

IMO SUB-COMMITTEE ON SHIP DESIGN & CONSTRUCTION (SDC 9), 23 – 27 JANUARY 2023

The IMO Sub-Committee on Ship Design & Construction held its 9th Session (SDC 9) in hybrid format (physical/virtual) from Monday 23 through Friday 27 January 2023 under the Chairmanship of Mr Erik Tvedt (Denmark) and his Vice-Chair, Mr Jaideep Sirkar (United States). The session was attended by delegations from Member States, Associate Members of IMO, representatives from United Nations and specialised agencies, and Observers from inter-governmental and non-governmental organisations in consultative status.

Three Working Groups (WG), one Expert Group (EG) and one Drafting Group DG) were formed and chaired as follows:

WG 1 Review of Underwater Noise Reduction Guidelines, Ms. M.Susini (Belgium).

WG 2 Development of Functional Requirements for SOLAS Chapter II-1, Dr. K. Yoshida (Japan).

WG 3 Revision of Interim explanatory notes for the assessment of passenger ship capabilities after a fire or flooding casualty., Ms. E. Poupaki (Germany).

EG Application of emergency towing equipment requirements for tankers to other types of ships, Mr. M. Legathe (France).

DG Unified interpretations, Mr. T. Theocaris (Marshall Islands).

OPENING REMARKS BY THE IMO SECRETARY-GENERAL.

The IMO Secretary-General, Mr Kitack Lim, welcomed delegates to SDC's ninth session, a propitious year celebrating 75 years of IMO, also, the 50th anniversary of MARPOL. He stated that the choice of this year's World Maritime theme: "MARPOL at 50 – Our commitment goes on" presents an opportunity to highlight the relevance and importance of MARPOL in helping to protect the environment from the impact of shipping via a robust regulatory framework.

In reviewing SDC's work this year, he highlighted the importance attached to the task of reducing the underwater noise from ships in order to minimise adverse effects on the marine environment, in particular, that on marine wildlife and indigenous communities. This should take into account the latest research in order to explore implementable solutions and incentives for the industry, ensuring uptake of the Revised Guidelines for underwater noise reduction whilst simultaneously remaining in compliance with IMO's energy efficiency requirements.

Amongst other important agenda items, he singled out:

- Development of safety objectives and functional requirements on alternative design and arrangements for SOLAS chapter II-1 in order to permit safe innovative designs for ships;
- Revision of the interim explanatory notes for the SOLAS safe return to port requirements for large passenger ships, made necessary after a decade of advancement in technology and design;
- Finalisation of SOLAS amendments to apply requirements for emergency towing equipment for tankers to other types of ships so as to ensure that loss of propulsion or steering of a large ship will not lead to an accident; and,
- Finalised revision of the 1979, 1989, and 2009 MODU Codes [Mobile Offshore Drilling Units] and associated MSC circulars to prohibit the use of materials containing asbestos.

Before concluding, the Secretary-General mentioned one more aspect of the Sub-Committees important work, that of finalising the Interim guidelines on the second-generation intact stability criteria plus associated Explanatory Notes. He spoke of the need for Experts attending the meeting, to evaluate the appropriateness, effectiveness and degree to which such criteria can be applied to ships of different sizes and types, taking steps to identify necessary amendments in order to make ships safer in the design phase. He therefore emphasised the importance of regular reporting of test results and academic research so as to change the interim character of the guidelines into a more robust IMO instrument.

Mr Lim concluded his address by wishing all delegations a successful meeting.

DECISIONS OF OTHER IMO BODIES.

The Sub-Committee noted the outcomes of PPR 8, MSC 105, MSC 106, MEPC 78, C 127 and MEPC 79 relevant to its work, as reported in document SDC 9/2 (Secretariat) and took action under the relevant agenda items.

SAFETY MEASURES FOR NON-SOLAS SHIPS OPERATING IN POLAR WATERS.

General. The Sub-Committee recalled that the work outstanding under this agenda item was for the development of Guidelines for the following two types of vessels operating in polar waters: (1) pleasure yachts of 300 gross tonnage and upwards but less than 500 gross tonnage engaged in trade (i.e. commercial yachts); and (2) cargo ships of 300 gross tonnage and upwards and less than 500 gross tonnage. However, in light of no submissions to SDC 8 and this session, the Sub-Committee recalled that sub-committees should seek the advice of the Committees in the case of outputs for which no submissions have been received for two consecutive sessions.

