

SUB-COMMITTEE ON SHIP DESIGN AND  
CONSTRUCTION  
5th session  
Agenda item 10

SDC 5/10/4  
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**REVISED SOLAS REGULATION II-1/3-8 AND ASSOCIATED  
GUIDELINES (MSC.1/CIRC.1175) AND NEW GUIDELINES  
FOR SAFE MOORING OPERATIONS FOR ALL SHIPS**

**Comments on documents SDC 5/10 and SDC 5/10/Add.1**

**Submitted by Antigua and Barbuda, Italy, Liberia, Marshall Islands, Panama, Spain,  
ICS, BIMCO, ICHCA, OCIMF, INTERTANKO, SIGTTO and NI**

**SUMMARY**

<i>Executive summary:</i>	This document provides comments on part 1 and part 2 of the report of the Correspondence Group on Safe Mooring Operations
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.1
<i>Output:</i>	5.2.1.1
<i>Action to be taken:</i>	Paragraph 20
<i>Related documents:</i>	SDC 4/11; SDC 5/10 and SDC 5/10/Add.1

**Introduction**

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5) and provides comments on part 1 and part 2 of the report of the Correspondence Group on Safe Mooring Operations, as set out in documents SDC 5/10 and SDC 5/10/Add.1 (Denmark and Japan).

2 OCIMF first produced the industry guidance on mooring equipment in 1992. The fourth and latest edition of the Mooring Equipment Guidelines (MEG 4) will be published in 2018 and was developed by an industry working group which included representatives of various shipowner/operator organizations, shipping companies, terminal operators, cordage institutes and classification societies. In addition to the updated guidance on mooring equipment and mooring lines, the fourth edition incorporates the guidance on effective mooring which addresses the human element aspects of safe mooring operations and guidance for improvements of mooring designs.

3 The findings of the joint marine safety investigation conducted by the United Kingdom and the Marshall Islands into the mooring accident on board the Q-Max LNG carrier **Zarga** include new knowledge and experience, which should be taken into account in the context of this work. The findings have informed the input of the co-sponsors to the Correspondence Group.

4 Research into mooring arrangement safety was also included within the CyClaDes project which addressed crew-centred design of ships and ship operations. Two of the outcomes from this work were guidelines on design of mooring decks and mooring winch controls. This information was also used to inform the input of some of the co-sponsors.

## **Discussion**

### ***Establishment of a working group***

5 The co-sponsors are acutely aware of the importance of improving the human centred design of mooring decks to enhance the safety of mooring operations. In this regard, the co-sponsors would like to express support for the coordinator's proposal to establish a working group to address unresolved issues from the Correspondence Group and work towards finalizing the draft revised SOLAS regulation II-1/3-8 and associated Guidelines, taking into account the decisions of the Sub-Committee.

### ***Comments on draft revised SOLAS regulation II-1/3-8 (TOR.1)***

6 The comments in paragraphs 7 and 13 below refer to part 1 of the Correspondence Group's report (SDC 5/10).

7 Regarding the inclusion of a reference to mooring lines in the text of draft SOLAS regulation II-1/3-8, the co-sponsors consider that there is a need to recognize mooring lines as an integral part of the mooring system on board. Equally, it is unclear how a mooring arrangement can be designed with seafarers in mind, if the characteristics of the mooring lines anticipated to be used were not taken into account at the design stage. Therefore, the co-sponsors support deletion of the square brackets and retaining the text "including lines" in the draft SOLAS regulation II-1/3-8 (SDC 5/10, annex 1, paragraphs 4 and 5) to ensure that the design of mooring arrangements, equipment and fittings takes into account the strength, material and diameter of the mooring lines, which are expected to be used during the normal operation of the ship.

8 The current draft revised SOLAS regulation II-1/3-8 refers to "occupational health" in the context of design of mooring arrangements. Concerns were raised within the Correspondence Group during the second round of correspondence regarding the appropriateness of the terminology (SDC 5/10, paragraph 10). Recalling the authoritative World Health Organization (WHO) and International Labor Organization (ILO) definition<sup>1</sup> of the term, occupational health goes beyond design and construction considerations. Demonstrating compliance of SOLAS chapter II-1/3-8 with this definition may be problematic and unrealistic. The proposal to refer to "human centred design" is consistent with the *Human element vision, principles and goals for the Organization* (resolution A.947(23)) and does not change the purpose or intent of the work agreed at MSC 95 (MSC 95/22, paragraph 19.22) and is supported by the co-sponsors.

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<sup>1</sup> Based on the Joint WHO/ILO Committee on Occupation Health, 1950 (as amended in 1995): "Occupational Health is the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs."

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**Comments on draft new Guidelines for safe mooring operations (TOR.2)**

9 Terminology is an important aspect of establishing clarity in the requirements for the design of mooring arrangements and the selection of appropriate equipment, fittings and mooring lines. The Sub-Committee is invited to note the knowledge and experience gained by OCIMF in developing the revisions to MEG 4 (see paragraph 2 above) and requested to invite a working group, if established, to address the issue of consistency in the use of terminology as a matter of priority.

