1$  metre on the shallow range scale

$\pm 5$  metres on the deep range scale

or

$\pm 5$  per cent of the indicated depth, whichever is the greater.

8. Roll and pitch

The performance of the equipment should be such that it will meet the requirements of this Recommendation when the ship is rolling  $\pm 10^\circ$  and/or pitching  $\pm 5^\circ$ .



- 4 -

A VII/Res.224

9. Power supply

9.1 The equipment should be capable of operating in accordance with the requirements of this Recommendation in the presence of such variations of the power supply as are normally expected in a vessel.

9.2 Means should be incorporated for the protection of the equipment from excessive currents and voltages, transients and accidental reversal of power supply polarity.

9.3 If provision is made for operating the equipment from more than one source of electrical energy, arrangements for rapidly changing from one source of supply to the other should be incorporated.

10. Interference

10.1 All reasonable and practicable steps should be taken to eliminate the causes of, and to suppress, radio interference to other equipment on board.

10.2 Mechanical noise from all units should be so limited as not to prejudice the hearing of sounds on which the safety of the ship might depend.

10.3 Each unit of the equipment should be marked with the minimum safe distances at which it may be mounted from a standard or a steering magnetic compass.

11. Durability and resistance to effects of climate

The equipment should be capable of continuous operation under the conditions of sea states, vibration, humidity and change of temperature likely to be experienced in the vessel in which it is installed.

- 5 -

A VII/Res.224

12. Miscellaneous

12.1 The equipment should be provided with an indication of manufacturer, type and/or number.

12.2 (a) The equipment should be so constructed that it is readily accessible for maintenance purposes.

(b) Information should be provided to enable competent members of a ship's staff to operate and maintain the equipment efficiently.

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