Further work on the output. The Sub-Committee noted the lack of an instrument for commercial yachts and non-SOLAS cargo vessels of less than 500 gross tonnage operating in polar waters with concern and, therefore, work on this output should be continued. One of the reasons for not progressing the matter was a lack of data for smaller vessels operating in polar waters, therefore such data should be collected for

consideration at SDC 10 given that, with the loss of polar ice, an increasing number of smaller vessels are entering polar waters with little polar experience.

Recognizing the importance of establishing a robust regime for all vessels entering polar waters while also noting the lack of data on traffic of smaller vessels, the Sub-Committee agreed to recommend to the Committee to place this agenda item onto the post-biennial agenda to allow more time for collecting relevant information so that work can be resumed in future without the need for a new output proposal.

FURTHER DEVELOPMENT OF THE IP CODE AND ASSOCIATED GUIDANCE.

General. The Sub-Committee recalled that MSC 106 had adopted the new SOLAS chapter XV (Safety measures for ships carrying industrial personnel) and the new International Code of Safety for Ships Carrying Industrial Personnel (IP Code) by resolutions MSC.521(106) and MSC.527(106), respectively, for entry into force on 1 July 2024. The Sub-Committee also recalled that MSC 105, after considering the need for future work on SOLAS chapter XV and the IP Code, had agreed to a second phase of work to address outstanding matters, including clarifying the interaction between the IP and SPS Codes; incorporating provisions for passenger ships; and, with respect to high-speed craft carrying IP, provisions for sleeping berths and for high-speed craft carrying more than 60 persons under the output. In this connection, the Sub-Committee also recalled that SDC 8 had, inter alia, considered the need to amend the SPS Code to address the perceived ambiguity in the application of both Codes and had agreed that the Explanatory Notes may be developed after finalisation of SOLAS chapter XV and the IP Code. This could clarify the interaction between the two Codes and the different categories of persons on board.

Further development of the IP Code and related guidance. The Sub-Committee noted the information contained in the following documents:

- SDC 9/INF.3 (IMCA), providing IMCA's submission on the IP Code Guidance, developed after IMCA had sought clarification on several key issues from their Flag Administrations, and which may be of assistance to the Sub-Committee in developing a Guidance document or Explanatory Notes as part of the second phase of its work on the IP Code; and,
- SDC 9/INF.6 (China), providing relevant experience of transferring industrial personnel from a high-speed passenger ship, which can be used as a reference for the Sub-Committee's subsequent development of IP Code amendments and associated guidelines.

Subsequently, the Sub-Committee invited interested delegations to liaise with IMCA with a view to developing a first draft of the Explanatory Notes, taking document SDC 9/INF.3 into account and addressing any other outstanding issues, for submission to SDC 10. It was also agreed to take the information provided in document SDC 9/INF.6 into account when addressing passenger ship provisions in the IP Code, or its related guidance.

REVIEW OF THE GUIDELINES FOR THE REDUCTION OF UNDERWATER NOISE (MEPC.1/CIRC.833) AND IDENTIFICATION OF NEXT STEPS.

General. The Sub-Committee recalled that SDC 8 had established a Correspondence Group on Review of the Guidelines for the Reduction of Underwater Noise to, inter alia, further develop amendments to the 2014 Guidelines and to consider next steps. In respect of a request by MEPC 76 to the Secretariat to discuss with potential donors, such as GEF, regarding the potential funding of a global underwater vessel noise project, the Sub-Committee was advised that the Organization's Department of Partnerships and Projects (DPP) will commence a two-year GEF-UNDP-IMO project called the Global Partnership for Mitigation of Underwater Noise from Shipping (GloNoise Partnership) later in 2023. It will be aligned with the current work on the Review of the Guidelines for the Reduction of Underwater Noise and the consideration of next steps.

Review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life. The Sub-Committee considered the report of the Correspondence Group on the Review of the Underwater Noise Guidelines (SDC 9/5), containing the draft for the Revised Guidelines, as well as additional information for their further development to increase awareness, uptake and implementation and outlining the next steps. Six documents were submitted for consideration and in addition, three Information papers. In the ensuing discussion, the following views were expressed:

- The draft revised 2014 Guidelines should have a generic application and provide flexibility so that they can be applied for specific areas;
- The draft revised 2014 Guidelines should have a provision clearly stating their non-mandatory character;
- A number of uncertainties exist in relation to the revised 2014 Guidelines: how to measure the levels of URN emitted from ships; how to quantify acceptable URN limits; whether they should be applied universally or in certain geographical regions only; whether compliance should be achieved through ship design or by operational measures or both; and how to ensure that ships' URN compliance does not adversely affect GHG emissions;
- The revised 2014 Guidelines should take into account different sizes and types of ships and may contain provisions which are specific for certain particularly sensitive sea areas;
- Further assessments and research is needed to develop measures for reducing URN, including their impact on GHG emissions and the marine ecosystem; and,
- Based on an Arctic Council report from 2021, underwater noise from shipping in the Arctic Ocean doubled in just six years and, as such, there is a need to develop mandatory measures within a programme of action as next steps, to ensure noise levels and impacts on marine life in Inuit Nunaat, and globally, are significantly reduced.

