



SUB-COMMITTEE ON SHIP DESIGN AND  
EQUIPMENT  
54th session  
Agenda item 7

DE 54/7/1  
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## PERFORMANCE STANDARDS FOR RECOVERY SYSTEMS FOR ALL TYPES OF SHIPS

### Draft performance standard for recovery systems

Submitted by Australia and Germany

#### SUMMARY

*Executive summary:* The co-sponsors reaffirm support for completion of this item in accordance with the Committee's instructions. A revised text for a draft performance standard for recovery systems is provided.

*Strategic direction:* 5.1

*High-level action:* 5.1.1

*Planned output:* 5.1.1.1

*Action to be taken:* Paragraph 16

*Related documents:* MSC 81/25 (paragraphs 4.37, 4.38 and 23.49.1), MSC 81/WP.6; COMSAR 10/11/1, COMSAR 8/9 (paragraph 8.34); DE 53/26 (section 6), DE 53/6, DE 53/6/1 and DE 53/WP.1 (paragraph 24)

#### Introduction

1 This document is submitted in response to the invitation to submit relevant proposals to this session, noting that the working group at DE 53, due to time constraints, had not been able to consider the draft new SOLAS regulation III/17-1 (Recovery arrangements for rescuing persons) and the associated draft Performance standard for recovery systems.

#### Background

2 This work programme item was allocated to the Sub-Committee by MSC 81 with regard to improving the safety of passenger ships. The Sub-Committee's terms of reference on this matter contained in paragraph 23.49.1 of document MSC 81/25 refer to paragraph 4.38 of the same document which states:

"The Committee agreed that the DE Sub-Committee should develop performance standards for recovery systems for all types of ships, taking into account the relevant parts of document MSC 81/WP.6, with a view to preparing mandatory requirements for implementation by 1 July 2012 for all types of new and existing ships."

3 The co-sponsors support application of recovery systems to all situations where a ship is called upon to participate in a rescue involving the recovery of persons from the sea. Accordingly, any requirements should apply to the widest possible group of ships, such as all SOLAS ships (note paragraph 4.37 of document MSC 81/25). This approach is consistent with the COMSAR Correspondence Group, (paragraph 5.9 of document COMSAR 10/11/1), as "all SOLAS ships should be enabled to carry out recovery of those in distress at sea".

4 The co-sponsors consider this issue to be very important in facilitating coverage of SAR areas, particularly those larger, remote and lightly trafficked areas. When combined with minimal aircraft surveillance and the absence of dedicated rescue vessels, these areas are identified as presenting a substantial problem. In such circumstances the success of the rescue coordination effort is reliant upon the resources of vessels in the area. Improved recovery capability achieved through the proposed changes to SOLAS regulation III/17-1 will substantially assist in improving the success of these rescue efforts.

#### **Availability of suitable equipment**

5 Equipment that could be deployed to achieve recovery capability has been discussed in the correspondence group (DE 53/6) and includes the Dacon rescue scoop, the RLS Rescue Star the RLS Rescue Shuttle, the Markusnet, the open-sided Billy Pugh transfer nets and slide-type MESs (used in reverse), the Jason Cradle, and the Sealift. While some of these devices are suitable only in low freeboard situations, for many ships an existing davit could be adapted for equipment deployment in both low and high freeboard situations.

6 Most of the equipment referred to in paragraph 5 is suitable for use in man-overboard recovery situations, and their use may reduce hazards to which the crew is exposed and improve efficiency when completing man-overboard drills.

7 The co-sponsors have the view that as long as the required functional capability can be achieved with existing equipment fitted on board ships, there is no need for mandating additional equipment.

8 The correspondence group report (DE 53/6) identifies that a gap exists in terms of the available equipment, referred to in paragraph 5, being suitable for use in recovery of persons from survival craft. The suitability of these devices needs to be further investigated to provide a possible solution to fill this gap. The provision of an improved capability to effect recovery of persons from the sea is a primary advancement which should not be delayed while the survival craft gap is filled.

9 In view of the hazard presented to ship's personnel when involved in recovering an unconscious person, the co-sponsors do not support the functional requirement extending to such a situation.

#### **Applicability to all ships**

10 In previous discussions some delegations objected to the recovery capability being required on all SOLAS ships on the basis of either inability to deploy equipment due to the ship's freeboard or being unable to manoeuvre a ship sufficiently close to a person in the sea requiring rescue. The freeboard question is dealt with in paragraph 5.

