INTERNATIONAL MARITIME ORGANIZATION

E

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT
10th session
Agenda item 20

SSE 10/20
8 May 2024
Original: ENGLISH

REPORT TO THE MARITIME SAFETY COMMITTEE

Table of contents

LIST OF ANNEXES

1 GENERAL

1.1 The Sub-Committee on Ship Systems and Equipment (SSE), chaired by Mr. Umut Şentürk (Türkiye), held its tenth session from 4 to 8 March 2024. The Vice-Chair, Mr. Cristiano Aliperta (Palau), was also present.

1.2 The session was attended by delegations from Member States, Associate Members of IMO, and observers from intergovernmental organizations and non-governmental organizations in consultative status, as listed in document SSE 10/INF.1.

Opening address

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: https://www.imo.org/en/MediaCentre/SecretaryGeneral/Pages/Secretary-GeneralsSpeechesToMeetings.aspx

Chair's remarks

1.4 In responding, the Chair thanked the Secretary-General for his words of guidance and encouragement and assured him that his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Use of hybrid meeting capabilities

1.5 The Sub-Committee noted that the plenary sessions would be conducted in hybrid mode, i.e. remote participation enabled, following the decision of C 129 to continue the trial period of the hybrid capabilities (C 129/D, paragraphs 18.3 and 18.4).

1.6 In this regard, the Sub-Committee also noted that C 129 had:

.1 agreed to extend the trial period to enable the assessment of the current planned enhancements introduced by the Secretariat;

.2 deferred a final decision on the matter to C 132, scheduled for mid-2024; and

.3 agreed not to request any further enhancements until the current planned enhancements had been implemented and assessed at C 132.

Update on the revised Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5)

1.7 The Sub-Committee noted that MSC 107 and MEPC 80 had concurrently approved the fifth revision of their Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5), which included new paragraph 6.2 in the section "Preparation of documents", following the successful launching of the new Meeting Document Submission Portal on IMODOCS.

Adoption of the agenda and related matters

1.8 The Sub-Committee adopted the agenda (SSE 10/1) and agreed to be guided in its work, in general, by the annotations contained in document SSE 10/1/1 (Secretariat) and the arrangements in document SSE 10/1/2 (Chair).

Statements by delegations with respect to attacks on ships in the Gulf of Aden and the Red Sea

1.9 Several delegations expressed concerns for the safety of ships and their crew following the attacks by Houthi rebels on commercial ships in the Red Sea and the Gulf of Aden and, in this respect, commended the Secretary-General's effort in bringing this to the attention of the United Nations Security Council at its special session on 3 January 2024.

1.10 Delegations that took the floor condemned the acts against commercial ships and seafarers while expressing grave concern for the region and the disruption caused to international trade.

1.11 A number of delegations, having highlighted the devastating impact such attacks had on innocent seafarers, especially those on board the **MV Galaxy Leader** which were still being held hostage, called for the immediate release of the ship and its crew.

1.12 Some delegations also condemned the attacks on the **MV Rubymar**, which sank with a cargo of 21,000 metric tons of fertilizer on 3 March 2024 after it was struck on 18 February 2024 by multiple missiles, causing environmental damage.

1.13 A few delegations also denounced the missile attack on the **MV True Confidence**, which occurred on 6 March 2024, and resulted in the deaths of three crew members and severe injuries to other crew members. In this regard, the Secretary-General expressed his deepest condolences to the families of those who had lost their lives as a result of the attack. The Secretary-General appreciated the efforts of all ships in the area in assisting the vessel and particularly its crew, and called for a collective action to fortify the safety of those who serve at sea.

1.14 Statements on the attacks on ships in the Gulf of Aden and the Red Sea were made by the delegations of Australia, Bahamas, Belgium, Canada, Cyprus, Finland, Germany, Italy, Japan, Malta, Palau, Spain, United Kingdom and United States, the full texts of which are set out in annex 18. Statements on the matter were also made by the delegations of China, Denmark, France, Greece, Netherlands (Kingdom of the), New Zealand, Norway, Panama, Philippines, Poland, Portugal, Republic of Korea, Singapore, Sweden and Ukraine, and by the observer from ITF.

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee, having noted the decisions and comments pertaining to its work made by MSC 107, C 129, III 9 and CCC 9, as reported in document SSE 10/2 (Secretariat) and under agenda item 1 (see paragraphs 1.5 to 1.7), agreed to take action, as appropriate, under the relevant agenda items.

3 NEW REQUIREMENTS FOR VENTILATION OF SURVIVAL CRAFT

Background

3.1 The Sub-Committee recalled that SSE 9 had considered the compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, and had agreed that:

.1 more discussion was required on the compelling need for partially enclosed lifeboats and liferafts; and

.2 the draft amendments for totally enclosed lifeboats should be finalized at that session, for timely entry into force of the draft amendments, following their expected adoption at MSC 107.

3.2 SSE 9, having also agreed to keep the agenda item on the provisional agenda of this session for further discussion on the compelling need, had deferred the consideration of the specific proposals in documents SSE 9/3/3 (India), SSE 9/3/5 (India) and SSE 9/3/6 (China), suggesting amendments to the LSA Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) for partially enclosed lifeboats and liferafts, together with any other relevant submissions, to SSE 10.

3.3 The Sub-Committee also recalled that MSC 107, having noted the discussion and decision of SSE 9 in relation to totally enclosed lifeboats, had adopted:

.1 resolution MSC.535(107), containing amendments to the LSA Code, with the expected entry into force date of 1 January 2026; and

.2 resolution MSC.544(107), containing amendments to the Revised Recommendation (resolution MSC.81(70)).

3.4 Furthermore, MSC 107 had approved:

.1 MSC.1/Circ.1630/Rev.2 on *Revised standardized life-saving appliance evaluation and test report forms (survival craft)*; and

.2 draft amendments to paragraph 6.2.3 of the *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear* (resolution MSC.402(96)), with a view to adoption at MSC 108.

Compelling need for ventilation requirements for partially enclosed lifeboats and liferafts

3.5 While discussing whether there was a compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, the Sub-Committee considered the following documents:

.1 SSE 10/3 (Secretariat), providing information on the outcome of SSE 9 and MSC 107 on ventilation of partially enclosed lifeboats and liferafts;

.2 SSE 9/3/3 (India), suggesting modifications to the draft amendments to the Revised Recommendation (resolution MSC.81(70)) (SSE 8/20, annex 2) for canopied reversible liferafts that have non-identical canopy configurations on both sides;

.3 SSE 9/3/5 (India), providing modifications to the draft amendments to the LSA Code for partially enclosed lifeboats with respect to power source for powered ventilation; and

.4 SSE 9/3/6 (China), suggesting modifications to the draft amendments to the LSA Code for partially enclosed lifeboats with respect to natural and powered ventilation, based on the "4% of the floor area" and " $5m^3/h$ per person" figures, respectively.

3.6 In this respect, the Sub-Committee noted the following views expressed:

Supporting the compelling need

.1 documents SSE 9/3/3, SSE 9/3/5 and SSE 9/3/6 should be referred to the Working Group on Life-Saving Appliances (LSA) for further discussion, together with the draft amendments to the LSA Code and resolution MSC.81(70) agreed by SSE 8, as set out in annexes 1 and 2 to document SSE 8/20, respectively;

.2 the air quality inside survival craft should be maintained for the occupants in distress to enhance survivability, as it was a crucial safety matter; and relying on the openings of partially enclosed lifeboats and liferafts did not ensure a CO_2 level below 5,000 ppm;

.3 the existing requirement in the LSA Code that partially enclosed lifeboats and liferafts shall admit sufficient air for the occupants at all times, even with the entrances closed, needed to be further clarified with specific criteria, through a unified implementation for both Administrations and manufacturers;

.4 as was previously submitted to the Sub-Committee, the outcome of the "SARex" excercise indicated the compelling need of ventilation requirements for partially enclosed lifeboats and liferafts in order to maintain a habitable environment for the occupants;

Not supporting the compelling need

.5 as was submitted to SSE 9 in document SSE 9/3/8 (Japan et al.), a study covering a period of over 20 years with more than 120,000 separate marine casualties, concluded that no incidents were due to inadequate ventilation within lifeboats or liferafts which contributed to the injury or death of an individual;

.6 additional ventilation equipment for partially enclosed lifeboats and liferafts could cause practical issues by introducing various equipment in such craft, e.g. batteries, power sources, pumps, etc. that could lead to accidents rather than preventing them;

.7 available openings, e.g. hatches and flaps of partially enclosed lifeboats and liferafts, could be opened for ventilation needs and, therefore, no further requirements were necessary, which could cause additional burden to the industry; and

.8 as no new documents justifying the compelling need had been submitted, the item should be considered completed, with the possibility of interested parties to submit a new output proposal to the Committee when such compelling need had been established.

Extension of the target completion year

3.7 In view of the above split views, the Sub-Committee concluded that a further opportunity to discuss the matter with more supporting information should be offered, and:

.1 invited submissions to the next session to justify the compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, with the understanding that the item would be considered completed if no submissions justifying the compelling need were received for a second year; and

.2 invited MSC 109 to extend the target completion year for this output to 2025.

4 DEVELOPMENT OF DESIGN AND PROTOTYPE TEST REQUIREMENTS FOR THE ARRANGEMENTS USED IN THE OPERATIONAL TESTING OF FREE-FALL LIFEBOAT RELEASE SYSTEMS WITHOUT LAUNCHING THE LIFEBOAT

Background

4.1 The Sub-Committee recalled that MSC 101 had considered document MSC 101/21/10 (Marshall Islands et al.), proposing the development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat, i.e. equipment used in the simulated launching of free-fall lifeboats. The Committee agreed to include, in the post-biennial agenda of the Committee, an output on "Development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ.

4.2 The Sub-Committee also recalled that MSC 101 had agreed that:

.1 the purpose of the output was to include, in the LSA Code, requirements for the design of "the arrangements", taking into account the static weight of the lifeboat, as well as the shock-load that would be experienced in the operational testing of the free-fall lifeboat release system without launching the lifeboat (a simulated launch);

.2 the amendments to be developed should apply to all ships for which SOLAS chapter III required the carriage of free-fall lifeboats; and

.3 the instrument to be amended was the LSA Code.

4.3 The Sub-Committee further recalled that SSE 9 had included the output on "Development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat" in the provisional agenda of this session.

Discussion

4.4 In this context, the Sub-Committee considered the following documents:

.1 SSE 10/4 (Marshall Islands et al.), proposing amendments to paragraph 4.7.6.4 of the LSA Code; consequential draft amendments to paragraphs 6.9.7 (Part 1) and 6.1.1 (Part 2) of resolution MSC.81(70) on the *Revised recommendation on testing of life-saving appliances*, to address the design and prototype test requirements for the equipment used in the simulated launching of free-fall lifeboats; and consequential amendments to MSC.1/Circ.1529 on *Unified interpretations of paragraph 4.4.7.6 of the LSA Code, as amended by resolution MSC.320(89)*, to expand its application to paragraph 4.7.6.4 of the LSA Code;

.2 SSE 10/4/1 (China), considering the necessity of shock-loading tests and proposing amendments to paragraph 4.7.6.4 of the LSA Code and paragraph 6.9 of resolution MSC.81(70), specifying the design and prototype test requirements for the arrangements of simulated release systems; and

.3 SSE 10/INF.11 (China), providing the report on the prototype test of the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat conducted by China, as a supplement to document SSE 10/4/1.

4.5 In this respect, the Sub-Committee noted that:

.1 while the agreed scope of the output was limited to the LSA Code, there might be other instruments to be consequentially amended, which could require the expansion of the scope, e.g. resolution MSC.81(70) and MSC.1/Circ.1529; and

.2 an implementation provision might be necessary, as the agreed output was applicable to all ships.

4.6 During the discussion, the Sub-Committee noted the following views expressed:

.1 regarding the proposals in document SSE 10/4/1:

.1 it was suggested that the detailed technical provisions for simulated launching of free-fall lifeboats be incorporated in the Revised recommendation (resolution MSC.81(70)), however, such provisions should be included in the LSA Code instead;

.2 with respect to the observation in paragraph 7.4 of the document, it was unlikely that the use of a secondary means of launching (i.e. falls) would lead to excessive travel distances to the extent that the free-fall lifeboats to go off the rail and fall right above water; and there were several alternative arrangements of testing the launching without free-fall lifeboats with only a few mm of travel on the ramp;

.3 the proposal did not specify how the shock-load force should be measured and, therefore, the design criteria should be further clarified; and

.4 the static weight of the lifeboat should be calculated as a fully loaded and equipped lifeboat, as opposed to being calculated with the weight of only three persons, as proposed;

.2 all documents should be referred to the Working Group on Life-Saving Appliances (LSA) for further consideration; and document SSE 10/4 should be used as a base document. Other documents should be taken into account, as they provided relevant inputs on the matter;

.3 consideration should be given to materials with corrosion resistance and application of the requirements to existing vessels for verification and testing;

.4 notwithstanding the view in paragraph 4.6.3 above, the proposal in document SSE 10/4 regarding corrosion resistance should be carefully considered as the components of the equipment were temporarily installed and not considered permanent fixtures; and

.5 the amendments should not hinder any simulated release system designs which did not involve any movement of the lifeboat.

4.7 In view of the above discussion, the Sub-Committee agreed to establish the LSA Working Group and to refer all documents to the Group for further consideration, with document SSE 10/4 being the base document and others being taken into account.

Establishment of the LSA Working Group

4.8 The Sub-Committee established the LSA Working Group and instructed it, taking into account comments made, and decisions taken, in plenary, to:

.1 consider the design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat, with a view to preparing draft amendments to relevant instruments, based on document SSE 10/4 and taking into account documents SSE 10/4/1 and SSE 10/INF.11, together with an implementation provision, as appropriate;

.2 prepare a brief justification for expanding the current scope of the output to include other instruments to be amended, in addition to the LSA Code; and

.3 if time permits, prepare consequential draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630/Rev.2).

Report of the LSA Working Group

4.9 Having considered the relevant part of the report of the LSA Working Group (SSE 10/WP.3), the Sub-Committee took actions as outlined below.

Amendments to paragraph 4.7.6.4 of the LSA Code

4.10 With respect to the amendments to the LSA Code, the Sub-Committee agreed, in principle, to draft amendments to paragraph 4.7.6.4 of the LSA Code, including the associated draft MSC resolution containing the relevant implementation provisions (SSE 10/WP.3, annex 1), with a view to finalization by SSE 11, together with any consequential amendments to other related instruments (see paragraph 4.11), for approval by MSC 110 and subsequent adoption by MSC 111.

Consequential amendments to resolution MSC.81(70)

4.11 Regarding the consequential amendments to resolution MSC.81(70), the Sub-Committee noted the considerations concerning the testing arrangement for the free-fall lifeboat release systems, in particular, whether the test should be carried out with a proof load equal to 1.1 times the weight of the lifeboat as mentioned in paragraph 6.3.1 of the annex to resolution MSC.402(96), or with the total weight of the lifeboat and its assigned operating crew based on the manufacturer's instructions in line with the provisions of SOLAS regulation III/20.11.2.3. The Sub-Committee also noted that further consideration was necessary on this matter.

Expansion of the scope of the output

4.12 Regarding the scope of the output, the Sub-Committee agreed that the development of any consequential amendments to other related instruments would require an expansion of the current scope and, thus, established the following justification:

.1 prototype and production test requirements for the testing arrangement under consideration should be developed and reflected in resolution MSC.81(70);

.2 procedures for the inspection, maintenance, thorough examination, operational testing, overhaul and repair of the testing arrangement should be developed and reflected in resolution MSC.402(96); and

.3 other related instruments, such as MSC.1/Circ.1529, *Guidelines on safety during abandon ship drills using lifeboats* (MSC.1/Circ.1578) and MSC.1/Circ.1630/Rev.2, might need to be revised, based on the draft amendments to paragraph 4.7.6.4 of the LSA Code and subsequent draft amendments to resolution MSC.81(70).

4.13 Therefore, the Sub-Committee invited MSC 109 to expand the scope of the output to also cover amendments to resolutions MSC.81(70) and MSC.402(96), and other related instruments, such as MSC.1/Circ.1529, MSC.1/Circ.1578 and MSC.1/Circ.1630/Rev.2, taking into account the established justification (see paragraph 4.12).

Further progress of the work

4.14 With regard to further progress of the work, the Sub-Committee agreed that the draft amendments to paragraph 4.7.6.4 of the LSA Code along with any consequential amendments to be developed for other related instruments should be finalized at SSE 11, subject to the expansion of the scope of the output on "Development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat" by MSC 109, with a view to approval by MSC 110 and adoption by MSC 111; and re-established the LSA Correspondence Group to further progress the work intersessionally.

Re-establishment of the LSA Correspondence Group

4.15 In view of the above, the Sub-Committee re-established the Correspondence Group on Life-Saving Appliances under the coordination of the United States,[1] and instructed it, taking into account comments made and decisions taken at SSE 10, to:

.1 finalize the draft amendments to the LSA Code, based on annex 1 of document SSE 10/WP.3;

[1] **Coordinator (United States):**
Ms. Jacqueline Yurkovich
Lifesaving and Fire Safety Division
U.S. Coast Guard Headquarters
Phone: +1 (571) 607 4931
Email: Jacqueline.M.Yurkovich@uscg.mil
Platform: IMO Space

.2 prepare consequential draft amendments to resolutions MSC.81(70) and MSC.402(96) and any other relevant instruments (e.g. MSC.1/Circ.1529, MSC.1/Circ.1578 and MSC.1/Circ.1630/Rev.2), taking into account paragraphs 4 to 13, and annexes 1 and 2, of document SSE 10/WP.3, subject to the approval of the expansion of the scope of the output by MSC 109; and

.3 submit a report to SSE 11.

5 REVISION OF SOLAS CHAPTER III AND THE LSA CODE

Background

5.1 The Sub-Committee recalled that SSE 9 had:

.1 considered the report of the first meeting of the Intersessional Working Group on the Revision of SOLAS chapter III and the LSA Code, together with the report of the meeting of the Group of Interested Parties, which had further progressed the draft hazard identification matrix;

.2 endorsed the categorization of documents submitted to SSE 7 and SSE 8, based on the agreement of SSE 8 on the criteria to categorize technical submissions proposing amendments to SOLAS chapter III and/or the LSA Code that did not directly serve the primary objective of the output, and had invited submitters to take appropriate actions in accordance with the criteria. In this respect, the Sub-Committee had noted that this output was not intended to provide a shortcut method to amend regulations and that such practice should be discontinued; and

.3 not been able to progress the work on hazard identification and had re-established the intersessional Working Group on the Revision of SOLAS chapter III and the LSA Code.

Report of the second Intersessional Working Group

5.2 The Sub-Committee considered document SSE 10/5 (Germany), providing the report of the second meeting of the Intersessional Working Group on the Revision of SOLAS Chapter III and the LSA Code, which had been held in person in Hamburg (Germany) from 9 to 13 October 2023.

5.3 Following consideration, the Sub-Committee approved the report in general and took action, as follows:

.1 noted the discussion on hazard identification, and the finalization of the hazard identification and the ranking of the hazards;

.2 noted the outcome of the consideration of "unregulated ship" condition and the assumptions made during the hazard identification and the ranking of hazards;

.3 instructed the LSA Working Group (see paragraph 5.6), in accordance with the action plan agreed by SSE 7 (SSE 7/21, annex 1); and

.4 appreciated the contributions of the Federal Ministry for Digital and Transport of Germany for hosting and coordinating the Intersessional Working Group meeting, and the German Maritime and Hydrographic Centre for its hospitality by providing required facilities.

Accidents related to faulty lifeboat slings

5.4 The Sub-Committee recalled that the Sub-Committee on Implementation of IMO Instruments (III), at its ninth session, had considered safety risks concerning lifeboat slings. In this context, III 9 had invited the Sub-Committee to consider the information provided in document III 9/4/4 (China) on the re-analysis of the safety risks involved and presenting countermeasures against repetition of certain similar accidents related to lifeboat slings, as appropriate (see document SSE 10/2).

5.5 The Sub-Committee, in considering the safety issue identified by III 9, noted that a relevant submission had been made under agenda item 14 on "Comprehensive review of the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation", with regard to maintenance and examination of slings. Therefore, the Sub-Committee agreed to consider the document SSE 10/14/2 (China) under agenda item 14 (see paragraph 14.14).

Instructions to the LSA Working Group

5.6 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 4 (see paragraph 4.8), taking into account comments made and decisions taken in plenary, to review the ranking of the hazards with a view to drafting goals, functional requirements and associated expected performances for SOLAS chapter III, based on annex 2 of document SSE 10/5.

Report of the LSA Working Group

5.7 Having considered the relevant part of the report of the LSA Working Group (SSE 10/WP.3), the Sub-Committee took actions as outlined below.

Review of the high-level hazards and road map

5.8 The Sub-Committee noted that the LSA Working Group had reviewed the roadmap on the revision of SOLAS chapter III and the LSA Code contained in annex 4 of document SSE 7/WP.3, together with the goals outlined in paragraph 9 of document SSE 8/3, and had considered the high-level hazards summarized in annex 2 of document SSE 10/5.

5.9 In this respect, the Sub-Committee agreed to the following road map to facilitate drafting of related functional requirements and expected performances for SOLAS chapter III and the LSA Code:

.1 use the specification for functional requirements and expected performances in the *Interim guidelines for development and application of IMO goal-based standards safety level approach* (MSC.1/Circ.1596), as a basis;

.2 use the hazards identified by phase, as shown in annex 2 of document SSE 10/5 , noting that the list might not be exhaustive;

.3 select one phase at a time for drafting functional requirements and expected performance for that phase before moving on to the next phase;

.4 draft the functional requirements and expected performances in a smaller group; and

.5 once the functional requirements and expected performances for all phases have been drafted, compare them to the functional requirements in the *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1).

Instructions to the LSA Correspondence Group

5.10 In view of the above, the Sub-Committeeinstructed the LSA Correspondence Group , under the coordination of Denmark[2], established under agenda item 4 (see paragraph 4.15), taking into account the comments made and decisions taken at SSE 10, to start drafting the necessary functional requirements and expected performances, taking into account the road map set out in paragraph 5.9 above and annex 2 of document SSE 10/5.

Extension of the target completion year

5.11 In light of the above conclusion, the Sub-Committee invited MSC 109 to extend the target completion year for this output to 2027.

6 AMENDMENTS TO SOLAS CHAPTER III AND CHAPTER IV OF THE LSA CODE TO REQUIRE THE CARRIAGE OF SELF-RIGHTING OR CANOPIED REVERSIBLE LIFERAFTS FOR NEW SHIPS

Background

6.1 The Sub-Committee recalled that MSC 99 had:

.1 considered document MSC 99/20/6 (China), proposing to equip all passenger and cargo ships with automatically self-righting or canopied reversible liferafts (except for liferafts with a capacity of no more than six persons), and, consequentially, to amend SOLAS regulations III/21, 26 and 31, and paragraphs 4.2 and 4.3 of chapter IV of the LSA Code; and

.2 agreed to include, in its post-biennial agenda, an output on "Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the associated organ.

6.2 The Sub-Committee also recalled that MSC 99 had agreed that:

.1 the amendments to be developed should consist of new requirements for new passenger and cargo ships to be equipped with automatically self-righting or canopied reversible liferafts; and

.2 the instruments to be amended were SOLAS regulations III/21, 26 and 31, and paragraphs 4.2 and 4.3 of chapter IV of the LSA Code.

6.3 The Sub-Committee further recalled that SSE 9 had considered document SSE 9/17 (China) and had agreed to place the output on the provisional agenda for this session.

---

[2] **Coordinator (Denmark), responsible only for agenda item 5:**
Ms. Nanna Hahn
Danish Maritime Authority
Phone: +45 72 19 60 71
Email: nha@dma.dk (participants should contact the Coordinator for registration)

Discussion

6.4 The Sub-Committee had for its consideration, the following documents:

.1 SSE 10/6 (China), introducing the carriage and user experience of automatically self-righting and canopied reversible liferafts, including safety, cost, and arrangement; discussing the technical requirements of liferafts; and proposing draft amendments to SOLAS chapter III and chapter IV of the LSA Code; and

.2 SSE 10/6/1 (Japan), discussing the scope of application of the amendments to SOLAS chapter III and chapter IV of the LSA Code in relation to the carriage of self-righting or canopied reversible liferafts.

6.5 In the ensuing discussion, the following views were expressed:

.1 although MSC 99 had approved this output to consider the carriage requirements of automatically self-righting or canopied reversible liferafts for new ships, the scope of application of the new requirement had not been concluded, nor even discussed;

.2 davit-launched liferafts did not have a risk of inverted inflation at sea in general. The size of liferafts, and the competence of the persons on board the ship in the context of the STCW Convention and SOLAS chapter III, would also be fundamental factors in determining the need for the new requirements. Therefore, it was considered that for cargo ships, there was no sufficient justification for the new requirements. For passenger ships, certain types of liferafts, such as those without launching and embarkation appliances, and those accommodating more than 25 persons, could be subject to the new requirements, following further consideration;

.3 present requirements indicated that liferafts should be able to be rightened by one person, unaided, and no serious accidents due to the failure of righting liferafts had been reported. Nevertheless, new requirements could be considered for passenger ships;

.4 an exemption for liferafts for 25 persons, or fewer on passenger ships, could be supported; and those liferafts used with launching appliances, including marine evacuation systems, which were commonly installed on passenger vessels, could also be exempted;

.5 liferafts were considered essential to enhance the safety of crew and passengers and, therefore, the proposal in document SSE 10/6 was supported in general. As the Committee had agreed that the amendments would apply to new ships, to avoid confusion, clarification was considered necessary in SOLAS regulation III/I on the application, e.g. when liferafts were replaced on existing ships;

.6 the proposal in document SSE 10/6 was supported with a transitionary period of three years for passenger ships and five years for cargo ships, after the expected entry into force of the new requirements;

.7 the proposal in document SSE 10/6/1 was not supported, as the safety risks existed for both cargo and passenger ships, and training of seafarers

referenced in paragraph 7 of the document would only lower the risks rather than eliminating efficiently. .7 the proposal in document SSE 10/6/1 was not supported, as the safety risks existed for both cargo and passenger ships, and training of seafarers referenced in paragraph 7 of the document would only lower the risks, rather than eliminating them efficiently. Therefore, to eliminate the risks as much as possible, liferaft designs should be improved for both cargo and passenger ships;

.8 assessing the impact on cost and differences in arrangements compared to existing systems was considered necessary and paragraph 9 of document SSE 10/6 provided very limited information as to what the differences were in terms of storage position, conditions and sizes between conventional liferafts, and self-righting or canopied reversible liferafts. Without such information, the impact of the amendments on existing ships could not be addressed properly;

.9 mandating self-righting and canopied reversible liferafts would lead to a surge in global demand that manufacturers might struggle to meeted. The LSA Working Group should further consider the matter, taking into account passenger capacity and approvals by Administrations; and

.10 no compelling need had been established for the proposed requirements, which might cause significant difficulties for the industry.

6.6 In view of the above, the Sub-Committee agreed to refer documents SSE 10/6 and SSE 10/6/1 to the LSA Working Group for further discussion on the scope of the draft amendments to SOLAS chapter III and the LSA Code.

Instructions to the LSA Working Group

6.7 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 4 (see paragraph 4.8), taking into account comments made and decisions taken in plenary, to consider documents SSE 10/6 and SSE 10/6/1 on the scope of draft amendments to SOLAS chapter III and the LSA Code regarding automatically self-righting and canopied reversible liferafts and to advise the Sub-Committee on how best to proceed.

Report of the LSA Working Group

6.8 Having considered the relevant part of the report of the LSA Working Group (SSE 10/WP.3), the Sub-Committee:

.1 noted that a consensus could not be reached on the scope of the draft amendments to SOLAS chapter III and chapter IV of the LSA Code regarding automatically self-righting and canopied reversible liferafts; and

.2 invited interested Member States and international organizations to submit further proposals to SSE 11, providing comments and relevant justification on the scope of the application of the new requirement, as deemed appropriate.

7 DEVELOPMENT OF AMENDMENTS TO PARAGRAPH 8.3.5 AND ANNEX 1 OF THE 1994 AND 2000 HSC CODES

Background

7.1 The Sub-Committee recalled that, following the consideration of document MSC 101/21/7 (Norway), proposing the harmonization of the lifejacket carriage requirements in the 1994 and 2000 International Codes of Safety for High-Speed Craft (HSC Codes) with the requirements in SOLAS chapter III, MSC 101 had agreed to include, in its post-biennial agenda, an output on "Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes", with one session needed to complete the item, assigning the SSE Sub-Committee as the associated organ.

7.2 MSC 101 also agreed that:

.1 the amendments to be developed should apply to new and existing high-speed passenger craft to which SOLAS chapter X applies; and

.2 the instruments to be amended were the 1994 and 2000 HSC Codes.

7.3 The Sub-Committee also recalled that SSE 9 had agreed to include the agenda item in this session's provisional agenda.

Discussion

7.4 The Sub-Committee considered document MSC 101/21/7 (Norway), providing relevant amendments to the 1994 and 2000 HSC Codes to harmonize the lifejacket carriage requirements therein with SOLAS chapter III.