Taking such views into account, the development of a mandatory instrument on the reduction of underwater-radiated noise from ships was recognized to be an MEPC task.

Establishment of the Working Group (WG 1). The Group was instructed to finalise the draft Guidelines for the Reduction of Underwater Noise from commercial shipping, to finalise the work plan for further prevention and also prioritise the list of suggestions to promote awareness, uptake and implementation of the Guidelines.

WG 1 Report. Having considered the Group's report, the Sub-Committee approved it in general and in particular:

- Noted the discussion and comprehensive work of the Group on the draft Revised Guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life;
- Noted the discussion of the Group on how the information related to the "national and international designated protected areas" could be collected by the Organization for the purposes of the draft Revised Guidelines;
- Noted the draft guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic, with a view to being utilised in the future by interested parties;
- Noted the draft responsibility assignment matrix with regard to URN reduction;
- Agreed the draft Revised Guidelines for reducing underwater radiated noise from shipping to address adverse impacts on marine life, for submission to MEPC 80;
- Endorsed the draft work plan for continued work on the underwater radiated noise;

Subject to the agreement on the above by the Sub-Committee:

- Will invite MEPC 80 to approve the convening of an expert workshop on the relationship between energy efficiency and underwater noise, with the participation of relevant experts. Also, encourage interested Member States and international organisations to submit lessons learned/best practices in the implementation of the Revised Guidelines by MEPC 85, including outreach and awareness efforts to support uptake, with a view to identifying necessary revisions to the Revised Guidelines;
- Requested the Secretariat to prepare the associated draft MEPC circular for the Revised Guidelines, for inclusion in the final report of the Sub-Committee, and,
- Approved the recommendation to re-establish the Correspondence Group on Underwater Radiated Noise with terms of reference prepared by the Group to continue the remaining work intersessionally and take action, as appropriate.

AMENDMENTS TO THE 2011 ESP CODE.

The Sub-Committee recalled that MSC 106 had adopted amendments to parts A and B of annexes A and B of the 2011 ESP Code, prepared by SDC 8 in accordance with the

procedure for undertaking regular updates of the Code agreed by MSC 92, which exempts regular updates to the 2011 ESP Code from the four-year cycle for entry into force of SOLAS amendments.

Modifications to the Procedures for approval and certification of a firm engaged in thickness measurement of hull structures. The Sub-Committee considered document SDC 9/6 (Secretariat), proposing to modify the Procedures for approval and certification of a firm engaged in thickness measurement of hull structures, so as to permit Administrations to exercise the right of auditing a firm conducting thickness measurement of hull structures. Following consideration, the Sub-Committee agreed to the draft amendments to the 2011 ESP Code for submission to MSC 107 for approval and subsequent adoption.

SAFETY OBJECTIVES AND FUNCTIONAL REQUIREMENTS OF THE GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR SOLAS CHAPTERS II-1.

General. The Sub-Committee recalled that SDC 8 had endorsed the time frame for further development of goals, functional requirements and expected performances for SOLAS chapter II-1, parts C, D and E with the aim of amending the Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III.

Report of the Correspondence Group. The Sub-Committee considered the report of the Correspondence Group on Safety Objectives and Functional Requirements for SOLAS Chapter II-1 (SDC 9/7), providing information on the progress made in updating the tables set out in annex 3 to document SDC 8/9 (System description and Identified Hazard Sheet for part D), as well as on the development of the goal, functional requirements and expected performances for parts C and E of SOLAS chapter II-1. Document SDC 9/7/1 (IACS) was also considered, commenting on the report of the Correspondence Group and proposing the identification of failure mode(s) and hazards addressed by the existing prescriptive regulations for part C of SOLAS chapter II-1 in order to meet their intent or rationale when developing the FRs and EPs for alternative design criteria.

