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**COMMISSION STAFF WORKING DOCUMENT**

**Union submission to the 104<sup>th</sup> session of the International Maritime Organization's Maritime Safety Committee proposing a new output to review SOLAS chapters II-1 (Part C) and V regarding steering and propulsion requirements**

## **Union submission to the 104<sup>th</sup> session of the International Maritime Organization's Maritime Safety Committee proposing a new output to review SOLAS chapters II-1 (Part C) and V regarding steering and propulsion requirements**

### **PURPOSE**

This Staff Working Document contains a draft Union submission to the International Maritime Organization's (IMO) 104<sup>th</sup> session of the Maritime Safety Committee (MSC 104). The IMO has indicatively scheduled MSC 104 from 4 to 8 October 2021.

The draft submission proposes a new output to review two chapters of the International Convention for the Safety of Life at Sea (SOLAS)<sup>1</sup>. The two chapters in question concern traditional and non-traditional propulsion and steering systems. The latter have evolved substantially in the past years, while safety standards have not changed, leaving them ill-adapted for these non-traditional systems. The draft Union submission suggests to update these parts of the convention to adjust safety standards laid down in SOLAS to fully cover newer steering and propulsion systems.

The current safety requirements for steering and propulsion are established by the following SOLAS regulations:

- II-1/28 on *Means going astern*;
- II-1/29 on *Steering gear*;
- II-1/30 on *Additional requirements for electric and electrohydraulic steering gear*;
- V/25 on *Operation of steering gear*; and
- V/26 on *Steering gear: Testing and drills*.

The requirements listed are prescriptive and reflect technology standards that are no longer sufficient to cover today's diverse range of machinery.

Especially steering systems have evolved radically since current SOLAS regulations were adopted, with current systems often combining propulsion and steering. SOLAS does not adequately address this, making a review necessary.

The draft Union submission aims to start work under the purview of the Maritime Safety Committee during its 104<sup>th</sup> session to update the requirements to cover steering systems of all ship types. This would ensure the regulations fulfil the IMO's mission and vision to promote safe, secure, environmentally sound, efficient and sustainable shipping. The IMO prescribes that this be achieved through cooperation, by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships.

### **EU COMPETENCE**

The European Union pursues implementing SOLAS through Directive 2009/45/EC on safety rules and standards for passenger ships<sup>2</sup>. Pursuant to Article 6(2)(i) of this Directive, new passenger ships of Class A shall comply entirely with the requirements of the 1974 SOLAS Convention, as amended, and with the specific relevant requirements specified in this Directive. For those regulations where the SOLAS Convention, as amended, leaves the interpretation to the discretion of States' Administrations, the flag State shall apply them as contained in Annex I to this Directive. Any changes in respective SOLAS regulation(s) would therefore affect Union common rules set out in Directive 2009/45 or alter their scope.

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<sup>1</sup> International Convention for the Safety of Life at Sea (SOLAS), 1974, of the International Maritime Organization

<sup>2</sup> Directive 2009/45/EC of the European Parliament and of the Council of 6 May 2009 on safety rules and standards for passenger ships; OJ L 163, 25.6.2009, p. 1–140

In light of all of the above, the present draft Union submission falls under EU exclusive competence.<sup>3</sup> This Staff Working Document is presented to establish an EU position on the matter and to transmit the document to the IMO prior to the required deadline of 2 July 2021.<sup>4</sup>

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<sup>3</sup> An EU position under Article 218(9) TFEU is to be established in due time should the IMO Maritime Safety Committee eventually be called upon to adopt an act having legal effects as regards the subject matter of the said draft Union submission. The concept of ‘*acts having legal effects*’ includes acts that have legal effects by virtue of the rules of international law governing the body in question. It also includes instruments that do not have a binding effect under international law, but that are ‘*capable of decisively influencing the content of the legislation adopted by the EU legislature*’ (Case C-399/12 Germany v Council (OIV), ECLI:EU:C:2014:2258, paragraphs 61-64).

<sup>4</sup> The submission of proposals or information papers to the IMO, on issues falling under external exclusive EU competence, are acts of external representation. Such submissions are to be made by an EU actor who can represent the Union externally under the Treaty, which for non-CFSP (Common Foreign and Security Policy) issues is the Commission or the EU Delegation in accordance with Article 17(1) TEU and Article 221 TFEU. IMO internal rules make such an arrangement absolutely possible as regards existing agenda and work programme items. This way of proceeding is in line with the General Arrangements for EU statements in multilateral organisations endorsed by COREPER on 24 October 2011.

