

SUB-COMMITTEE ON SHIP DESIGN AND
CONSTRUCTION
4th session
Agenda item 11

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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**

Issues for further consideration regarding safe mooring operations

Submitted by Japan

SUMMARY

<i>Executive summary:</i>	This document identifies issues which need to be further considered
<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 3/21; MSC 95/INF.3, MSC 95/22, paragraph 19.23; and SDC 4/11

Background

1 The Sub-Committee, at its third session, established the Correspondence Group on Safe Mooring Operations, under the coordination of Denmark and Japan. Japan appreciates Denmark for coordinating the work and other participants for their contribution and cooperation.

2 As described in the Group's report (SDC 4/11), the Group prepared draft SOLAS amendments regarding safe mooring operations, developed draft guidelines on the design of safe mooring arrangement and considered the need for the IMO guidance on selection, identification, use, inspection and/or maintenance of mooring lines.

Issues for further consideration

3 Due to a complexity of the discussion, Japan is of the opinion that further consideration by the Sub-Committee is necessary on the issues identified in the paragraphs 4 to 19 below.

Application of new requirements

4 As mentioned in paragraph 9 of the Group's report (SDC 4/11), the Group did not discuss some comments on the scope of application of the new SOLAS requirements, taking into account the following instruction of MSC 95 (MSC 95/22, paragraph 19.23.1):

"19.23 The Committee further agreed, in accordance with MSC.1/Circ.1481 and MSC.1/Circ.1500, that:

- .1 the amendments to be developed should apply to all new ships of 3,000 gross tonnage and upwards, and that new ships of less than 3,000 gross tonnage should comply as far as practicable ..."

5 Japan is of the view that some of the requirements seem to be stringent for small ships which have smaller areas of mooring deck. For example, paragraph 4.2.4 and 5.1.5 of the draft Guidelines prepared by the Group are as follows:

"4.2 In order to achieve the appropriate goal, the mooring arrangement should be designed and arranged in order to ensure that:

...

- .4 each mooring line has a straight lead and its own dedicated fairleads."

"5.1.5 The mooring arrangement should be so designed that the crew is at no stage exposed to lines under tension through snap back [or by sudden movements] of mooring lines. This could be established through e.g. short distances from mooring winch to fairlead, by placing the mooring winch directly before the fairlead, by enclosing the mooring line behind a barrier or through alternative design where crew members do not need to work close to or have to pass [mooring lines under tension or potentially under tension]."

6 The above requirements mean that installation of roller guides for mooring lines may be difficult and additional mooring winches may be required on the mooring deck, as shown in the example of the mooring arrangement set out in document MSC 95/INF.3 (Denmark). For ships of around 3,000 gross tonnage, the installation of additional mooring winches on the mooring deck would be difficult or extremely decrease the work area on the mooring deck for the ship's crew. In addition, as the roller guides are installed on the ship to allow flexible handling of mooring lines, the prohibition of roller guides would impair the flexibility of mooring operations.

7 Therefore, the scope of application of some requirements in the draft Guidelines should be carefully considered, taking into account applicability to small ships which have smaller deck areas, while the new requirements will generally apply to ships of 3,000 gross tonnage and upwards.

A ship-specific risk assessment in the design phase

8 The feasibility of using a ship-specific risk assessment in the design phase was discussed in the Group (SDC 4/11, paragraph 13). Japan is of the view that sufficient casualty data relating to mooring incidents are essential to conduct risk assessment in a uniform manner, where such data would not be available. Therefore, the risk assessment is necessarily based on expert judgments instead of casualty data and the result of such an assessment varies depending on the experts involved.

9 Japan has a concern that, when SOLAS requires a ship-specific risk assessment in the design phase, it would be an administrative burden for the Administration or the RO to verify the compliance of the result of risk assessment against the mandatory requirements, because the verifier needs to examine and decide whether all the expert judgments in the assessment are valid or not before issuing a certificate.