7.5 In connection with the above, the Sub-Committee noted that the draft amendments did not contain any application provisions for new and existing craft, and agreed that these provisions needed to be developed.

7.6 Having agreed with the proposed amendments set out in annex 1 of document MSC 101/21/7, the Sub-Committee instructed the LSA Working Group to finalize them, together with the necessary implementation provisions, with a view to approval by MSC 109 and subsequent adoption by MSC 110.

Instructions to the LSA Working Group

7.7 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 4 (see paragraph 4.8), taking into account comments made and decisions taken in plenary, to finalize the draft amendments to the 1994 and 2000 HSC Codes, including annex 1 (Record of equipment) thereof, based on annex 1 of document MSC 101/21/7, together with application provisions.

Report of the LSA Working Group

7.8 Having considered the relevant part of the report of the LSA Working Group (SSE 10/WP.3), the Sub-Committee agreed to the draft amendments to the 1994 and 2000 HSC Codes, together with the associated check/monitoring sheet and the record format, as set out in annexes 1 and 2, respectively, with a view to approval by MSC 109 and subsequent adoption by MSC 110.

Completion of the work on the output

7.9 The Sub-Committee agreed to invite the Committee to concur that the work on the output had been completed.

8 REVISION OF THE 2010 FTP CODE TO ALLOW FOR NEW FIRE PROTECTION SYSTEMS AND MATERIALS

Background

8.1 The Sub-Committee recalled that MSC 103 had:

.1 considered document MSC 102/21/11 (Austria et al.), proposing a new output on the revision of the International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code) in order to allow for new fire protection systems and materials, taking into account unified interpretations of the Code and most recent ISO fire test standards;

.2 agreed to include in its post-biennial agenda an output on "Revision of the 2010 FTP Code to allow for new fire protection systems and materials", with three sessions needed to complete the item, assigning the SSE Sub-Committee as the associated organ; and

.3 also agreed that the amendments to be developed should apply to all new ships to which the 2010 FTP Code applied and the instrument to be amended was the 2010 FTP Code.

Discussion

8.2 The Sub-Committee considered document SSE 10/8 (United States), identifying ambiguities in the 2010 FTP Code, and proposing new materials and construction techniques to be addressed in the revision of the Code, in coordination with the review and update of SOLAS regulation II-2/9.

8.3 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the proposals in paragraph 22 of the document were supported in general and should be utilized when drafting necessary amendments to the 2010 FTP Code;

.2 regarding the use of aerogel materials, further data would be required while the 2010 FTP Code already contained specific provisions for the use of cementitious materials and intumescent materials;

.3 as no specific proposals for draft amendments had been submitted, further submissions should be invited for consideration at the next session, together with supporting data;

.4 regarding the proposals in paragraphs 3 to 8 of the document, testing panels on both sides was considered necessary. However, they should be conducted on a sound basis, noting that one-sided testing required formal approval from the Administration;

.5 in addition to the agreed scope of the output to include new fire protection systems and materials, existing requirements in the 2010 FTP Code should also be reviewed and potential errors should be rectified;

.6 regarding the proposal to coordinate the work under this output with the revision of SOLAS regulation II-2/9 (see paragraph 17.9), such coordination should not compromise the ongoing work on the revision of the 2010 FTP Code and cause any delay. The Sub-Committee should, therefore, prioritize the work on the revision of the Code;

.7 equally, the work on the revision of the 2010 FTP Code should not cause any delay to the work under the output on the revision of SOLAS regulation II-2/9 agreed by MSC 105;

.8 it should be clarified whether "modular construction" stated in paragraphs 3 to 9 of the document was related to B-class constructions (pre-constructed cabins installed on board passenger ships), as A-class and B-class constructions were subject to different fire test requirements; and

.9 with respect to the statement in the document that the temperature could be much higher in the air gap between two B-class bulkheads, CFD results should be made available in order to evaluate the thermodynamic phenomena on that air gap.

8.4 Following consideration, the Sub-Committee:

.1 agreed, in principle, with the proposals in paragraph 22 of document SSE 10/8;

.2 also agreed to coordinate the work under this output with that of the post-biennial item on "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements", subject to the Committee's decision to lift the output from its post-biennial agenda to the provisional agenda of SSE 11 (see paragraph 17.9), ensuring that the ongoing work on the revision of the 2010 FTP Code should have priority and not be delayed, while expecting any relevant inputs emanating from the revision of SOLAS regulation II-2/9; and

.3 invited relevant proposals to SSE 11 for amending the 2010 FTP Code.

9 REVISION OF THE PROVISIONS FOR HELICOPTER FACILITIES IN SOLAS AND THE MODU CODE

Background

9.1 The Sub-Committee recalled that, following the consideration of document MSC 86/23/17 (Secretariat) providing a justification, as prepared by the Sub-Committee on Ship Design and Equipment (DE) at its fifty-second session, for a new work programme item to align the requirements of SOLAS and the Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code) with the most recent requirements of the Chicago Convention of the International Civil Aviation Organization (ICAO), MSC 86 had agreed to include, in the work programme of the DE Sub-Committee, a low-priority item on "Revision of the provisions for helicopter facilities in SOLAS and the MODU Code", with two sessions needed to complete the item, in cooperation with the Sub-Committee on Fire Protection (FP), as necessary and when requested by the DE Sub-Committee.

9.2 The Sub-Committee also recalled that the work item had been included in the post-biennial agenda of the Committee as an output that fell under the purview of the SSE Sub-Committee and that SSE 8 had subsequently agreed to include the item in the provisional agenda of SSE 9.

9.3 The Sub-Committee further recalled that, owing to time constraints, SSE 9 had agreed to defer the consideration of this agenda item to this session.

Discussion

9.4 The Sub-Committee noted that no additional documents had been submitted to SSE 9 and SSE 10, and that, in accordance with paragraph 5.12 of the Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5), subsidiary bodies should seek the advice of the Committee in the case of outputs for which no submission has been received for two consecutive sessions.

Completion of the work on the output

9.5 In this respect, the Sub-Committee, while advising MSC 109 that no submission has been received over two sessions, agreed to:

.1 invite the Committee to decide that the work on this output has been completed; and

.2 inform ICAO of such a decision, pending consideration of the matter by MSC 109.

10 DEVELOPMENT OF AMENDMENTS TO SOLAS CHAPTER II-2 AND THE FSS CODE CONCERNING DETECTION AND CONTROL OF FIRES IN CARGO HOLDS AND ON THE CARGO DECK OF CONTAINERSHIPS

Background

10.1 The Sub-Committee recalled that SSE 8 had considered specific proposals related to containership fires and had deferred consideration of documents SSE 8/10/1 (China) and SSE 8/10/2 (Denmark), containing technical proposals, to a future session of the Sub-Committee, together with the Formal Safety Assessment (FSA) Experts Group's report concerning detection and control of fires in cargo holds and on the cargo deck of containerships, for a holistic approach.

10.2 The Sub-Committee also recalled that MSC 106 had agreed to establish the FSA Experts Group with agreed terms of reference and that the report of the Group would be submitted directly to the SSE Sub-Committee for consideration, with a view to developing relevant amendments and instruments, as appropriate.

10.3 The Sub-Committee also recalled that SSE 9 had:

.1 noted that the CARGOSAFE FSA study, commissioned by the European Maritime Safety Agency (EMSA), had been completed and that the report would be submitted to MSC 107; and

.2 agreed to postpone consideration of the proposals in documents SSE 9/10 (Qatar et al.) and SSE 9/10/1 (Republic of Korea) to the next session, with a view to taking a holistic approach on this output, noting that the proposals would be better addressed together with the outcome of the expected meeting of the FSA Experts Group that would review the report of the CARGOSAFE FSA study.

10.4 In this regard, the Sub-Committee further recalled that MSC 107 had referred document MSC 107/10 (Sweden) on the CARGOSAFE study to the FSA Experts Group for a review, with a view to reporting to SSE 10.

Report of the FSA Experts Group

10.5 The Sub-Committee considered document SSE 10/10 (Chair of the FSA Experts Group), containing the report of the FSA Experts Group.

10.6 Having approved the report of the FSA Experts Group (SSE 10/10), in general, and having noted the discussions on the CARGOSAFE FSA study, the Sub-Committee noted, in particular, that:

.1 the scope of the study was clearly defined;

.2 the validity of the input data (transparency, comprehensiveness, availability, etc.) was acceptable;

.3 the expertise of the experts that participated in the study was adequate;

.4 accident scenarios, risk models and calculated risks; identified risk control measures (RCMs) and risk control options (RCOs); selection of RCOs for cost-benefit analysis (CBA); CBA results; and sensitivity analysis; were adequate;

.5 the methodologies appropriately reflected the aims of the study, and the methods and tools used were considered relevant;

.6 no deficiencies affecting the outcome were identified in the study;

.7 the study had been adequately conducted in accordance with the *Revised guidelines for Formal Safety Assessment (FSA) for use in the IMO rule-making process* (MSC-MEPC.2/Circ.12/Rev.2) (Revised FSA Guidelines);

.8 the recommendations in the study should be considered at this session for further action, together with the submissions already made to SSE 8 and SSE 9, for a holistic approach;

.9 the results and recommendations contained in the study were credible; and

.10 the Revised FSA Guidelines could be improved by addressing the observations made by the Group (SSE 10/10, paragraphs 4.19 to 4.21), possibly in conjunction with the recommendations made by the previous iteration of the FSA Experts Group that had reported to MSC 102 (MSC 102/12 and MSC 104/18, paragraph 10.4).

10.7 With regard to the Revised FSA Guidelines, the Sub-Committee invited MSC 109 to consider the FSA Experts Group's relevant observations (see paragraph 10.6.10 above).

Documents commenting on the CARGOSAFE study

Technical evaluation of the CARGOSAFE FSA study

10.8 The Sub-Committee considered document SSE 10/10/1 (IACS), providing information on the technical evaluation performed by IACS of the CARGOSAFE FSA study, and initial deliberations on the risk mitigating measures proposed therein.

10.9 In this respect, the Sub-Committee noted the following additional information provided by the observer from IACS:

.1 further review of the RCOs identified in the CARGOSAFE FSA study was necessary before drafting concrete amendments to the relevant instruments; and

.2 paragraph 3.1.1 of the annex to the document should be considered as a screening tool when reviewing the RCOs identified in the CARGOSAFE study, whereas paragraph 3.1.2 of the annex should be utilized in identifying relevant organs of the Organization to address those RCOs, as well as cross-cutting issues.

10.10 Following consideration, the Sub-Committee agreed to establish the FP Working Group, and to refer document SSE 10/10/1 to Group for further review (see paragraph 10.25).

Assessment of RCOs in the CARGOSAFE FSA study

10.11 The Sub-Committee considered document SSE 10/10/2 (France et al.), assessing several RCOs related to prevention, detection, extinction, and containment of fires on board containerships, as provided in the CARGOSAFE FSA study, and recommending them to be further considered by the Sub-Committee; and agreed to refer the document to the FP Working Group for further consideration.

Potential risk-prevention-related areas for consideration by the CCC Sub-Committee

10.12 The Sub-Committee considered document SSE 10/10/3 (Denmark et al.) proposing, as part of a holistic risk-based approach and for the prioritization of risk prevention and mitigation enhancement when developing amendments, to prepare a list of potential risk-prevention-related areas for consideration and action by the CCC Sub-Committee.

10.13 During consideration, the Sub-Committee noted the following views:

.1 the FP Working Group should consider the elements in document SSE 10/10/3 and, as also noted by the FSA Experts Group (SSE 10/10, paragraph 4.9.1), a bow tie approach should be taken for a holistic consideration of the matters; and

.2 there were some areas of risk prevention identified where the CCC Sub-Committee could provide technical input.

10.14 Subsequently, the Sub-Committee agreed to refer document SSE 10/10/3 to the FP Working Group for further consideration and preparation of a list of RCOs that needed to be addressed by the CCC Sub-Committee and other Sub-Committees, as appropriate.

Documents providing technical proposals postponed by SSE 8 and SSE 9

10.15 In relation to the documents that had been postponed by SSE 8 and SSE 9, the Sub-Committee agreed that priority should be given to the identification and prioritization of RCOs by the FP Working Group for a holistic and systematic approach, before considering the draft amendments contained therein.

Fixed water monitor as an alternative means for a mobile water monitor

10.16 The Sub-Committee considered document SSE 9/10 (Qatar et al.), proposing fixed water monitors as an alternative means for a mobile water monitor to improve the fire-fighting capability for the cargo deck area of containerships.

10.17 In the ensuing discussion, the following views were expressed:

.1 caution should be exercised regarding the use of fixed water monitors stationed on the bridge wings and other places on deck, as such installations might be damaged during loading and unloading operations, and would also interfere with ship's cargo operations;

.2 notwithstanding the view expressed in paragraph 10.17.1 above, fixed water monitors could be a significant improvement especially for larger containerships;

.3 such water monitors required a high output power and more data should be provided for justifying the proposals;

.4 mobile water monitors required by SOLAS regulation II-2/10.7.3 were affected by wind, limiting the fire extinguishing capability and, therefore, such an effect could be minimized by using fixed water monitors instead; and

.5 a more holistic approach should be taken and the proposals should be discussed in detail by the FP Working Group.

10.18 In view of the above, the Sub-Committee agreed to refer document SSE 9/10 to the FP Working Group for consideration of the draft amendments to SOLAS regulation II-2/10.7.3 and draft guidelines for fixed water monitors, based on annexes 1 and 2 of the document, in light of the identification and prioritization of the most viable RCOs (see paragraph 10.15).the most viable RCOs.

Video fire detection systems

10.19 The Sub-Committee considered the following documents regarding video fire detection systems:

.1 SSE 9/10/1 (Republic of Korea), proposing a Video Fire Detection System as an alternative means for a fire detection system to improve the detection capability of fires on deck cargo areas of containerships; and

.2 SSE 10/INF.12 (Republic of Korea), providing further information on the performance tests and onboard tests of the Video Fire Detection System, in support of document SSE 9/10/1.

10.20 During consideration, the Sub-Committee noted the following views expressed:

.1 the experience gained in using video fire detection systems was considered limited and they were mainly installed in engine rooms and not open spaces, due to their limitations; and could not, therefore, be supported;

.2 improved detection was considered essential for early detection; however, limitations, such as adverse weather effects and detection at night, require further consideration and should, therefore, be further discussed in the FP Working Group;

.3 further data should be provided with respect to real life implementation of such systems before consideration be given to the proposals; and

.4 bearing in mind that the integration of new, emerging and advancing technologies in the regulatory framework being one of the strategic directions of the Organization (resolution A.1173(33)), the proposals were, therefore, supported.

10.21 In view of the above, the Sub-Committee agreed to refer documents SSE 9/10/1 and SSE 10/INF.12 to the FP Working Group for consideration of the application of a video fire detection system as an alternative fire detection system for on-deck cargo areas of containerships, in light of the identification and prioritization of most viable RCOs (see paragraph 10.15).

Portable infrared thermal imagers and thermometers

10.22 The Sub-Committee considered document SSE 8/10/1 (China), proposing to enhance the capabilities of containerships for early fire detection in cargo holds and on cargo decks through portable infrared (IR) thermal imagers and thermometers, and agreed to refer document SSE 8/10/1 to the FP Working Group for consideration of the proposal contained therein, in light of the identification and prioritization of most viable RCOs (see paragraph 10.15).

Standards for water mist lances

10.23 The Sub-Committee considered document SSE 8/10/2 (Denmark), commenting on document SSE 8/10 (Bahamas et al.) and proposing draft guidelines for the design, performance, testing and approval of water mist lances used for the protection of on-deck cargo areas of ships designed and constructed to carry containers on or above the weather deck; and agreed to refer document SSE 8/10/2 to the FP Working Group for consideration of the proposal contained therein, in light of the identification and prioritization of most viable RCOs (see paragraph 10.15).

Establishment of the FP Working Group

10.24 Subsequently, the Sub-Committee established the Working Group on Fire Protection (FP) and instructed it, taking into account comments made, and decisions taken, in plenary, to:

.1 consider documents SSE 10/10, SSE 10/10/1, SSE 10/10/2 and SSE 10/10/3, and to:

.1 evaluate and prioritize most viable RCOs mentioned in the CARGOSAFE FSA study (MSC 107/10) to be utilized in preparing

draft amendments to SOLAS and the International Code for Fire Safety Systems (FSS Code), as well as new draft guidelines involving performance standards (e.g. for mobile water monitors and water mist lances), as appropriate; and

.2 prepare a list of RCOs that need to be addressed by the CCC Sub-Committee in particular, and other Sub-Committees (e.g. HTW Sub-Committee), as appropriate; and

.2 in light of the identification and prioritization of most viable RCOs, consider:

.1 the draft amendments to SOLAS regulation II-2/10.7.3 and draft guidelines for fixed water monitors, based on annexes 1 and 2 of document SSE 9/10;

.2 the proposals contained in documents SSE 9/10/1 and SSE 10/INF.12 on the application of video fire detection on deck cargo areas of containerships;

.3 the proposals contained in document SSE 8/10/1 on the use of portable infrared thermal imagers and thermometers for early detection; and

.4 the proposals contained in document SSE 8/10/2 on draft guidelines for the design, performance, testing and approval of water mist lances.

Report of the FP Working Group

10.25 Having considered the relevant part of the report of the FP Working Group (SSE 10/WP.4), the Sub-Committee noted the Group's comprehensive discussion on the RCOs identified in table 91 (Summary of cost-effectiveness of all RCOs for the three generic ships) of the CARGOSAFE study, together with relevant documents and proposals therein and various relevant casualty reports, as outlined below.

Technical submissions and discussions

Fixed fire detection within the cargo hold

10.26 In relation to fixed fire detection within the cargo hold, the Sub-Committee noted that:

.1 all suitable fire detection systems which provide heat detection of individual containers within the container spaces, needed to be considered before making a final recommendation, given the novelty of the system within marine applications;

.2 fire detection systems with point detectors might also be considered because large parts of the deck above cargo consisted of hatch covers that were lifted away before loading and unloading operations; and

.3 sample extraction smoke detection systems could complement any system on heat detection of individual containers and, therefore, it was not necessary to amend the existing requirements for sample extraction smoke detection systems.

Fixed fire detection for containers carried on deck, including video fire detection system

10.27 With regard to fixed fire detection for containers carried on deck, including video fire detection system proposed in document SSE 9/10/1, the Sub-Committee noted that a linear heat detection system could be suitable for containers up to the level of lashing bridge. Having also noted the need for additional discussion, the Sub-Committee agreed to further consider fixed fire detection for containers carried on deck, including video fire detection systems proposed in documents SSE 9/10/1 and SSE 10/INF.12, at SSE 11.

Portable infrared (IR) thermal imagers and thermometers

10.28 Regarding the proposals in document SSE 8/10/1 on IR thermal imagers and thermometers, the Sub-Committee:

.1 noted that they might be beneficial as supplementary tools for the early confirmation of fire and observing the development thereof, and the need for further discussion; and

.2 agreed to re-establish the Correspondence Group on Fire Protection (FP) (see paragraph 10.41) to further consider the proposal in document SSE 8/10/1 on portable infrared (IR) thermal imagers and thermometers.

Water mist lances

10.29 In relation to the proposals in document SSE 8/10/2, the Sub-Committee noted that development of relevant guidelines on water mist lances was necessary. Therefore, the Sub-Committee instructed the FP Correspondence Group (see paragraph 10.41) to:

.1 consider the draft guidelines for the design, performance, testing and approval of water mist lances used for the protection of on-deck cargo areas of ships designed and constructed to carry containers on or above the weather deck, set out in document SSE 8/10/2; and

.2 further consider the feasibility of the means for extended reach for breaching tools to be used in conjunction with water mist lances, taking into account document SSE 8/10/2.

10.30 In this respect, the Sub-Committee encouraged interested Member States and international organizations to share their experience on using water mist lances in the FP Correspondence Group.

Mobile water monitors

10.31 With respect to the use of mobile water monitors, the Sub-Committee noted the need to explore if existing systems could be improved, e.g. revising MSC.1/Circ.1472 or adding new functionality, such as remote, directional control of these water monitors. Therefore, the Sub-Committee instructed the FP Correspondence Group (see paragraph 10.41) to consider the matter in detail.

Fixed water monitors

10.32 Regarding the proposals in document SSE 9/10, the Sub-Committee noted that:

.1 replacing the current provisions of mobile water monitors, as proposed in annex 1 of document SSE 9/10, could not be supported; and

.2 while acknowledging that fixed water monitor systems could serve as an effective fire-fighting system, in particular for very large and ultra-large containerships, the identified challenges (SSE 10/WP.4, paragraph 26) needed to be properly analysed.

10.33 Therefore, the Sub-Committee instructed the FP Correspondence Group (see paragraph 10.41) to further consider what kind of systems would be suitable for large deck cargo arrangements and analyse implications of fixed water monitor systems, taking into account the relevant part of document SSE 9/10 and the challenges identified in paragraph 26 of document SSE 10/WP.4.

Fixed CO_2 fire-extinguishing systems

10.34 Regarding fixed CO_2 fire-extinguishing systems, the Sub-Committee noted the need for further discussion on the matter, taking into account the relevant parameters identified (SSE 10/WP.4, paragraph 29).

10.35 Therefore, the Sub-Committee instructed the FP Correspondence Group (see paragraph 10.41) to further consider the relevant requirements for fixed CO_2 fire extinguishing systems applicable to containerships, taking into account the parameters in paragraph 29 of document SSE 10/WP.4.

Protection of hatch covers

10.36 With regard to the protection of hatch covers, the Sub-Committee noted the outcome of the consideration on active protection systems (SSE 10/WP.4, paragraphs 32 to 34), e.g. spraying water horizontally below the hatch coaming and deluge systems integrated into the pontoon hatches, as well as passive protection systems, e.g. A-60 protection below the hatches; and the need for further discussion at SSE 11.

Other topics

10.37 The Sub-Committee noted that the implementation of some measures might impact other systems or other parts of the existing requirements, e.g. water pump capacity, bilge capacity and breathing air capacity, stored air and compressor arrangement for fire-fighters, as well as type and number of fire-fighters' outfits; and that these systems would need to be further discussed at SSE 11.

Future discussion

10.38 In view of the above, the Sub-Committee agreed that further consideration was necessary at the next session for the following items:

.1 video fire detection system;

.2 protection of hatch covers; and

.3 implication of some measures on other systems or other parts of the existing requirements, e.g. water pump capacity, bilge capacity and breathing air capacity, stored air and compressor arrangement for fire-fighters, as well as type and number of fire-fighters' outfits.

List of risk-prevention-related areas to be considered by other sub-committees

10.39 Regarding other items in connection with containership fire safety, the Sub-Committee agreed to invite CCC 10 and HTW 11 to note and to consider the following non-exhaustive list of risk-prevention-related areas identified by the Sub-Committee, with a view to taking action, as deemed appropriate:

For consideration by the CCC Sub-Committee

.1 improved training of shore-side personnel throughout the supply chain, (e.g. consideration of identification/certification regimes for shippers/handlers);

.2 measures to encourage, ensure and improve the quality and reliability of shipper's declaration (e.g. conducting Member State implementation of inspection programmes for all cargo transport units, including those carrying dangerous goods and reporting to IMO; encouraging Member State law enforcement for cooperation regarding shipper's mis-declaration and non-declaration of dangerous goods; shippers supplying the carrier with photographic and/or other reliable documentary evidence of cargo stowage and segregation compliance with the IMDG Code);

.3 container scanning process in port;

.4 stowage provisions for cargoes, which the CCC Sub-Committee considers relevant for container fire safety. For example: Should class 5.1 (oxidizers) or other cargo classes be continued to be allowed under deck, or should on deck stowage only be regulated?; and

.5 risk control measures (RCMs) in paragraph 4.3.1 of the CARGOSAFE study report, noting that the list might not be completed at this stage; and

For consideration by the HTW Sub-Committee

.1 training of seafarers (fire-fighting for the cargoes in question, etc.).

10.40 In this respect, the Sub-Committee:

.1 encouraged interested Member States and international organizations to submit further proposals for addition to the list of risk-prevention-related areas to SSE 11, taking into account paragraph 4.3.1 (Risk Control Measures) of the CARGOSAFE study report; and

.2 invited interested Member States and international organizations to make relevant submissions to CCC 10, under the agenda item on "Any other business", for CCC 10, and to HTW 11 under the agenda item on "Comprehensive review of the 1978 STCW Convention and Code", for, respectively, referring to the outcome of SSE 10.

Re-establishment of the FP Correspondence Group

10.41 In view of the above, the Sub-Committee re-established the Correspondence Group on Fire Protection (FP) under the coordination of Norway,[3] and instructed it, taking into account comments made and decisions taken at SSE 10, to:

.1 further consider the proposal in document SSE 8/10/1 on portable infrared (IR) thermal imagers and thermometers;

.2 consider the proposed draft guidelines for the design, performance, testing and approval of water mist lances used for the protection of on-deck cargo areas of ships designed and constructed to carry containers on or above the weather deck, set out in document SSE 8/10/2;

.3 further consider the feasibility of the means for extended reach for breaching tools to be used in conjunction with water mist lances, taking into account document SSE 8/10/2;

.4 explore if the existing mobile water monitor systems could be improved, e.g. by revising MSC.1/Circ.1472 or adding new functionality, such as remote, directional control of the mobile water monitors;

.5 further consider what kind of system would be suitable for large deck cargo arrangements and analyse implications of fixed water monitor systems, taking into account the challenges in paragraph 26 of document SSE 10/WP.4;

.6 further consider the relevant requirements for fixed CO_2 fire extinguishing systems applicable to containerships, taking into account the parameters in paragraph 29 of document SSE 10/WP.4; and

.7 submit a report to SSE 11.

11 VALIDATED MODEL TRAINING COURSES

Background

11.1 The Sub-Committee recalled that MSC 100 had instructed the sub-committees to consider whether model courses under their responsibility might need to be revised (namely Model Courses 3.03 to 3.06 for the SSE Sub-Committee) and, if it were the case, to do so in accordance with the revised *Guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15/Rev.2) at the earliest opportunity, in consultation with the Secretariat in order to streamline the process.

11.2 The Sub-Committee also recalled that SSE 7 had discussed the need for revising model courses under its purview and the applicable procedures, and had agreed that all model courses should be revised in due course, with priority being given to the revision of Model Course 3.03 on Survey of Machinery Installations.

[3] **Coordinator (Norway):**
Mr. Kim Are Paulsen
Senior Surveyor
Norwegian Maritime Authority
Phone: +47 99 63 95 08
Email: kap@sdir.no

11.3 The Sub-Committee further recalled that SSE 9 had:

.1 agreed and validated revised Model Course 3.03 and its compendium;

.2 approved the draft terms of reference for the course developer and the Review Group for the revision of Model Course 3.04 on Survey of Electrical Installations, with a view to validation of the revision at this session; and

.3 established a Review Group to work between sessions by correspondence to review the revision of Model Course 3.04.

Draft revised Model Course 3.04

11.4 The Sub-Committee considered document SSE 10/11 (Secretariat), containing the report of the Review Group on draft revised Model Course 3.04 on Survey of Electrical Installations.

11.5 In this regard, the Sub-Committee noted that the draft revised Model Course 3.04 had been developed by Mr. Jake De Guzman (IACS) and reviewed by the Review Group, coordinated by Capt. Vinayak Mohla (GlobalMET), and expressed its appreciation for their work.

11.6 Having agreed to the draft revision in principle, the Sub-Committee established the Drafting Group on Model Courses and instructed it to finalize draft revised Model Course 3.04, based on document SSE 10/11, with a view to validation.

11.7 The Sub-Committee recalled that SSE 7 had also agreed to revise the following model courses (see paragraph 11.2):

.1 Model Course 3.05 on Survey of Fire Appliances and Provisions; and

.2 Model Course 3.06 on Survey of Life-saving Appliances and Arrangements.

11.8 Therefore, the Sub-Committee tasked the Drafting Group to consider which of the model courses under the purview of the Sub-Committee should be revised next, and to prepare the draft terms of reference for the Review Group accordingly, based on the progress made by the Group on the finalization of Model Course 3.04 at this session.

Establishment of the Drafting Group on Model Courses

11.9 The Sub-Committee established the Drafting Group on Model Courses and instructed it, taking into account the comments made and decisions taken in plenary, to:

.1 finalize draft revised Model Course 3.04, based on document SSE 10/11, with a view to validation; and

.2 consider which of the model courses under the purview of the Sub-Committee should be revised next and prepare the draft terms of reference for the course developer(s) and the Review Group, with a view to reporting to SSE 11.

Report of the Drafting Group

11.10 Having considered the report of the Drafting Group on Model Courses (SSE 10/WP.5), the Sub-Committee took actions, as outlined below.

Revision of Model Course 3.04

11.11 The Sub-Committee noted, in particular, that:

.1 the general structure of the model course had been aligned as per the nomenclature prescribed in the revised Guidelines (MSC-MEPC.2/Circ.15/Rev.2);

.2 entry standards, references and bibliography in part A (Course framework); duration of the course in part B (General outline); the action verbs for the Knowledge, Understanding and Proficiency (KUPs) in part C (Detailed outline); and headings of various sections in part D (Instructor manual) had been reviewed; and

.3 appendix I had been amended, in accordance with the revised Guidelines (MSC MEPC.2/Circ.15/Rev.2).

