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Agenda item 17

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## WORK PROGRAMME

### Proposal to revise MSC.1/Circ.1353/Rev.2 to permit lashing software as a supplement to container stowage and securing plan

Submitted by Germany, IACS and ICS

#### SUMMARY

*Executive summary:* This document proposes to include a new output in the Strategic Plan of the Organization and on the provisional agenda for CCC Sub-Committee to permit lashing software as a supplement to container stowage and securing plan and amend MSC.1/Circ.1353/Rev.2 in order to include harmonized performance standards and guidelines for lashing software.

*Strategic direction,  
if applicable:* 7

*Output:* Not available

*Action to be taken:* Paragraph 16

*Related documents:* CCC 8/12 and CCC 8/18 (paragraph 12.10)

#### Introduction

1 This document is submitted in accordance with the provisions 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.4) proposing a new output to amend MSC.1/Circ.1353/Rev.2 to include harmonized performance standards and guidelines for lashing software to permit lashing software as a supplement to container stowage and securing plan.

#### IMO's objectives

2 This proposal to amend MSC.1/Circ.1353/Rev.2 to permit lashing software as a supplement to container stowage and securing plan and to develop harmonized performance standards and guidelines for lashing software in line with the IMO's mission statement of promoting safe, secure, and environmentally sound, efficient, and sustainable shipping.

**Need**

3 SOLAS regulation VI/5.6 states:

"All cargoes, other than solid and liquid bulk cargoes, cargo units and cargo transport units shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration. In ships with ro-ro spaces, as defined in regulation II-2/3.41, all securing of such cargoes, cargo units and cargo transport units, in accordance with the Cargo Securing Manual, shall be completed before the ship leaves the berth. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to relevant guidelines developed by the Organization."

4 Furthermore, the approved Cargo Securing Manual (CSM) should be drawn up in accordance with the recommendations contained in the revised guidelines for the preparation of the CSM contained in MSC.1/Circ.1353/Rev.2, as approved by MSC 102.

5 As actual loading conditions of the container ships can vary significantly owing to varying container carrying arrangements and weights from voyage to voyage, deviations from the sample loading conditions indicated in the approved stowage and securing plans can exist. Assistive technologies can be used as a supplement to the CSM to evaluate the actual loading condition for a more accurate assessment of the requirements for the voyage. These technologies are already readily available and in use.

**Analysis of the issue**

6 The co-sponsors note that paragraph 3.2.5 of chapter 3 of MSC.1/Circ.1353/Rev.2 allows for a loading computer to be accepted as an alternative to documentation used to evaluate forces acting on non-standardized cargo units described in paragraphs 3.2.1 to 3.2.4 of MSC.1/Circ.1353/Rev.2, as follows:

".5 other operational arrangements such as electronic data processing (EDP) or use of a loading computer may be accepted as alternatives to the requirements of paragraphs 3.2.1 to 3.2.4 above, providing that this system contains the same information."

7 Considering paragraphs 5 and 6 above, and with the intention of providing a means to efficiently evaluate actual stowage and securing of cargo containers, the co-sponsors consider that lashing software, currently available, should also be permitted for use by the crew as a supplement to the approved stowage and securing plans included in the approved CSM (MSC.1/Circ.1353/Rev.2, chapter 4).

8 In order to formally recognize the use of lashing software as a supplement to the approved CSM on an international basis, at CCC 8, IACS proposed a draft unified interpretation in document CCC 8/12. During the discussion, views were expressed that before providing for such approval by the Administration, harmonized performance standards and guidelines should be developed in order that the approval of lashing software is carried out in a harmonized and consistent manner. While the proposal to permit the use of lashing software, and that this software should be approved by the Administration, received support in principle, the conclusion of the Sub-Committee was that the proposal in document CCC 8/12 was beyond the remit of a unified interpretation, and interested Member States and international organizations should submit proposals for a new output on lashing software as a supplement to the container stowage and securing plan (CCC 8/18, paragraph 12.10).

9 The co-sponsors are committed to support the Organization's work on developing harmonized performance standards for lashing software. Once the Committee has taken the basic decision on the possible use of lashing software, the co-sponsors will take every effort to ensure that the harmonized performance standards become available as soon as possible.

### **Analysis of implications**

10 No costs to the maritime industry are anticipated. The administrative burden to the Organization and to the Member States is anticipated to be minimal. The *Checklist for identifying administrative requirements* is set out in annex 1 of this document.