10 Furthermore, Japan has a concern that the administrative burden would become worse if the ALARP (As Low As Reasonably Practicable) concept is introduced in the draft Guidelines. It should be noted that ALARP is a concept for the rule-making process but not for the risk assessment itself. ALARP refers to a level of risk for which further investment of resources for risk reduction is not justifiable and when risk is reduced to ALARP, it is acceptable. The ALARP concept requires the persons who conduct a risk assessment to demonstrate that no justifiable risk control measures exist and the Administration or the RO need to confirm/verify it while the risk assessment is based on the expert judgments as explained in the previous paragraph. Whereas the definition of ALARP is reproduced from the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments* (MSC.1/Circ.1455), there is a difference in the availability of data between the design and arrangement of mooring equipment, and approval of alternatives and equivalents.

11 It should be noted that the "ALARP area" is different from the "ALARP concept". It should be noted that "a risk is in ALARP area" merely means "a risk is neither intolerable nor negligible" and that intolerable level of risk owing to mooring is not determined while intolerable risk level of a ship is explained in the FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.1). Therefore, the required risk level should be further considered.

12 In considering the requirements on risk assessment, the Sub-Committee should take into account the aspects of implementation, especially of verification by the Administration and the RO.

Design corresponding to berth configuration

13 Paragraph 5.1.2 of the draft Guidelines prepared by the Group is as follows:

"5.1.2 The position of the mooring deck and placing of fairleads should be planned with respect to the typical mooring pattern corresponding to type of ship and the berth configuration of the ports the ship is expected to call at. In this respect it should be possible to obtain a sufficient length of hawser line from the fairlead to the quayside bollard. Furthermore, the mooring deck should as far as foreseeable be arranged in respect to the vertical distance to the quayside in order to ensure an efficient pull towards the quayside."

14 Japan would like to point out that it is not possible to identify "the berth configuration of the ports the ship is expected to call at" at the time of design, especially for trampers. In addition, it should be noted that a number of ships change their trade routes in their life due to various reasons such as a change of business circumstances and a change of the ownership.

Harbour towing

15 The Sub-Committee, at its third session, agreed to include "harbour tug operations related to mooring" within the scope of the output as follows (SDC 3/21, paragraph 15.9):

"15.9 Following subsequent discussion, the Sub-Committee agreed that, notwithstanding the views outlined in paragraph 15.4.4 above, when considering

the draft guidelines contained in annex 2 to document SDC 3/15, references made to "towing" should be taken to mean "harbour tug operations related to mooring", and that this is within the scope of the output."

16 It should be noted that some mooring equipment (such as the warping end of mooring winches and bollards) is also used for towing operations. However, some descriptions in the draft Guidelines do not seem to take "harbour tug operations related to mooring" into consideration. For example, paragraphs 5.1.5 and 5.1.6 of the draft Guidelines propose to place mooring equipment close to the ship's side in order to reduce the danger of snap-back and to minimize manual handling of towing and mooring winch. These requirements result in a shortage of working space for a ship's crew to handle tug lines provided by a tugboat with warping-ends attached to mooring winches and bollards, and vertical distance between tug line and deck would increase. In this situation, the crew holding stopper would be exposed to excessive load.

17 It should be noted that towing operations by tugboat are indispensable for many ships when ships reach or leave berth. Furthermore, towing operations are also necessary in case of dock-in/out, passing canals, and so on. Therefore, consideration should be given to the fact that mooring arrangement is also used in towing operations.

Selection, identification, use, inspection and/or maintenance of mooring lines

18 Japan believes that selection, identification, use, inspection and/or maintenance of mooring lines are essential for safety. In this regard, the Group concluded that the development of generic guidelines for mooring lines was necessary to facilitate the development of the safety management system (SMS), while the draft text has not been prepared. Japan proposes that the Sub-Committee considers developing the generic guidelines for mooring lines, which are applicable to existing ships as well.

19 In view of Japan, the outline of generic guidelines could be as follows:

- "1 Inspection
 - .1 Frequency (e.g. before use, every X month)
 - .2 Inspection item (e.g. external abrasion and fusion, eye condition)
 - .3 Criteria
- .2 Replacement
 - .1 Replacement period (e.g. maximum X years)
 - .2 Replacement according to judgment based on inspection criteria
- .3 Inspection and replacement record"

Action requested of the Sub-Committee

20 The Sub-Committee is invited to consider the issues in paragraphs 4 to 19 above, and take action as appropriate.