11 Unless constrained by draught or navigational hazards, the co-sponsors consider that most masters should be able to manoeuvre their vessels within the range of line-throwing apparatus, which can be used to draw the rescued person, if not unconscious, to the recovery system.

12 The co-sponsors reaffirm their view that there should be no significant exemptions from the provision of recovery capability for any vessel.

### **Training implications**

13 The provision of enhanced capability to recover persons from the sea can be an extension of existing man-overboard drills, therefore streamlining training requirements rather than adding to them. This matter should be referred to the STW Sub-Committee in accordance with the Committee's instructions in paragraph 4.38 of document MSC 81/25.

### **Text of draft performance standard for recovery systems**

14 The annex to this document provides revised text for a draft performance standard for recovery systems, based upon text from document DE 53/6, annex 2, and taking into account documents DE 53/6/Add.1 and DE 53/6/1.

15 In preparing this revised text, the co-sponsors have used an "operational freeboard" concept, as it was considered that a gross tonnage value as a delimiter between use of manual recovery systems on small vessels and mechanical systems on larger ships was not an appropriate reflection of the operational environment.

### **Action requested of the Sub-Committee**

16 The Sub-Committee is requested to note the information provided and decide as appropriate.

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## ANNEX

### DRAFT PERFORMANCE STANDARD FOR RECOVERY SYSTEMS

Revised text (adapted from annex 2 to document DE 53/6 taking into account documents DE 53/6/Add.1 and DE 53/6/1)

#### 1 General

1.1 Seafarers have a humane and legal (UNCLOS art. 98, SOLAS reg. V/33) duty to rescue persons in distress at sea, particularly when a professional rescue service is not available.

1.2 The provisions of this standard do not apply to recovery of unconscious or immobile persons where crew of a recovery vessel are exposed to the additional hazard of entry into the sea.

#### 2 Application

2.1 This standard applies to recovery operations and technical systems on all new and existing passenger ships, ro-ro passenger ships and cargo ships required by SOLAS regulation III/17-1.

2.2 In assessing systems fitted prior to [1 July 2012] on existing ships, compliance with all the detailed provisions of this standard is not required provided the Administration is satisfied that general compliance is achieved.

2.3 For ships having an operational freeboard of 3.0 m or less, paragraph 5 may be applied.

#### 3 Awareness of action necessary in case of man-overboard accidents

3.1 Successful recovery operation requires a combination of suitable equipment, seamanship skills and the ship's particular characteristics of manoeuvrability and design. Small variations in the direction, size, frequency and force of sea, swell and wind will significantly affect the outcome of rescue operations conducted by skilled professional rescue crews, irrespective of the equipment deployed. Each individual rescue or recovery event will be a unique combination of such factors.

3.2 The establishment of any recovery system has to be based on equipment on board in connection with plans and procedures used in case of man-overboard situations.

3.3 Appropriate methods for the recovery operation for different types of ships should be indicated in accordance with section 8 of Part A of the ISM Code procedures. All available recovery equipment should be considered in order to rescue persons in the safest manner practicable in the prevailing conditions.

#### 4 Operational guide

4.1 Considering possible adverse weather and sea conditions, recovery equipment and procedures should be applicable to the particular rescue situation. The master should carefully consider safe launching and recovery of any equipment not to endanger any further person in the prevailing conditions.

4.2 For a man-overboard into cold water situation, the time required to complete the rescue is a decisive factor for the success of the operation. For ships covered by 2.3, an easy means, operated manually, could be equipped with simple recovery appliances, i.e. rescue net, cradle or double slings. Ships with higher freeboard should, unless fitted with a means of rescue meeting the provisions of SOLAS regulation III/26.4, be equipped with winch-operated means for recovery in order to lift persons safely on board the ship.

4.3 In cases where it is not intended to deploy a rescue boat, a fast rescue boat or other means of rescue due to unacceptable danger for the crew in sea conditions up to at least those specified in 5.1.5, fitting of a recovery appliance may be appropriate to meet the provisions of this standard. Equipment meeting the provisions of section 5 may be provided as an aid to rescue person(s) from water, particularly for ships having an operational freeboard exceeding 3.0 m.