Subsequently the Sub-Committee considered the actions requested in paragraph 19 of document SDC 9/7, (the CG report) and, having approved it in general, took the following decisions:

- Endorsed the tables on system description and identified hazard sheet for SOLAS chapter II-1, part D, which were important for the development of requirements but would not be included in the Revised Guidelines;
- Agreed to conduct the failure mode/hazard identification addressed by the regulations of SOLAS chapter II-1, part C and part E, as proposed in document SDC 9/7/1;
- Agreed to the draft goal, as well as the draft functional requirements and expected performances of SOLAS chapter II-1, part C;

- Agreed that functional requirements and expected performances of regulations II-1/28, II-1/29 and II-1/30 (steering and propulsion) should be considered under the post-biennial agenda for output on "Revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems"; and,
- Noted the preliminary draft goal, functional requirements and expected performances of SOLAS chapter II-1, part E.

Establishment of the Working Group (WG 2). Having considered the above matters, WG 2 was established and furnished with appropriate terms of reference, taking into account comments and decisions made in plenary. Following the Group's work, the Sub-Committee approved the subsequent report in general, and in particular:

- Agreed, in principle, to the outcome of failure modes/hazards identification for SOLAS chapter II-1, parts C and E;
- Endorsed the view of the Group that the presentation format of the goals, functional requirements and expected performances for SOLAS chapter II-1, parts C and E, should follow the same format used for SOLAS chapter III in appendix 5 to the Revised Guidelines (MSC.1/Circ.1212/Rev.1);
- Endorsed the view of the Group that the goals, functional requirements and expected performances for SOLAS chapter II-1, parts C, D and E, should be presented separately, but described in the same appendix to the Revised Guidelines;
- Agreed, in principle, to the goals for SOLAS chapter II-1, parts C and E;
- Noted that the Group discussed whether the gender-neutral term "continuously attended", instead of "manned", should be used in the goal for SOLAS chapter II-1, part E, although the current regulations in SOLAS chapter II-1, part E, use the term "manned"; and,
- Approved the recommendation to re-establish the Correspondence Group.

REVISION OF THE 1979, 1989 AND 2009 MODU CODES AND ASSOCIATED MSC CIRCULARS TO PROHIBIT THE USE OF MATERIALS CONTAINING ASBESTOS, INCLUDING CONTROL OF STORAGE OF SUCH MATERIALS ON BOARD.

General. The Sub-Committee recalled that SDC 8 had established an intersessional Correspondence Group on Revision of the 1979, 1989 and 2009 MODU Codes in order to finalise amendments to the 2009, 1989 and 1979 MODU Codes for the prohibition of materials which contain asbestos on board MODUs, as well as a draft unified interpretation on the matter.

Report of the Correspondence Group. Having approved the CG report in general, the Sub-Committee considered the actions requested in paragraph 19 of document SDC 9/8 and took the following decisions, as set out in the ensuing paragraphs.

Draft amendments to the 1979, 1989 and 2009 MODU Codes. After agreeing to delete the reference to SOLAS regulation II-1/3-5 in draft paragraph 2.10.3 in annex 1 to document SDC 9/8, the Sub-Committee discussed a suitable entry-into-force date of the draft amendments to the 1979, 1989 and 2009 MODU Codes and agreed that they should enter into effect on 1 January 2024.

Subsequently, the Sub-Committee agreed to the draft amendments to the 1979, 1989 and 2009 MODU Codes to prohibit materials which contain asbestos, including the proposed associated draft MSC resolutions, for submission to MSC 107 for adoption.

Unified interpretation for the amendments to the 1979, 1989 and 2009 MODU Codes.

In considering the draft unified interpretations for paragraph 2.10.3 of the 2009 MODU Code, paragraph 2.8.2 of the 1989 MODU Code and paragraph 2.7.2 of the 1979 MODU Code (SDC 9/8, annex 4), the Sub-Committee noted the following views:

- Sub-paragraph 1.3 of the draft unified interpretation does not provide for a time limit for storing asbestos containing materials on board; it should therefore be included and three years would be appropriate;
- It could be inferred from sub-paragraph 1.3 that the existing asbestos containing inventories on board (consumables, stores, spare parts etc.) could be used until exhausted and until the MODU Code amendments enter into effect, which would be a contradiction; and,
- If the text of a unified interpretation does not provide clarity, then it should not be included.

Subsequently, the Sub-Committee agreed to the draft unified interpretation for the amendments to the 1979, 1989 and 2009 MODU Codes to prohibit the use of materials containing asbestos, together with the associated draft MSC circular, for submission to MSC 107 for approval.

Guidelines for maintenance and monitoring of materials containing asbestos. The Sub-Committee also agreed to the draft new guidelines for maintenance and monitoring of materials containing asbestos on board MODUs, together with an associated draft MSC circular, for submission to MSC 107 for approval.