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MARITIME SAFETY COMMITTEE  
104th session  
Agenda item 21

MSC 104/21/XX  
XX July 2021  
Original: ENGLISH

Pre-session public release:

## WORK PROGRAMME

### Proposal for a new output to review SOLAS chapters II-1 (Part C) and V regarding steering and propulsion requirements

Submitted by the European Commission on behalf of the European Union

#### SUMMARY

*Executive summary:* This document proposes a new output to review SOLAS chapters II-1 (Part C) and V to address both traditional and non-traditional propulsion and steering systems

*Strategic direction, if applicable:* 2

*Output:* Not applicable

*Action to be taken:* Paragraph 19

*Related documents:* DE 55/3; SSE 6/12; SSE 6/18

#### 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.1) on the submission of proposals for new outputs and proposes to revise SOLAS chapters II-1 (Part C) and V to address both traditional and non-traditional propulsion and steering systems.

#### Background

2 SOLAS requirements for steering and propulsion were developed some time ago based on the system of a single propeller and a rudder, the standard system design of that time. Since then, steering systems underwent a development process and today's modern propulsion/steering systems are completely different to the traditional type, such as azimuth thrusters, podded propulsors, waterjets, cycloidal propellers etc. Therefore, current safety standards of SOLAS for steering and propulsion are not directly applicable to these non-traditional types.

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3 IACS already addressed this issue in paper DE 55/3, which contains its Unified Interpretation SC 242 on the arrangements for steering capabilities and function on ships fitted with propulsion and steering systems other than traditional arrangements for a ship's directional control, by providing interpretation of SOLAS regulations II-1/28 and II-1/29. This unified interpretation was agreed at DE 55 and subsequently approved by MSC 90 as MSC.1/Circ.1416.

4 Based on the experience of application of MSC.1/Circ.1416 (respectively UI SC242), and feedback from the industry, IACS submitted a revised version of UI SC 242 to SSE 6 (SSE 6/12). However, the Sub-Committee, while accepting this latest version as an interim measure (it was further approved as MSC.1/Circ.1416/Rev.1 at MSC 99), decided that a new output proposal encompassing all types of modern steering systems would be necessary (SSE 6/18, paragraph 12.42).

### **Current safety standards**

5 Present safety requirements regarding steering and propulsion of ships are established by SOLAS regulation II-1/28 on *Means going astern*, regulation II-1/29 on *Steering gear*, regulation II-1/30 on *Additional requirements for electric and electrohydraulic steering gear*, regulation V/25 on *Operation of steering gear* and regulation V/26 on *Steering gear: Testing and drills*. These requirements are prescriptive and reflect the technology that was in use at the time of their adoption.

### **Motivation**

6 Steering systems have evolved radically since current SOLAS regulations were adopted; modern systems are a combination of propulsion and steering. Current SOLAS requirements do not adequately consider these non-traditional propulsion/steering systems. So far, this issue was addressed by means of unified interpretations, however a review is considered necessary in order to reflect modern propulsion/steering systems in the IMO framework.

### **IMO's objectives**

7 The main goal of this proposal is to provide the requirements for steering systems of all ship types, correlating to IMO's mission and vision to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation, by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships.

8 The proposed output aims to achieve the integration of new technologies in the regulatory framework by accommodating non-traditional propulsion/steering systems appropriately, as well as ensure regulatory effectiveness by improving the application of the framework to new propulsion/steering systems.

### **Need**

9 The steering systems are essential for ship safety, e.g. mitigating the risk of collision, contact and grounding. IMO's regulatory framework needs to be adequate for current technologies and therefore, as decided by SSE 6, a new approach encompassing all types of steering systems is necessary.

### **Analysis of the issue**

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10 Existing SOLAS regulations mentioned in paragraph 5 above are based on the traditional steering system consisting of a single propeller and a single rudder. Today, various non-traditional propulsion/steering systems exist that are inadequately addressed by these requirements. So far, the discrepancy between regulations and current technology has been addressed by unified interpretation.

11 The technological possibilities of providing steering need to be holistically considered by the regulatory framework. The proposed new work output will enable to amend SOLAS provisions to address all technologies<sup>5</sup>.

### **Analysis of implications**

12 Minimal costs to the maritime industry are anticipated. There are no additional administrative requirements or burdens. The complete checklist for identifying administrative requirements and burdens is set out as annex 1 to this document.