Validation of the revision of Model Course 3.04

11.12 Subsequently, the Sub-Committee agreed to the draft revised Model Course 3.04 and validated it; and requested the Secretariat to finalize and publish it as soon as possible.

Participation in the Review Group and Drafting Group on model courses

11.13 The Sub-Committee noted that not many participants had joined the discussions in the Drafting Group on Model Courses and, therefore, encouraged active participation of more members in both the Review Group and the Drafting Group at future sessions to enhance the quality of future work on model courses, which remained instrumental for maritime training in general.

Revision of Model Course 3.05

11.14 The Sub-Committee agreed that the next model course to be revised should be the Model Course 3.05 on Survey of Fire Appliances and Provisions (2004).

Establishment of the Review Group

11.15 In this respect, the Sub-Committee:

.1 established a Review Group to work intersessionally by correspondence to review the draft revision of Model Course 3.05 on Survey of Fire Appliances and Provisions, with the terms of reference for the course developer(s) and the Review Group as set out in the annex to document SSE 10/WP.5;

.2 invited Member States and international organizations to take on the role as Review Group coordinator, course developer and members of the Review Group (see paragraph 11.13);

.3 invited interested delegations to notify the Secretariat of the contact details of participating members of the Review Group within one month from the publication of the report of this session, through the following registration form link: https://forms.office.com/e/s013Kpm5AA; and

.4 requested the Secretariat to take the necessary action for the hiring of developers for the revision of the model course, subject to the Secretariat's contracting process, if need be.

12 UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, ENVIRONMENT, FACILITATION, LIABILITY AND COMPENSATION-RELATED CONVENTIONS

12.1 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 (UIs) to provisions of IMO safety, security and environment-related conventions, so that any newly developed or updated draft unified interpretation could be submitted for consideration by the Sub-Committee, with a view to developing an appropriate IMO interpretation.

12.2 The Sub-Committee also recalled that MSC 107 had:

.1 discussed whether unanimity should be required for the approval of a draft unified interpretation, taking into account that its previous practice had been to approve it only if there had been unanimous support. The Director of the Legal Affairs and External Relations Division had advised the Committee that amendments to mandatory international instruments under IMO, such as SOLAS, usually required only a two-thirds majority for entry into force, and not unanimity. Therefore, the previous practice had been somewhat illogical in light of the hierarchy in the Vienna Convention on the Law of Treaties;

.2 requested the Secretariat to provide legal advice to MSC 108 on how to approach the approval of UIs when there was no unanimity, for consideration under the agenda item "Any other business"; and

.3 agreed to continue to follow that approach until it had made a policy decision[4] on the matter of the approval of UIs.

LSA-RELATED MATTERS

Launching of rescue boats on a cargo ship

12.3 The Sub-Committee recalled that SSE 9 had:

.1 considered documents SSE 8/15/2 (IACS), SSE 9/14/3 (IACS) and SSE 9/14/7 (China), seeking clarification on the implementation of paragraphs 6.1.1.3, 6.1.2.2 and 6.1.2.6 of the LSA Code in relation to the launching of rescue boats on a cargo ship; and

.2 agreed, in principle, with the proposals to establish a UI on the requirement for manual hoisting of a dedicated rescue boat in the LSA Code and, having noted that further consideration was necessary intersessionally, had instructed the LSA Correspondence Group to consider documents SSE 8/15/2, SSE 9/14/3 and SSE 9/14/7, with a view to finalization of a relevant UI.

[4] Refer to document MSC 108/20, section 19

Report of the Correspondence Group and commenting documents

12.4 The Sub-Committee approved, in general, the report of the LSA Correspondence Group (SSE 10/14) and considered its relevant part, together with the following documents:

.1 SSE 10/12/7 (IACS), commenting on the proposed interpretations of paragraphs 6.1.1.3 and 6.1.2.2 of the LSA Code, with a view towards universal and uniform implementation;

.2 SSE 10/12/12 (China), commenting on the draft interpretations of paragraphs 6.1.1.3 and 6.1.2.2 of the LSA Code; and

.3 SSE 10/12/13 (India), commenting on the proposed draft unified interpretation of paragraph 6.1.2.2 of the LSA Code, with a view to consistent implementation of the requirements.

12.5 In this regard, the Sub-Committee noted the following views:

.1 with respect to the interpretation of paragraph 6.1.2.2 of the LSA Code (launching of a survival craft/rescue boat by one person), the draft UI, provided in paragraph 3 of annex 1 of document SSE 10/14, could be further refined and; with respect to the interpretation of paragraph 6.1.1.3 of the LSA Code (requirements for a launching appliance to be independent of the ship's power supplies), if the proposed alternative UI in paragraph 20 of document SSE 10/12/7 would not be acceptable then a decision should be made on using a tilting cradle, as it would remain the only option available, which was not regulated and defined in SOLAS;

.2 the proposal in document SSE 10/12/12 to remove the wording "by stored mechanical power" was not supported, as it could lead to misinterpretation;

.3 the outcome of the LSA Correspondence Group discussion was supported, including the additional draft interpretation on launching mechanism;

.4 notwithstanding the view expressed in paragraph 12.5.3 above, the additional interpretation of launching mechanism was not supported, as it could cause confusion, e.g. in a scenario where no person boarded a rescue boat before launching and a designated person boarded on deck side after launching; and

.5 the proposal in document SSE 10/12/13 was supported, as the amendments adopted by resolution MSC.459(101) were already applicable to rescue boats and the reference to the resolution could be deleted.

12.6 In this context, the Sub-Committee concluded that more discussion was necessary and instructed the LSA Correspondence Group (see paragraphs 4.15 and 12.14) to re-consider the draft UIs of paragraphs 6.1.1.3 and 6.1.2.2 of the LSA Code regarding the launching of rescue boats, based on document SSE 10/14 (relevant part), and taking into account documents SSE 10/12/7, SSE 10/12/12 and SSE 10/12/13 for advice and action, as appropriate.

Applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats

12.7 The Sub-Committee considered document SSE 10/12/8 (IACS), commenting on document SSE 10/14, relating to the applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats, with a view towards universal and uniform implementation by providing a draft UI.

12.8 In the ensuing discussion, the Sub-Committee noted that the wording of the draft UI might need to be clarified by adding the word "also", as follows (modification in grey shading):

> "SOLAS regulation III/20.11 and resolution MSC.402(96) should also be applicable to inflated rescue boats."

12.9 Having concurred with the above modification, the Sub-Committee agreed to the draft MSC circular on UIs of SOLAS regulations III/20.8.4 and 20.11 and of resolution MSC.402(96) on the applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats, as modified, as set out in annex 3, with a view to approval by MSC 109.

Unified interpretation of SOLAS regulation III/11.2

12.10 The Sub-Committee considered document SSE 10/12/11 (China), providing a draft UI of SOLAS regulation III/11.2 regarding "all persons assigned to muster at that station".

12.11 During consideration, the Sub-Committee noted the additional explanation of the submitter that the intention of the proposal was to clarify that all persons should be taken into account and accommodated in muster stations on cargo ships, including the crew, passengers, industrial personnel, etc., in order to avoid any safety risks.

12.12 In this context, the following views were expressed:

.1 the proposal could not be supported, as:

.1 the intention of the proposal was to address a problem on cargo ships. However, in its current form, the proposed UI would be applicable to all ships, including passenger ships; and

.2 it was not clear whether the proposed interpretation required that all the muster stations combined should be able to accommodate 100% of the persons on board, or whether each muster station should have this capacity; and

.2 although the proposal merited attention, this should not be considered as a UI.

12.13 Following consideration, the Sub-Committee did not endorse the proposed UI, and invited China and interested delegations to note the comments made and to take action, as appropriate.

Instructions to the LSA Correspondence Group

12.14 The Sub-Committee instructed the LSA Correspondence Group established under agenda item 4 (see paragraph 4.15), taking into account the comments made and decisions taken in plenary, to re-consider the draft UIs of paragraphs 6.1.1.3 and 6.1.2.2 of the LSA Code regarding the launching of rescue boats, based on document SSE 10/14 (relevant part), and taking into account documents SSE 10/12/7, SSE 10/12/12 and SSE 10/12/13 for advice and action, as appropriate.

FP-RELATED MATTERS

Matters addressed by the FP Correspondence Group

12.15 The Sub-Committee recalled that SSE 9 had considered documents SSE 8/15/1, SSE 8/15/8, SSE 8/15/9, SSE 8/15/13 and SSE 9/14/1, submitted by IACS, and SSE 9/14/5 (China), containing draft UIs, and had referred them to the FP Correspondence Group for further consideration and advice to this session.

Report of the Correspondence Group

12.16 The Sub-Committee considered document SSE 10/13 (Norway), containing the relevant part of the report of the FP Correspondence Group and, having approved it in general, took action as outlined below.

Means of escape from the steering gear space on cargo ships (SSE 8/15/1)

12.17 With regard to the draft UI, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on the clarification of SOLAS requirements relating to the means of escape from the steering gear space on cargo ships;

.2 also noted the view that the FP Correspondence Group's discussion did not indicate a particular objection to the technical content of the proposed draft UI. Nevertheless, the FP Correspondence Group concluded that a new output might be needed and, therefore, the technical basis for such a conclusion should be clarified. If the Sub-Committee agreed with the FP Correspondence Group's recommendation, this should also be required for some other proposals reviewed by the FP Correspondence Group; and

.2 agreed that a UI was not needed and, therefore, invited IACS to note the comments made and to take action, as appropriate.

Draft unified interpretation of SOLAS and the IBC Code (SSE 8/15/9)

12.18 The Sub-Committee agreed to the draft "Unified interpretation of SOLAS regulation II-2/4.5.6.1 and paragraphs 3.1.2, 3.1.4 and 3.5.3 of the IBC Code", as revised, by adding the wording "those serving for inerting gas supply and" after the word "except", in the first paragraph of the draft UI, and the effective date of "1 January 2026", together with the associated draft MSC circular, as set out in annex 4, with a view to approval by MSC 109.

Testing requirements in SOLAS for floor covering materials (SSE 8/15/13)

12.19 With regard to the draft UI, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on testing requirements in SOLAS for floor covering materials; and

.2 endorsed the FP Correspondence Group's conclusion that amendments to SOLAS regulation II-2/6.2 were necessary under a new output; and invited IACS and interested delegations to submit proposals for a relevant new output in accordance with the Committees' organization and method of work (MSC-MEPC.1/Circ.5/Rev.5), taking into account annex 3 of document SSE 10/13, as appropriate.

Requirements in chapter 15 of the FSS Code on inert gas systems on tankers (SSE 8/15/8)

12.20 With regard to the draft UI, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on the requirements in chapter 15 of the FSS Code relating to inert gas systems on tankers; and

.2 agreed that a UI was not needed; and, therefore, invited IACS to note the comments made and to take action, as appropriate.

Requirements in chapter 5 of the FSS Code relating to air testing fitting (SSE 9/14/5)

12.21 With regard to the draft UI, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on requirements in chapter 5 of the FSS Code relating to air testing fittings installed in the discharge piping of fixed carbon dioxide systems; and

.2 endorsed the Group's conclusion that amendments to the FSS Code were necessary under a new output; and invited China and interested delegations to submit proposals for a relevant new output in accordance with the Committees' Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5), taking into account annex 5 of document SSE 10/13, as appropriate.

Required air changes for the carriage of dangerous goods (SSE 9/14/1)

12.22 With regard to the draft UI, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on the requirements in SOLAS chapter II-2 relating to required air changes for the carriage of dangerous goods; and

.2 agreed that a UI was not needed and, therefore, invited IACS to note the comments made and to take action, as appropriate.

Unified interpretation of SOLAS regulation II-2/11.4.1

12.23 The Sub-Committee considered document SSE 10/12 (IACS), proposing a draft interpretation of SOLAS regulation II-2/11.4.1, with a view to ensuring consistent implementation of this provision for passenger ships and cargo ships.

12.24 During consideration, the Sub-Committee noted the need for clarification of the proposed draft UI and agreed to modify it, as follows (modifications in grey shading):

> "The crown of a machinery space of category A should be understood to mean the underside of the deck and the uppermost horizontal part of the main space of the machinery space. ~~The crown should mean either the underside of a deck or, if the side bulkheads are sloping, the uppermost part beyond the point at which the slope terminates~~ If the upper side bulkheads are sloping, the sloping parts of the bulkheads should be included in the crown."

12.25 Following consideration, the Sub-Committee agreed to the draft MSC circular on UI of SOLAS regulation II-2/11.4.1 on the crowns of a machinery space of category A, as modified and as set out in annex 5, with a view to approval by MSC 109.

Unified interpretation of SOLAS regulation II-2/4.2.2.3.5.2.1

12.26 The Sub-Committee considered document SSE 10/12/1 (IACS), proposing a UI of SOLAS regulation II-2/4.2.2.3.5.2.1 regarding acceptable equivalent arrangements relating to level gauges with self-closing valves for oil tanks in passenger ships.

12.27 During consideration, the Sub-Committee noted the following views:

.1 the technical content of the proposal was supported; however, consideration should be given to whether a SOLAS amendment might be a more appropriate way forward;

.2 there was still room for improvement with regard to the wording of the draft UI;

.3 the draft text seemed beyond an interpretation and amendments to SOLAS might be necessary instead of a UI; and

.4 notwithstanding the views expressed in the above sub-paragraphs, the proposed UI was supported as it did not conflict with SOLAS requirements and was intended to clarify penetration of hydraulic and/or lubrication oil tanks, i.e. non-fuel oil tanks.

12.28 Subsequently, the Sub-Committee did not endorse the proposed UI, and invited IACS and interested delegations to note the comments made and to take action, as appropriate, with a potential revision of the proposal, taking into account the views expressed, to be submitted to a future session of the Sub-Committee.

Unified interpretation of SOLAS regulation II-2/4.2.4

12.29 The Sub-Committee considered document SSE 10/12/2 (IACS), proposing a UI regarding the fitting of the small-diameter self-closing control cock required by SOLAS regulation II-2/4 on sounding pipes in certain tanks.

12.30 During consideration, the Sub-Committee noted the following views:

.1 SOLAS regulation II-2/4.2.2.3.5.1.3 applied to all tanks containing fuel oils, lubricating oils and other flammable oils regardless of whether they were pressurized or not. Therefore, exempting the tanks listed in paragraph 2 of the draft UI was not supported. In addition, the way the interpretation was

drafted would exempt main engine scavenge drain tanks in engine rooms with large two-stroke engines. Opening the sounding pipes of these tanks without ensuring that pressure was released, could lead to serious injury to ship's crew. Such an approach could reduce the stringency of the regulation;

.2 notwithstanding the view expressed in paragraph 12.30.1 above, the proposal could be supported, in general, with some additional clarifications required; and

.3 the proposal had technical merits; however, further consideration was necessary as to whether a UI or amendments should address the issue.

12.31 Following consideration, the Sub-Committee concluded that more discussion was necessary and instructed the FP Correspondence Group (see paragraphs 10.41 and 12.38) to consider document SSE 10/12/2 (IACS), with a view to advising on how best to proceed, including the validity of the proposed UI.

Unified interpretation of SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2

12.32 The Sub-Committee considered document SSE 10/12/5 (IACS), proposing a UI on the secondary means of venting cargo tanks required in SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2, as amended by resolution MSC.392(95), to achieve a unified understanding and implementation.

12.33 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the proposal was supported in general; however, the quoted text of SOLAS regulation II-2/11.6.3.2 did not reflect the amendments made by resolution MSC.392(95); and

.2 the wording of the first sentence in the first paragraph of the draft UI could be improved, as follows (modification in grey shading):

"For ships that apply pressure sensors in each tank, as an alternative to having the secondary means of venting, as per SOLAS regulation II-2/11.6.3.2, the setting of the over-pressure alarm should be above the pressure setting of the P/V valve and the setting of the under-pressure alarm should be below the vacuum setting of the P/V valve."

12.34 Having concurred with the suggested modification, the Sub-Committee agreed to the draft MSC circular on UI of SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2 on the secondary means of venting cargo tanks, as modified, as set out in annex 5, with a view to approval by MSC 109.

Unified interpretation of paragraph 2.2.1.7 of chapter 5 of the FSS Code

12.35 The Sub-Committee considered document SSE 10/12/10 (United States), proposing draft amendments to the UI of paragraph 2.2.1.7 of chapter 5 of the International Code for Fire Safety Systems (FSS Code) in the *Unified interpretations of chapters 5, 6 and 9 of the FSS Code* (MSC.1/Circ.1528).

12.36 During consideration, the following views were expressed:

.1 although the proposal was supported in general, some technical and editorial improvements were necessary, e.g. the phrase "regular human occupancy" needed further clarification; and

.2 the proposal could be better addressed under a new output as the draft modifications were considered significant.

12.37 Following consideration, the Sub-Committee did not support the proposal and invited the United States and interested delegations to note the comments made and to take action, as appropriate.

Instructions to the FP Correspondence Group

12.38 The Sub-Committee instructed the FP Correspondence Group established under agenda item 10 (see paragraph 10.41), taking into account the comments made, and decisions taken, in plenary, to consider document SSE 10/12/2 (IACS) on the fitting of the small-diameter self-closing control cock, with a view to advising on how best to proceed, including the validity of the proposed UI.

OTHER MATTERS

Minor corrections to MSC.1/Circ.1276/Rev.1

12.39 The Sub-Committee:

.1 recalled that the *Revised unified interpretations of SOLAS chapter II-2* (MSC.1/Circ.1276/Rev.1) had been approved by MSC 107, incorporating amendments agreed by SSE 9; and

.2 noted that, in preparing the revision of the circular, there was an oversight with regard to the referenced SOLAS regulation II-2/9.7.5 (Exhaust ducts from galley ranges), as the draft amendments to the UI were meant for SOLAS regulation II-2/9.7.5.1 only (Requirements for passenger ships carrying more than 36 passengers).

12.40 Therefore, the Sub-Committee concurred with the replacement of the references to "SOLAS regulation II-2/9.7.5" with references to "SOLAS regulation II-2/9.7.5.1"; and agreed to the draft MSC circular on Revised unified interpretations of SOLAS chapter II-2, as set out in annex 6, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1276/Rev.2.

Single electric propulsion motors

12.41 The Sub-Committee recalled that SSE 9 had:

.1 considered document SSE 8/15/3 (IACS), seeking clarification of requirements of SOLAS regulation II-1/26.2 for single essential propulsion components and their reliability, and offering a draft interpretation thereof; and

.2 agreed to the draft MSC circular on Unified interpretation of SOLAS chapter II-1 (SSE 9/20, annex 16), for approval by MSC 107, as the proposal would improve the safety of ships with unconventional propulsion designs available as of today; and had noted that future submissions could be considered involving other unconventional propulsion designs for a more holistic approach.

12.42 The Sub-Committee also recalled that MSC 107 had:

.1 considered the draft UI agreed by SSE 9, together with document MSC 107/14/1 (IACS), proposing an alternative application date, i.e. 1 July 2024;

.2 noted diverging views on the draft UI (SSE 9/20, annex 16), and had referred it back to this session for further consideration, given that unanimity had not been reached;

.3 invited Finland and other interested Member States, as well as international organizations to submit proposals regarding the draft unified interpretation; and

.4 requested the Secretariat to provide legal advice to MSC 108 on how to approach the approval of unified interpretations when there was no unanimity.

12.43 In this respect, the Sub-Committee considered the following documents:

.1 SSE 10/12/3 (Secretariat), providing information on the outcome of SSE 9 and MSC 107 on single essential propulsion components and their reliability; and

.2 SSE 10/12/9 (IACS), providing comments on document SSE 10/12/3, elaborating on the safety concerns regarding electric motors provided with two stator windings within the same stator iron core as being not tolerant to a single failure of a winding, and inviting the Sub-Committee to confirm the decision which was taken at SSE 9 to agree to the UI presented in document SSE 8/15/3, for approval by MSC 109.

12.44 Furthermore, the Sub-Committee noted the information in document SSE 10/INF.7 (Finland) on the reliability of electric motors as propulsion components.

12.45 In the ensuing discussion, the Sub-Committee considered, in particular, the draft UI set out in annex 16 of document SSE 9/20, in light of the additional submissions made to this session; and noted the following views expressed:

.1 the draft unified interpretation was supported; however, it should be applied to passenger ships only due to their specificities and, in particular, the requirement for safe return to port under SOLAS regulation II-2/21. A more holistic approach to address all propulsion designs should continue under a new output and, therefore, the information provided in document SSE 10/INF.7 should be considered in light of this potential new output;

.2 notwithstanding the view expressed in paragraph 12.45.1 above, the significant portion of the information provided in document SSE 8/15/3 was not current and, therefore, not sufficient to validate the concerns regarding the reliability of single motor propulsions. Additionally, it was considered that the recent failures as stated in documents SSE 10/12/9 and SSE 10/INF.7 would not be sufficient to determine whether a UI was necessary, and document SSE 10/12/9 provided contradictory data. Therefore, more up-to-date research and data were required for future consideration and the proposal could not be supported at that stage;

.3 the hazards described in document SSE 8/15/3 required immediate attention and the conclusion of SSE 9 should be confirmed by the Sub-Committee for approval by the Committee;

.4 SOLAS lacked the definitions for conventional and unconventional arrangements; and

.5 for a more holistic approach, interested stakeholders were invited to gather and submit up-to-date data with regard to reliability and failures of all single essential propulsion components.

12.46 In this context, the following statements were made, the full texts of which are set out in annex 18:

.1 Finland made a statement with regard to their concerns that the draft UI would have an impact on currently allowed designs and arrangements on cargo ships and that the data provided in documents SSE 8/15/3 and SSE 10/12/9 was not sufficient to validate the safety concerns regarding the reliability of electric motors; and

.2 IACS made a statement with regard to the specific comments contained in document SSE 10/INF.7, in particular emphasizing the significant safety risks on the basis that failures of electrical machines did occur (SSE 10/INF.7 and in the IEEE study) and that these failures were challenging to predict and, in most cases, that they were non-reparable on board by the crew, as mentioned in document SSE 10/INF.7.

12.47 Following discussion, taking into account the support and the absence of objection to the draft UI for passenger ships, the Sub-Committee agreed to the draft MSC circular on Unified interpretation of SOLAS regulation II-1/26.2 applicable to passenger ships only, as set out in annex 7, with a view to approval by MSC 109 with the effective date of 1 January 2026.

Unified interpretation of regulation 3.5.1 of the IBC Code

12.48 The Sub-Committee considered document SSE 10/12/4 (Russian Federation), proposing a UI of regulation 3.5.1 of the IBC Code in order to allow discharge arrangements for permanent ballast tanks sited immediately adjacent to cargo tanks to be placed inside machinery spaces for ships engaged in transportation of cargoes which are non–toxic and non-flammable or with a flash point exceeding 60°C, as such cargoes are neither considered harmful to the crew nor present a risk of fire or explosion.

12.49 In this respect, the Sub-Committee noted some concerns regarding the content of the proposal and that a relevant proposal had also been made to PPR 11 (PPR 11/14), which had concluded that the matters raised in the document would require amendments to the IBC Code and a proposal for a new output, since an interpretation should not change the purpose of a regulation. Consequently, the PPR Sub-Committee did not agree to the proposed UI.

12.50 The Sub-Committee noted the outcome of the discussion at PPR 11 and concurred with its conclusion.

Factual statement for the test and thorough examination of non-certified lifting appliances

12.51 The Sub-Committee considered document SSE 10/12/6 (Germany and IACS), proposing a draft UI of SOLAS regulation II-1/3-13.2.4 to facilitate uniform documentation of load testing and thorough examination for existing non-certified lifting appliances.

12.52 Following a request for clarification on whether the test referred to in paragraph 2, as well as in the table of the factual statement template form of the draft UI (SSE 10/12/6, annex), was the same as the test load as advised in table 1 of paragraph 3.2.1.5 of *Guidelines for lifting appliances* (MSC.1/Circ.1663), the co-submitters confirmed that it was indeed the case.

12.53 Additionally, the Sub-Committee noted the following views:

.1 although the proposal was supported in principle, some modifications might be necessary, e.g. in paragraph 1, which stated that the factual statement could be issued by other entities than a classification society; and

.2 a revised proposal might be submitted to the next session taking into account the views expressed.

12.54 Following consideration, the Sub-Committee did not support the proposal and invited Germany, IACS and interested delegations to note the comments made and to take action, as appropriate, with a potential submission of a revised proposal to a future session of the Sub-Committee.

13 DEVELOPMENT OF PROVISIONS TO CONSIDER PROHIBITING THE USE OF FIRE-FIGHTING FOAMS CONTAINING FLUORINATED SUBSTANCES, IN ADDITION TO PFOS, FOR FIRE-FIGHTING ON BOARD SHIPS

Background

13.1 The Sub-Committee recalled that SSE 9 had:

.1 considered the prohibition of fire-fighting foams containing other substances, such as perfluorooctanoic acid (PFOA), in addition to the prohibition of perfluorooctane sulfonic acid (PFOS), and whether the existing output should be expanded in that regard, in accordance with the instructions of MSC 106 (MSC 106/19, paragraph 11.27);

.2 invited MSC 107 to proceed with the expected adoption of the draft amendments to SOLAS and the 1994 and 2000 HSC Codes in relation to the prohibition of PFOS;

.3 prepared a justification for revising the existing scope of the output to "Development of provisions to consider prohibiting the use of fire-fighting foams containing fluorinated substances, in addition to PFOS, for fire-fighting on board ships" and had requested the extension of the target completion year for this output to 2025; and

.4 re-established the FP Correspondence Group to further consider and finalize the draft consequential amendments to the *Revised guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems* (MSC.1/Circ.1312), emanating from the draft amendments prohibiting the use of PFOS.

13.2 The Sub-Committee also recalled that MSC 107 had:

.1 adopted resolutions MSC.532(107), MSC.536(107) and MSC.537(107) containing amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes, respectively, on the prohibition of fire-fighting foams containing PFOS; and

.2 endorsed the change of scope of the related output and the revision of its title, based on the justification prepared by the Sub-Committee.

Report of the Correspondence Group

13.3 The Sub-Committee considered the relevant part of document SSE 10/13 (Norway), containing the report of the FP Correspondence Group.

13.4 Having approved the report of the FP Correspondence Group (SSE 10/13) in general, the Sub-Committee agreed with the conclusion of the Group, with respect to the revision of MSC.1/Circ.1312, that the banning of fluorinated substances in foam concentrates was not necessary at this stage and that the matter should be re-visited in case of expansion of the ban to cover other types of fluor-based foam concentrates.

13.5 In this context, the Sub-Committee noted:

.1 the information provided in document SSE 10/INF.5 (Austria et al.), providing additional information for the discussion on a possible prohibition of fire-fighting foams containing fluorinated substances for new ships, in addition to PFOS; and

.2 a view that the Sub-Committee should continue considering the prohibition of the use of foams containing PFAS (fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom), using the information contained in the document.

13.6 Subsequently, noting that the matter should be further discussed, the Sub-Committee invited interested Member States and international organizations to make relevant submissions to the next session.

14 COMPREHENSIVE REVIEW OF THE REQUIREMENTS FOR MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR OF LIFEBOATS AND RESCUE BOATS, LAUNCHING APPLIANCES AND RELEASE GEAR (RESOLUTION MSC.402(96)) TO ADDRESS CHALLENGES WITH THEIR IMPLEMENTATION

Discussions at SSE 9

14.1 The Sub-Committee recalled that SSE 9 had:

.1 continued the discussion with regard to ISO Standard 23678 and the implementation of *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear* (resolution MSC.402(96)) under its agenda item on "Any Other Business";

.2 agreed that further discussion was necessary on the matter and that various proposals could be better addressed under a new output while the LSA Correspondence Group could be tasked to consider the relevant submissions, subject to the Committee's agreement;

.3 prepared the justification for a new output on "Comprehensive review of the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with implementation of the requirements"; and

.4 instructed the LSA Correspondence Group to consider all relevant submissions made to SSE 9, as well as those made to previous sessions of the Committee and the Sub-Committee, with regard to:

.1 safety issues and barriers to consistent implementation of the Requirements (resolution MSC.402(96)), including the ambiguities in the use of terms therein; and

.2 the applicability of the Requirements to inflated rescue boats and the LSA equipment installed on high-speed craft and mobile offshore drilling units.

14.2 The Sub-Committee also recalled that MSC 107 had:

.1 noted the discussion during SSE 9 on ISO Standard 23678 and the revision of resolution MSC.402(96);

.2 agreed to the draft new output prepared by SSE 9 for inclusion in the biennial agenda of the Sub-Committee for 2024-2025 and the provisional agenda of this session, with a target completion year of 2025, assigning the SSE Sub-Committee as the associated organ;

.3 agreed that the instrument to be amended was resolution MSC.402(96) and that the amendments to be developed should apply to all ships to which SOLAS applied;

.4 agreed that the amendments to be developed should enter into force on 1 January 2028, provided that they would be adopted before 1 July 2026; and

.5 endorsed the instructions given to the LSA Correspondence Group established at SSE 9 to consider the relevant documents listed in paragraph 19.18 of document SSE 9/20 and the proposals therein regarding the comprehensive review of resolution MSC.402(96), and to advise SSE 10 accordingly under the new output.