Completion of the output. The Committee was invited to note that the work on the output has been completed.

DEVELOPMENT OF AMENDMENTS TO SOLAS REGULATION II-1/3-4 TO APPLY REQUIREMENTS FOR EMERGENCY TOWING EQUIPMENT FOR TANKERS TO OTHER TYPES OF SHIPS.

General. The Sub-Committee recalled that MSC 103 had agreed that the requirements for towing equipment for tankers in SOLAS regulation II-1/3-4 should also apply to all types of larger new ships, whereby the tonnage threshold was left unspecified with a view to SDC subsequently advising the Committee.

Draft amendments to SOLAS regulation II-1/3-4 (Emergency towing arrangements and procedures). Three documents were submitted for consideration plus an Information paper providing summaries of 346 incidents recorded in the United States regarding vessels that had experienced a loss of propulsion or steering while under way, analysed by ship size. Following discussion and considering that a large majority expressed support for the proposal in document SDC 8/12/1, the Sub-Committee agreed to a threshold value of 20,000 gross tonnage and upwards for new ships requiring emergency towing arrangements.

Consideration of exemptions to ships with redundant propulsion systems. The Sub-Committee considered whether or not ships with redundant propulsion systems should be excluded from the requirements for emergency towing equipment. Having noted the views of delegations which stated that redundancies, such as the safe return capabilities on passenger ships, may still lead to blackouts and that, in addition to propulsion loss, emergency towing may also be needed in cases of steering gear failure or loss of fuel supply, the Sub-Committee agreed that no exemptions should be incorporated for ships with redundant propulsion systems. Subsequently, the Sub-Committee instructed the Experts Group to finalise the draft amendments to SOLAS regulation II-1/3-4, based on this decision. Having noted the views of delegations which stated that redundancies, such as the safe return capabilities on passenger ships, may still lead to blackouts and that, in addition to propulsion loss, emergency towing may also be needed in cases of steering gear failure or loss of fuel supply, the Sub-Committee agreed that no exemptions should be incorporated for ships with redundant propulsion systems. Subsequently, the Sub-Committee agreed to instruct the Experts Group to finalise the draft amendments to SOLAS regulation II-1/3-4, based on these preceding decisions.

Consequential amendments to the Guidelines on emergency towing arrangements for tankers (resolution MSC.35(63), as amended). Having agreed on the need to amend the Guidelines on emergency towing arrangements for tankers (resolution MSC.35(63), as amended) to address all types of ships covered by the draft new regulation on emergency towing arrangements, the Sub-Committee instructed the Experts Group to prepare an appropriate justification to expand the output and identify the provisions that will require amendment in order to be applicable to all types of ships meeting the size threshold, for consideration by MSC 107.

Report of the Experts Group. Following establishment of the Experts Group on Application of Emergency Towing Equipment for Tankers to Other Types of Ships, and having considered its subsequent report, the Sub-Committee approved it in general and in particular:

- Agreed with the draft amendments to SOLAS regulation II-1/3-4;

- Agreed with part III of the Check/monitoring sheet and the Record format;
- Endorsed the deliberations of the Group for further work, in particular to develop a new set of guidelines for emergency towing arrangements on new ships other than tankers, as well as consequential amendments to the existing guidelines on tankers; and,
- Agreed with the justification for an expansion of the scope of the output with an extension of the target completion year to 2025.

UNIFIED INTERPRETATION TO PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS.

General. The Sub-Committee recalled that this was a continuous item on the Sub-Committee's biennial agenda and that the Assembly, at its twenty-eighth session, had expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related Conventions, so that any newly developed or updated draft unified interpretation could be submitted for the consideration of the Sub-Committee, with a view to developing an appropriate IMO interpretation.

Interpretation on mooring arrangement and equipment (SOLAS regulation II-1/3-8). The Sub-Committee considered document SDC 9/10 (IACS), proposing an interpretation for the newly amended SOLAS regulation II-1/3-8 (Towing and mooring equipment), expected to enter into force on 1 January 2024, to clarify the documentation which is necessary to support an Administration or a regional organisation (RO) in verifying compliance with the regulation. Following discussion, the Sub-Committee agreed to the draft unified interpretation of SOLAS regulation II-1/3-8 in principle and instructed the Drafting Group on Unified Interpretations to consider the text in detail with a view to finalisation.

