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106th session  
Agenda item 16

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## WORK PROGRAMME

**Proposal for a new output to amend MSC.1/Circ.1331 to address the safety risk to crew when rigging of safety netting from the ship's deck to the outboard side of an accommodation ladder and/or gangway**

**Submitted by Denmark, Netherlands, ICS, IAPH, BIMCO, IMPA, IFSMA and IHMA**

### SUMMARY

*Executive summary:* This document proposes a new output to amend MSC.1/Circ.1331 on *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* so as to avoid the hazardous rigging of safety netting from the ship's deck to the outboard side of an accommodation ladder and/or gangway, as currently required by some Administrations.

*Strategic direction, if applicable:* 6

*Output:* Not applicable

*Action to be taken:* Paragraph 24

*Related documents:* None

### Introduction

1 This document is submitted in accordance with paragraphs 4.6 and 6.12.2 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.2) and proposes to amend paragraph 3.8 on "Rigging (safety net)" of the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331).

### Terminology for the purpose of this document

2 An "accommodation ladder" is a means of (dis)embarkation which is rigged parallel to the ship's side or at a narrow angle to the ship's side depending on the freeboard of the ship and the vessel or structure from which a person is transferred, as well as on its intended purpose (e.g. transfer of persons at sea in combination with a pilot ladder, transfer of people while moored alongside at a quay).

3 A "gangway" is a means of (dis)embarkation usually rigged perpendicular to the ship's side under small inclination and generally acting as a bridge between a ship and shore or another structure.

4 A "safety net" is a net which is rigged between the ship and the shore to prevent a person from falling into the water or ashore from a means of (dis)embarkation.

5 A "side net" is a net which is rigged between the topside hand railing and the bottom of the gangway or accommodation ladder to avoid that a person falls from the means of embarkation by slipping between the topside hand railing and the bottom of the gangway.

### **Analysis of the issue**

#### *Custom and practice*

6 Traditionally, safety netting is deployed on a ship's arrival in port and is rigged from the ship's deck railing to the outboard side of an accommodation ladder. It is recognized that the rigging of the safety net from the ship's deck to the outboard side of an accommodation ladder is, in itself, a hazardous activity and puts the crew assigned with this task at risk, particularly at night or in bad weather. The traditional rigging of safety netting does not prevent persons falling on to the quay over the outboard side of the accommodation ladder.

#### *Risk assessment*

7 The hazard of falling through the sides of the means of (dis)embarkation does not exist if a side net has been rigged between the rigid top railing and the base of the ladder or gangway (see figure 1). Therefore, it follows that a safety net should not be required in such case to mitigate this risk.

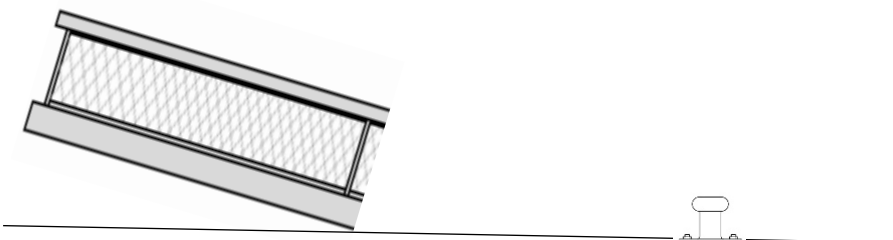


Figure 1: Side view on a typical arrangement of a side net

8 The hazard of falling over the top railing of the access equipment is minimized already if this railing is installed in accordance with the relevant international standards (i.e. ISO 5488:2015 on *Shipbuilding – Accommodation ladders* and ISO 7061:2015 on *Ships and marine technology – Aluminium shore gangways for seagoing vessels*). These standards require a handrail height of not less than 1000 mm and, therefore, it follows that a safety net should not be required to mitigate this risk.

9 According to ISO 7061:2015, the presence of one safety pin is sufficient to keep handrails in their upright position and prevent any inadvertent collapsing of the handrails – which is crucial for safe access. This safety pin is a crucial component in ensuring the safety of the users of the ladders and therefore, it is the view of the co-sponsors that inclusion of an additional safety pin should be required by ISO.

10 The hazard of falling into a gap between the quay side and the access equipment (either static or created by a combination of ladder movement and curvature of the ship's side plating) that must be stepped across can be mitigated by rigging a safety net in way of and below the gap, if such access equipment does not have a handrail in combination with a side net.

11 It is the co-sponsors view that a safety net with sufficient overhang deployed under a gangway or accommodation ladder should be secured to the ship's side rails/bulwark or bottom platform at one end and the berth or shore structure at the other end, all along the way of the gangway/accommodation ladder.

12 The current guidance in MSC.1/Circ.1331, paragraph 3.8 states:

"A safety net should be mounted in way of the accommodation ladders and gangways where it is possible that a person may fall from the means of embarkation and disembarkation or between the ship and quayside."