Report of the Correspondence Group

14.3 The Sub-Committee considered the relevant part of document SSE 10/14, containing the report of the LSA Correspondence Group.

14.4 In this context, the Sub-Committee:

.1 endorsed the LSA Correspondence Group's recommendation on the applicability of the requirements in resolution MSC.402(96) to inflated rescue boats, and to the LSA equipment installed on high-speed craft and mobile offshore drilling units;

.2 agreed that the HSC and MODU Codes would need to be amended in order to apply resolution MSC.402(96) to the LSA equipment installed on high-speed craft and mobile offshore drilling units;

.3 instructed the LSA Working Group (see paragraphs 4.8 and 14.17) to prepare a draft justification for a relevant new output for consideration by MSC 109, taking into account the draft text provided by the observer of IACS (SSE 10/J/7), as appropriate, and the comments thereon; and

.4 noted the list of safety issues and barriers to consistent implementation of the requirements contained in resolution MSC.402(96) (SSE 10/14, annex 2) and referred them to the LSA Working Group (see paragraph 14.17) for validation and prioritization with a view to developing solutions, which may include preparing consequential draft amendments to resolution MSC.402(96) (SSE 10/14, paragraph 15).

14.5 In this context, the Sub-Committee noted that:

.1 the list of safety issues and barriers in annex 2 of document SSE 10/14 was indicative and might be subject to further modification; and

.2 document SSE 9/19/5 (ILAMA) provided relevant proposals regarding maintenance and inspection of suspension parts used on survival craft, which should also be taken into account.

Documents commenting on the report of the Correspondence Group

Safety issues and barriers

14.6 The Sub-Committee considered document SSE 10/14/1 (IACS), providing comments on paragraphs 13 to 16 and annex 2 of document SSE 10/14, relating to identified safety issues and barriers to consistent implementation of resolution MSC.402(96), with a view to prioritizing the issues and establishing relevant solutions.

14.7 The Sub-Committee also considered:

.1 suggested prioritization of the safety issues and barriers (SSE 10/14/1, paragraph 5); and

.2 draft amendments to resolution MSC.402(96) (SSE 10/14/1, annex).

14.8 In the ensuing discussion, the Sub-Committee noted a view that the proposal in paragraph 27 of the document, in relation to the annual servicing other than the five-year servicing, should be carefully considered. Such an approach might be in conflict with SOLAS regulation III/20.11, which required that tests shall be conducted during annual surveys, as opposed to the time window proposed in the document, i.e. prior to the annual survey but within the survey window. This could set a precedent for other requirements and lead to confusion.

14.9 Following discussion, the Sub-Committee referred document SSE 10/14/1 to the LSA Working Group for further consideration (see paragraph 14.17), with a view to validating and prioritizing the safety issues and barriers identified by the LSA Correspondence Group as a priority, and to prepare draft amendments to resolution MSC.402(96), if time permitted.

Proposed amendments to resolution MSC.402(96)

14.10 The Sub-Committee considered document SSE 10/14/3 (United States), commenting on the report of the LSA Correspondence Group (SSE 10/14) and proposing amendments to resolution MSC.402(96) in order to clarify interpretations and improve implementation.

14.11 In this context, the Sub-Committee considered in particular the draft amendments to resolution MSC.402(96), as set out in the annex to document SSE 10/14/3, and noted the following views:

.1 replacing the manufacturers' established certification programme by ISO certification under Standard 23678:2022, as proposed for paragraph 7.1.1 of the resolution, would not be acceptable;

.2 reference to ISO definitions were inappropriate and should be under the sole competence of the Organization and not other organizations;

.3 the definitions of "make" and "type" should appear in the text of the mandatory instrument to ensure universal understanding and application;

.4 making a reference to an ISO Standard in resolution MSC.402(96) should only be recommendatory and follow the provisions of *Uniform wording for referencing IMO instruments* (resolution A.911(22));

.5 development of a database of authorized service providers (ASP) on the Global Integrated Shipping Information System (GISIS) could be supported;

.6 the draft amendment to paragraph 6.3.1 of resolution MSC.402(96) could be supported, but not the draft amendment to paragraph 7.1.1 of the resolution as the deletion of "manufacturer's established certification programme" was not acceptable; and it was crucial that the manufactures be duly involved, as stated in the *Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear* (MSC.1/Circ.1093); and

.7 the proposal of proof load test to be performed when falls were replaced required amendments to SOLAS regulation III/20.4, through a new output, since such testing was not required under SOLAS regulation III/20.4 or resolution MSC.402(96).

14.12 Following discussion, the Sub-Committee referred document SSE 10/14/3 to the LSA Working Group for further consideration (see paragraph 14.17), with a view to validating and prioritizing the safety issues and barriers identified by the LSA Correspondence Group as a priority and to prepare draft amendments to resolution MSC.402(96), if time permitted.

Practical issues and challenges currently experienced by the industry

14.13 The Sub-Committee considered document SSE 10/14/4 (CESA), proposing to consider practical issues and challenges currently experienced by the industry in implementing the requirements regarding LSA, and referred it to the LSA Working Group for further consideration (see paragraph 14.17), with a view to validating and prioritizing the safety issues and barriers as a priority and to prepare draft amendments to resolution MSC.402(96), if time permitted.

Annual and five-year thorough examinations

14.14 The Sub-Committee considered document SSE 10/14/2 (China), proposing amendments to resolution MSC.402(96) regarding annual and five-year thorough examinations.

14.15 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the link between boat manufacturers and maintenance service providers ensured that they had access to original spare parts and maintenance instructions, which included documentation and safety bulletins; removing this link would raise legal questions about the liability of the service provider; and availability of the maintenance manuals on board ships was normally checked by the surveyors, but not by the authorized service providers;

.2 maintenance manuals were sufficiently addressed by SOLAS regulations III/20 and 36 and, therefore, did not need to be part of the resolution. However, if maintenance manuals were part of the resolution, presence of such documentation should only be confirmed and not reviewed;

.3 exclusion of on-load or off-load release gear from the entries stating ''make'' and ''type'' of equipment in an authorization document could not be supported (SSE 10/14/2, paragraph 9), as it could compromise a crucial safety aspect;

.4 notwithstanding the view in paragraph 14.15.3 above, excluding the release gear of a lifeboat from the make and type of equipment could be supported. However, the release gear of a rescue boat was considered a general-purpose product and, therefore, such an exclusion was not supported;

.5 technical requirements, such as safety standards for on-load sling, should be developed before inclusion in resolution MSC.402(96), for examinations and checks;

.6 the current annual examination was considered sufficient for sprinkler or air supply systems and, therefore, additional five-year thorough examination would cause an unnecessary burden; and

.7 the document should be referred to the LSA Working Group for a detailed consideration.

14.16 Following discussion, the Sub-Committee referred document SSE 10/14/2 to the LSA Working Group for further consideration (see paragraph 14.17) with a view to validating and prioritizing the safety issues and barriers identified by the LSA Correspondence Group, as a priority, and to prepare draft amendments to the resolution, if time permitted.

Instructions to the LSA Working Group

14.17 The Sub-Committee instructed the LSA Working Group, established under agenda item 4 (see paragraph 4.8), taking into account comments made and decisions taken in plenary, to:

.1 consider, as a priority, the list of safety issues and barriers to consistent implementation of the requirements contained in resolution MSC.402(96) (SSE 10/14, annex 2), taking into account documents SSE 9/19/5, SSE 10/14/1, SSE 10/14/2, SSE 10/14/3 and SSE 10/14/4, for validation and prioritization;

.2 if time permits, based on such validation and prioritization (see paragraph 14.17.1 above), prepare draft amendments to resolution MSC.402(96); and

.3 prepare a draft justification for a relevant new output for consideration by MSC 109 for the review of SOLAS regulation III/20 and the HSC and MODU Codes, to ensure the consistent application of resolution MSC.402(96), taking into account the draft text provided by the observer of IACS (SSE 10/J/7), as appropriate.

Report of the LSA Working Group

14.18 Having considered the relevant part of the report of the LSA Working Group (SSE 10/WP.3), the Sub-Committee took actions as outlined below.

Prioritization of the issues for consistent implementation of the requirements

14.19 With respect to the prioritization of the issues for consistent implementation of the Requirements (resolution MSC.402(96)), the Sub-Committee noted the categorization of the identified issues (SSE 10/WP.3, annex 5), to be considered when developing draft amendments to resolution MSC.402(96).

14.20 In this respect, the Sub-Committee agreed that the highest priority item was the definition of "make" and "type" in the context of resolution MSC.402(96); and instructed the LSA Correspondence Group (see paragraph 14.22) to:

.1 continue to develop, validate and prioritize the list of issues for consistent implementation of the requirements contained in resolution MSC.402(96); and

.2 draft definitions of "make" and "type".

Draft amendments to resolution MSC.402(96)

14.21 The Sub-Committee noted that the LSA Working Group had not been able to draft amendments to resolution MSC.402(96) due to time constraints.

Instructions to the LSA Correspondence Group

14.22 In view of the above, the Sub-Committee instructed the LSA Correspondence Group established under agenda item 4 (see paragraph 4.15), taking into account the comments made and decisions taken in plenary, to:

.1 continue to develop, validate and prioritize the list of issues for consistent implementation of the requirements contained in resolution MSC.402(96), taking into account the categorized list set out in annex 5 of document SSE 10/WP.3 and any other relevant documents; and

.2 draft definitions of "make" and "type", taking into account documents SSE 10/14/1, SSE 10/14/3 and SSE 10/14/4, and any other relevant documents.

Justification for a new output

14.23 The Sub-Committee, recalling its earlier agreement that the HSC and MODU Codes would need to be amended in order to apply resolution MSC.402(96) to the LSA equipment installed on HSC and MODUs (see paragraph 14.4.2), agreed to the justification for a new output on "Amendments to the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes to ensure the consistent application of resolution MSC.402(96)", with a view to endorsement by MSC 109 for inclusion on the post-biennial agenda of the Committee, as set out in annex 8.

14.24 In this regard, the Sub-Committee invited MSC 109 to endorse also that the output be placed on the provisional agenda of the next appropriate session of the Sub-Committee upon the completion of the existing output relating to the comprehensive review of resolution MSC.402(96), for the continuity of the consideration of the two related outputs.

15 AMENDMENTS TO THE LSA CODE FOR THERMAL PERFORMANCE OF IMMERSION SUITS

Background

15.1 The Sub-Committee recalled that SSE 9 had:

.1 considered thermal performance of immersion suits and had prepared draft amendments to the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)), as well as consequential draft

amendments to the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628), in relation to the low-temperature tolerance time threshold of test subjects, during thermal performance tests of the immersion suits; and

.2 agreed to keep this agenda item on the provisional agenda of SSE 10, noting that further discussion would be required on thermal performance of immersion suits.

15.2 The Sub-Committee also recalled that MSC 107 had adopted resolution MSC.544(107), containing amendments to the Revised Recommendation (resolution MSC.81(70)), and had approved MSC.1/Circ.1628/Rev.1, incorporating consequential amendments to the revised test report forms therein.

Discussion

15.3 In relation to the matter, the Sub-Committee had the following documents for its consideration:

.1 SSE 10/15 (Canada and United States), providing the status of research conducted by the National Research Council of Canada and ISO/TC 188/SC 1 on thermal testing of immersion suits using instrumented manikins and proposing to create a GISIS module for listing thermal manikin testing laboratories;

.2 SSE 10/INF.4 (Canada and United States), providing a report on research conducted by the National Research Council of Canada assessing the repeatability of thermal testing of immersion suits using instrumented manikins, in support of document SSE 10/15; and

.3 SSE 10/15/1 (China), commenting on document SSE 10/15 relating to the use of the ISO 15027 series and the correlation when using a thermal manikin for thermal performance test of immersion suits.

15.4 In this respect, the Sub-Committee considered, in particular:

.1 the research conducted on thermal manikins and repeatability of results;

.2 the proposal for creating a GISIS module with a list of laboratories recognized by Administrations; and

.3 whether the agenda item should either be placed on the provisional agenda of SSE 11 or closed at this session, with an option to place the agenda item back on the post-biennial agenda of the Committee, pending the completion of the ongoing work of ISO/TC 188/SC.1, while seeking any relevant information regarding the ISO/TC 188 process.

15.5 During discussion, the following views were expressed with respect to the proposals in document SSE 10/15:

.1 the continuation of the work on the development of standardized procedures among laboratories to ensure the better use of manikins to evaluate thermal performance of immersion suits was supported and the agenda item should therefore be kept on the provisional agenda of SSE 11; and

.2 the development of a GISIS module with a list of laboratories recognized by Administrations which can conduct testing with a thermal manikin in accordance with the testing method of ISO 15027-3 was supported and the development of such a module should not be delayed.

15.6 Following discussion, the Sub-Committee:

.1 supported the outcome of the research, in general, and encouraged interested delegations to participate in the ongoing work of ISO/TC 188/SC 1;

.2 agreed to retain the agenda item on the provisional agenda of SSE 11; and

.3 requested the Secretariat, subject to the availability of resources, to develop a GISIS module with a list of laboratories recognized by the Administrations which are able to conduct testing with a thermal manikin, in accordance with the testing method of ISO 15027-3, and to report on the status of the development of the module at the earliest opportunity, as appropriate.

Extension of the target completion year

15.7 The Sub-Committee invited MSC 109 to extend the target completion year for this output to 2025.

16 EVALUATION OF ADEQUACY OF FIRE PROTECTION, DETECTION AND EXTINCTION ARRANGEMENTS IN VEHICLE, SPECIAL CATEGORY AND RO-RO SPACES IN ORDER TO REDUCE THE FIRE RISK OF SHIPS CARRYING NEW ENERGY VEHICLES

Background

16.1 The Sub-Committee recalled that MSC 105 had:

.1 considered document MSC 104/15/19 (China), proposing an evaluation of the adequacy of fire protection, fire detection and fire extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles;

.2 agreed to include in its post-biennial agenda an output on "Evaluation of adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles", with four sessions needed to complete the item, assigning the SSE Sub-Committee as the associated organ; and

.3 instructed the SSE Sub-Committee to evaluate the applicability of the new measures to be developed to existing ships and to address the charging of electric vehicles on board ships.

16.2 The Sub-Committee also recalled that MSC 105 had agreed that:

.1 the instruments to be amended were SOLAS and the FSS Code, and that new guidelines for reducing the fire risk of ship's vehicle, special category and ro-ro spaces carrying new energy vehicles might need to be developed; and

.2 the amendments to be developed should enter into force on 1 January 2028, provided that they were adopted before 1 July 2026.

16.3 The Sub-Committee further recalled that SSE 9 had included the agenda item in the provisional agenda of this session, which was endorsed by MSC 107.

Discussion

Fire safety on board PCTC and PCC ships

16.4 The Sub-Committee considered document SSE 10/16 (Germany et al.), providing information on the experience gained from fire tests and fire incidents, and further providing a number of proposals to support fire safety on board pure car and truck carrier (PCTC) ships and pure car carrier (PCC) ships.

16.5 In the ensuing discussion, the following views were expressed:

.1 a two-step approach was necessary for the proper consideration of the matter for existing and new ships, where, as a first step, measures for the existing fleet should be addressed as a matter of urgency. Directly embarking on regulatory modifications would not be of help for existing ships as designing and introducing new equipment would take time. However, operational issues could be addressed for such ships. As a second step, the current regulations of SOLAS chapter II-2, and the FSS and 2010 FTP Codes should be looked into in order to identify how new ships could be better regulated;

.2 while the properties of electric batteries and associated risks were already addressed in the transport provisions of the IMDG Code, which were under the purview of the CCC Sub-Committee, the Sub-Committee should focus on fire-fighting issues;

.3 the risks associated with the transport of battery electrical vehicles (BEVs) could be different from the risks associated with conventional vehicles, but not necessarily higher, as one of the outcomes stated in the LASH FIRE project;

.4 the scope of the submission should be clarified, as it referred to PCTC and PCC ships, which were not defined in SOLAS, while vehicle carriers were defined in SOLAS regulation II-2/3.56. Further clarification was necessary if the proposal was intended to be applicable to cargo ships with ro-ro spaces;

.5 it was necessary to identify the causes of fire and the regulatory gaps first before embarking on drafting amendments to SOLAS and the FSS Code;

.6 it should be ensured that fixed fire-fighting systems address both BEVs and conventional vehicles under all circumstances so that any combination of fixed systems would not affect the overall efficiency, and it would be premature to confirm CO_2 systems as a suitable method for BEV fires without sufficient testing;

.7 the Sub-Committee should not prejudge the difference in the hazards emanating from different types of vehicles;

.8 the suggested standard time frame of 14 minutes for the activation of the system after a fire alarm was considered very prescriptive. Focus should be on improved detection and verification systems to enable early and reliable detection. Further measures should be considered for newbuilds;

.9 emergency response procedures, crew training and equipment aspects needed to be given priority. Coordination with shore-based fire-fighting assets should also be taken into account;

.10 the matter should be discussed by the FP Working Group, which should be tasked to prepare a draft roadmap for efficient planning of the work on this agenda item;

.11 the III Sub-Committee, whose remit covered analysis of casualty reports, should analyse recent fires at sea potentially caused by electrical vehicles as early as possible, but before the ongoing work had been completed; and

.12 given the comprehensive work required, for which a three-year period had been agreed with 2027 being the target completion year, a road map for the output should be developed in order to structure the regulatory development.

16.6 Following discussion, the Sub-Committee supported the proposals contained in document SSE 10/16, in general, and:

.1 invited interested Member States and international organizations to inform shipowners on the experience gained and lessons learned in order to raise awareness and to improve emergency response procedures in case of fire at sea, as well as at berth; and

.2 instructed the FP Working Group (see paragraph 16.13) to consider document SSE 10/16 and to examine the existing regulatory framework, in light of the issues identified in annexes 1 and 2 thereof, and to prepare a draft roadmap for an efficient planning of the work on this agenda item.

Proposed amendments to SOLAS regulation II-2/20

16.7 The Sub-Committee considered document SSE 10/16/1 (China), providing initial draft amendments to SOLAS regulation II-2/20, adding requirements for ships carrying lithium battery electric vehicles that took into account further research that had been carried out by China and the experience accumulated by the industry.

16.8 Additionally, the Sub-Committee noted the following information documents, supplementing the proposals in document SSE 10/16/1:

.1 SSE 10/INF.8 (China), providing a report on China's research and practical experience in fire safety of ships carrying lithium battery electric vehicles, and serving as a reference for further research on fire safety of ships carrying lithium battery electric vehicles, as well as for the development of relevant requirements;

.2 SSE 10/INF.9 (China), providing a further study on the fire risks and fire characteristics for ships carrying electric vehicles powered by lithium batteries; and

.3 SSE 10/INF.10 (China), providing relevant information about simulated fire suppression test of power battery packs of lithium BEVs carried out in China using a high-pressure water mist fire suppression system to support the consideration of amendments to SOLAS regulation II-2/20.

16.9 During consideration, the Sub-Committee noted the following views:

.1 other relevant sources of information should also be taken into account, in addition to those provided by the submitter, e.g. the outcome of the LASH FIRE project, as well as the information in documents SSE 9/INF.4 (Japan) and MSC 107/INF.5 (Interferry). The FP Working Group should also be tasked to prepare an inventory of other available relevant sources that could contribute to the discussions as part of the suggested roadmap to be developed (see paragraph 16.6.2);

.2 it would be premature to consider the draft amendments presented in document SSE 10/16/1 before the existing regulatory framework had been thoroughly examined;

.3 the proposal for a separate new SOLAS regulation II-2/20-2 (SSE 10/16/1, paragraph 7) could not be supported as it was anticipated that, in principle, all ro-ro ships, today and in the future, would transport battery-powered vehicles. Therefore, there was no reason to have a separate regulation for ships carrying lithium battery electric vehicles;

.4 a holistic approach should be taken by including other possible battery technologies in addition to lithium-ion batteries for electric vehicles;

.5 current testing provisions of water-based systems in the *Revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces* (MSC.1/Circ.1430/Rev.3) were considered efficient to fight BEV fires; and

.6 the proposal followed a prescriptive approach, whereas the Organization strived for a goal-based approach defining goals, and formulating respective functional requirements and expected performances.

16.10 Following consideration, the Sub-Committee supported document SSE 10/16/1, in general, and instructed the FP Working Group (see paragraph 16.13) to:

.1 consider document SSE 10/16/1 to examine the existing regulatory framework in light of the issues identified therein, taking into account documents SSE 10/INF.8, SSE 10/INF.9 and SSE 10/INF.10, as appropriate;

.2 prepare a draft roadmap for efficient planning of the work on this agenda item, including preparation of an inventory of other available relevant sources that could contribute to the discussions; and

.3 if time permitted, consider new draft SOLAS regulation II-2/20-2 in the annex to document SSE 10/16/1.

ELBAS Project

16.11 The Sub-Committee noted the information contained in document SSE 10/INF.2 (Denmark), providing information on the ELBAS Project (Electric Vehicle Fires at Sea: New Technologies and Methods for Suppression, Containment, and Extinguishing of Battery Car Fires Onboard Ships), related to how fires in electrical driven cars could potentially be handled, and also providing relevant considerations in case of such a fire.

16.12 Subsequently, the Sub-Committee referred document SSE 10/INF.2 to the FP Working Group, so that the outcome of the project could also be taken into account, as appropriate, when examining the gaps and drafting amendments.

Instructions to the FP Working Group

16.13 Subsequently, the Sub-Committee instructed the FP Working Group, established under agenda item 10 (see paragraph 10.24), taking into account comments made and decisions taken in plenary, to:

.1 consider document SSE 10/16 and to examine the existing regulatory framework in light of the issues identified in annexes 1 and 2 thereof;

.2 consider document SSE 10/16/1, taking into account documents SSE 10/INF.8, SSE 10/INF.9 and SSE 10/INF.10, as appropriate, and examine the existing regulatory framework in light of the issues identified therein. If time permits, also to consider specific draft amendments presented in the annex to document SSE 10/16/1;

.3 consider the outcome of the ELBAS Project (SSE 10/INF.2), as well as the information in documents SSE 9/INF.4 and MSC 107/INF.5 when examining the gaps and drafting amendments, as appropriate; and

.4 prepare a draft roadmap for efficient planning of the work on this agenda item, including preparation of an inventory of other available relevant sources that can contribute to the discussions.

Report of the FP Working Group

16.14 Having considered the relevant part of the report of the FP Working Group (SSE 10/WP.4), the Sub-Committee took action as outlined below.

Roadmap

16.15 For an effective consideration of fire safety system to reduce the fire risk of ships carrying new energy vehicles, including BEVs, the Sub-Committee agreed to the following roadmap:

.1 review of scientific reports and studies, new technologies, casualty reports and other available credible resources;

.2 identification of hazards related to new energy vehicles, including BEVs, compared to conventional internal combustion engine vehicles (ICEVs);

.3 consideration of a goal-based approach;

.4 identification of gaps in existing regulations and consideration of the way forward to address the gaps; and

.5 identification of placeholders for possible future amendments (i.e. SOLAS regulation II-2/20 for all ro-ro ships or regulation II-2/20-2 for a specific segment).

Goal-based approach

16.16 To efficiently address the matter of reducing the fire risk of ships carrying new energy vehicles, including BEVs, the Sub-Committee agreed to the following goal-based approach:

.1 *Goal:* Decrease and minimize the risk of fire in vehicle spaces, ro-ro spaces, and special category spaces of ships in terms of carrying new energy vehicles, including BEVs;

.2 *Hazard identification*: Identification of hazard and risk of fires on new energy vehicles, including BEVs;

.3 *Rule scoping*: Examination of existing regulations of SOLAS chapter II-2 whether the regulations cover the identified hazards;

.4 *Possible functional requirements*, such as:

.1 fire detection capability to detect vehicle fires and identify vehicle(s) on fire;

.2 fire control capability by cooling the ship structures and vehicles (vehicles on fire and surrounding vehicles);

.3 fire containment capability in the vehicle spaces (possibly by fire-rated boundaries or active fire boundaries or fire curtains);

.4 fire suppression capability against vehicle fires, including BEVs; and

.5 systems and equipment to mitigate risks from BEV battery fire beyond heat and smoke generation (reignition, toxic and explosive gas release, etc.).

Technical discussions

16.17 The Sub-Committee noted the FP Working Group's thorough discussions on hazards, data sharing, identification of gaps in existing regulations and the way forward to mitigate the gaps.

16.18 In this respect, the Sub-Committee:

.1 encouraged interested Member States and international organizations to share with the FP Correspondence Group their data of scientific reports and studies, new technologies, casualty reports and other available credible resources on fire incidents of new energy vehicles, including BEVs;

.2 noted the need for further discussion by the FP Correspondence Group on fixed fire detection and video monitoring within ro-ro spaces; and

.3 noted that further discussion might be necessary on structural fire protection; fixed CO_2, deluge and high expansion foam systems, including revision of the test and approval provisions in chapter 6 of the FSS Code and the *Guidelines for testing and approval of fixed high-expansion foam systems* (MSC.1/Circ.1384); protection of weather decks; and where the suitable place for the new amendments in SOLAS chapter II-2 (regulations II-2/20 or 20-2) would be.

Instructions to the FP Correspondence Group

16.19 In view of the above, the Sub-Committee instructed the FP Correspondence Group established under agenda item 10 (see paragraph 10.41), taking into account the comments made, and decisions taken, in plenary, to:

.1 review and share relevant and credible information including scientific studies, accident reports, etc.;

.2 further consider fixed fire detection system within vehicle spaces and ro-ro spaces on cargo ships, e.g. heat and smoke detectors within an addressable system; and

.3 further consider fire confirmation (video monitoring system) within vehicle spaces and ro-ro spaces on cargo ships.

17 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SSE 11

General

17.1 The Sub-Committee recalled that MSC 107 had agreed to include, in its post-biennial agenda, the following three new outputs that fall under the purview of the Sub-Committee:

.1 "Development of amendments to paragraph 2.1.2.5 of chapter 5 of the FSS Code on construction requirement for gaskets";

.2 "Review and update of the Code of Practice for Atmospheric Oil Mist Detectors (MSC.1/Circ.1086)"; and

.3 "Revision of the *Revised guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems* (MSC.1/Circ.1318/Rev.1) to clarify the testing and inspection provisions for CO_2 cylinders".

17.2 The Sub-Committee also recalled that MSC 107 had approved the proposed biennial agenda for the 2024-2025 biennium and the proposed provisional agenda for SSE 10 (MSC 107/20, paragraph 17.81 and MSC 107/20/Add.1, annexes 39 and 40).

17.3 The Sub-Committee further recalled that MSC 107 had agreed, after considering a proposal by the Chair to address the ongoing and prospective high workload of the Committee, including the 31 documents concerning 22 proposals for new outputs submitted to its session, to consider new output proposals to MSC 108, as part of an exercise to prioritize and to apply a moratorium on submissions of proposals for new outputs.

Proposals for the provisional agenda of SSE 11

Review of the 2009 Code on Alerts and Indicators

17.4 The Sub-Committee considered document SSE 10/17 (IACS), proposing to start the work on the output "Review of the 2009 Code on Alerts and Indicators" in the 2024-2025 biennium, which currently resided with the SSE Sub-Committee as the coordinating organ and also proposing to transfer it to the provisional agenda of SDC 11.

17.5 In this respect, the Sub-Committee recalled that SDC 10 had considered document SDC 10/14/1 (IACS), proposing to lift the output on "Review of the 2009 Code on Alerts and Indicators" from the post-biennial agenda of the Committee to the provisional agenda of SDC 11, based on the annex to document SSE 10/17 (IACS), containing the draft amendments to the Code. Subsequently, SDC 10 had agreed to the proposal in the document and had requested MSC 108 to approve it accordingly (SDC 10/17, paragraph 14.7).

17.6 In this regard, the Sub-Committee noted the view that standards relevant to the GMDSS equipment should be considered in both bridge alert management and in the 2009 Code on Alerts and Indicators, and therefore, the improvement of bridge alert management should also be taken into account.

17.7 Following consideration, the Sub-Committee:

.1 concurred with SDC 10 to lift the output from the post-biennial agenda of the Committee to the provisional agenda of SDC 11; and

.2 noted that additional proposals regarding the scope of the output (see paragraph 17.6) should be submitted to SDC 11 for consideration.

Review and update SOLAS regulation II-2/9

17.8 The Sub-Committee considered document SSE 10/17/1 (IACS), proposing to include the output "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements" in the provisional agenda for SSE 11.

17.9 The Sub-Committee, recalling a relevant discussion under agenda item 8 (see paragraph 8.4.2), agreed to include this post-biennial item in the provisional agenda for SSE 11.

17.10 Regarding the future consideration of the output, the observer of IACS noted that the output on the revision of SOLAS regulation II-2/9 had been agreed by MSC 105 with a clear scope, which did not foresee any work other than updating the regulation to account for existing guidelines and clarifying it to remove any ambiguities and that any changes to the scope of the output, originating from the revision of the 2010 FTP Code under agenda item 8, would require the agreement of the Committee, based on a justification to be submitted.