Clarification of penetrations in watertight divisions – pressure testing after a fire test (SOLAS regulation II-1/13). The Sub-Committee considered document SDC 9/10/1 (IACS), responding to the discussion at SDC 8 and proposing an interpretation of SOLAS regulation II-1/13, clarifying that heat-sensitive piping systems penetrating a watertight bulkhead or deck on a passenger ship should be tested and be type-approved for watertight integrity after the fire test, as per the Explanatory Notes to SOLAS regulation II-1/13.2.3.4 (resolution MSC.429(98)/Rev.1 or Rev.2, as applicable). Having agreed to the draft unified interpretation of SOLAS regulation II-1/13 (Openings in watertight bulkheads below the bulkhead deck in passenger ships), in principle, while noting that some further editorial work was required, the Sub-Committee instructed the Drafting Group on Unified Interpretations to consider the text in detail with a view to finalisation.

Draft interpretation of amendments of SOLAS chapter II-1 adopted by resolutions MSC.474(102) and MSC.482(103). The Sub-Committee considered document SDC 9/10/2 (IACS), proposing an interpretation for the expressions "ships constructed before 1 January 2024" and "multiple hold cargo ships other than bulk carriers and tankers constructed on or after 1 January 2024" in SOLAS chapter II-1. In discussion, the view

which prevailed was that while the interpretation may be superfluous for those familiar with the application requirements in SOLAS, some uncertainty exists within the industry for ships with a contract placed before 1 January 2024 but with a keel-laying date between 1 January 2024 and 1 July 2024. Consequently, the Sub-Committee agreed to the draft new unified interpretation of SOLAS regulation II-1/1.1.3, for submission to MSC 107 for approval. The Chair invited interested delegations to consider providing illustrative timeline presentations of the application dates as a means to better convey the seemingly rather complex application cycle following the three-day format over consecutive four-year cycles.

Proposed revision to the unified interpretations of the 2008 IS Code (MSC.1/Circ.1537/Rev.1). The Sub-Committee considered document SDC 9/10/3 (United States and IACS), proposing a revision of the unified interpretations of the 2008 Intact Stability Code (MSC.1/Circ.1537/Rev.1) for the interpretation of down-flooding point so as to realign the scope of their application to all criteria addressed by the 2008 Intact Stability Code. One delegation sought clarification on whether the newly agreed unified interpretation, upon entry into effect, would impact existing ships and in response, IACS stated that when the Committee agrees to a unified interpretation and disseminates it as an MSC circular, it does not usually include an application date and Administrations may apply them as they see fit. He believed that the proposed change would not have an effect on ships since IACS specified application criteria for its unified interpretation, as a follow up on the unified interpretations approved by the Committee. Consequently, the Sub-Committee agreed to the draft revised unified interpretations of the 2008 IS Code (MSC.1/Circ.1537/Rev.1), for submission to MSC 107 for approval.

Establishment of the Drafting Group. Following consideration of the above matters, the Sub-Committee established a Drafting Group on Unified Interpretations and instructed it accordingly. Having considered the report of the Group, the Sub-Committee approved its work in general and in particular:

- Noted the discussion concerning the application criteria of circulars MSC.1/Circ.1175/Rev.1, MSC.1/Circ.1619 and MSC.1/Circ.1620;
- Agreed to the draft unified interpretation of SOLAS regulation II-1/3-8, as amended by resolution MSC.474(102), relating to mooring arrangements and equipment; and,
- Agreed to the draft unified interpretation of SOLAS regulation II-1/13.2.3, relating to penetrations in watertight divisions on a passenger ship for pressure testing after a fire test.

REVISION OF THE INTERIM EXPLANATORY NOTES FOR THE ASSESSMENT OF PASSENGER SHIP SYSTEMS' CAPABILITIES AFTER A FIRE OR FLOODING CASUALTY (MSC.1/CIRC.1369) AND RELATED CIRCULARS.

Review of Interim Explanatory Notes (MSC.1/Circ.1369). The Sub-Committee considered document SDC 9/11 (China), highlighting that the safe return to port requirements were interpreted differently by flag States and classification societies and,

In light of recent developments in technology and design, proposed a review of MSC.1/Circ.1369 and MSC.1/Circ.1369/Add.1 from three aspects: single voyage exceeding safe return to port (SRtP)-range; challenges of crew operation; and, the use of gases or low-flashpoint fuel. Following discussion, the Sub-Committee agreed that the review of the Interim Explanatory Notes should be based on document MSC 102/21/12, paragraph 15, taking into account the proposals contained in document SDC 9/11, with the following caveats:

- (1). Since a clear linkage of the impact of the use of LNG, methanol, hydrogen and other gases or low-flash-point fuels on the implementation of the SRtP regulations could not be clearly established, consideration for inclusion in the Interim Explanatory Notes (MSC.1/Circ.1369) should be a low priority; and,
- (2). The proposal to include "tanks, voids and auxiliary machinery spaces having little or no fire risk complying with SOLAS regulation II-2/9.2.2.3.2.2(10)" as spaces in which the risk of a fire originating is negligible and thus would not need to be considered as spaces of origin of a fire, was not supported.