### **Benefits**

13 A regulatory framework for all types of steering systems, including propulsion/steering systems, will provide the basis for a consistent evaluation of such systems helping to achieve IMO's safety objectives.

### **Industry Standards**

14 The European Union is not aware of any existing industry standards for non-traditional propulsion/steering systems.

### **Output**

15 The following new output is proposed:

*"Revision of SOLAS chapters II-1 (Part C) and V to address both traditional and non-traditional propulsion and steering systems".*

16 Parts I and II of the check/monitoring sheet, as given in annex 2 to MSC.1/Circ.1500/Rev.1, have been completed and are provided in annex 3.

### **Human element**

17 The completed checklist for considering human element issues contained in MSC-MEPC.7/Circ.1 is set out in annex 2 to this document. This proposal is not considered to have relevant implications for the human element.

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<sup>5</sup> With a view to address this agenda output (if approved), a dedicated study on the subject called "STEERSAFE Steering and Manoeuvrability Study" has been commissioned by EMSA and carried out by DNV (<http://emsa.europa.eu/publications/reports/item/4398-steersafe.html>).

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**Urgency**

18 It is proposed that the output should be included in the Committee's post biennial agenda (2022-23), with two sessions needed to complete the item by SSE Sub-Committee.

**Action requested of the Committee**

19 The Committee is invited to consider the foregoing, in particular paragraphs 10 and 11, the proposals in paragraphs 15 and 18 above, and take action as appropriate.

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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	<b>NR</b>	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	<b>NR</b>	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	<b>NR</b>	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	<b>NR</b>	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?	<b>NR</b>	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)		



## ANNEX 2

## CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

<b>Instructions:</b>	
If the answer to any of the questions below is:	
(A) <b>YES</b> , the preparing body should provide supporting details and/or recommendation for further work.	
(B) <b>NO</b> , the preparing body should make proper justification as to why human element issues were not considered.	
(C) <b>NA</b> (Not Applicable) – the preparing body should make proper justification as to why human element issues were not considered applicable.	
<b>Subject Being Assessed:</b> (e.g. Resolution, Instrument, Circular being considered)	
SOLAS chapters II-1 (Part C) and V	
<b>Responsible Body:</b> (e.g. Committee, Sub-committee, Working Group, Correspondence Group, Member State)	
MSC/SSE	
1. Was the human element considered during development or amendment process related to this subject?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Ship owners/managers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Seafarers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Surveyors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
10. Have human element experts been consulted in development of the solution?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<p><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.</p> <p>Human element is not considered further as the proposal is to align existing requirements with technology that is already in use.</p>	

## ANNEX 3

**PARTS I AND II OF THE CHECK/MONITORING SHEET FOR THE PROCESS OF  
AMENDING THE CONVENTION AND RELATED MANDATORY INSTRUMENTS  
(PROPOSAL/DEVELOPMENT) (MSC.1/CIRC.1500/REV.1)**

**Part I – Submitter of proposal (refer to section 3.2.1.1)\***

1	Submitted by (Document Number and submitter) <b>MSC 104/XX/XX – Norway, , European Commission on behalf of the European Union, and IACS</b>
2	Meeting session <b>MSC 104</b>
3	Date (date of submission) <b>XX XXXXX 2021</b>

**Part II – Details of proposed amendment(s) or new mandatory instrument  
(refer to sections 3.2.1.1 and 3.2.1.2)\***

1	Strategic Direction <b>6</b>
2	Title of the output <b>Revision of SOLAS chapters II-1 (Part C) and V to address both traditional and non-traditional propulsion and steering systems</b>
3	Recommended type of amendments (MSC.1/Circ.1481) (delete as appropriate)  <ul style="list-style-type: none"> <li>• <b>Four-year cycle of entry into force</b></li> <li>• <del>exceptional circumstance</del></li> </ul>
4	Instruments intended for amendment (SOLAS, LSA Code, etc.) or developed (new code, new version of a code, etc.) <b>SOLAS chapters II-1 (Part C) and V</b>
5	Intended application (scope, size, type, tonnage/length restriction, service (International/non-international), activity, etc.) <b>All ships to which SOLAS chapter II-1, Part C applies</b>
6	Application to new/existing ships <b>New ships</b>
7	Proposed coordinating sub-committee <b>SSE Sub-Committee</b>
8	Anticipated supporting sub-committees <b>None</b>
9	Time scale for completion <b>2023</b>
10	Expected date(s) for entry into force and implementation/application <b>1 January 2028</b>
11	Any relevant decision taken or instruction given by the Committee <b>None</b>