Amendments to chapter 6 of the 2009 MODU Code

17.11 The Sub-Committee considered document SSE 10/17/2 (IACS), proposing to include the output "Development of amendments to chapter 6 of the 2009 MODU Code regarding electrical equipment capable of operation after shutdown" in the provisional agenda for SSE 11.

17.12 Taking into account the progress made at this session on other agenda items, the Sub-Committee agreed to reconsider the proposal in document SSE 10/17/2 at SSE 11, with a view to including this post-biennial item in the provisional agenda for SSE 12.

Amendments to chapter 15 of the FSS Code

17.13 The Sub-Committee considered document SSE 10/17/3 (IACS), proposing to include the output "Development of amendments to chapter 15 of the International Code for Fire Safety System (FSS Code) on enclosed spaces containing a nitrogen receiver or a buffer tank of nitrogen generator system" in the provisional agenda for SSE 11.

17.14 Taking into account the progress made at this session on other agenda items, the Sub-Committee agreed to reconsider the proposal in document SSE 10/17/3 at SSE 11, with a view to including this post-biennial item in the provisional agenda for SSE 12.

Review and update of the Code of practice for atmospheric oil mist detectors (MSC.1/Circ.1086)

17.15 The Sub-Committee considered document SSE 10/17/4 (Denmark et al.), proposing to include the output "Review and update of the Code of practice for atmospheric oil mist detectors (MSC.1/Circ.1086)" in the provisional agenda for SSE 11.

17.16 Following consideration, the Sub-Committee agreed to include this post-biennial item in the provisional agenda for SSE 11.

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

17.17 Taking into account the progress made at this session, the Sub-Committee prepared the Sub Committee's biennial status report for the 2024-2025 biennium and the outputs on the post-biennial agenda of the Committee assigned to the Sub-Committee (SSE 10/WP.2, annex 1), as set out in annex 9.

Proposed provisional agenda for SSE 11

17.18 Taking into account the progress made at the session, the Sub-Committee prepared the proposed provisional agenda for SSE 11 (SSE 10/WP.2, annex 2) for consideration by MSC 109, as set out in annex 10.

Correspondence groups established at the session

17.19 The Sub-Committee established correspondence groups on the following subjects, due to report to SSE 11:

.1 life-saving appliances; and

.2 fire protection.

Arrangements for the next session

17.20 The Sub-Committee agreed to establish, at its next session, working and drafting groups on the following subjects:

.1 life-saving appliances (agenda items 3, 4, 5, 6, 10, 14, 15)[5];

.2 fire protection (agenda items 7, 8, 9, 10, 12, 13, 16); and

.3 validated model training courses (agenda item 11),

whereby the Chair, taking into account the submissions received on the respective subjects, would advise the Sub-Committee before SSE 11 on the final selection of such groups.

17.21 In this regard, the Sub-Committee noted a request that, for enhancing the effectiveness of the working groups, subject to the submissions to be made at the next session, the Chair and Secretariat should consider increasing the number of groups to alleviate the workload on certain groups, in particular, that the LSA Working Group might be split into two individual groups, e.g. potentially to deal with agenda item 14 on the revision of resolution MSC.402(96) and other LSA matters, respectively.

Date of the next session

17.22 The Sub-Committee noted that the eleventh session of the Sub-Committee had been tentatively scheduled to take place from 24 to 28 February 2025.

18 ELECTION OF CHAIR AND VICE-CHAIR FOR 2025

18.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously elected Mr. Hironori Eguro (Japan) as Chair, and re-elected Mr. Cristiano Aliperta (Palau) as Vice-Chair, both for 2025.

Expression of appreciation

18.2 The Sub-Committee expressed its appreciation to Mr. Umut Şentürk (Türkiye) for his excellent service during the last four terms of office when he served as Chair.

19 ANY OTHER BUSINESS

LSA MATTERS

Outcome of III 8 on man overboard from fishing vessels

19.1 The Sub-Committee recalled that the Sub-Committee on Implementation of IMO Instruments (III), at its eighth session, had considered the report of the Working Group on Analysis of Marine Safety Investigation Reports (III 8/WP.3) in relation to safety issues resulting in man overboard from fishing vessels and had noted the following points:

.1 the attitude within the fishing industry concerning personal flotation devices (PFDs) needed to change in order to increase the use of PFDs, as they were essential for survival; and

[5] Numbers refer to the agenda items contained in annex 10.

.2 modern technology had allowed better means to locate a person falling overboard from fishing vessels; and the introduction of such a technology for increasing the ability of survival could be considered.

19.2 The Sub-Committee also recalled that it had been invited by III 8, along with the NCSR and HTW Sub-Committees, to note the analysis contained in document III 8/4 (annex 3) on the safety issues resulting in man overboard from fishing vessels in relation to the use of PFDs and possible application of the existing technology, such as search and rescue transponder (SART), and to take action as appropriate.

19.3 Having further recalled that SSE 9 had not been able to discuss this matter and having considered the analysis contained in document III 8/4 (annex 3) on the safety issues resulting in man overboard from fishing vessels in relation to the use of PFDs, the Sub-Committee:

.1 encouraged fishing vessel companies and skippers to ensure that fishing vessel personnel wear PFDs on the upper decks of all fishing vessels while at sea; and

.2 invited interested Member States to consider becoming a Party to the Cape Town Agreement of 2012, as it regulated lifejacket requirements on board fishing vessels of 24m in length and above.

Average mass of a person in conducting prototype self-righting tests for totally enclosed lifeboats

19.4 The Sub-Committee considered document SSE 10/19/1 (India), proposing to consider the average mass of a person to be 75 kg (for lifeboats intended for passenger ships) or 82.5 kg (for lifeboats intended for cargo ships) in the case of prototype self-righting test for totally enclosed lifeboats, with a view to amending part 1 of the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)), and the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630/Rev.2), as minor corrections.

19.5 Following discussion, the Sub-Committee concurred with the proposed modifications as minor corrections (C/ES.27/D, paragraph 3.2(vi)), and agreed to the draft amendments to:

.1 the Revised Recommendation (resolution MSC.81(70)), and the associated draft MSC resolution, as set out in annex 11, with a view to adoption by MSC 109; and

.2 the *Revised standardized life-saving appliance evaluation and test report forms* (MSC.1/Circ.1630/Rev.2), and the associated draft MSC circular, as set out in annex 12, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1630/Rev.3.

Retro-reflective materials

19.6 The Sub-Committee considered document SSE 10/19/2 (India), proposing to replace the reference to resolution A.658(16) with a reference to resolution MSC.481(102), regarding retro-reflective materials in various Revised standardized life-saving appliance evaluation and test report forms (MSC.1/Circ.1628/Rev.1, MSC.1/Circ.1630/Rev.2 and MSC.1/Circ.1632), as well as to add a few details in the forms (MSC.1/Circ.1630/Rev.2 and MSC.1/Circ.1631), intended for personal life-saving appliances, survival craft and rescue boats, as minor corrections.

19.7 Following consideration, the Sub-Committee concurred with the proposed modifications as minor corrections (C/ES.27/D, paragraph 3.2(vi)), and agreed to the draft amendments, with an effective date of 15 August 2025, to:

.1 the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630/Rev.2), and the associated draft MSC circular, as set out in annex 12, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1630/Rev.3;

.2 the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628/Rev.1), and the associated draft MSC circular, as set out in annex 13, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1628/Rev.3;

.3 the *Revised standardized life-saving appliance evaluation and test report forms (rescue boats)* (MSC.1/Circ.1631), and the associated draft MSC circular, as set out in annex 14, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1631/Rev.1; and

.4 the *Revised standardized life-saving appliance evaluation and test report forms* (*launching and embarkation appliances)* (MSC.1/Circ.1632), and the associated draft MSC circular, as set out in annex 15, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.1632/Rev.1.

Test procedure and acceptance criteria for lifejacket buoyancy test

19.8 The Sub-Committee considered document SSE 10/19/3 (India), proposing amendments to resolution MSC.81(70) and MSC.1/Circ.1628/Rev.1, with a view to improving the procedure for lifejacket buoyancy tests and make acceptance criteria consistent with the LSA Code, as a minor correction.

19.9 The following views were expressed during discussion:

.1 the proposal to replace the erroneous reference to "two lifejackets subjected to temperature cycling and the hot and cold inflation test" with a test procedure more appropriate for an inherently buoyant lifejacket, was supported. However, the test should be applied to, at least, two inherently buoyant lifejackets;

.2 the following wording should be used in the acceptance criteria in line with ISO Standard 12402-2: "The difference between the initial measurements and the measurement after 24 hours shall not exceed 5% of the original buoyancy" instead of the suggested wording in the document: "The difference between the initial buoyancy and the final buoyancy should not exceed reduction in buoyancy by 5% of the initial buoyancy";

.3 although the corrections could be agreed upon, in principle, they should not be considered under this agenda item, as they were considered beyond the limit of "minor corrections"; and

.4 further consideration should be given intersessionally to address the issues raised, for advice and action, as appropriate.

19.10 Following discussion, the Sub-Committee agreed, in principle, with the proposal. However, it concluded that more discussion was necessary intersessionally by the LSA Correspondence Group.

Instructions to the LSA Correspondence Group

19.11 In view of the above, the Sub-Committee instructed the LSA Correspondence Group established under agenda item 4 (see paragraph 4.15), taking into account the comments made and decisions taken in plenary, to consider document SSE 10/19/3 on the procedure for lifejacket buoyancy tests and acceptance criteria for consistency with the LSA Code, for advice and action, as appropriate.

Unfavourable trim and list requirements in SOLAS chapter III and the LSA Code

19.12 The Sub-Committee considered document SSE 10/19/6 (China), proposing to reconsider the revision of unfavourable trim and list requirements in SOLAS chapter III and the LSA Code, and providing a possible solution, based on the difficulties and safety concerns experienced during the implementation of the unfavourable 10°trim/20°list requirements.

19.13 In the ensuing discussion, the following views were expressed:

.1 the safety concerns related to the unfavorable trim and list requirements in SOLAS chapter III and the LSA Code, should be considered in the context of developing goals, functional requirements and expected performance for SOLAS chapter III and the LSA Code (agenda item 5); and

.2 although the safety concerns were recognized, the matter had long been discussed by the DE Sub-Committee for several sessions without reaching any generally accepted solution. Subsequently, MSC 87 had agreed to discontinue consideration of the subject. Therefore, the matter might not be resolved through prescriptive amendments to the present regulations, however, they should be addressed by a goal-based approach.

19.14 In view of the above, the Sub-Committee did not concur with the proposals in document SSE 10/19/6. However, it agreed that the issue could be addressed within the framework of the revision of SOLAS chapter III and the LSA Code, when appropriate.

Information documents

19.15 The Sub-Committee noted the information contained in the following documents:

.1 SSE 10/INF.3 (OCIMF), introducing the OCIMF publication on Management of Survival Craft on Fixed/Floating Offshore Installations, which reported the preliminary findings on the safety considerations during survival craft operations and maintenance on offshore installations; and

.2 SSE 10/INF.6 (France), providing some feedback on an exercise conducted on Herschel Island (Yukon, Canada) involving evacuation, survival, and rescue stages in polar waters, as well as sharing experience gained in relation to *Interim guidelines on life-saving appliances and arrangements for ships operating in polar waters* (MSC.1/Circ.1614).

FP MATTERS

Documents addressed by the FP Correspondence Group

19.16 The Sub-Committee recalled that SSE 9 had considered documents SSE 9/19/1 (relevant part) (Chair), SSE 9/19/4 (IACS) and SSE 9/19/7 (Republic of Korea) and had referred them to the FP Correspondence Group for further consideration and advice to this session.

Report of the Correspondence Group

19.17 The Sub-Committee considered the relevant part of the report of the FP Correspondence Group (SSE 10/13) related to this agenda item. Having approved these parts in general, the Sub-Committee took actions as outlined below.

Standards for fire-fighters' outfits (SSE 9/19/7)

19.18 With regard to the standards for fire-fighters' outfits, the Sub-Committee:

.1 noted the FP Correspondence Group's discussion on the requirements in chapter 3 of the FSS Code relating to applicable standards for fire-fighters' outfits; and

.2 endorsed the FP Correspondence Group's conclusion that amendments were necessary; and invited the Republic of Korea and other interested delegations to submit proposals for a new output in accordance with the Committees' organization and method of work (MSC-MEPC.1/Circ.5/Rev.5), taking into account annex 7 of document SSE 10/13, as appropriate.

Revision of MSC.1/Circ.677 (SSE 9/19/1, relevant part)

19.19 In relation to the revision of S*tandards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers* (MSC.1/Circ.677), the Sub-Committee:

.1 noted the Group's discussion on revising MSC.1/Circ.677 regarding devices to prevent the passage of flame into cargo tanks in tankers; and

.2 agreed to the draft revision of MSC.1/Circ.677, as set out in annex 16, with a view to approval by MSC 109 and dissemination as MSC.1/Circ.677/Rev.1, with the effective date of two years after the expected approval of the draft revised circular.

Minor corrections to SOLAS regulations II-2/11.2 and 11.4.1

19.20 The Sub-Committee considered document SSE 10/19 (IACS), proposing minor corrections to SOLAS regulations II-2/11.2 and 11.4.1, with a view to ensuring consistent implementation of this provision for passenger ships and cargo ships.

19.21 Following discussion, the Sub-Committee supported the proposal and agreed to the draft amendments to SOLAS regulation II-2/11, as minor corrections (C/ES.27/D, paragraph 3.2(vi)), as set out in annex 17, with a view to approval by MSC 109 and adoption by MSC 110.

Issues with the implementation of SOLAS regulation II-2/4.5.10

19.22 The Sub-Committee considered document SSE 10/19/4 (IACS), discussing lessons learned from accidents which might have been avoided by having more clarity on the arrangement of detectors of the fixed hydrocarbon gas detection system and the bilge high-level alarm in the cargo pump-rooms of oil tankers and seeking advice on a way forward.

19.23 During consideration, the Sub-Committee noted the view that the proposed amendment entailed substantial changes to the arrangement of ship equipment and thus this should be considered under a new output together with sufficient justification.

19.24 Following consideration, the Sub-Committee invited the observer of IACS and other interested Member States and international organizations to submit proposals for a new output in accordance with the Committees' organization and method of work (MSC-MEPC.1/Circ.5/Rev.5).

Scenarios of evacuation from safe areas in MSC.1/Circ.1533

19.25 The Sub-Committee considered document SSE 10/19/5 (China), proposing to add scenarios of evacuation from safe areas in the *Revised guidelines on evacuation analysis for new and existing passenger ships* (MSC.1/Circ.1533), taking into account the increasing need for evacuation analysis and calculation of safe return to port (SRtP) for large passenger ships, and providing editorial revisions based on the implementation of the evacuation analysis of passenger ships in recent years.

19.26 During consideration, the Sub-Committee noted the following views:

.1 the proposed amendments entailed substantial changes to the content of the Revised guidelines (MSC.1/Circ.1533), including design criteria and thus should be considered under a new output together with sufficient justification;

.2 the scenarios in the Revised guidelines were sufficient and did not require any additional scenarios as they had been developed well after the adoption of the SRtP regulations and reflected all possible scenarios. The regulations were developed to qualify dedicated systems with redundancies in the design, which should enable the ship to return safely to port;

.3 the SRtP regulations were established as design criteria for the safe return of a passenger ship and such criteria were neither an operative instruction nor a performance parameter. The proposal could therefore not be supported; and

.4 the suggested additional evacuation scenario was not needed as cruise ships maintained emergency response plans which already accounted for the potential loss of muster stations and the need to have alternative ones.

19.27 Following consideration, the Sub-Committee invited the delegation of China and other interested Member States and international organizations to submit proposals for a new output in accordance with the Committees' organization and method of work (MSC-MEPC.1/Circ.5/Rev.5).

Proposal to amend MSC.1/Circ.1165 and MSC.1/Circ.1387

19.28 The Sub-Committee considered document SSE 10/19/7 (China), proposing to amend the *Revised guidelines for the approval of equivalent water-based fire-extinguishing systems for machinery spaces and cargo pump-rooms* (MSC.1/Circ.1165) and *Revised guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces* (MSC.1/Circ.1387) by specifying the performance requirements of foam concentrates as additives in the water-based fire-extinguishing medium for fixed-pressure, water-spraying, fire-extinguishing systems for engine-rooms and cargo pump-rooms, and local water-based fire-extinguishing systems so as to enhance the fire-extinguishing effectiveness and efficiency.

19.29 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the proposed wording of the modifications should further be considered with respect to physical and chemical features of foam concentrates, as they were too generic;

.2 the proposed modifications in paragraph 10.1 of the document could be supported. However, for the additional modifications in paragraph 10.2 of the document on "means of flushing the system", MSC.1/Circ.1387 might not be the right instrument to address the issue; and

.3 the proposal should not be considered under this agenda item as it was considered beyond the scope of the item.

19.30 In view of the above, the Sub-Committee did not support the proposals in document SSE 10/19/7.

OTHER MATTERS

Substantive documents being considered under the agenda item on "Any other business"

19.31 The Sub-Committee noted that substantive documents had been submitted under this agenda item, requiring allocation of substantial time and compromising the work under other agenda items, as had also been noted by SSE 5 and SSE 6 (SSE 5/17, paragraph 16.11, and SSE 6/18, paragraph 25). Therefore, the Sub-Committee reiterated its concern regarding the proliferation of substantive documents being considered under this agenda item before such documents had been properly addressed by the Committee, in accordance with the relevant procedures for new outputs.

Expressions of condolence

19.32 The Sub-Committee noted with great sadness the recent passing of Mr. Jaideep Sirkar of the United States, the Vice-Chair of the SDC Sub-Committee. The Sub-Committee appreciated Mr. Sirkar's contribution to the work of the Organization and expressed its condolences to his family and to the delegation of the United States.

19.33 The Sub-Committee also noted with great sadness the recent passing of Mrs. Liubov Shvedova, Head of the Russian Translation Section of the Secretariat. The Sub-Committee greatly appreciated Mrs. Shvedova's contribution to the work of the Organization and expressed its condolences to her family, the delegation of the Russian Federation and her colleagues in the Secretariat.

Expression of appreciation

19.34 The Sub-Committee expressed appreciation to the following delegates and members of the Secretariat who had recently moved to other duties or had retired, for their invaluable contribution to its work and wished them a long and happy retirement or, as the case might be, every success in their new duties:

- Ms. Heike Deggim (IMO Secretariat) (on new duties)
- Mr. Joseph Westwood-Booth (IMO Secretariat) (on retirement)
- Ms. Brandi Baldwin (United States) (on new duties)

20 ACTION REQUESTED OF THE COMMITTEE

20.1 The draft report of the session (SSE 10/WP.1/Rev.1) was prepared by the Secretariat for consideration and adoption by the Committee.

20.2 During the meeting held on 8 March 2024, delegations were given the opportunity to provide comments on the draft report (SSE 10/WP.1) and the Secretariat, then, prepared the revised draft report (SSE 10/WP.1/Rev.1), incorporating the comments made. The Member States and international organizations wishing to provide further editorial corrections and improvements, including finalizing individual statements, were given the deadline of 20 April 2024, 23.59 (UTC), to do so by correspondence, in accordance with paragraphs 4.37 and 4.38 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.5).

Action requested of the Committee

20.3 The Maritime Safety Committee, at its 109th session, is invited to:

.1 note the discussion on the compelling need for ventilation requirements for partially enclosed lifeboats and liferafts; and that this matter will be revisited at SSE 11 with the understanding that the item would be considered completed if no submissions justifying the compelling need were received at the next session (paragraphs 3.5 to 3.7, and annexes 9 and 10);

.2 note the discussions and progress made on design and prototype test requirements for the equipment used in the simulated launching of free-fall lifeboats (paragraphs 4.4 to 4.11);

.3 endorse the expansion of the output on "Development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat", taking into account the justification provided (paragraphs 4.12 and 4.13, and annex 9);

.4 note the Sub-Committee's agreement, in principle, on the draft amendments to paragraph 4.7.6.4 of the LSA Code, for finalization at SSE 11 together with any consequential amendments to other related instruments, subject to the expansion of the scope of the output by MSC 109, with a view to approval by MSC 110 and adoption by MSC 111 (paragraphs 4.10 and 4.14, and annex 9);

.5 endorse the road map to facilitate drafting of related functional requirements and expected performances for SOLAS chapter III and the LSA Code (paragraph 5.9);

.6 note the discussion on automatically self-righting or canopied reversible liferafts and that a consensus could not be reached on the scope of the draft amendments to SOLAS chapter III and chapter IV of the LSA Code and, therefore, relevant submissions were invited to SSE 11 (paragraphs 6.4 to 6.8);

.7 approve the draft amendments to the 1994 and 2000 HSC Codes on lifejacket carriage requirements, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 110 (paragraph 7.8, and annexes 1 and 2);

.8 note the discussion on the revision of the 2010 FTP Code to allow for new fire protection systems and materials; and that the Sub-Committee agreed to coordinate the work under this output with that of the post biennial item on "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements", pending the Committee's decision to lift the output from its post-biennial agenda to the provisional agenda of SSE 11 (paragraphs 8.2 to 8.4 and 17.9; and annexes 9 and 10);

.9 note the discussion on the revision of the provisions for helicopter facilities in SOLAS and the MODU Code; and to decide that the work on this output has been completed, as no submission has been received over two sessions (paragraphs 9.4 and 9.5);

.10 consider the FSA Experts Group's relevant observations to improve the Revised FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.2), possibly in conjunction with the recommendations made by the previous iteration of the Group that had reported to MSC 102; and to take action, as appropriate (paragraphs 10.6.10 and 10.7);

.11 note the discussions and progress made with respect to development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of containerships (paragraph 10.8 to 10.38);

.12 note the invitation to CCC 10 and HTW 11 to consider a non-exhaustive list of risk-prevention-related areas on containership fires within their respective purviews, identified by the Sub-Committee, with a view to taking action, as deemed appropriate (paragraphs 10.39 and 10.40);

.13 note that the Sub-Committee validated revised Model Course 3.04, with a view to publication; and that the Sub-Committee agreed to revise Model Course 3.05 on Survey of Fire Appliances and Provisions next (paragraphs 11.12 and 11.14);

.14 note that the Sub-Committee established a Review Group to work between sessions by correspondence to review the draft revision of Model Course 3.05 on Survey of Fire Appliances and Provisions, reporting to SSE 11; and to encourage active participation of more members in both the Review Group and the Drafting Group at future sessions (paragraphs 11.13 and 11.15);

.15 approve the draft MSC circular on Unified interpretations of SOLAS regulations III/20.8.4 and 20.11, and resolution MSC.402(96), on the applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats (paragraph 12.9 and annex 3);

.16 approve the draft MSC circular on Unified interpretations of SOLAS regulation II-2/4.5.6.1, and paragraphs 3.1.2, 3.1.4 and 3.5.3 of the IBC Code, on cargo/vapour piping and related gas-freeing piping/ducts on tankers (paragraph 12.18 and annex 4);

.17 approve the draft MSC circular on Unified interpretations of SOLAS chapter II-2, on consistent application of SOLAS regulation II-2/11.4.1 on the crown of a machinery space of category A; as well as SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2 on the secondary means of venting cargo tanks (paragraphs 12.25 and 12.34, and annex 5);

.18 approve the draft MSC circular on Revised unified interpretations of SOLAS chapter II-2, rectifying an oversight regarding references to SOLAS regulation II-2/9.7.5.1, with a view to dissemination as MSC.1/Circ.1276/Rev.2 (paragraph 12.40 and annex 6);

.19 approve the draft MSC circular on Unified interpretation of SOLAS chapter II-1, on SOLAS regulation II-1/26 concerning single essential propulsion components (paragraph 12.47 and annex 7);

.20 note the discussion on development of provisions to consider prohibiting the use of fire-fighting foams containing fluorinated substances, in addition to PFOS, for fire-fighting on board ships; and that the matter will further be discussed at SSE 11 (paragraphs 13.3 to 13.6);

.21 endorse the justification for a new output on "Amendments to the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes to ensure the consistent application of resolution MSC.402(96)" for inclusion on the post-biennial agenda of the Committee (paragraph 14.23 and annexes 8 to 10);

.22 agree to place the new output in sub-paragraph .21 on the provisional agenda of the next appropriate session of the Sub-Committee upon the completion of the existing output relating to the comprehensive review of resolution MSC.402(96), for the continuity of the two outputs (paragraph 14.24, and annexes 9 and 10);

.23 note the discussion on thermal performance of immersion suits and that the matter will further be discussed at SSE 11 (paragraphs 15.3 to 15.7);

.24 note the discussion and progress made on fire safety of ships carrying new energy vehicles; and that the Sub-Committee agreed on a road map for an effective consideration of the matter, together with a goal-based approach (paragraphs 16.4 to 16.19);

.25 approve the biennial status report of the Sub-Committee for the 2024-2025 biennium (paragraph 17.17 and annex 9), and agree, in particular, to:

.1 extend the target completion year of the output on "New requirements for ventilation of survival craft" to 2025 (paragraph 3.7.2);

.2 extend the target completion year of output on "Revision of SOLAS chapter III and the LSA Code" to 2027 (paragraph 5.11); and

.3 extend the target completion year of output on "Amendments to the LSA Code for thermal performance of immersion suits" to 2025 (paragraph 15.7);

.26 approve the proposed provisional agenda for SSE 11, containing the following post-biennial agenda items added (paragraph 17.18, and annexes 9 and 10):

.1 "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements" (paragraph 17.9); and

.2 "Review and update of the Code of practice for atmospheric oil mist detectors (MSC.1/Circ.1086)" (paragraph 17.16);

.27 adopt the draft MSC resolution on amendments to paragraph 6.14.1.1 of resolution MSC.81(70) concerning assumed weight used to represent each person in self-righting tests for totally enclosed lifeboats (paragraph 19.5.1 and annex 11);

.28 approve the draft MSC circular on Revised standardized life-saving appliance evaluation and test report forms (survival craft), containing amendments on assumed weight in self-righting tests for totally enclosed lifeboats, as well as on retro-reflective materials used on survival craft, in conjunction with the adoption of the associated draft amendments to resolution MSC.81(70), for dissemination as MSC.1/Circ.1630/Rev.3 (paragraphs 19.5.2 and 19.7.1, and annex 12);

.29 approve the draft MSC circular on Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances), containing amendments on retro-reflective materials used on personal life-saving appliances, for dissemination as MSC.1/Circ.1628/Rev.3 (paragraph 19.7.2 and annex 13);

.30 approve the draft MSC circular on Revised standardized life-saving appliance evaluation and test report forms (rescue boats), containing amendments on retro-reflective materials used on rescue boats, for dissemination as MSC.1/Circ.1631/Rev.1 (paragraph 19.7.3 and annex 14);

.31 approve the draft MSC circular on Revised standardized life-saving appliance evaluation and test report forms (launching and embarkation appliances), containing amendments on retro-reflective materials used on launching and embarkation appliances, for dissemination as MSC.1/Circ.1632/Rev.1 (paragraph 19.7.4 and annex 15);

.32 approve the draft MSC circular on Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers, incorporating the previous amendments made and updating an ISO standard, for dissemination as MSC.1/Circ.677/Rev.1 (paragraph 19.19.2 and annex 16);

.33 approve the draft amendments to SOLAS regulation II-2/11, for consistent implementation of this provision for passenger ships and cargo ships, as a minor correction, with a view to adoption by MSC 110 (paragraph 19.21 and annex 17);

.34 note the Sub-Committee's concern regarding the proliferation of substantive documents being considered under this agenda item before such documents had been properly addressed by the Committee, in accordance with the relevant procedures for new outputs (paragraph 19.31); and

.35 approve the report in general.

***

ANNEX 1[1]

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

8.3 Personal life-saving appliances

1 The existing paragraph 8.3.5 is amended as follows:

"8.3.5 A lifejacket complying with the requirements of regulation III/32.1 or III/32.2 of the Convention should be provided for every person on board the craft and, in addition:

.1 a number of lifejackets suitable for children equal to at least 10% of the number of passengers on board should be provided or such greater number as may be required to provide a lifejacket for each child;

.2 every passenger craft should carry lifejackets for not less than 5% of the total number of persons on board. These lifejackets should be stowed in conspicuous places on deck or at muster stations;

.3 a sufficient number of lifejackets should be carried for persons on watch and for use at remotely located survival craft and rescue boat stations; ~~and~~

.4 all lifejackets should be fitted with a light, which complies with the requirements of regulation III/32.3 of the Convention~~.~~; and

.5 in addition, on all craft, the following should be provided no later than the date of the first renewal survey on or after 1 January 2028:

.1 for passenger craft on voyages less than 24 h, a number of infant lifejackets equal to at least 2.5% of the number of passengers on board should be provided;

.2 for passenger craft on voyages 24 h or greater, infant lifejackets should be provided for each infant on board; and

.3 if the adult lifejackets provided are not designed to fit persons weighing up to 140 kg and with a chest girth of up to 1,750 mm, a sufficient number of suitable accessories should be available on board to allow them to be secured to such persons."