13 However, the guidance does not stipulate the circumstances under which this risk becomes apparent, nor does it stipulate how the safety net should be mounted in such case. It is recognized that the interpretation of paragraph 3.8 of MSC.1/Circ.1331 by some authorities has led to the requirement of the persistent rigging of safety netting from the ship's deck to the outboard side of an accommodation ladder, regardless of the presence of side netting. The co-sponsors are of the view that paragraph 3.8 of MSC.1/Circ.1331 requires further clarification and moreover, in the interest of safety, should offer flexibility to apply alternative arrangements, such as side netting, which render the hazardous rigging of a safety net unnecessary.

### **Analysis of implications**

14 Minimum costs to the maritime industry are anticipated, and the administrative burden on board is anticipated to be none. The completed administrative checklist, as set out in annex 5 to the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.2), is set out in annex 1.

### **Benefits**

#### *Safety*

15 The proposal will improve safety for the crew assigned with the activity of rigging safety netting.

#### *Environment*

16 Rigging and unrigging of a safety net in total requires about one hour extra port stay. One hour less port stay on a typical voyage of 205 nautical miles reduces the average speed from 14.7 to 13.7 knots, resulting in an average emission reduction of 5.8% for an average-sized container vessel with an average draught, sailing on an average speed.

### **Industry standards**

17 Industry standards exist on accommodation ladders and gangways (ISO 5488:2015 and ISO 7061:2015, respectively), as well as ILO's *Code of Practice on Safety and Health in ports* (see section 7.2, pages 341-347). However, these standards do not address the current designs of accommodation means where it is unsafe to rig safety nets by the crew.

## **Output**

18 It is proposed to amend MSC.1/Circ.1331, paragraph 3.8 on "Rigging (safety net)", applying the risk assessment above and to recommend to manufacturers to review the design of accommodation ladders to include, as a minimum, additional fixing points between the stanchions at the base of the ladder to allow permanent rigging of the side netting between the base and the rigid top handrail.

19 It is proposed to recommend manufacturers of accommodation ladders to fit at least an additional safety pin, or other means, to prevent the inadvertent collapsing of handrails, in the event of the failure of the first safety pin, until standard ISO 7061:2015 has been amended accordingly (see paragraph 9).

20 It is proposed that an output on "Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331)" be included on the agenda of the Sub-Committee on Ship Design and Construction (SDC) with one session required to complete the work.

21 It is proposed to include clear definitions for accommodation ladder, gangway, safety net and side nets in MSC.1/Circ.1331 as, in its present form, it does not clarify the differences between some of these. With the inclusion of a new item "side net" it is important to have a correct understanding of each term.

## **Human element**

22 The frequent exposure of crew assigned with the activity of rigging safety netting to heights may have an impact on the human element and the completed checklist for considering human element issues by IMO bodies (MSC-MEPC.7/Circ.1) is set out in annex 2.

## **Urgency**

23 In light of past accidents when crew were injured while rigging safety nets and considering the potential for future injury and loss of life, it is proposed that a priority output be placed on the biennial agenda of the Committee with a view to inclusion on the provisional agenda of SDC 10 with an estimated single session needed to complete the work.

## **Action requested of the Committee**

24 The Committee is invited to consider the information provided above and endorse the request for a new output as proposed.

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**ANNEX 1**

**CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS**

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirement" is defined in accordance with resolution A.1043(27), as an obligation arising from a mandatory IMO instrument to provide or retain information or data.

**Instructions:**

- (A) If the answer to any of the questions below is **YES**, the Member State proposing an output should provide supporting details on whether the requirements are likely to involve start-up and/or ongoing costs. The Member State should also give a brief description of the requirement and, if possible, provide recommendations for further work, e.g. would it be possible to combine the activity with an existing requirement?
- (B) If the proposal for the output does not contain such an activity, answer **NR** (not required).
- (C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.

1. Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
2. Record keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
4. Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
5. Other identified requirements?	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		

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**ANNEX 2**

**CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES**

<p>Instructions: If the answer to any of the questions below is:</p> <p>(A) YES, the preparing body should provide supporting details and/or recommendation for further work. (B) NO, the preparing body should make proper justification as to why human element issues were not considered. (C) NA (Not Applicable) – the preparing body should make proper justification as to why human element issues were not considered applicable.</p>	
<p>Subject Being Assessed: (e.g. resolution, instrument, circular being considered)</p>	
<p>Responsible Body: (e.g. committee, sub-committee, working group, correspondence group, Member State)</p>	
1. Was the human element considered during development or amendment process related to this subject?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Shipowners/managers?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Seafarers?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Surveyors?	<input type="checkbox"/> Yes x <input type="checkbox"/> No <input type="checkbox"/> NA
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
10. Have human element experts been consulted in development of the solution?	<input type="checkbox"/> Yes x <input type="checkbox"/> No <input type="checkbox"/> NA
11. HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc., to properly manage risks.	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those on working on board, such as noise,	x <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA

vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	
<input type="checkbox"/> HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<b>Comments:</b> (1) Justification if answers are NO or Not Applicable. (2) Recommendations for additional human element assessment needed. (3) Key risk management strategies employed. (4) Other comments. (5) Supporting documentation.	

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