### **Benefits**

11 The intention to consider the lashing software as a supplement to the CSM and harmonize the performance standards and guidelines of the lashing software should lead to greater effectiveness and consistency in the application of SOLAS regulation VI/5.6 and MSC.1/Circ.1353/Rev.2. In addition, the use of lashing software would improve the accuracy of lashing needs, make assessing the requirements for a particular stowage arrangement easier and provide more flexible loading patterns, leading to fewer containers lost overboard and thus improving the safety of shipping.

### **Industry standards**

12 No industry standards are relevant to this circular.

### **Output**

13 Considering paragraphs 6, 7 and 8 above, the co-sponsors propose an output to permit lashing software as a supplement to the CSM and amend MSC.1/Circ.1353/Rev.2 to include a harmonized performance standard for lashing software as follows:

"Revision of MSC.1/Circ.1353/Rev.2 to include a harmonized performance standard for lashing software to permit lashing software as a supplement to the CSM".

### **Human Element**

14 This proposal is not considered to have relevant implications for the human element. The completed checklist for considering human element issues contained in annex 5 to MSC-MEPC.1/Circ.5/Rev.4 is set out in annex 2 to this document.

### **Urgency**

15 This proposal is not considered as urgent and can be addressed by the Organization in the normal course of its work; it is suggested that two sessions would be needed to complete the work by the CCC Sub-Committee which could be added to the post-biennial agenda.

### **Action requested of the Committee**

16 The Committee is invited to consider the proposals in paragraphs 13 and 15, and take action, as appropriate.

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**ANNEX 1**

**CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS**

*MSC-MEPC.1/Circ.5/Rev.3, annex 6*

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 requirements" is defined in resolution A.1043(27), i.e. administrative requirements are an obligation arising from future IMO mandatory instruments 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 <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/>	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**

*MSC-MEPC.1/Circ.5/Rev.4, annex 5*

	<b>1</b> Question	<b>2</b> Yes/No	<b>3</b> IMO References	<b>4</b> Considerations	<b>5</b> Instructions
	<b>Workload</b>		<i>Other relevant references may be added Strikeout references that are not relevant</i>	<i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
<b>1</b>	<b>Does the "output" affect workload?</b>	No		Proposed amendment will not affect the onboard workload	
<b>1.1</b>	<b>On board, especially in the already intensive phases of the voyage and port operations to:</b>	No	<i><del>Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8) Guidelines on fatigue (MSC.1/Circ.1598) Principles of minimum safe manning (resolution A.1047(27)) Guidelines for the investigation of accidents where fatigue may have been an issue (MSC/Circ.621)</del></i>	See 1 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
1.1.1	Operations including navigation, cargo and engineering	No		See 1 above	
1.1.2	Maintenance of the ships structure and its equipment	No		See 1 above	
1.1.3	Onboard administration in support of the ships' management systems	No		See 1 above	
1.1.4	Onboard administration related to regulation involving flag States, classification societies, port State and other bodies such as charterers and port authorities	No		See 1 above	
1.1.5	Increased workload or time pressure on personnel if involved in implementation of changes prior to the implementation date	No		See 1 above	
1.2	<b>Ashore, in a manner that would affect the ships operation to:</b>	No		Proposed changes amend to MSC.1/Circ.1353/Rev.2 and will not affect related processes	
1.2.1	Companies' administration	No		See 1.2 above	

	<b>1</b> <b>Question</b>	<b>2</b> <b>Yes/No</b>	<b>3</b> <b>IMO References</b>	<b>4</b> <b>Considerations</b>	<b>5</b> <b>Instructions</b>
<b>1.2.2</b>	Flag State, port State and classification societies administration such that certification and other processes are compromised or delayed	No		See 1.2 above	