[1] Tracked changes are created using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

ANNEX 1

FORM OF SAFETY CERTIFICATE FOR HIGH-SPEED CRAFT

Record of Equipment for High-Speed Craft Safety Certificate

2 Details of life-saving appliances

2 In the table for "Details of life-saving appliances", a new entry 8.3 is inserted under entry 8.2, as follows:

"

8.3	Number suitable for infants	……..

"

APPENDIX [2]

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE 1974 SOLAS CONVENTION AND RELATED MANDATORY INSTRUMENTS FOR AMENDMENTS TO THE 1994 AND 2000 HSC CODES

1	The Sub-Committee, at an initial engagement, has allocated sufficient time for technical research and discussion before the target completion date, especially on issues needing to be addressed by more than one Sub-Committee and for which the timing of relevant sub-committees meetings and exchanges of the result of consideration needed to be carefully examined.	YES
2	The scope of application agreed at the proposal stage was not changed without the approval of the Committee.	YES
3	The technical base document/draft amendment addresses the proposal's issue(s) through the suggested instrument(s); where it does not, the Sub-Committee offers the Committee an alternative method of addressing the problem raised by the proposal.	YES
4	Due attention has been paid to the *Interim guidelines for the systematic application of the grandfather clauses* (MSC/Circ.765-MEPC/Circ.315).	YES
5	All references have been examined against the text that will be valid if the proposed amendment enters into force.	YES
6	The location of the insertion or modified text is correct for the text that will be valid when the proposed text enters into force on a four-year cycle of entry into force, as other relevant amendments adopted might enter into force on the same date.	YES
7	There are no inconsistencies in respect of scope of application between the technical regulation and the application statement contained in regulation 1 or 2 of the relevant chapter, and application is specifically addressed for existing and/or new ships, as necessary.	YES
8	Where a new term has been introduced into a regulation and a clear definition is necessary, the definition is given in the article of the Convention or at the beginning of the chapter.	N/A
9	Where any of the terms "fitted", "provided", "installed" or "installation" are used, consideration has been given to clarifying the intended meaning of the term.	YES
10	All necessary related and consequential amendments to other existing instruments, including non-mandatory instruments, in particular to the forms of certificates and records of equipment required in the instrument being amended, have been examined and included as part of the proposed amendment(s).	YES
11	The forms of certificates and records of equipment have been harmonized, where appropriate, between the Convention and its Protocols.	N/A
12	It is confirmed that the amendment is being made to a currently valid text and that no other bodies are concurrently proposing changes to the same text.	YES

[2] The appendix to this annex is also relevant with the draft amendments set out in annex 2.

13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	N/A
14	Other impacts of the implementation of the proposed/approved amendment have been fully analysed, including consequential amendments to the "application" and "definition" regulations of the chapter.	YES
15	The amendments presented for adoption clearly indicate changes made with respect to the original text, so as to facilitate their consideration.	YES
16	For amendments to mandatory instruments, the relationship between the Convention and the related instrument has been observed and addressed, as appropriate.	YES
17	The related record format has been completed or updated, as appropriate.	YES

RECORD FORMAT FOR AMENDMENTS TO THE 1994 AND 2000 HSC CODES

The following records should be created and kept updated for each regulatory development.

The records can be completed by providing references to paragraphs of related documents containing the relevant information, proposals, discussions and decisions.

1 Title (number and title of regulation(s))
Paragraph 8.3.5 (Personal life-saving appliances) and annex 1 (Form of safety certificate)
2 Origin of the requirement (original proposal document)
MSC 101/21/7 (Norway)
3 Main reason for the development (extract from the proposal document)
Harmonization of the lifejacket carriage requirements in the 1994 and 2000 HSC Codes with the requirements in SOLAS chapter III.
4 Related output
Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes (7.32)
5 History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
Following the consideration of document MSC 101/21/7 (Norway), proposing the harmonization of the lifejacket carriage requirements in the 1994 and 2000 HSC Codes with the requirements in SOLAS chapter III, **MSC 101** agreed to include, in its post-biennial agenda, an output on "Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes", with one session needed to complete the item, assigning the SSE Sub-Committee as the associated organ. **SSE 10** finalized the draft amendments for approval by MSC 109 and adoption by MSC 110.
6 Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
Not applicable
7 Technical background
7.1 Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)
The draft amendments will harmonize the lifejacket carriage requirements in the 1994 and 2000 HSC Codes with the requirements in SOLAS chapter III.

7.2 Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)
Not applicable
7.3 Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)
Not applicable
7.4 Short summary of requirement (what is the new requirement – in short and lay terms)
The draft amendments require that sufficient number of lifejackets will be provided for infants and oversize passengers no later than the date of the first renewal survey on or after 1 January 2028 on existing craft, and on new craft constructed on or after 1 January 2028.
7.5 Points of discussions (controversial points and conclusion)
Not applicable

***

ANNEX 2*

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

8.3 Personal life-saving appliances

1 The existing paragraph 8.3.5 is amended as follows:

"8.3.5 A lifejacket complying with the requirements of paragraph 2.2.1 or 2.2.2 of the LSA Code shall be provided for every person on board the craft and, in addition:

.1 a number of lifejackets suitable for children equal to at least 10% of the number of passengers on board shall be provided or such greater number as may be required to provide a lifejacket for each child;

.2 every passenger craft shall carry lifejackets for not less than 5% of the total number of persons on board. These lifejackets shall be stowed in conspicuous places on deck or at assembly stations;

.3 a sufficient number of lifejackets shall be carried for persons on watch and for use at remotely located survival craft and rescue boat stations; ~~and~~

.4 all lifejackets shall be fitted with a light, which complies with the requirements of paragraph 2.2.3 of the LSA Code~~.~~;

.5 in addition, on craft constructed on or after 1 January 2028, the following shall be provided:

.1 for passenger craft on voyages less than 24 h, a number of infant lifejackets equal to at least 2.5% of the number of passengers on board shall be provided;

.2 for passenger craft on voyages 24 h or greater, infant lifejackets shall be provided for each infant on board; and

.3 if the adult lifejackets provided are not designed to fit persons weighing up to 140 kg and with a chest girth of up to 1,750 mm, a sufficient number of suitable accessories shall be available on board to allow them to be secured to such persons; and

.6 craft constructed before 1 January 2028 shall comply with subparagraph .5 no later than the date of the first renewal survey on or after 1 January 2028."

* Tracked changes are created using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

ANNEX 1

FORM OF HIGH-SPEED CRAFT SAFETY CERTIFICATE AND RECORD OF EQUIPMENT

Record of Equipment for High-Speed Craft Safety Certificate

2 Details of life-saving appliances

2 In the table for "Details of life-saving appliances", a new entry 8.3 is inserted under entry 8.2, as follows:

"

8.3	Number suitable for infants	……..

"

***

ANNEX 3

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF SOLAS REGULATIONS III/20.8.4 AND 20.11, AND RESOLUTION MSC.402(96)

1 The Maritime Safety Committee, at its [109th session (2 to 6 December 2024)], with a view to providing more specific guidance on the applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats, approved unified interpretations of SOLAS regulations III/20.8.4 and 20.11, and resolution MSC.402(96), prepared by the Sub-Committee on Ship Systems and Equipment, at its tenth session (4 to 8 March 2024), as set out in the annex.

2 Member States are invited to use the annexed unified interpretations as guidance when applying SOLAS regulations III/20.8.4 and 20.11, and resolution MSC.402(96), and to bring the unified interpretations to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS REGULATIONS III/20.8.4 AND 20.11, AND RESOLUTION MSC.402(96)

RESOLUTION MSC.402(96)

SOLAS CHAPTER III

Life-saving appliances and arrangements

Regulations III/20.8.4 and 20.11 – Operational readiness, maintenance and inspections

SOLAS regulation III/20.11 and resolution MSC.402(96) should also be applicable to inflated rescue boats.

***

ANNEX 4

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF SOLAS REGULATION II-2/4.5.6.1, AND PARAGRAPHS 3.1.2, 3.1.4 AND 3.5.3 OF THE IBC CODE

1 The Maritime Safety Committee, at its [109th session (2 to 6 December 2024)], with a view to providing more specific guidance for the application of the relevant requirements of chapter II-2 of the SOLAS Convention and the IBC Code regarding cargo/vapour piping and related gas-freeing piping/ducts on tankers, approved unified interpretations of SOLAS chapter II-2 and the IBC Code, prepared by the Sub-Committee on Ship Systems and Equipment at its tenth session (4 to 8 March 2024), as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying relevant provisions of SOLAS chapter II-2 and the IBC Code, and to bring them to the attention of all parties concerned.

3 This circular applies to the systems installed on or after [1 January 2026].

4 The expression *installed on or after* [*1 January 2026*] means:

(a) for ships for which the building contract is placed on or after [1 January 2026], or in the absence of the contract, constructed on or after [1 January 2026], any installation date on the ship; or

(b) for ships other than those ships prescribed in (a) above, a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery date of the equipment to the ship on or after [1 January 2026].

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS REGULATION II-2/4.5.6.1 AND PARAGRAPHS 3.1.2, 3.1.4 AND 3.5.3 OF THE IBC CODE

All cargo piping (including cargo tank venting piping, relief valve discharge piping, cargo tank purging and gas-freeing piping/ducts), except those serving for inerting gas supply and for bow or stern loading and unloading arrangement, should be arranged within the cargo areas, as defined in SOLAS regulation II-2/3.6 and in paragraph 1.3.6 of the IBC Code. However, gas-freeing air-supply fan(s)/blower(s) and related air-supply piping/ducts may be located in the forecastle area, outside of the cargo area, subject to the following paragraphs:

1 The air-supply piping/ducts should not be permanently connected to cargo piping or cargo tank venting piping/ducts and additionally the following conditions in sub-paragraphs 1 to 5 should also be met:

.1 The connection should be made with detachable connections (e.g. spool pieces, detachable ducts/hoses, etc.) and two shut-off valves fitted as specified in sub-paragraph 2 below. Such detachable connections should be located within the cargo area.

.2 A non-return valve should be provided within the cargo area at the cargo side (i.e. between the said detachable connection and cargo tank(s)). A shut-off valve should be fitted at the fan/blower side (i.e. between the said detachable connection and the fan(s)/blower(s)), and another shut-off valve should be fitted at the cargo side (i.e. between the said detachable connection and cargo tank(s)). The shut-off valve at the cargo side may or may not be located after the non-return valve and therefore, a single non-return valve with a positive means of closure can be located between the said detachable connection and cargo tank(s) in lieu of the combination of the said non-return valve and shut-off valve at the cargo side.

.3 The shut-off valve at the fan/blower side should open after the air-supply fan(s)/blower(s) is/are started; this should be triggered/activated by the fan discharge pressure.

.4 The shut-off valve at the fan/blower side should automatically close when the air-supply fan(s)/blower(s) is/are stopped or in the event of loss of gas freeing air pressure.

.5 When the air-supply duct is arranged penetrating through the bulkhead facing the cargo area, the shut-off valve at the fan/blower side should be fitted directly on the bulkhead. This shut-off valve may or may not be located inside the fan/blower room. Alternatively, the shut-off valve at the fan/blower side may be fitted on the open deck apart from the bulkhead. In all cases, electrical parts (if any) of this shut-off valve should, if fitted in a hazardous area, be of certified safe type* for use in the concerned hazardous area (Zone 1 or Zone 2).

* Refer to IEC 60092-502:1999 Electrical Installations in Ships – Tankers.

2 The part of the air-supply piping/duct from air intakes of the fan(s)/blower(s) till the shut-off valve at the fan/blower side, except the part necessary to extend into a hazardous area (depending on the location of this shut-off valve), should be arranged in a non-hazardous area. The air intakes for the gas-freeing fans/blowers should be located on the open deck and in a non-hazardous area.

3 When not being used in gas-freeing operation, the said detachable connection should be dismantled, with all the openings closed with blank flanges; and a warning plate should be provided in the vicinity of each opening, stating "This opening is to be closed with a blank flange when not in gas-freeing operation".

4 The air-supply fan(s)/blower(s), as well as the associated piping/ducts, should not be used for any other purpose.

5 The air-supply fan(s)/blower(s) should be of the non-sparking type (see IACS unified requirement UR F29).

6 Electrical motor(s) driving the air-supply fan(s)/blower(s) should be of the explosion-proof type when fitted in the duct or located in the cargo area.

7 Suitable and clear operational procedures should be provided stating, inter alia:

.1 the flexible hose, detachable duct or spool piece can only be connected and fixed to the piping/duct just or within 10 minutes before the gas-freeing operation; and

.2 the shut-off valves can only be opened after the air-supply fan(s)/blower(s) are put into operation and this action should be interlocked with the fan discharge pressure.

***

ANNEX 5

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

1 The Maritime Safety Committee, at its [109th session (2 to 6 December 2024)], in order to provide specific guidance on the consistent application of SOLAS regulation II-2/11.4.1 on the crown of a machinery space of category A; as well as SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2 on the secondary means of venting cargo tanks, approved the unified interpretation of SOLAS chapter II-2, prepared by the Sub-Committee on Ship Systems and Equipment, at its tenth session (4 to 8 March 2024), as set out in the annex.

2 Member States are invited to use the annexed unified interpretation as guidance when applying SOLAS regulations II-2/11.4.1, 4.5.3.2.2 and 11.6.3.2, respectively, and to bring them to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

SOLAS regulation II-2/11.4.1 – Machinery spaces of category A, crowns and casings

The crown of a machinery space of category A should be understood to mean the underside of the deck and the uppermost horizontal part of the main space of the machinery space. If the upper side bulkheads are sloping, the sloping parts of the bulkheads should be included in the crown.

SOLAS regulations II-2/4.5.3.2.2 and 11.6.3.2 – Cargo areas of tankers; Protection of cargo tank structure against pressure or vacuum in tankers

For ships that apply pressure sensors in each tank as an alternative to having the secondary means of venting as per SOLAS regulation II-2/11.6.3.2, the setting of the over-pressure alarm should be above the pressure setting of the P/V valve and the setting of the under-pressure alarm should be below the vacuum setting of the P/V valve. The alarm settings should be within the design pressures of the cargo tanks. The settings should be fixed and should not be arranged for blocking or adjustment in operation.

An exception should be permitted for ships that carry different types of cargo and use P/V valves with different settings, one setting for each type of cargo. The settings may be adjusted to account for the different types of cargo.

***

ANNEX 6

DRAFT MSC CIRCULAR*

REVISED UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

1 The Maritime Safety Committee, at its eighty-fourth session (7 to 16 May 2008), with a view to providing more specific guidance for application of the relevant requirements of the 1974 SOLAS Convention, approved the *Unified interpretations of SOLAS chapter II-2* prepared by the Sub-Committee on Fire Protection, at its fifty-second session (14 to 18 January 2008).

2 The Maritime Safety Committee, at its 107th session (31 May to 9 June 2023), approved *Revised unified interpretations of SOLAS chapter II-2* (MSC.1/Circ.1276/Rev.1), incorporating amendments to the unified interpretations of SOLAS regulations II-2/9.7.2 and 9.7.5 on separation of ducts from spaces, in order to align them with the ~~provisions~~ requirements of the SOLAS Convention, as amended by resolution MSC.365(93), prepared by the Sub-Committee on Ship Systems and Equipment at its ninth session (27 February to 3 March 2023)~~, as set out in the annex~~.

3 The Maritime Safety Committee, at its [109th session (2 to 6 December 2024)], approved draft amendments to the revised unified interpretation of SOLAS regulation II-2/9.7.5.1 on separation of ducts from spaces in order to correct the reference to the regulation in MSC.1/Circ.1276/Rev.1, prepared by the Sub-Committee on Ship Systems and Equipment at its tenth session (4 to 8 March 2024), as set out in the annex.

4 Member Governments are invited to use the annexed revised unified interpretations as guidance when applying relevant ~~provisions~~ requirements of SOLAS chapter II-2 to fire protection construction, installation, arrangements and equipment to be installed on board ships of which the building contract is placed on or after ~~5 June 2023~~[*date of approval*], and to bring the unified interpretations to the attention of all parties concerned.

5 This circular supersedes MSC.1/Circ.1276/Rev.1.

* Modifications are indicated in grey shading. The revision of MSC.1/Circ.1276/Rev.1 will be disseminated as MSC.1/Circ.1276/Rev.2.

ANNEX

REVISED UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

Regulation II-2/4.3 – Arrangements for gaseous fuel for domestic purposes

1 A portion of open deck, recessed into a deck structure, machinery casing, deck house, etc., utilized for the exclusive storage of gas bottles is considered acceptable for the purpose of regulation II-2/4.3 provided that:

.1 such a recess has an unobstructed opening, except for small appurtenant structures, such as opening corner radii, small sills, pillars, etc. The opening may be provided with grating walls and door; and

.2 the depth of such a recess is not greater than 1 m.

2 A portion of open deck meeting the above should be considered as open deck in applying tables 9.1 to 9.8 of SOLAS chapter II-2.

Regulations II-2/9.7.2 and 9.7.5.1 – Separation of ducts from spaces

1 With respect to the application of SOLAS regulations II-2/9.7.2 and 9.7.5.1 for determining fire insulation for trunks and ducts which pass through an enclosed space, the term "pass through" pertains to the part of the trunk/duct contiguous to the enclosed space.

2 The following sketches are given as examples:

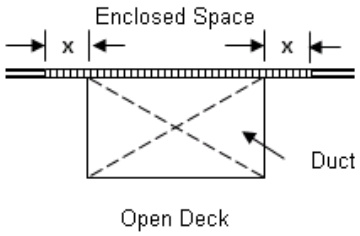


Figure 1

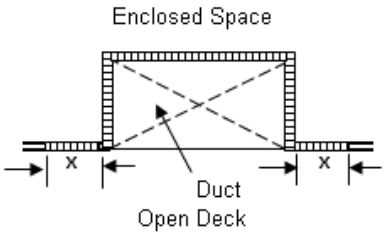


Figure 2

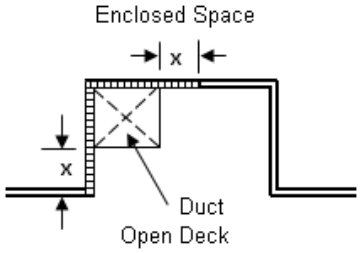


Figure 3

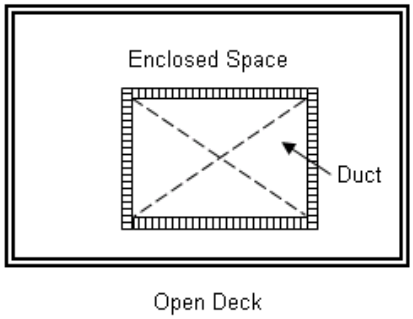


Figure 4

= fire insulation
x = 450 mm

Examples of ducts contiguous to enclosed space

Regulation II-2/10.5.6 – Fixed local application fire-extinguishing systems*

1 The end nozzles of a single line of nozzles should be positioned:

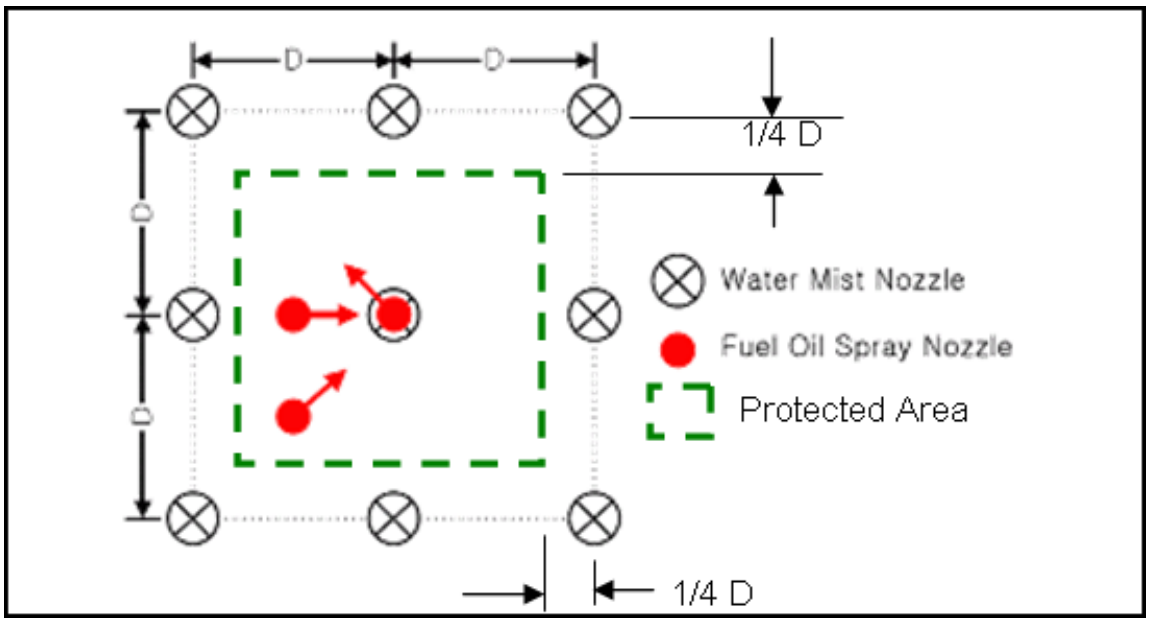
.1 outside the hazard where paragraph 3.4.2.1 of the appendix to the annex to MSC/Circ.913 is applicable, to the distance established in testing; and

.2 at the edge or outside of the protected area where paragraph 3.4.2.2 of the appendix to the annex to MSC/Circ.913 is applicable.

A single nozzle should be located above the fire source and at the centre of an area having dimensions D/2 x D/2.

Sketches of acceptable arrangements are as follows:

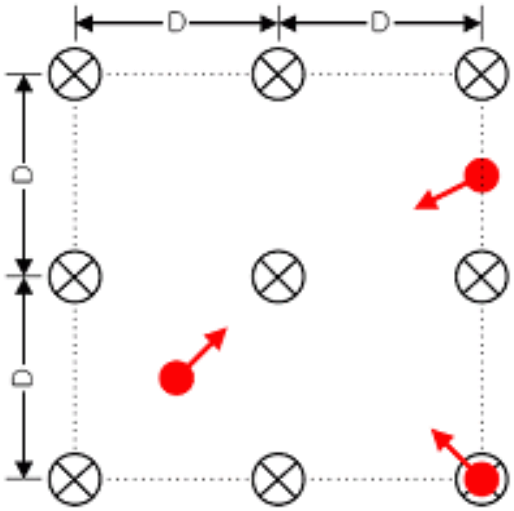
1.1 System (utilizing a 3 x 3 nozzle grid) that extinguishes fires referred to in paragraphs 3.3.2.1 to 3.3.2.3 of the appendix to the annex to MSC/Circ.913



For this system, the outer nozzles should be installed outside of the protected area at a distance of at least one quarter of the maximum nozzle spacing.

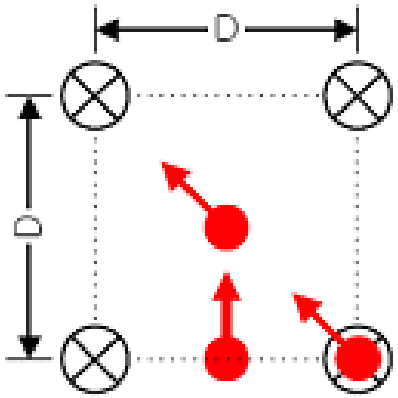
* The fixed local application fire-fighting systems shall be approved based on the standards contained in the *Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces* (MSC/Circ.913), as was superseded by MSC.1/Circ.1387.

1.2 System (utilizing a 3 x 3 nozzle grid) that extinguishes fires referred to in paragraphs 3.3.2.3 to 3.3.2.5 of the appendix to the annex to MSC/Circ.913



For this system, outer nozzles can be located either at the edge of the protected area or outside of the protected area.

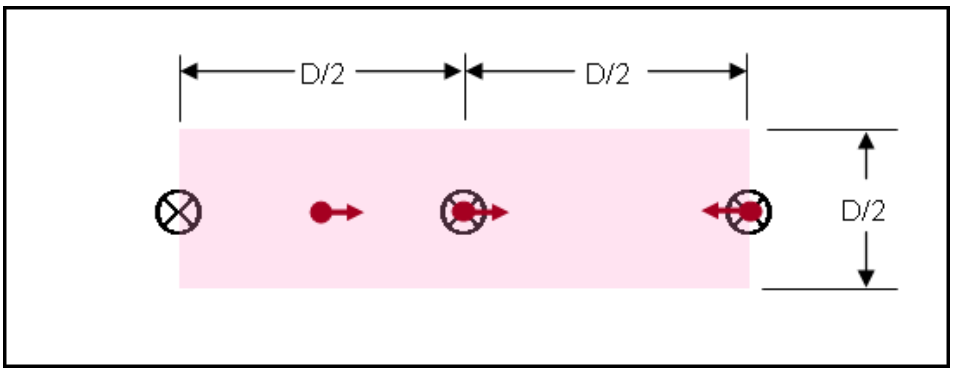
1.3 System (utilizing a 2 x 2 nozzle grid) that extinguishes fires referred to in paragraphs 3.3.2.3 to 3.3.2.5 of the appendix to the annex to MSC/Circ.913



For this system, outer nozzles can be located either at the edge of the protected area or outside of the protected area.

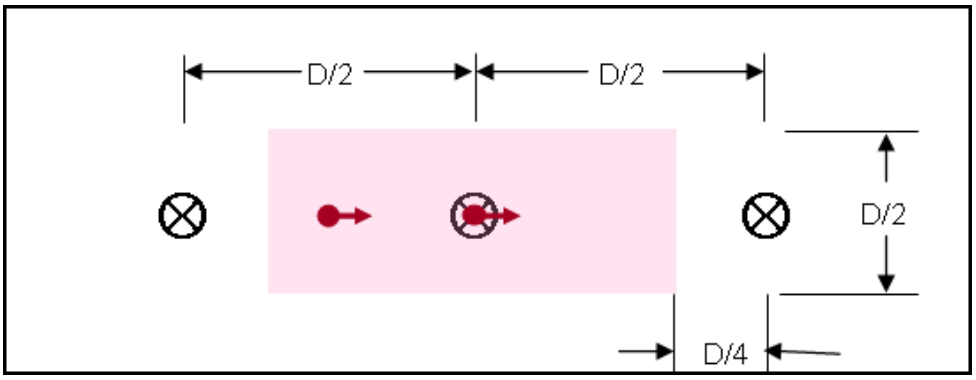
1.4 A single row of nozzles

1.4.1 System that extinguishes fires referred to in paragraphs 3.3.2.3 to 3.3.2.5 of the appendix to the annex to MSC/Circ.913



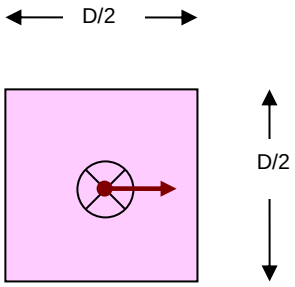
For this system, outer nozzles should be placed at least at the edge of the protected area.

1.4.2 System that extinguishes fires referred to in paragraphs 3.3.2.1 to 3.3.2.3 of the appendix to the annex to MSC/Circ.913



For this system, the outer nozzles should be placed outside of the protected area at a distance of at least one quarter of the maximum nozzle spacing.

1.5 Single nozzle



Regulation II-2/10.8.1 – Fixed deck foam fire-extinguishing systems

Where an enclosed pipe trunk is situated within the cargo tanks deck area, the pipe trunk:

.1 should be protected by a fixed fire-extinguishing system in accordance with regulation II-2/10.9; and the extinguishing system should be operated from a readily accessible position outside the pipe trunk;

.2 is not considered part of the cargo tanks deck area;

.3 the area of the pipe trunk need not be included in the calculation of the foam solution rate of supply for the deck foam system required by regulation II-2/10.8;

.4 should be adequately ventilated and protected in accordance with regulations II-2/4.5.10.1.2 and 4.5.10.1.3; and

.5 should contain no flammable gas sources other than pipes and flanges. If the pipe trunk contains any other source of flammable gas, i.e. valves and pumps, it should be regarded as a cargo pump-room.

***

ANNEX 7

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS CHAPTER II-1

1 The Maritime Safety Committee, at its [109th session (2 to 6 December 2024)], with a view to providing more specific guidance on SOLAS regulation II-1/26, approved the unified interpretation of SOLAS chapter II-1, prepared by the Sub-Committee on Ship Systems and Equipment, at its tenth session (4 to 8 March 2024), as set out in the annex.

2 Member States are invited to use the annexed unified interpretation as guidance when applying SOLAS regulation II-1/26, and to bring the unified interpretation to the attention of all parties concerned.

3 This circular applies to the systems installed on passengers ships, on or after [1 January 2026].

4 The expression *installed on or after [1 January 2026]* means:

(a) for passenger ships for which the building contract is placed on or after [1 January 2026], or in the absence of the contract, constructed on or after [1 January 2026], any installation date on the ship; or

(b) for passenger ships other than those ships prescribed in (a) above, a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery date of the equipment to the ship on or after [1 January 2026].