Following the above decisions, the Sub-Committee requested the Working Group on the Revision of the Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) to commence the review of the Interim Explanatory Notes, including identification of further areas for which updated or revised interpretations for the SRtP-requirements in SOLAS were needed.

Establishment of the Working Group (WG 3). Following its review of the Interim Explanatory Notes and considering whether a correspondence group should be established to progress its work, WG 3 rendered a report which the Sub-Committee approved in general, and in particular:

- Noted the deliberations of the Group as a result of the review of MSC.1/Circ.1369;
- Noted the deliberations of the Group on the other related circulars;
- Noted the deliberations of the Group on alternative fuels; and,
- Approved the recommendation to establish a Correspondence Group on Revision of the Interim Explanatory Notes (MSC.1/Circ.1369) with terms of reference as suggested.

REVISION OF THE PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS (RESOLUTION MSC.188(79)).

General. The Sub-Committee recalled that MSC 105 had considered the proposal in document MSC 105/15/1 (Belgium, United States and IACS) for a revised paragraph 2.2.2

of the appendix to the draft revised Performance standards, proposing a change thereto with respect to the measurement of installation height of sensors. However, MSC 105 had not agreed to the proposal and, instead, had decided to request SDC to consider it at this session. Document MSC 105/15/1 (Belgium, United States and IACS), provided clarification on paragraph 2.2.2 of the appendix to the draft revised Performance standards and proposed a way to accurately define the measurement of installation height of sensors between the three SOLAS regulations addressed in the standards. Also, document SDC 9/12 (Belgium et al.), provided a refined proposal of paragraph 2.2.2 of the appendix to the draft revised Performance standards, based on the comments and input received at MSC 105 on the matter.

Having decided a clarification to be necessary, the Sub-Committee agreed draft amendments to the Revised performance standards for water level detectors on ships subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12 (resolution MSC.188(79)/Rev.1), for submission to MSC 107 for adoption, and dissemination as MSC.188(79)/Rev.2.

BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SDC 10.

The Sub-Committee recalled that MSC 106 had agreed to include in its post-biennial agenda a new output on "Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) concerning the rigging of safety netting on accommodation ladders and gangways", with one session needed to complete the item, assigning SDC as the coordinating organ, in association with the SSE Sub-Committee.

The Sub-Committee agreed to the proposal in document SDC 9/15/2 (CESA) to lift the post-biennial output on the revision of the "Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures" onto the biennial agenda of the Committee and the provisional agenda of SDC 10.

Biennial status report and proposed biennial agenda for the 2024-2025 biennium.

Taking into account the progress made at this session, the Sub-Committee prepared its biennial status report and proposed biennial agenda for the 2024-2025 biennium, together with the proposed provisional agenda for SDC 10, for consideration by MSC 107.

ANY OTHER BUSINESS.

Considerations of amendments to SOLAS chapter XII and revision of associated unified interpretations. The Sub-Committee recalled that the proposal for a new output to amend SOLAS regulations XII/4, XII/5 and XII/12 set out in document MSC 102/21/9/Rev.1 (Brazil, the Marshall Islands and INTERCARGO) had been supported by several delegations at MSC 103. However, MSC decided to request SDC to further consider the proposal and report back to it with a recommendation on the best way forward. The Sub-Committee also recalled that SDC 8 had considered document MSC 102/21/9/Rev.1, together with the comments in document MSC 102/21/21 (IACS), and deferred consideration of the matter, inviting submissions providing additional information and justification to this session, thus enabling the Sub-Committee to decide on whether or not there is a compelling need for amending SOLAS chapter XII.

Two documents were considered, MSC 102/21/9/Rev.1 containing the output proposal in order to close gaps in the regulations that were identified during the flag State's marine safety investigation into the loss of **MV Stellar Daisy**; and, SDC 9/15 (IACS), containing an analysis of the applicable SOLAS stability requirements, which recommended that no action is needed due to lack of technical justification in extending the current damage stability requirements for bulk carriers.