	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	<b>Decision-making</b>		<i>Other relevant references may be added</i>  <i>Strikeout references that are not relevant</i>	<i>If answer to question is "yes" identify considerations.</i> <i>If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
<b>2</b>	<b>Does the "output" impact decision-making on board the ship?</b>	No		Proposed amendment will not have any impact on decision-making on board.	
<b>2.1</b>	By confusion with existing requirements and regulations	No		See 2 above	
<b>2.2</b>	By changing responsibilities as laid out in the ISM Code	No		See 2 above	
<b>2.3</b>	By creating complexity in its implementation and/or in the safety management systems	No		See 2 above	
<b>2.4</b>	By requiring increased mental effort, such as the need to find, transform and analyse data or result in the need to make judgements based on incomplete information	No		See 2 above	
<b>2.5</b>	By limiting the time available to establish situational awareness, decide, communicate (possibly across time zones) or check	No		See 2 above	
<b>2.6</b>	By increasing reliance on judgement and administrative controls to manage major risks such as oil spills and collisions	No		See 2 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	<b>Living and Working Environment</b>		<i>Other relevant references may be added</i>  <i>Strikeout references that are not relevant</i>	<i>If answer to question is "yes" identify considerations.</i> <i>If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
3	<b>Does the "output" affect the living and working environment?</b>	No	<del>Guidelines on the basic elements of a shipboard occupational health and safety programme (MSC-MEPC.2/Circ.3)</del>  <del>Guidelines on fatigue (MSC.1/Circ.1598)</del>	Proposed amendment will not affect the living and working environment on board.	
3.1	By interfering with existing arrangements for abandonment, fire-fighting and other emergency plans or procedures	No		See 3 above	
3.2	By introducing new materials that could create an explosion, fire, environmental or occupational health risk	No		See 3 above	
3.3	By introducing new high energy sources such as high-voltage, high pressure fluids	No		See 3 above	
3.4	By affecting access or egress and causing lack of ventilation in working spaces	No		See 3 above	
3.5	By affecting the habitability of accommodation spaces due to noise, vibration, temperatures, dust and other contaminants	No		See 3 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	<b>Operation and Maintenance</b>		<p><i>Other relevant references may be added</i></p> <p><i>Strikeout references that are not relevant</i></p>	<p><i>If answer to question is "yes" identify considerations.</i></p> <p><i>If answer is "no" make proper justification</i></p>	<p><i>Identify how human element considerations should be addressed in the output</i></p>
4.	Does the "output" affect the operation and maintenance of the ship, its structure or systems and equipment?		<p><del>Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8)</del></p> <p><del>Guidelines for bridge equipment and systems, their arrangement and integration (BES) (SN.1/Circ.288)</del></p> <p><del>Principles of minimum safe manning (resolution A.1047(27))</del></p> <p><del>Issues to be considered when introducing new technology on board ships (MSC/Circ.1091)</del></p> <p><del>Guideline on software quality assurance and human-centred design for e-navigation (MSC.1/Circ.1512)</del></p> <p><del>Guidelines for the standardization of user interface design for navigation equipment (MSC.1/Circ.1609)</del></p>	Proposed amendment will not add new equipment and will not change operation and maintenance of the usual installed equipment.	

	<b>1 Question</b>	<b>2 Yes/No</b>	<b>3 IMO References</b>	<b>4 Considerations</b>	<b>5 Instructions</b>
4.1	By introducing equipment that the user may find difficult to operate or maintain or may be unreliable	No		See 4 above	
4.2	By introducing new and/or novel technology, or technology that changes the role of the person	No		See 4 above	
4.3	By introducing requirements for new competencies and roles	No		See 4 above	
4.4	By overloading existing infrastructure such as power generation and ventilation systems	No		See 4 above	
4.5	By poor integration with existing systems and controls	No		See 4 above	
4.6	By introducing new and unfamiliar operations/procedures	No		See 4 above	
4.7	By introducing new and unfamiliar operating interfaces?	No		See 4 above	
4.8	By introducing risks to the ship during any modifications required prior to the implementation date of the output	No		See 4 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	<b>Measures to address the human element</b>		<p><i>Other relevant references may be added</i></p> <p><i>Strikeout references that are not relevant</i></p>	<p><i>If answer to question is "yes" identify considerations.</i></p> <p><i>If answer is "no" make proper justification</i></p>	<p><i>Identify how human element considerations should be addressed in the output</i></p>
5.	Does the "output" require changes to:	No	<p><del>Shipboard technical operating and maintenance manuals (MSC.1/Circ.1253)</del></p> <p><del>Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8)</del></p>	Proposed amendment will not change the procedures or operations onboard a ship or the support from shore.	
5.1	Training	No		See 5 above	
5.2	Practical skill development and competences	No		See 5 above	
5.3	Operating, management and/or maintenance procedures	No		See 5 above	
5.4	Information/manuals for operation and maintenance	No		See 5 above	
5.5	Spares outfit	No		See 5 above	
5.6	Occupational safety requirements including guarding and PPE	No		See 5 above	
5.7	Shore support	No		See 5 above	

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