



Technical Information

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To : Whom It May Concern

Subject : Summary Report on IMO Meeting of Sub-Committee on Ship Design and Construction 4th Session (SDC 4)

Summary

This Technical Information summarizes the result of 4th Session of the IMO Sub-Committee on Ship Design and Construction (SDC 4) that was held from the 13 to 17 Februari 2017, at the IMO headquarters in London.

Information

1. The information provided in this Technical Information are the ones which have high relevance with the work of BKI or considered as an essential information for interested parties.
2. The following agenda are among those discussed during the meeting :

Agenda Number	Topic
3	Amendments to SOLAS regulations II-1/6 and II-1/8-1
4	Computerized stability support for the master in case of flooding for existing passenger ships
5	Finalization of second generation intact stability criteria
7	Revision of section 3 of the Guidelines for damage control plans and information to the master (MSC.1/Circ.1245) for passenger ships
8	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages
9	Amendments to the 2011 ESP Code
10	Unified interpretation to provisions of IMO safety, security, and environment-related Conventions
11	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships
12	Guidelines for use of Fibre Reinforced Plastic (FRP) within ship structures

3. The Agenda above are several technical issues discussed during the meeting. A brief coverage among the issues are expressed in the attached document.

More info

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BRIEF INFORMATION ON IMO MEETING OF SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION 4TH SESSION (SDC 4)

A. AMENDMENTS TO SOLAS REGULATIONS II-1/6 AND II-1/8-1 (AGENDA ITEM 3)

Following the final work of Sub-Committee on amendment to SOLAS Chapter II-1, SDC 3 established correspondence group to develop the revised Explanatory Notes to the SOLAS chapter II-1 (subdivision and damage stability regulations).

Having considered the report of correspondence group, the Sub-Committee instructed the working group on Subdivision and Damage Stability (SDS) to finalize the draft Explanatory Notes as a new MSC resolution with the same applicability as the new SOLAS chapter II-1 (i.e. applicable to ships built on or after 1 January 2020).

The draft Explanatory Notes that have been discussed and agreed provide:

1. clarification on the term of “alterations and modifications” (regulation 1)
2. clarification on the term of “light service draught (di)” (regulation 2)
3. clarification on the issue of the term of “sister ship” and the use of sister ship’s lightship information (regulation 5.2).
4. a threshold for when amended stability information should be supplied to the master, based on the calculated new lightship properties (regulation 5.4).
5. guidance for the index A calculation, particularly for the case of sister ship and alterations (regulation 7).
6. clarification on the calculation of b (mean transverse distance) (regulation 7-1).
7. information on how to consider cross-flooding and down-flooding, and on how to apply TGZmax and TRange on the calculation of si (regulation 7-2).
8. clarification on the requirements to the fitting of double bottom (regulation 9)
9. information on suitable butterfly valve arrangements for cargo ships, afterpeak bulkhead arrangement for cargo ships with a raised quarter deck, and cargo ship stern tube arrangement (regulation 12)
10. clarification on the approved piping arrangements and fire testing requirements for pipes penetrate watertight bulkheads (regulation 13).
11. Clarification of the applicability of requirements of watertight closures (regulation 16)
12. clarification on the requirements of watertight doors located above the bulkhead deck and which are immersed in the final or during any intermediate stage of flooding (regulation 17)
13. clarification on the direct accesses from a ro-ro space to spaces located below the bulkhead deck (regulation 17-1)
14. clarification on the word “port” (regulation 22)

Furthermore, the matters related to the availability of a passenger ship's electrical power supply in cases of flooding from side raking damage will be discussed by the correspondence group established by SDC 4.

B. COMPUTERIZED STABILITY SUPPORT FOR THE MASTER IN CASE OF FLOODING FOR EXISTING PASSENGER SHIPS (AGENDA ITEM 4)

After the accident of Costa Concordia, there were several proposals submitted to IMO to enhance the safety of passenger ships. One of the proposals submitted to SDC 4 was the proposal to amend SOLAS regulation II-1/8-1.3 which requires existing passenger ships to be provided with computerized stability support.

Having regard to the report of working group established and discussion made at this session, SDC 4 agreed on the amendments to SOLAS regulation II-1/8-1.3 and that any limitations of applicability of the current guidelines, i.e. MSC.1/Circ.1400, MSC.1/Circ.1532 and MSC.1/Circ.1229, should be addressed by means of an appropriate set of new guidelines. The new guidelines will be developed by correspondence group.

The draft amendments of SOLAS regulation II-1/8-1.3 will be submitted to MSC 98 for approval consideration and with a view to adoption at MSC 99.