## **5 Technical requirements for mechanically operated recovery equipment**

### **5.1 General description of mechanically operated recovery equipment**

5.1.1 Each recovery system should be designed to allow a safe transfer of person(s) in the water from one dynamic system (sea) to another dynamic system (ship).

5.1.2 The equipment should be:

- .1 designed to float or, if necessary in rough sea, immerse in the wave trough and permit the safe recovery of a distressed person(s);
- .2 highly visible with retro reflective tape and clearly marked with the maximum number of persons for which it is designed;
- .3 capable of recovering a person from the water in a horizontal position or as near horizontal as practicable without active participation by the person being rescued; and
- .4 designed to recover a maximum of three persons, with minimum risk to the ship's crew.

5.1.3 All structural components should have a factor of safety of at least 6 based on the Ultimate Tensile Strength (UTS).

5.1.4 Strength of the equipment should be sufficient to:

- .1 enable it to be safely launched and recovered when loaded with their full complement of persons;
- .2 withstand a load, twice the total mass of the fully loaded system, without residual deflection; and
- .3 support a static load equivalent to the number of persons, each weighing 82.5 kg, for which it is certified for.

5.1.5 The system should be capable of being launched and recovered at varying speeds at a rate of not less than 0.3 m/s in sea conditions up to 3 m significant wave height.

5.1.6 Falls for the system should be of adequate strength to withstand, when loaded to its full complement, a lateral impact against the ship's side at a velocity of at least 3.5 m/s, with structural parts of the system and a drop into the water from a height of at least 3 m.

5.1.7 The equipment should be designed for easy operation and require minimal maintenance. Materials used in the equipment shall be corrosion-resistant to the marine environment and should not depend on coatings for this corrosion resistance.

5.1.8 The equipment should enable recovery of persons by direct mechanical lifting without the necessity of launching a rescue boat or other means of in-water recovery operation.

5.1.9 The equipment shall be designed to minimize the risk of injuries to rescued persons from impact with the ship's side, or with structural parts of the system.

5.1.10 The equipment shall be designed to enable simple securing of persons in the water, and prevent them from dropping or sliding out during recovery.

## **5.2 Operational requirements**

5.2.1 Location, deck area for operation and means of communication shall take account of the decision taken with respect to ISM procedures.

5.2.2 Mechanical recovery appliances should preferably be operated from the midship area; they should, however, be clear of ship's screws at all times.

5.2.3 The operating area on board shall be suitable for a safe recovery operation.

5.2.4 Adequate illumination shall be available for the rescue area on deck and over the sea where the recovery appliance is launched.

## **5.3 Storage**

5.3.1 Either fixed and maintained at the designated position or as a mechanical, remountable system, suitably stowed and readily transferable.

## **5.4 Approval**

5.4.1 It should be demonstrated that a mechanical recovery system has a rate of recovery in the water of at least 10 persons per hour in sea conditions of 3 m significant wave height commencing at the time at which the persons are in a position from which they may be recovered.

5.4.2 For type approval of a recovery system one single rescue procedure should be demonstrated completely.

5.4.3 Any recovery system, including items of ship's equipment not carried specifically for this purpose but used as part of the recovery system, to be approved by the Administration.

## **5.5 Maintenance**

5.5.1 The requirements of SOLAS regulation III/20.7 for regular inspections shall apply.

5.5.2 The maintenance instructions of the manufacturer should be observed.

## **6 Technical requirements for manually operated recovery systems**

- 6.1 Manually operated equipment intended for recovering persons from the water shall:
- .1 be of light weight but robust design and construction suitable for manual deployment from the ship's open deck;
  - .2 be arranged to be readily entered by a rescued person in such a manner that the person is automatically cradled in a near-horizontal position during recovery;
  - .3 have at least 100 N buoyant force in fresh water for not less than 24 h;
  - .4 be fitted with a buoyant heaving line of not less than 40 m in length and a lifting system covering at least the operational freeboard of the ship;
  - .5 be so arranged that it can be applied for lifting one person from the water level;
  - .6 be so arranged that it is easy to employ, both with manual effort and boom/crane or comparable equipment as an option; and
  - .7 be stored in a container labelled with operating instructions and specifications providing instructions and guidance with regard to the operation and storage arrangements that are safe and secure.
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