ANNEX

UNIFIED INTERPRETATION OF SOLAS CHAPTER II-1

CHAPTER II-1

Construction – Structure, subdivision and stability, machinery and electrical installations

Regulation II-1/26.2 – General

1 The possibility of failures in electric machines should be considered. Sufficient propulsion capacity should be maintained or restored within due time for the following failure modes of electric machines, as a minimum:

.1 winding insulation failures; and

.2 excitation failures.

2 Single electric propulsion motors (both single and dual winding with a single rotor) for main propulsion should not be considered to provide the reliability required for a single essential propulsion component. A separate propulsion unit sufficient to give the ship a navigable speed should be required for such arrangements.

3 Propulsion arrangements with two independent rotors on a single shaft should be considered to provide the required reliability, provided it is possible to de-excite or de-flux each of the rotors individually and to supply independently the stators.

***

ANNEX 8

JUSTIFICATION FOR A NEW OUTPUT ON AMENDMENTS TO THE 1994/2000 HSC CODES AND 1979/1989/2009 MODU CODES, AND TO ENSURE THE CONSISTENT APPLICATION OF RESOLUTION MSC.402(96)

Introduction

1 This justification is submitted for a new output to amend the 1994/2000 HSC Codes and 1979/1989/2009 MODU Codes, to ensure the consistent application of resolution MSC.402(96) in accordance with paragraphs 4.6 and 4.10 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.5), taking into account resolution A.1174(33) on the *Application of the Strategic Plan of the Organization*, noting that proposals for new outputs may be developed and submitted by a subsidiary body when such proposals arise from other outputs already on the agenda of that subsidiary body.

2 MSC 106 instructed SSE 9 to consider, as an urgent matter, all relevant submissions relating to the implementation of resolution MSC.402(96), including the issue on the applicability of SOLAS regulation III/20.11 and resolution MSC.402(96) to inflated rescue boats, as well as to LSA equipment installed on high-speed craft and mobile offshore drilling units (MSC 106/19, paragraph 18.18.4).

3 After discussion, SSE 9 prepared and submitted the justification for a related new output to MSC 107. Consequently, MSC 107 approved the new output on "Comprehensive review of the requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation" to avail immediate discussion of the LSA Correspondence Group established by SSE 9 and, subsequently, to start the work at SSE 10 (MSC 107/20, paragraphs 14.51 and 14.52).

4 The LSA Correspondence Group's report (SSE 10/14) states that the majority of participants agreed that SOLAS regulation III/20.11 does not apply to high-speed craft or mobile offshore drilling units and, therefore, resolution MSC.402(96) is not explicitly applied. However, all respondents agreed that resolution MSC.402(96) should apply to high-speed craft and mobile offshore drilling units. The Group agreed that this should be considered under a new output for amending the 1994 and 2000 HSC Codes and the 1979,1989 and 2009 MODU Codes, as proposed in document MSC 106/18/3 submitted by IACS (SSE 10/14, paragraph 12).

5 The Sub-Committee supports the agreement of the Group in that regard. Therefore, subject to the discussion on the matter and concurrence of the Committee on the need for a new output, the Sub-Committee proposes to establish a related new output to apply the requirements in SOLAS regulation III/20.11 and resolution MSC.402(96), as appropriate, to high-speed craft and mobile offshore drilling units.

IMO's objectives

6 The proposal falls under the scope of IMO's mission, as stated in paragraph 1 of the annex to the *Revised strategic plan for the organization for the six-year period 2024 to 2029* (resolution A.1173(33)), 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, and effective implementation of IMO’s instruments with a view to their universal and uniform application.

7 The proposal also supports SD 7: Ensure regulatory effectiveness by ensuring that a universally adopted, effective, international regulatory framework is in place and implemented consistently.

Need

8 IMO has made progress on addressing the risk of accidents associated with lifeboats, rescue boats, launching appliances and release gears in the past decade through amending SOLAS regulation III/20.11 (resolution MSC.404(96)) and by adopting resolution MSC.402(96). However, in doing so the life-saving appliances installed on high-speed craft and MODUs may have been overlooked, as the corresponding enhancements to the HSC Codes and the MODU Codes have not been made.

9 As mentioned in paragraph 4, the LSA Correspondence Group discussed document MSC 106/18/3 and reported its consensus to SSE 10, as follows (SSE 10/14, paragraphs 12 and 17.3):

.1 SOLAS regulation III/20.11 does not apply to high-speed craft or mobile offshore drilling units and, therefore, resolution MSC.402(96) is not explicitly applied;

.2 however, resolution MSC.402(96) should apply to high-speed craft and mobile offshore drilling units; and

.3 this should be considered under a new output for amending the 1994 and 2000 HSC Codes and the 1979,1989 and 2009 MODU Codes, as proposed in document MSC 106/18/3.

10 The LSA Correspondence Group also unanimously agreed that the requirements in SOLAS regulation III/20.11 and resolution MSC.402(96) should also apply to inflated rescue boats (SSE 10/14, paragraph 11).

11 The regulatory inconsistency as identified in paragraphs 9 and 10 above may lead to improper maintenance, repair, and testing of lifeboats, rescue boats, launching appliances and release gears installed on high-speed craft and MODUs. Given that the life-saving appliances are frequently operated for drills and eventually utilized at the time of emergency, the improperly serviced ones give rise to relevant accidents.

Analysis of the issue

Applicability of resolution MSC.402(96) to the life-saving appliances installed on high-speed craft certified to the 1994 and 2000 HSC Codes

12 SOLAS regulation III/20.11, as amended by resolution MSC.404(96), and resolution MSC.402(96) provide the requirements for maintenance, thorough examination, operational testing, overhaul, and repair of the following life-saving appliances:

.1 lifeboats (including free-fall lifeboats), rescue boats, and fast rescue boats; and

.2 launching appliances and on-load/off-load release gear for lifeboats (including primary and secondary means of launching appliances for free-fall lifeboats), rescue boats, fast rescue boats, and davit-launched liferafts.

13 Further, SOLAS regulation III/20.11, as amended by resolution MSC.404(96), and resolution MSC.402(96) require that such activities are to be conducted annually and five-yearly either by the equipment manufacturer or an authorized service provider.

14 However, SOLAS regulation X/3.1 states that a high-speed craft, which complies with the requirements of the 1994 or 2000 HSC Codes in its entirety and which has been surveyed and certified as provided in one of the Codes, is deemed to have complied with the requirements of SOLAS chapters I to IV and SOLAS regulations V/18, V/19 and V/20.

15 In this regard, section 8.9.14 of the 2000 HSC Code, as amended by resolution MSC.222(82), only addresses the periodic servicing of launching appliances without referencing resolution MSC.402(96), as follows:

"Launching appliances:

.1 shall be serviced at recommended intervals in accordance with instructions for onboard maintenance as required by regulation III/36 of the Convention;

.2 shall be subject to a thorough examination at the annual surveys required by paragraph 1.5.1.3; and

.3 shall upon completion of the examination in .2 be subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the survival craft or rescue boat without persons on board, except that, at intervals not exceeding five years, the test shall be carried out with a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment."

16 It is also noted that section 8.9.10 of the 1994 HSC Code, as amended by resolution MSC.221(82), has similar provisions using non-mandatory expressions.

17 As such, it appears that the periodic servicing of lifeboats, if fitted, rescue boats and their release gears are left unaddressed in the 1994 and 2000 HSC Codes, while that of launching appliance is included without explicitly mentioning resolution MSC.402(96).

18 Crew and passengers using life-saving appliances installed on high-speed craft are exposed to various risks arising from their improper servicing or repair, just as those under the remit of SOLAS chapter III. The operational limitation of high-speed craft may not be a justification to take a less strict approach compared to SOLAS regulation III/20.11 and resolution MSC.402(96).

19 In light of the aforementioned, it is considered that resolution MSC.402(96) should be applicable to lifeboats, rescue boats, launching appliances, and release gears installed on high-speed craft subject to the 1994 and 2000 HSC Codes; and that the 1994 and 2000 HSC Codes should be amended in line with, or to refer to, SOLAS regulation III/20.11 for application of resolution MSC.402(96).

Applicability of resolution MSC.402(96) to the life-saving appliances installed on mobile offshore drilling units subject to the 1979, 1989 and 2009 MODU Codes

20 Similarly, the 1979, 1989 and 2009 MODU Codes are left as a grey area in applying resolution MSC.402(96). It is noted that section 10.18.12 of the 2009 MODU Code addresses the periodic servicing of launching appliances and on-load release gear, which corresponds to SOLAS regulation III/20.11, as amended by resolution MSC.325(90), not resolution MSC.404(96), and still footnotes MSC.1/Circ.1206/Rev.1. It is observed that the 1979 and 1989 MODU Codes do not have the corresponding part addressing the periodic servicing.

21 In this regard, it is opined that the life-saving appliances installed on the mobile offshore drilling units should also be serviced by the equipment manufacturer or a service provider approved in accordance with resolution MSC.402(96).

Analysis of implications

22 The scheme of authorized service providers has been already in place since 2020 for compliance with SOLAS regulation III/20.11 and resolution MSC.402(96). Therefore, it is anticipated that this proposal does not incur substantive burden and cost to the maritime industry.

23 The checklist for identifying administrative requirements given in annex 6 to MSC-MEPC.1/Circ.5/Rev.5 is included in appendix 1.

Benefits

24 It is expected that embarking on this output would give industry the clarity required to ensure consistent application of resolution MSC.402(96) regardless of ship types.

25 The safety risk posed to persons using the life-saving appliances installed on board high-speed craft and MODUs will be alleviated by appropriately aligning the requirements in the HSC Codes and the MODU Codes with those of SOLAS regulation III/20.11, as amended by resolution MSC.404(96), and resolution MSC.402(96).

Industry standards

26 ISO 23678:2020 series provide a minimum standard of competency for the certification of servicing personnel. However, expanding the application of resolution MSC.402(96) to high-speed craft and MODUs does not require the review of the standard because resolution MSC.402(96) does not reference ISO 23678:2020.

Output

27 It is proposed that, in order to ensure a holistic approach, the following output is proposed:

> "Amendments to the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes to ensure the consistent application of resolution MSC.402(96)".

28 The suggested modifications to the 2000 HSC Code and to 2009 MODU Code are respectively contained in appendices 3 and 4, and shaded in grey, with the understanding that the same amendments will be produced to all versions of the HSC and MODU Codes, as appropriate. Parts I and II of the check/monitoring sheet, as given in annex 2 to MSC.1/Circ.1500/Rev.2, have been completed and are provided in appendix 5.

Human element

29 The completed checklist for considering human element issues contained in annex 5 to MSC-MEPC.1/Circ.5/Rev.5, is provided in appendix 2.

Urgency

30 MSC 106 instructed the SSE Sub-Committee to consider document MSC 106/18/3 (IACS) as an urgent item. The discrepancies amongst the SOLAS Convention, the 1994/2000 HSC Codes and the 1979/1989/2009 MODU Codes need to be concurrently addressed when the comprehensive review of resolution MSC.402(96) is made through the existing output.

31 The work on this proposal may be completed in two sessions with the Sub-Committee on Ship Systems and Equipment (SSE) as the associated organ. Noting that there is an ongoing revision work of resolution MSC.402(96), for utilizing the available resources in the most efficient way, the proposed new output should be included in the post-biennial agenda for the moment, with the understanding that the Sub-Committee can place the output on the provisional agenda of the next appropriate session upon the completion of the existing output relating to the comprehensive review of resolution MSC.402(96). The Committee is invited to endorse such a plan of work for the continuity of the two outputs back to back.

APPENDIX 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	NR X	Yes □ Start-up □ 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	NR X	Yes □ Start-up □ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes) *See paragraphs 11 and 12 above*		
3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing	NR X	Yes □ Start-up □ 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	NR X	Yes □ Start-up □ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
5. Other identified requirements?	NR X	Yes □ Start-up □ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		

APPENDIX 2

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

	1 **Question**	**2** **Yes/No**	**3** **IMO References**	**4** **Considerations**	**5** **Instructions**
Workload			***Other relevant references may be added*** ***Strike out references that are not relevant***	***If answer to question is "yes" identify considerations. If answer is "no" make proper justification***	***Identify how human element considerations should be addressed in the output***
1	**Does the "output" affect workload?**	**No**		**Proposed changes will not affect the workload of crew, as the potential modifications relate to service providers and manufacturers of LSA**	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
1.1	**On board, especially in the already intensive phases of the voyage and port operations to:**	**No**	~~***Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies* (MSC-MEPC.7/Circ.8)**~~ ~~***Guidelines on fatigue* (MSC.1/Circ.1598)**~~ ~~***Principles of minimum safe manning* (Resolution A.1047(27))**~~ ~~***Guidelines for the investigation of accidents where fatigue may have been an issue* (MSC/Circ.621)**~~		

	1	2	3	4	5
	Question	**Yes/No**	**IMO References**	**Considerations**	**Instructions**
1.1.3	Onboard administration in support of the ships' management systems	No		See 1 above	
1.1.4	Onboard administration related to regulation involving flag States, classification societies, port State and other bodies such as charterers and port authorities	No		See 1 above	
1.1.5	Increased workload or time pressure on personnel if involved in implementation of changes prior to the implementation date	No		See 1 above	
1.2	Ashore, in a manner that would affect the ships operation to:	No		Proposed changes merely brings the consistency with SOLAS	
1.2.1	Companies' administration	No		See 1.2 above	
1.2.2	Flag State, port State and classification societies	No		See 1.2 above	

	1	2	3	4	5
	Question	**Yes/No**	**IMO References**	**Considerations**	**Instructions**
	administration such that certification and other processes are compromised or delayed				

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
Decision-making			*Other relevant references may be added* *Strike out references that are not relevant*	*If answer to question is "yes" identify considerations. If answer is "no" make proper justification*	*Identify how human element considerations should be addressed in the output*
2	**Does the "output" impact decision-making on board the ship?**	No		Proposed changes will not affect the decision-making of crew, as the potential modifications relate to service providers and manufacturers of LSA	
2.1	By confusion with existing requirements and regulations	No		See 2 above	
2.2	By changing responsibilities as laid out in the ISM Code	No		See 2 above	
2.3	By creating complexity in its implementation and/or in the safety management systems	No		See 2 above	
2.4	By requiring increased mental effort, such as the need to find, transform and analyse data or result in the need to make judgements based on	No		See 2 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	incomplete information				
2.5	By limiting the time available to establish situational awareness, decide, communicate (possibly across time zones) or check	No		See 2 above	
2.6	By increasing reliance on judgement and administrative controls to manage major risks such as oil spills and collisions	No		See 2 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
Living and Working Environment			*Other relevant references may be added* *Strike out references that are not relevant*	*If answer to question is "yes" identify considerations. If answer is "no" make proper justification*	*Identify how human element considerations should be addressed in the output*
3	**Does the "output" affect the living and working environment?**	No	*Guidelines on the basic elements of a shipboard occupational health and safety programme* (MSC-MEPC.2/Circ. 3) *Guidelines on fatigue* (MSC.1/Circ.1598)	Proposed changes will not affect the living and working environment, as the potential modifications relate to service providers and manufacturers of LSA	
3.1	By interfering with existing arrangements for abandonment, fire-fighting and other emergency plans or procedures	No		See 3 above	
3.2	By introducing new materials that could create an explosion, fire, environmental or occupational health risk	No		See 3 above	
3.3	By introducing new high energy sources such as	No		See 3 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	high-voltage, high pressure fluids				
3.4	By affecting access or egress and causing lack of ventilation in working spaces	No		See 3 above	
3.5	By affecting the habitability of accommodation spaces due to noise, vibration, temperatures, dust and other contaminants	No		See 3 above	
Operation and Maintenance			*Other relevant references may be added* *Strike out references that are not relevant*	*If answer to question is "yes" identify considerations. If answer is "no" make proper justification*	*Identify how human element considerations should be addressed in the output*
4.	**Does the "output" affect the operation and maintenance of the ship, its structure or systems and equipment?**	No	~~*Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies* (MSC-MEPC.7/Circ. 8)~~ ~~*Guidelines for bridge equipment and systems, their*~~	Proposed changes will not affect the operation and maintenance of the LSA by crew, as the potential modifications relate to service providers and manufacturers of LSA	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
			~~*arrangement and integration (BES)* (SN.1/Circ.288)~~ ~~*Principles of minimum safe manning* (Resolution A.1047(27))~~ ~~*Issues to be considered when introducing new technology on board ships* (MSC/Circ.1091)~~ ~~*Guideline on software quality assurance and human-centred design for e-navigation* (MSC.1/Circ.1512)~~ ~~*Guidelines for the standardization of user interface design for navigation equipment* (MSC.1/Circ.1609)~~		

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
4.1	By introducing equipment that the user may find difficult to operate or maintain or may be unreliable	No		See 4 above	
4.2	By introducing new and/or novel technology, or technology that changes the role of the person	No		See 4 above	
4.3	By introducing requirements for new competencies and roles	No		See 4 above	
4.4	By overloading existing infrastructure such as power generation and ventilation systems	No		See 4 above	
4.5	By poor integration with existing systems and controls	No		See 4 above	
4.6	By introducing new and unfamiliar operations/procedures	No		See 4 above	
4.7	By introducing new and unfamiliar operating interfaces?	No		See 4 above	
4.8	By introducing risks to the ship during any modifications required prior to the	No		See 4 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
	implementation date of the output				
Measures to address the human element			*Other relevant references may be added* *Strike out references that are not relevant*	*If answer to question is "yes" identify considerations. If answer is "no" make proper justification*	*Identify how human element considerations should be addressed in the output*
5.	**Does the "output" require changes to:**	No	*Shipboard technical operating and maintenance manuals* (MSC.1/Circ.1253) *Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies* (MSC-MEPC.7/Circ. 8)	Proposed changes will have a positive impact on the operation and maintenance of the LSA by shore support	
5.1	Training	No		See 5 above	
5.2	Practical skill development and competences	No		See 5 above	
5.3	Operating, management and/or maintenance procedures	No		See 5 above	

	1 Question	2 Yes/No	3 IMO References	4 Considerations	5 Instructions
5.4	Information/manuals for operation and maintenance	No		See 5 above	
5.5	Spares outfit	No		See 5 above	
5.6	Occupational safety requirements including guarding and PPE	No		See 5 above	
5.7	Shore support	No		See 5 above	

APPENDIX 3

SUGGESTED MODIFICATIONS TO THE 2000 HSC CODE

HSC 2000 Code – Chapter 8 – Life-saving appliances and arrangements

8.9 Operational readiness, maintenance and inspections

8.9.7 Servicing of inflatable liferafts, inflatable lifejackets, and marine evacuation systems ~~and inflated rescue boats~~

8.9.7.1 Every inflatable liferaft, inflatable lifejacket and MES shall be serviced:

… omitted …

8.9.14 ~~*Periodic servicing of launching appliances*~~ *Maintenance, thorough examination, operational testing, overhaul and repair of lifeboats, rescue boats, launching appliances and release gear*

8.9.14.1 Launching appliances shall be:

.1 ~~shall be serviced at recommended intervals in accordance with instructions for on-board maintenance as required by regulation III/36 of the Convention;~~

. 1~~2~~ ~~shall~~ subject to a thorough examination at the annual surveys required by paragraph 1.5.1.3; and

.2~~3~~ ~~shall~~ upon completion of the examination in .1~~2~~, ~~be~~ subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the survival craft or rescue boat without persons on board, except that, at intervals not exceeding five years, the test shall be carried out with a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment.

8.9.14.2 Lifeboat or rescue boat release gear shall be:

.1 subject to a thorough examination and operational test at the annual surveys in paragraph 1.5.1.3; and

.2 in case of on-load release gear, operationally tested under a load of 1.1 times the total mass of the lifeboat or rescue boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such overhauling and test shall be carried out at least once every five years.

8.9.14.3 Davit-launched liferaft automatic release hooks shall be:

.1 subject to a thorough examination and operational test at the annual surveys in paragraph 1.5.1.3; and

.2 operationally tested under a load of 1.1 times the total mass of the liferaft when loaded with its full complement of persons and equipment whenever the automatic release hook is overhauled. Such overhauling and test shall be carried out at least once every five years.

8.9.14.4 Lifeboats and rescue boats shall be subject to a thorough examination and operational test during the annual surveys in paragraph 1.5.1.3.

8.9.14.5 The thorough examination, operational testing and overhaul required by sub-paragraphs .1 to .4 and the maintenance and repair of equipment specified in sub-paragraphs .1 to .4 shall be carried out in accordance with the *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear*, adopted by the Organization by resolution MSC.402(96), as may be amended by the Organization, and the instruction for onboard maintenance as required by regulation III/36 of the SOLAS Convention.

APPENDIX 4

SUGGESTED MODIFICATIONS TO THE 2009 MODU CODE

2009 MODU Code – Chapter 10 – Life-Saving Appliances and Equipment

10.18 Operational readiness, maintenance and inspections

Servicing of inflatable liferafts, inflatable lifejackets, and marine evacuation systems ~~and maintenance and repair of inflated rescue boats~~

10.18.9 Every inflatable liferaft, inflatable lifejacket and marine evacuation system should be serviced:

.1 at intervals not exceeding 12 months, provided where in any case this is impracticable, the Administration may extend this period to 17 months;

.2 at an approved servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel[40]; and

[40] Refer to the Recommendation on conditions for the approval of servicing stations for inflatable liferafts, adopted by the Organization by resolution A.761(18).

.3 in addition to or in conjunction with the servicing intervals of marine evacuation systems under paragraph 10.18.9.1, each marine evacuation system should be deployed from the ship on a rotational basis at intervals to be agreed by the Administration provided that each system is to be deployed at least once every six years.

~~10.18.10 All repairs and maintenance of inflated rescue boats should be carried out in accordance with the manufacturer's instructions. Emergency repairs may be carried out on board the unit; however, permanent repairs should be carried out by an approved servicing station.~~

Periodic servicing of lifeboats, rescue boats, launching appliances and ~~on-load~~ release gear

10.18.12 Periodic servicing of launching appliances and ~~on-load~~ release gear

.1 Launching appliances should be:

~~.1 maintained in accordance with instructions for on-board maintenance in paragraph 10.18.2;~~

.12 subject to a thorough examination at the annual surveys in section 1.6; and

. 23 upon completion of the examination referred to in paragraph 10.18.12.1.12, subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied should be the mass of the survival craft or rescue boat without persons on board, except that, at intervals not exceeding five years, the test should be carried out with a proof load of 1.1 times the mass of the survival craft or rescue boat and its full complement of persons and equipment.

.2 Lifeboat or rescue boat ~~on-load~~ release gear, including free-fall lifeboat release systems should be:

~~.1 maintained in accordance with instructions for on-board maintenance in paragraph 10.18.2;~~

.~~1~~2 subject to a thorough examination and operational test at the annual surveys in section 1.6 by properly trained personnel familiar with the system; and

.~~2~~3 in cases of on-load release gear, operationally tested under a load of 1.1 times the total mass of the lifeboat or rescue boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such overhauling and test should be carried out at least once every five years.

.3 notwithstanding paragraph 10.18.12.2.2, the operational testing of free-fall lifeboat release systems should be performed either by free-fall launch with only the operating crew on board or by a test without launching the lifeboat carried out based on the *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear*, adopted by the Organization by resolution MSC.402(96), as may be amended by the Organization.

.3 Davit-launched liferaft automatic release hooks should be:

~~.3.1 maintained in accordance with the instructions for on-board maintenance in paragraph 10.18.2;~~

.~~1~~2 subject to a thorough examination and operational test at the annual surveys in section 1.6 by properly trained personnel familiar with the system; and

.~~2~~3 operationally tested under a load of 1.1 times the total mass of the liferaft when loaded with its full complement of persons and equipment whenever the automatic release hook is overhauled. Such overhauling and test should be carried out at least once every five years.

.4 Lifeboats and rescue boats should be subject to a thorough examination and operational test during the annual surveys required by section 1.6.

.5 The thorough examination, operational testing and overhaul required by sub-paragraphs .1 to .4 and the maintenance and repair of equipment specified in sub-paragraphs .1 to .4 should be carried out in accordance with the *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear*, adopted by the Organization by resolution MSC.402(96), as may be amended by the Organization, and the instructions for on-board maintenance in paragraph 10.18.2.

APPENDIX 5

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.2)

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

1	*Submitted by* **SSE10**
2	*Meeting session* **MSC 109**
3	*Date* **8 March 2024**

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* **7**
2	*Title of the output* **Amendments to the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes to ensure the consistent application of resolution MSC.402(96)**
3	*Recommended type of amendments* (MSC.1/Circ.1481) (delete as appropriate)
	• **Four-year cycle of entry into force** • ~~exceptional circumstance~~
4	*Instruments intended for amendment (SOLAS, LSA Code, etc.) or developed (new code, new version of a code, etc.)* **1994/2000 HSC Codes and 1979/1989/2009 MODU Codes**
5	*Intended application (scope, size, type, tonnage/length restriction, service (International/non-international), activity, etc.)* **All craft and units to which above listed Codes apply, respectively**
6	*Application to new/existing ships* **Existing and new craft and units, respectively**
7	*Proposed coordinating sub-committee* **SSE Sub-Committee**
8	*Anticipated supporting sub-committees* **None**
9	*Time scale for completion* **2 sessions**
10	*Expected date(s) for entry into force and implementation/application* **1 January 2032**
11	*Any relevant decision taken or instruction given by the Committee* **None**

***

ANNEX 9*

BIENNIAL STATUS REPORT FOR THE 2024-2025 BIENNIUM

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for alternative fuels and related technologies	Continuous	MSC	HTW / PPR / SDC / SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2; PPR 6/20, paragraph 3.39; MSC 102/24, paragraph 21.4; MSC 106/19, paragraph 16.42.
Notes:	MSC 106 changed description in order to accommodate the consideration of alternative fuels not having a low-flashpoint. This resulted the deletion of output 2.24 on "Development of guidelines for the safety of ships using ammonia as fuel" to avoid duplication.								
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapter II-1	2024	MSC	SSE	SDC	No work requested		MSC 82/24, paragraph 3.92; MSC 98/23, annex 38; MSC 102/24, paragraph 19.16. MSC 105/20, paragraphs 15.13 and 18.54;SSE 6/18, section 3; SSE 7, section 10

* Grey shading indicates proposed modifications.