Following discussion and noting that there was no broad support for the new output proposal from those that spoke on the matter, in particular highlighting that there is a lack of justification to commence the revision of SOLAS chapter XII, the Sub-Committee agreed to recommend to the Committee that the proposed output in document MSC 102/21/9/Rev.1 should not be approved.

Experience gained with larger FRP structures in ship construction. The Sub-Committee had for its consideration document SDC 9/15/2 (CESA), recounting the experience gained in the application of larger Fibre Reinforced Plastic (FRP) structures during the research project RAMSSES and proposing a review of the Interim Guidelines with a view to the wider application of FRP beyond their current limitation as structures that may be removed without compromising the safety of the ship. The CESA Observer stated that the introduction of FRP would reduce structural weight and propulsion powering needs, lower fuel consumption and thus emissions from ships, increase cargo capacity and be a key enabler for emission-reduction technologies, for example by lowering the centre of gravity for ships using wind-assisted propulsion on their superstructure (such as Flettner rotors). While supported in general by many delegations, concerns were raised regarding the potential challenges in using FRP, in particular concerning its recycling or its combustibility with respect to fire safety.

After consideration, the Sub-Committee agreed to invite the Committee to lift the output "Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures" from its post-biennial agenda to the 2024-2025 biennial agenda, as well as to place it on the provisional agenda of SDC 10.

Holistic approach on the human element. The Sub-Committee had for its consideration document SDC 9/15/3 (Secretariat), relaying the request of MSC 105 to all relevant IMO bodies, to assess their respective involvement in the human element within their remit and reporting back to the Committee, in order to devise an outline for an holistic approach in this area, outlining the current work of the Sub-Committee related to the human element.

In response to this request, the delegation of the United Kingdom highlighted the need to establish guiding principles to provide a regulatory framework addressing the human element more consistently and which may be applied across the work of SDC and others, such as SSE. Accordingly, the UK recommended adopting the principles of human-centred design, which is an approach to system design and development placing focus on the end user and which yields improvements to safety, usability and accessibility through the use of human factors and ergonomics. In this context, it was noted that ISO developed standards 9241-210 – Ergonomics of human-system interactions: Human-centred design

for interactive systems; and part 220: Processes for enabling, executing, and assessing human-centred design within organizations, which could supplement this consideration. The United Kingdom therefore proposed that the Sub-Committee note the potential benefit of adopting a human-centred design approach in its future regulatory work, and invited concrete proposals to SDC 10 related to the human element.

Having considered document SDC 9/15/3 and the recommendation by the United Kingdom on adopting the principles of human-centred design, the Sub-Committee agreed that there is currently no work undertaken requiring action related to the human element for the current matters under its purview.

Comments on the Explanatory Notes to the Interim guidelines on the second generation intact stability criteria (MSC.1/Circ.1652). In considering matters related to the second generation intact stability criteria, the Sub-Committee noted that the Secretariat had not been able to publish the Explanatory notes to the Interim guidelines on the second generation intact stability criteria (MSC.1/Circ.1652) since the various documents comprising the Explanatory Notes produced at SDC 8 required major editorial work from the stability experts and the Secretariat, including translators; however, the Sub-Committee noted that the last set of documents forming the Explanatory Notes had been processed and MSC.1/Circ.1652 would be published by the end of February.

Feedback received on the application of the second generation intact stability criteria. Following the decision of SDC 8 to invite interested Member States and international organizations to provide feedback on the application of the second generation intact stability criteria, based on their use as stipulated in section 1.1.5 (Feedback) in the Interim Guidelines and of part B of the Explanatory Notes, the Sub-Committee took cognizance of the following documents:

- SDC 9/INF.5 and SDC 9/INF.6 (China), reporting on the sensitivity assessment carried out on the second generation intact stability criteria on six types of real ships, some of which did not satisfy all of the criteria on surf-riding/broaching, dead ship condition, pure loss of stability and parametric rolling; and,
- SDC 9/INF.7 (China), providing the verification results for the mathematical model for direct stability assessment of pure loss of stability, based on the requirements of the direct stability assessment framework for pure loss of stability in the Interim guidelines on the second generation intact stability criteria (MSC.1/Circ.1627).

Expression of condolence. The Sub-Committee noted, with great sadness, the recent passing away of Edward ("Ted") Nannini, Deputy Permanent Representative of Saint Vincent and the Grenadines. The Sub-Committee appreciated his contribution to the work of the Organization and expressed its sincere sympathy to his family and colleagues.

DATE OF NEXT MEETING.

The next meeting of the Sub-Committee, SDC 10, will take place 22-26 June 2024.

End

Captain Paddy McKnight