10 When discussing the matter within the Correspondence Group during the first round of correspondence, some of the co-sponsors proposed and developed comprehensive alternative text for section 5 of the draft new Guidelines on safe mooring operations (see the appendix to annex 2 to document SDC 5/10). The alternative text for section 5 is based on the experience gained during the development of MEG 4 (see paragraph 2 above), and the incident and research referred to in paragraphs 3 and 4 above. This text received support from the Marshall Islands, ICS, OCIMF, INTERTANKO, SIGTTO and others within the Correspondence Group.

11 The alternative text aims to introduce necessary flexibility, balancing the following two important considerations:

- .1 the need to provide seafarers and shore-based mooring personnel with mooring arrangements which are safer by design; and
- .2 the need to ensure that ships can be secured alongside berths of variable design in ports worldwide, in varying environmental conditions, without compromising the safety of the ship, the berth and protection of the marine environment.

12 The proposed alternative text for section 5 of the draft Guidelines is consistent with the text contained in document SDC 4/11 (Denmark and Japan) which was utilized as the base document. During the third round of correspondence one member of the Correspondence Group noted that relevant sections could be included in the draft Guidelines. The co-sponsors consider that development of the proposed alternative provides additional clarity to the draft Guidelines and making the best possible use of the work done to develop MEG 4.

**Draft revised MSC.1/Circ.1175 (TOR.3)**

13 The co-sponsors further consider that there is a need to clarify the terms "normal", "other" and "emergency towing". Mooring equipment and fittings should be marked with their respective safe working load. In cases where a fitting may be utilized for dual purposes with different design considerations (mooring and towing), dual markings (SWL and TOW) should be clearly made. It is envisioned these differences can be kept to a minimum and should be clearly marked on a mooring plan with the meaning of the dual markings. Otherwise dual marking has the potential to confuse personnel engaged in mooring operations, which is inconsistent with human centred design.

**Comments on draft separate guidelines on safe mooring operations (TOR.5)**

14 The comments in paragraphs 15 to 17 refer to part 2 of the Correspondence Group's report (SDC 5/10/Add.1).

15 Recalling the established guidance already available from Member States and international organizations, notably OCIMF (MEG and Effective mooring), the Nautical Institute (Mooring and anchoring, Volume 1 & 2), as well as P&I Clubs, the value of separate guidelines on mooring operations is unclear. Furthermore, the co-sponsors are concerned that an additional guidance on mooring operations could fall short of the necessary detail and potentially contradict existing guidance. Consequently, the co-sponsors consider that the Sub-Committee should focus on the development of a guidance to support the design of mooring arrangements and not develop a separate guidance on mooring operations.

16 Notwithstanding the above view, the co-sponsors consider that developing an IMO guidance on in-service inspection and retirement of mooring lines would be valuable and is consistent with the decision at MSC 95 (MSC 95/22, paragraph 19.22) relating to the inclusion of mooring line replacement (retirement) as proposed in document MSC 95/19/13 (Japan). Sufficient information is available within the work done by the Correspondence Group to advance this work in a working group, if established.

17 The co-sponsors note that there are differences between the selection of mooring lines between IACS design restraint criteria in IACS Recommendation No.10 "Anchoring, Mooring and Towing Equipment" and the OCIMF standard environmental restraint criteria in MEG. Whilst the specific criteria are different, the principles and terminology are the same. The draft Guidelines should allow for selection of mooring lines based on IACS or another criteria with minimum breaking load (MBL). IACS Recommendation No.10 (based on 50 knots wind with 2 knots current) is the minimum line load to be applied for the selection of mooring equipment, fittings and lines. A guidance based on more severe criteria such as OCIMF's minimum breaking load ship design (MBL<sub>SD</sub>, based on 60 knots wind combined with 3 knots current) may be used where appropriate. The ship drawings should clearly indicate what design criteria was used for the ship restraint.

## Proposals

18 When considering part 1 and part 2 of the Correspondence Group's report, the co-sponsors recommend that in considering the actions requested in:

- .1 paragraph 37.1.1 of document SDC 5/10, the Sub-Committee agrees to the proposal to include mooring lines in the text of draft revised SOLAS regulation II-1/3-8;
- .2 paragraph 37.1.2 of document SDC 5/10, the Sub-Committee agrees to the proposal to use "human centred design" in the text of draft revised SOLAS regulation II-1/3-8;
- .3 paragraph 37.2.4 of document SDC 5/10, the Sub-Committee considers section 5 as an alternative, coherent proposal for section 5 of annex 2 to document SDC 5/10, rather than a set of potential items which could be included in section 5 of the draft new Guidelines; and
- .4 paragraph 47.1.3 of document SDC 5/10/Add.1, the Sub-Committee agrees to the proposed scope and title in paragraph 11.3 of the same document, amended to read: "Guidelines on in-service inspection and retirement of mooring lines".

19 The co-sponsors further recommend that the issues of terminology (see paragraph 9), the marking of mooring equipment and fittings (see paragraph 13), and possible restraining criteria (see paragraph 17) be referred to a working group, if established, for further consideration.

**Action requested of the Sub-Committee**

20 The Sub-Committee is invited to note the comments on the Correspondence Group's report in paragraphs 5 to 17, consider the recommendations in paragraphs 18 and 19, and take action as appropriate.

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