C. FINALIZATION OF SECOND GENERATION INTACT STABILITY CRITERIA (AGENDA ITEM 5)

As one of efforts to promote and enhance safety of ships, IMO has been developing second generation intact stability criteria which deal with five failure modes:

1. pure loss of stability;
2. parametric roll resonance;
3. surf-riding / broaching;
4. dead ship condition; and
5. excessive accelerations

For each failure mode, there will be three levels of vulnerability criteria, i.e. level 1, level 2 and direct stability assessment as level 3. Still, a ship is only required to comply with one of those 3 levels. It means that for a ship, which complies with level 1, does not need to comply with level 2 or 3. However, a ship fails to comply with level 2 and 3 will be subject to the requirements of operational limitations and operational guidance. These requirements will be developed by the Sub-Committee.

Taking into account report of correspondence group and documents submitted to SDC 4, it was identified that there is inconsistency between levels 1 and 2 of vulnerability criteria for the pure loss of stability failure mode. In order to address the issue, SDC 4 agreed to conduct further studies to validate an appropriate solution to resolve the inconsistency.

Furthermore, regarding development of guidelines for direct stability assessment, the Sub-Committee agreed that because of the lack data and information given by the correspondence group to develop the draft of guidelines, the finalization of the draft will be conducted at the next session.

D. REVISION OF SECTION 3 OF THE GUIDELINES FOR DAMAGE CONTROL PLANS AND INFORMATION TO THE MASTER (MSC.1/CIRC.1245) FOR PASSENGER SHIPS (AGENDA ITEM 7)

Following the approval of the Shipboard escape route signs and emergency equipment location markings (MSC.1/Circ.1553) by MSC 97 and a proposal to use graphical symbols for shipboard fire control plans (res.A.952(23)) for same fittings and equipment in damage control plans, for ease of identification and consistent operation on board, the Sub-Committee agreed to develop draft amendments to MSC.1/Circ.1245 for enhancement.

E. MANDATORY INSTRUMENT AND/OR PROVISIONS ADDRESSING SAFETY STANDARDS FOR THE CARRIAGE OF MORE THAN 12 INDUSTRIAL PERSONNEL ON BOARD VESSELS ENGAGED ON INTERNATIONAL VOYAGES (AGENDA ITEM 8)

MSC 96 agreed to develop new chapter of SOLAS (Chapter XV) and associated Code in order to address issues on the carriage of more than 12 industrial personnel for the purpose of offshore activities and It was followed by the adoption of resolution MSC.418(97) on Interim Recommendations on the safe carriage of more than 12 industrial personnel on board vessels engaged on international voyages by MSC 97.

MSC 97 was not only adopted the resolution but also approved a roadmap to complete the work on the development of mandatory instruments, as follows:

Year	IMO Body	Action
2017	SDC 4	Using the outcome of the discussions at MSC 96 and MSC 97, begin the development of the draft new code and the new SOLAS chapter [XV]
2018	SDC 5	Continue the development of the draft new code and the new SOLAS chapter [XV], in association with other relevant Sub-Committees, as and when necessary
2019	SDC 6	Continue the development of the draft new code and the new SOLAS chapter [XV], in association with other relevant Sub-Committees, as and when necessary
2020	SDC 7	Finalize the draft new code Finalize the amendments to SOLAS (new chapter [XV])
2020	MSC 102	Approve the amendments to SOLAS (new chapter [XV]) Approve, in principle, the draft new code
2020	MSC 103	Adopt amendments to SOLAS (new chapter [XV]), with entry into force date of 1 January 2024 Adopt the draft new code, with entry into force date concurrent with new SOLAS chapter [XV] Approve early voluntary application resolution
2024	-	Entry into force of new SOLAS chapter [XV] Entry into force of new code

A concrete proposal on how the work of development of SOLAS amendment and associated Code should be proceeding and as a basis for discussion has been submitted to SDC 4. However, because it was not possible to establish working group during this session, SDC 4 agreed to establish correspondence group on Carriage of more than 12 Industrial Personnel on board Vessels engaged on International Voyages.

The correspondence group was instructed to:

1. develop a matrix that identifies the relevant aspects of the existing IMO regulatory framework,
2. develop the draft new SOLAS chapter [XV];
3. consider the format and organization of the draft Code
4. develop the introduction and preamble for the Code
5. consider the impact that the service of the vessel may have on the total number of industrial personnel carried
6. develop the draft Code
7. submit a report to SDC 5

F. AMENDMENTS TO THE 2011 ESP CODE (AGENDA ITEM 9)

2011 ESP Code is updated regularly in order for the Code to be aligned with IACS Unified Requirement (UR) Z10. The updated Code was adopted by MSC 97 (Res.MSC.412(97)) and should be deemed to have been accepted on 1 January 2018 and enter into force on 1 July 2018.

With regard to the need to prepare a consolidated text of the ESP Code, with a view to taking on board all amendments adopted by the Maritime Safety Committee, and the need to align the Code with the most updated version of IACS Unified Requirement (UR) Z10 and to clearly identify all mandatory requirements, SDC 4 endorsed the plan of further actions made by IACS. Upon the endorsement, SDC 4 authorized IACS and the Secretariat to review the 2011 ESP Code and provide the report on the progress made for consideration at the next session.

G. UNIFIED INTERPRETATION TO PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS (AGENDA ITEM 10)

Under this agenda, SDC 4 agreed on the following draft MSC Circulars containing the unified interpretation or guidance to ease the implementation of IMO instruments:

1. Draft amendments to MSC/Circ.686, updating the reference to supersede instruments contained in the Guidelines.
2. Draft MSC Circular on unified interpretations of SOLAS regulations II-1/17-1, II-1/20-2 and II-1/35-1, regarding drainage of enclosed spaces situated on the bulkhead deck and special requirements for vehicle ferries, ro-ro ships and other ships of similar type.
3. Draft MSC Circular on unified interpretations of SOLAS chapters II-1 and XII, of the Technical provisions for means of access for inspections (resolution MSC.158(78)) and of Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79)).
4. Consolidated draft MSC circular containing provisions of MSC.1/Circ.1464/Rev.1 and its Corr.1, as amended by MSC.1/Circ.1507 and MSC.1.Circ.1545, related to the application of SOLAS

regulation II-1/3-6, as amended, and the revised Technical provisions for means of access for inspections.

5. Draft MSC circular on Unified interpretations of SOLAS regulations II-1/2.20 and II-2/3.21, and the draft MEPC circular on Unified interpretations of regulation 1.23 of MARPOL Annex I, regarding the use of even-keel hydrostatics for determination of the regulatory deadweight to be entered on relevant statutory certificates

Those draft MSC Circulars will be submitted to MSC 98 for approval and the draft MEPC Circular will go to MEPC 71 for approval.

H. REVISED SOLAS REGULATION II-1/3-8 AND ASSOCIATED GUIDELINES (MSC.1/CIRC.1175) AND NEW GUIDELINES FOR SAFE MOORING OPERATIONS FOR ALL SHIPS (AGENDA ITEM 11)

In order to develop the draft revised SOLAS regulation II-1/3-8 and the associated draft Guidelines on the design of safe mooring arrangements, SDC 3 established a Correspondence Group on Safe Mooring Operations and instructed them to submit the report to SDC 4.

Having considered the report of correspondence group, SDC 4 noted and agreed:

1. the progress made on the development of the draft revised SOLAS regulation II-1/3-8
2. the draft Guidelines on the design of safe mooring arrangements should only give guidance on how to design the mooring arrangement;
3. that generic guidelines on the inspection and/or maintenance of mooring lines should be developed as part of the guidelines related to operations, taking into account the possibility of consequential amendments to other IMO instruments
4. that information on break accidents and best practices of maintenance of mooring lines would be beneficial, encouraged Member States to provide more detailed information while reporting such incidents via GISIS
5. to re-establish the Correspondence Group on Safe Mooring Operations, with a view to finalizing the draft revised SOLAS regulation II-1/3-8 and the draft Guidelines on the design of safe mooring arrangements, and to developing guidelines on the selection, identification and use of mooring lines as well as generic guidelines on inspection and/or maintenance of mooring lines.
6. to instruct the Correspondence Group on Safe Mooring Operations to take into account the updates to IACS UR A2 and the non-fishing vessel mooring-related elements of IACS Recommendation 10, when finalizing the draft Guidelines on the design of safe mooring arrangements.

I. GUIDELINES FOR USE OF FIBRE REINFORCED PLASTIC (FRP) WITHIN SHIP STRUCTURES (AGENDA ITEM 12)

Since IMO introduced the regulation pertaining alternative designs and arrangements to SOLAS in 2002, it is enable the use of alternative materials, such as Fibre Reinforced Polymer (FRP) for ship structures.

In order to ensure the use of FRP will not compromise the safety of ship and person on board, IMO have been developing *Interim guidelines for use of Fibre Reinforced Plastic (FRP) elements within ship structures*. Thus, SDC 3 had established Correspondence Group on Development of Interim guidelines for use of Fibre Reinforced Plastic (FRP) elements within ship structures which followed by the establishment of the Working Group on Fire Protection to continue the work.

The interim guidelines will contain:

1. Assessing fire safety of FRP composite structures
2. Important factors to consider when evaluating FRP elements with starting point in the regulations of SOLAS chapter II-2
3. Issues other than fire safety
4. FRP composite materials and compositions used in shipbuilding
5. Recommendations regarding the assessment
6. Fire testing of FRP composite
7. Example of assessment procedure

Following the report of the working group, SDC 4 agreed to submit the draft of interim guidelines to MSC 98 for approval. In addition, SDC 4 also agreed to review of the interim guidelines will be conducted 4 years after the their approval to gather experience in the use of the Interim guidelines for use of Fibre Reinforced Plastic (FRP) elements within ship structures.