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
Notes:	MSC 105 retitled the output to: "Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapter II-1" and extended the TCY to 2024.								
2. Integrate new and advancing technologies in the regulatory framework	2.9 (New)	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	2025	MSC	SSE	SDC	No work requested		
2. Integrate new and advancing technologies in the regulatory framework	2.16	Revision of SOLAS chapter III and the International Life-Saving Appliance (LSA) Code	~~2024~~2027	MSC	SSE		Extended		SSE 7/21, section 5;SSE 8/2, section 5; SSE 9/20, section 5; SSE 10, section 5
Notes:	To remove gaps, inconsistencies and ambiguities based on the safety objectives, functional requirements and expected performance for SOLAS chapter III								
3. Respond to climate change	3.8 (New)	Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels	Continuous	MSC	MEPC / III / HTW / CCC / SDC / SSE	MSC	No work requested		
6. Address the human element	6.1	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	No work requested		MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21; MEPC 78/17,

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
									paragraphs 10.4 and 13. MSC 100/20, paragraph 17.28
6. Address the human element	6.2	Validated model training courses	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MSC 100/20, paragraphs 10.3 to 10.6 and 17.28; MSC 105/20, section 16 PPR 9/21, section 12; MEPC 79/15, paragraphs 9.1, 9.14 to 9.15; SSE 10/20, section 11
Notes:	Virtual meetings of three drafting groups are taking place during 2022, to consider draft model courses for validation at HTW 9.								
6. Address the human element	6.15	Revision of resolution A.1050(27) to ensure the safety of personnel entering enclosed spaces on board ships	2024	MSC	III / HTW / PPR / SDC / SSE	CCC	No work requested		MSC 101/24, paragraph 21.48; MSC 104/18, paragraph 15.16; MSC 106/19, paragraph 16.31.
Notes:	MSC 106 expanded the scope of "Revision of the Revised recommendations for entering enclosed spaces aboard ships (resolution A.1050(27))" and modified the description, with a target completion year of 2024, assigning the CCC Sub-Committee as the coordinating organ, in association with the III, HTW, PPR, SDC and SSE Sub-Committees.								
7. Ensure regulatory effectiveness	7.1	Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions	Continuous	MSC / MEPC / FAL / LEG	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; MEPC 78/17, section 4, and paragraphs 5.6 and 5.7;

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
									MEPC 79/15, paragraphs 4.8, 4.26, 4.27, 6.26 to 6.29; MEPC 80/17, paras. 4.11 and 5.24 SSE 7/21, section 16; SSE 9/20, section 14; SSE 10/20, section 12
7. Ensure regulatory effectiveness	7.14	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	2024	MSC	SSE		Completed		SSE 10/20, section 9
Notes:	MSC 86/26, paragraph 23.39; SSE 9/20, section 9								
7. Ensure regulatory effectiveness	7.15	Development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of container ships	2025	MSC	CCC	SSE	In progress		MSC 103/21, paragraph 18.8; SSE 8/20, section 10; MSC 106/19, section 9; SSE 9/20, section 10; SSE 10/20, section 10
7. Ensure regulatory effectiveness	7.19 (New)	Amendments to the LSA Code for thermal performance of immersion suits	~~2024~~2025	MSC	SSE		Extended		MSC 92/26, paragraph 13.34; SSE 9/20, section 7; SSE 10/20, section 15

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
7. Ensure regulatory effectiveness	7.29 (New)	Comprehensive review of the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation	2025	MSC	SSE		In progress		SSE 10/20, section 14
7. Ensure regulatory effectiveness	7.30 (New)	Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships	2025	MSC / SSE	SSE		In progress		SSE 10/20, section 6
7. Ensure regulatory effectiveness	7.32 (New)	Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes	2024	MSC	SSE		Completed		SSE 10/20, section 7
7. Ensure regulatory effectiveness	7.33 (New)	Development of design and prototype test requirements for the arrangements used in the operational testing of free fall lifeboat release systems without launching the lifeboat	2025	MSC	SSE		In progress		SSE 10/20, section 4

7. Ensure regulatory effectiveness	7.34 (New)	Revision of the 2010 FTP Code to allow for new fire protection systems and materials	2026	MSC	SSE		Ongoing		SSE 10/20, section 8
7. Ensure regulatory effectiveness	7.35 (New)	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	2024	MSC	SSE	SDC	No work requested		
7. Ensure regulatory effectiveness	7.36	New requirements for ventilation of survival craft	~~2024~~2025	MSC	SSE		Extended		MSC 97/22, paragraph 19.22; SSE 8/20, section 3; MSC 106/19, section 11; MSC 107/20, section 14; SSE 10/20, section 3
Notes:	~~MSC 106 extended TCY to 2023. MSC 106 approved the draft amendments to the LSA Code for totally enclosed lifeboats as a matter of priority; and agreed to keep the agenda item on the agenda for SSE 9 for consideration of any compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, for inclusion in both the LSA Code and resolution MSC.81(70).~~ MSC 107 extended the TCY to 2024 in order for SSE 10 to consider compelling need for ventilation requirements for partially enclosed lifeboats and liferafts. SSE 10 requested MSC 109 to extend the TCY to 2025 for further discussion on the compelling need.							
7. Ensure regulatory effectiveness	7.37 (New)	Evaluation of adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles	2027	MSC	SSE		In progress		SSE 10/20, section 16

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	**Output number**	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
7. Ensure regulatory effectiveness	7.41	Development of provisions to consider prohibiting the use of fire-fighting foams containing fluorinated substances, in addition to PFOS for fire-fighting on board ships	2025	MSC	SSE		In progress		MSC 101/24, paragraph 21.27; MSC 102/24, paragraphs 19.31 and 21.19; SSE 8/20, section 12; MSC 106/19, section 11; SSE 9/20, section 15; MSC 107/20, section 14; SSE 10/20, section 13
Notes:	MSC 107 endorsed the change of scope of the related output and the revision of its title to "Development of provisions to consider prohibiting the use of fire fighting foams containing fluorinated substances, in addition to PFOS, for fire-fighting on board ships", based on the justification agreed by the Sub-Committee								
7. Ensure regulatory effectiveness	7.42	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	2024	MSC	HTW / SSE	SDC	No work requested		MSC 103/21, paragraph 18.31; MSC 105/20, paragraphs 15.24.2 and 18.54

OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

Sub-Committee on Ship Systems and Equipment (SSE)

Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to Strategic Direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
185	2022-2023	1	Development of amendments to chapter 6 of the 2009 MODU Code regarding electrical equipment capable of operation after shutdown	MSC	SSE		1	MSC 105/20, paragraph 18.3
194	2022-2023	1	Development of measures to ensure the safe operation of elevators on board ships	MSC	SSE		4	MSC 106/19, paragraphs 16.25 and .26
200	2022-2023	1	Development of amendments to paragraph 2.1.2.5 of chapter 5 of the FSS Code on construction requirement for gaskets	MSC	SSE		1	MSC 107/20, para. 17.16
~~209~~	~~2022-2023~~	~~5~~	~~Review and update of the Code of Practice for Atmospheric Oil Mist Detectors (MSC/Circ.1086)~~	~~MSC~~	~~SSE~~		~~2~~	~~MSC 107/20, para 17.39~~
186	2022-2023	7	Development of amendments to chapter 15 of the FSS Code on enclosed spaces containing a nitrogen receiver or a buffer tank of nitrogen generator systems	MSC	SSE		2	MSC 105/20, paragraphs 18.5 and 18.6

~~187~~	~~2022-2023~~	~~7~~	~~Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements~~	~~MSC~~	~~SSE~~		~~2~~	~~MSC 105/20, paragraphs 18.8 and 18.9~~
192	2022-2023	7	Revision of the Guidelines for the application of plastic pipes on ships (resolution A.753(18))	MSC	SSE		1	MSC 105/20, paragraph 18.40
215	2022-2023	7	Revision of the Revised guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems (MSC.1/Circ.1318/Rev.1) to clarify the testing and inspection provisions for CO_2 cylinders	MSC	SSE		1	MSC 107/20, paragraph 17.60
216	2022-2023	7	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets	MSC	SSE		2	MSC 101/24, paragraph 21.6; SSE 9/20, paragraph 8.19; MSC 101/24, paragraph 21.9 MSC 107/20, paragraph 14.24
[…]	[2024]	[7]	[Amendments to the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes to ensure the consistent application of resolution MSC.402(96)]	[MSC]	[SSE]		[2]	[…] Note: Subject to the Committee's approval of the new output proposal prepared by SSE 10
~~42~~	~~2012-2013~~	~~OW~~	~~Review of the 2009 Code on Alerts and Indicators~~	~~MSC~~	~~NCSR~~	~~SSE~~	~~2~~	~~MSC 89/25, paragraph 22.25~~

***

ANNEX 10

PROPOSED PROVISIONAL AGENDA FOR SSE 11

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 New requirements for ventilation of survival craft (7.36)

4 Development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat (7.33)

5 Revision of SOLAS chapter III and the LSA Code (2.16)

6 Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships (7.30)

7 Review and update of the Code of practice for atmospheric oil mist detectors (MSC.1/Circ.1086)

8 Revision of the 2010 FTP Code to allow for new fire protection systems and materials (7.34)

9 Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements

10 Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions (7.1)

11 Validated model training courses (6.2)

12 Development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of containerships (7.15)

13 Development of provisions to consider prohibiting the use of fire-fighting foams containing fluorinated substances, in addition to PFOS, for fire-fighting on board ships (7.41)

14 Comprehensive review of the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation (7.29)

15 Amendments to the LSA Code for thermal performance of immersion suits (OW 14)

16 Evaluation of adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles (7.37)

17 Biennial status report and provisional agenda for SSE 12

18 Election of Chair and Vice-Chair for 2026

19 Any other business

20 Report to the Maritime Safety Committee

***

ANNEX 11[*]

DRAFT MSC RESOLUTION

AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.689(17) on *Testing of life-saving appliances*, authorized the Committee to keep the annexed Recommendation on testing of life-saving appliances under review and to adopt, when appropriate, amendments thereto,

RECALLING FURTHER that, since the adoption of resolution A.689(17), the Committee has amended the Recommendation annexed thereto by resolutions MSC.54(66) and MSC.81(70), and by circulars MSC/Circ.596, MSC/Circ.615 and MSC/Circ.809,

RECOGNIZING the need to ensure that the references in the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) are kept up to date,

1 ADOPTS the *Amendments to the Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)), set out in the annex to the present resolution;

2 RECOMMENDS Governments to apply the amendments when testing life-saving appliances, as set out in the annex to the present resolution;

3 INVITES Contracting Governments to the SOLAS Convention to bring the above amendments to the attention of all parties concerned.

[*] Modifications are indicated in grey shading.

ANNEX

AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))

PART 1 - PROTOTYPE TEST FOR LIFE-SAVING APPLIANCES

6 Lifeboats

6.14 Additional tests for totally enclosed lifeboats

1 Paragraph 6.14.1.1 is modified, as follows:

Self-righting test

"6.14.1.1 when the lifeboat with its engine is loaded in the normal position with properly secured weights representing the fully equipped lifeboat with a full complement of persons on board. The weight used to represent each person, assumed to have an average mass of 75 kg for a lifeboat intended for a passenger ship or 82.5 kg for a lifeboat intended for a cargo ship, should be secured at each seat location and have its centre of gravity approximately 300 mm above the seat pan so as to have the same effect on stability as when the lifeboat is loaded with the number of persons for which it is to be approved; and".

***

ANNEX 12*

DRAFT MSC CIRCULAR

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (SURVIVAL CRAFT)

1 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved the *Revised standardized life-saving appliance evaluation and test report forms*.

2 The original forms, as set forth in the *Standardized life-saving appliance evaluation and test report forms* (MSC/Circ.980) and its addenda, were developed on the basis of the requirements of the International Life-Saving Appliance (LSA) Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) by the Maritime Safety Committee, at its seventy-third session in 2001, with a view to providing guidance on how to conduct tests, record test data and verify tests. The Committee adopted several amendments to the LSA Code and to resolution MSC.81(70). These amendments were incorporated in the original forms which, due to their volume, were presented in six separate circulars, i.e. MSC.1/Circ.1628, MSC.1/Circ.1629, MSC.1/Circ.1630, MSC.1/Circ.1631, MSC.1/Circ.1632 and MSC.1/Circ.1633, pertaining to the equipment addressed in chapters II to VII of the LSA Code, respectively.

3 The forms annexed to this circular apply to the equipment addressed in chapter IV of the LSA Code, i.e. survival craft (inflatable liferafts; rigid liferafts; components for survival craft; davit-launched lifeboats; and free-fall lifeboats).

4 In order to address the need to update the references to the withdrawn standards in "Technical tests on the membrane", "Porosity" and "Oil resistance" in the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630), the Committee, at its 106th session (2 to 11 November 2022), approved amendments to the above-mentioned evaluation and test report forms, for dissemination as MSC.1/Circ.1630/Rev.1.

5 The Committee, at its 107th session (31 May to 9 June 2023), approved amendments to the evaluation and test report forms emanating from amendments to the LSA Code and resolution MSC.81(70) concerning ventilation requirements for totally enclosed lifeboats adopted at the session, for dissemination as MSC.1/Circ.1630/Rev.2. ~~The text of the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* is set out in the annex.~~

6 The Committee, at its [109th session (2 to 6 December 2024)], approved amendments to the evaluation and test report forms concerning assumed weight used to represent each person in self-righting tests for totally enclosed lifeboats, as well as retro-reflective materials used on survival craft. The text of the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* is set out in the annex.

* Modifications are indicated in grey shading. The annex indicates only modifications and the full text of the revised circular will be issued upon approval by the Committee, as appropriate, for dissemination as MSC.1/Circ.1630/Rev.3.

7 The use of the revised forms will continue to be of benefit to Administrations and other parties, such as manufacturers, test facilities, owners and surveyors, and will be a major help in mutually accepting the type approval of appliances approved by other Administrations.

8 Member Governments are invited to bring the annexed revised forms to the attention of all parties concerned with approving, manufacturing and testing life-saving appliances, and to encourage them to use the forms.

9 This circular applies to the survival craft installed on or after [15 August 2025].

10 This circular supersedes MSC.1/Circ.1630/Rev.~~1~~2 as of [15 August 2025].

ANNEX

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (SURVIVAL CRAFT)

4.1 INFLATABLE LIFERAFTS EVALUATION AND TEST REPORT

1 In table 4.1.3, the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data "are amended, as follows:

4.1.3 Visual inspection	**Regulations: LSA Code IV/4.2; MSC.81(70) 1/5.14**	
Test Procedure	Acceptance Criteria	Significant Test Data
The liferaft should be subjected to a thorough visual inspection. The following items should be confirmed during the inspection: - proper workmanship - suitable materials - rot proof, corrosion resistant - not affected by seawater, oil or fungal attack - resistant to sunlight - highly visible colour - retro reflective tape ~~to be as per resolution A.658(16~~)	All materials should be properly certificated Be of an international or vivid reddish orange, or at a comparably highly visible colour on all parts where this will assist detection at sea.	Comments/Observations Passed Failed Passed Failed Passed Failed Passed Failed Passed Failed Passed Failed

- safely used in a seaway - certification - whether the light is activated when carrying out insulation test	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102), as detailed below: Retro-reflective materials should be fitted around the canopy of the liferaft. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre) at a suitable height above the waterline, doorways included, if suitable. On inflatable liferafts, retro-reflective materials should also be fitted to the underside of the floor, cross-shaped in the centre. The dimension of the cross should be half the diameter of the liferaft, and a similar cross should be applied to the top of the canopy. On liferafts which are not equipped with canopies, materials which should be sufficiently wide and long (to give a minimum area of 150 cm^2) should be attached to the buoyancy chamber at suitable intervals (approximately 80 cm from centre to centre), in such a manner that they are visible both from the air and from a ship.	Passed___ Failed _____ Type of retro-reflective tape_____ Where fitted (canopy or buoyancy chamber)? _____ Tape sizes (LXB)_____ Total tape area_____ Centre to centre spacing: _____ Height above waterline in case of canopy: _____ Doorways included in case of canopy? - Yes/No For inflatable liferafts, retro-reflective materials fitted to the underside of the floor, cross-shaped in the centre? - Yes/No The dimension of the cross is half the diameter of the liferaft,:- Yes/No In case of canopy, similar cross applied to the top of the canopy? - Yes/No Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____

4.2 RIGID LIFERAFTS
EVALUATION AND TEST REPORT

2 In table 4.2.3 the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data "are amended, as follows:

4.2.3 Visual inspection	**Regulations: LSA Code I/1.2, IV/4.3; MSC.81(70)**	
Test Procedure	Acceptance Criteria	Significant Test Data
The liferaft should be subjected to a thorough visual inspection. The following items should be confirmed during the inspection: - proper workmanship - suitable materials - rot proof, corrosion resistant - not affected by seawater, oil or fungal attack - resistant to sunlight - highly visible colour - retro-reflective tape ~~to be as per resolution A.658(16) safely used in a seaway~~	Be of an international or vivid reddish orange, or at a comparably highly visible colour on all parts where this will assist detection at sea. Be fitted with approved patches of retro-reflective material complied with resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted around the canopy of the liferaft. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre) at a suitable height above the waterline, doorways included, if suitable. The cross-shaped retro-reflective materials with	Comments/Observations Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____ Passed___ Failed _____ Type of retro-reflective tape_____ Fitted on canopy? Yes/No Tape sizes (LXB)_____ Total tape area_____ Centre to centre spacing: _____

	dimension of the cross half the diameter of the liferaft should be applied to the top of the canopy.	Height above waterline: _____ Doorways included? - Yes/No The dimension of the cross is half the diameter of the liferaft: - Yes/No On canopy cross applied to the top of the canopy? - Yes/No Passed_____ Failed _____

4.4 DAVIT-LAUNCHED LIFEBOATS
EVALUATION AND TEST REPORT

3 In the table of contents, a new entry: "4.4.1.7 Retro-reflective materials" is inserted after entry 4.4.1.6, as follows:

4 A new table 4.4.1.7 is inserted after table 4.4.1.6 and before table 4.4.2.1, as follows:

4.4.1.7 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). In the case of partially enclosed or totally enclosed lifeboats, such materials should be placed, as follows: .1 for detection by horizontal light beams - at suitable intervals at half the height between the gunwale and the top of the fixed cover;	Type of retro-reflective tape_____ Passed Failed _____ Passed Failed _____ Tape sizes (LXB)_____ Total tape area_____ Centre to centre spacing: _____ Passed Failed _____ Tape sizes (LXB)_____ Total tape area_____ Centre to centre spacing: _____ Obscured: - Yes/No? Passed Failed _____

	.2 for detection by vertical light beams (e.g. from helicopters) - at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover; and .3 on the bottom of lifeboats which are not self-righting.	Passed Failed _____ Passed Failed _____ Passed Failed _____ Comments/Observations

5 In table 4.4.2.3, the column for "Test Procedure" is amended, as follows:

4.4.2.3 Self-Righting Test (Totally Enclosed Lifeboats)	**Regulations: LSA Code 4.6.3.2/4, 4.6.4.2; MSC.81(70) 1/ 6.14.1/1.1/1.2/2/2.1/2.2**	
Test Procedure	Acceptance Criteria	Significant Test Data
A suitable means should be provided to rotate the lifeboat about a longitudinal axis to any angle of heel and then release it. The lifeboat, in the enclosed condition, should be incrementally rotated to angles of heel up to and including 180° and should be released. These tests should be conducted in the following conditions of load: .1 when the lifeboat with its engine is loaded in the normal position with properly secured weights representing the fully equipped lifeboat with a full complement of persons on board. The weight used to represent each person, assumed to have an average mass of	After release, the lifeboat should always return to the upright position without the assistance of the occupants. At the beginning of these tests, the engine should be running in neutral position and: .1 unless arranged to stop automatically when inverted, the engine should continue to run when inverted and for 30 min after the lifeboat has returned to the upright position; and .2 if the engine is arranged to stop automatically when inverted, it should be easily restarted and run for 30 min after the lifeboat has returned to the upright position. Water does not enter the engine.	**Loaded:** Passed ____ Failed _____ **Light:** Passed: ___ Failed: _____ Passed: ___ Failed: _____ Passed: ___ Failed: _____

~~82.5 kg~~ 75 kg for a lifeboat intended for a passenger ship or 82.5 kg for a lifeboat intended for a cargo ship, should be secured at each seat location and have its centre of gravity approximately 300 mm above the seat pan so as to have the same effect on stability as when the lifeboat is loaded with the number of persons for which it is to be approved; and .2 when the lifeboat is in the light condition.	The ventilation system of either powered or passive type while in operation, should not compromise the ability of the lifeboat to self-right under any circumstance.	Comments/Observations

4.5 FREE-FALL LIFEBOATS
EVALUATION AND TEST REPORT

6 In the table of contents, a new entry: "4.5.1.6 Retro-reflective materials" is inserted after entry 4.5.1.5.

7 A new table 4.5.1.6 is inserted after table 4.5.1.5 and before table 4.5.2.1, as follows:

4.5.1.6 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials should be	Type of retro-reflective tape_____ Passed Failed _____ Passed Failed _____ Tape sizes (LXB)_____ Total tape area_____ Centre to centre spacing: _____ Passed Failed _____ Tape sizes (LXB)_____

	sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). In the case of free-fall lifeboats, such materials should be placed, as follows: .1 for detection by horizontal light beams - at suitable intervals at half the height between the gunwale and the top of the fixed cover; and .2 for detection by vertical light beams (e.g. from helicopters) - at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover.	Total tape area_____ Centre to centre spacing: _____ Obscured: - Yes/No? Passed Failed _____ Passed Failed _____ Passed Failed _____ Comments/Observations

***

ANNEX 13*

DRAFT MSC CIRCULAR

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (PERSONAL LIFE-SAVING APPLIANCES)

1 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved the *Revised standardized life-saving appliance evaluation and test report forms* (MSC.1/Circ.1628).

2 The original forms, as set forth in the *Standardized life-saving appliance evaluation and test report forms* (MSC/Circ.980) and its addenda, were developed on the basis of the requirements of the International Life-Saving Appliance (LSA) Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) by the Maritime Safety Committee, at its seventy-third session in 2001, with a view to providing guidance on how to conduct tests, record test data and verify tests. The Committee adopted several amendments to the LSA Code and to resolution MSC.81(70). These amendments were incorporated in the original forms which, owing to their volume, were presented in six separate circulars, i.e. MSC.1/Circ.1628, MSC.1/Circ.1629, MSC.1/Circ.1630, MSC.1/Circ.1631, MSC.1/Circ.1632 and MSC.1/Circ.1633, pertaining to the equipment addressed in chapters II to VII of the LSA Code, respectively.

3 The forms annexed to this circular apply to the equipment addressed in chapter II of the LSA Code, i.e. personal life-saving appliances (lifebuoys and associated equipment; lifejackets and associated equipment; immersion suits and associated equipment; anti-exposure suits; and thermal protective aids).

4 The Committee, at its 107th session (31 May to 9 June 2023), approved draft amendments to the evaluation and test report forms emanating from amendments to resolution MSC.81(70) on thermal manikin tests, for dissemination as MSC.1/Circ.1628/Rev.1.

5 The Committee, at its 108th session (15 to 24 May 2024), approved draft amendments to the evaluation and test report forms with respect to lifejackets' in-water performance emanating from amendments to the LSA Code and resolution MSC.81(70), for dissemination as MSC.1/Circ.1628/Rev.2. ~~The text of the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* is set out in the annex.~~

6 The Committee, at its [109th session (2 to 6 December 2024)], approved draft amendments to the evaluation and test report forms with respect to retro-reflective materials used on personal life-saving appliances. The text of the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* is set out in the annex.

* Modifications are indicated in grey shading, subject to the expected approval of MSC.1/Circ.1628/Rev.2 by MSC 108. The annex indicates only modifications and the full text of the revised circular will be issued upon approval by the Committee, as appropriate, for dissemination as MSC.1/Circ.1628/Rev.3.

7 The use of the revised forms will continue to be of benefit to Administrations and other parties, such as manufacturers, test facilities, owners and surveyors, and will be a major help in mutually accepting the type approval of appliances approved by other Administrations.

8 Member Governments are invited to bring the annexed revised forms to the attention of all parties concerned with approving, manufacturing and testing life-saving, and to encourage them to use the forms.

9 This circular applies to the personal life-saving appliances installed on or after [15 August 2025].

10 This circular supersedes MSC.1/Circ.1628/Rev.~~1~~2 as of [15 August 2025].

ANNEX

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (PERSONAL LIFE-SAVING APPLIANCES)

2.1.1 LIFEBUOYS
EVALUATION AND TEST REPORT

1 In table 2.1.1.3, the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data" are amended, as follows:

2.1.1.3 Visual inspection	**Regulations: LSA Code 1.2.2**	
Test Procedure	Acceptance Criteria	Significant Test Data
Visually inspect the lifebuoy. Conduct measurements and verify characteristics as required. Retro-reflective tape	Be of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea. Fitted with approved retro-reflective materials of a sufficient width (approximately 5 cm) applied around or on both sides of the body of the lifebuoy at four evenly-spaced points in compliance with resolution ~~A.658(16)~~ MSC.481(102). Clearly marked with approval information from the organization that approved it and any operational restrictions.	Colour(s): Passed _____ Failed_____ Quantity: Spacing: Width: Type of retro-reflective tape: _____ Passed _____ Failed_____ Any operational restrictions? Passed _____Failed_____ Comments/Observations

2.2.1 INHERENTLY BUOYANT LIFEJACKETS
EVALUATION AND TEST REPORT

2 In table 2.2.1.3, the columns for "Acceptance criteria" and "Significant Test Data" are amended, as follows:

2.2.1.3 Visual inspection	**Regulations: LSA Code I/1.2.2.1, 1.2.2.6, 1.2.2.7, 1.2.2.9, 1.2.3; LSA Code II/ 2.2.1.14, 2.2.1.5.3 & 2.2.1.5.5, 2.2.1.10, 2.2.1.13, 2.2.1.16 & 2.2.1.17**	
Test Procedure	Acceptance Criteria	Significant Test Data
.2 Retro-reflective tape	Inherently buoyant lifejackets should: be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 according to resolution ~~A.658(16)~~ MSC.481(102). In the case of a reversible lifejacket, the arrangement should be complied with no matter which way the lifejacket is put on. Such material should be placed as high on the lifejacket as possible;	Tape sizes (LXB)_____ Total tape area_____ Passed _____Failed _____
.3 Lifejacket light	have provision to be fitted with a light;	Passed _____ Failed _____

2.2.2 INFLATABLE LIFEJACKETS (ADULTS & CHILD)
EVALUATION AND TEST REPORT

3 In table 2.2.2.3, the columns for "Acceptance criteria" and "Significant Test Data" are amended, as follows:

2.2.2.3 Visual inspection	**Regulations: LSA Code I/1.2.2 & II/2.2**	
Test Procedure	Acceptance Criteria	Significant Test Data
2. Retro-reflective tape	Inflatable lifejackets should: be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 according to resolution ~~A.658(16)~~ MSC.481(102). In the case of a reversible lifejacket, the arrangement should be complied with no matter which way the lifejacket is put on. Such material should be placed as high on the lifejacket as possible;	Tape sizes (LXB)_____ Total tape area_____ Passed _____Failed _____
3. Lifejacket light	have provision to be fitted with a light;	Passed_____ Failed _____

2.3.1 IMMERSION SUITS (NON-INSULATED)
EVALUATION AND TEST REPORT

4 In table 2.3.1.4, the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data" are amended, as follows:

2.3.1.4 Visual inspection	**Regulations: LSA Code I/1.2.2, II/2.3.1.1.3 & 2.3.1.1.4**	
Test Procedure	Acceptance Criteria	Significant Test Data
Non-insulated immersion suit should: .3 be fitted with retro-reflective tape ~~be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution A.658(16)~~.	be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 distributed so as to be useful for search from air and surface craft from all directions and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution MSC.481(102).	Tape sizes (LXB)_____ Total tape area_____ Does the suit automatically turn the wearer face up: - Yes/No If No, tape area on back_____ Passed _____Failed _____

2.3.2 IMMERSION SUITS (INSULATED)
EVALUATION AND TEST REPORT

5 In table 2.3.2.4, the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data" are amended, as follows:

2.3.2.4 Visual inspection	**Regulations: LSA Code I/1.2.2, II/2.3.1.1.3 & 2.3.1.1.4**	
Test Procedure	Acceptance Criteria	Significant Test Data
Insulated immersion suit should: .3 be fitted with retro-reflective tape ~~be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution A.658(16)~~.	be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 distributed so as to be useful for search from air and surface craft from all directions and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution MSC.481(102).	Tape sizes (LXB)_____ Total tape area_____ Does the suit automatically turn the wearer face up: - Yes/No If No, tape area on back_____ Passed_____Failed _____

2.4 ANTI-EXPOSURE SUITS
EVALUATION AND TEST REPORT

6 In table 2.4.4, the columns for "Test Procedure", "Acceptance criteria" and "Significant Test Data "are amended, as follows:

2.4.4 Visual inspection	**Regulations: LSA Code I/1.2.2, II/2.4.1.1.3 & 2.4.1.1.4**	
Test Procedure	Acceptance Criteria	Significant Test Data
Anti-Exposure suit should: Be fitted with retro-reflective tape ~~Be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution A.658(16).~~	be fitted with approved patches of retro-reflective material with a total area of at least 400 cm^2 distributed so as to be useful for search from air and surface craft from all directions and with 100 cm^2 on the back if the suit does not automatically turn the wearer face up according to resolution MSC.481(102).	Type of retro-reflective tape: _____ Tape sizes (LXB)_____ Total tape area_____ Does the suit automatically turn the wearer face up: - Yes/No If No, tape area on back_____ Passed_____Failed _____

***

ANNEX 14*

DRAFT MSC CIRCULAR

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (RESCUE BOATS)

1 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved the *Revised standardized life-saving appliance evaluation and test report forms*.

2 The original forms, as set forth in the *Standardized life-saving appliance evaluation and test report forms* (MSC/Circ.980) and its addenda, were developed on the basis of the requirements of the International Life-Saving Appliance (LSA) Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) by the Maritime Safety Committee, at its seventy-third session in 2001, with a view to providing guidance on how to conduct tests, record test data and verify tests. The Committee has since adopted seven amendments to the LSA Code and eight amendments to resolution MSC.81(70). These amendments have been incorporated in the original forms which, due to their volume, are now presented in six separate circulars, i.e. MSC.1/Circ.1628, MSC.1/Circ.1629, MSC.1/Circ.1630, MSC.1/Circ.1631, MSC.1/Circ.1632 and MSC.1/Circ.1633, pertaining to the equipment addressed in chapters II to VII of the LSA Code, respectively.

3 The forms annexed to this circular apply to the equipment addressed in chapter V of the LSA Code, i.e. rescue boats (outboard engines for rescue boats; rigid rescue boats; inflated rescue boats; rigid/inflated rescue boats; rigid fast rescue boats; inflated fast rescue boats; and rigid/inflated fast rescue boats).

4 The Committee, at its [109th session (2 to 6 December 2024)], approved draft amendments to the evaluation and test report forms with respect to retro-reflective materials used on rescue boats. The text of the *Revised standardized life-saving appliance evaluation and test report forms (rescue boats)* is set out in the annex.

5 The use of the revised forms will continue to be of benefit to Administrations and other parties, such as manufacturers, test facilities, owners and surveyors, and will be a major help in mutually accepting the type approval of appliances approved by other Administrations.

6 Member Governments are invited to bring the annexed, revised forms to the attention of all parties concerned with approving, manufacturing and testing life-saving appliances and to encourage them to use the forms.

7 This circular applies to the rescue boats installed on or after [15 August 2025].

8 This circular supersedes MSC.1/Circ.1631~~MSC/Circ.980~~ as of [15 August 2025].

* Modifications are indicated in grey shading. The annex indicates only modifications and the full text of the revised circular will be issued upon approval by the Committee, as appropriate, for dissemination as MSC.1/Circ.1631/Rev.1.

ANNEX

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (RESCUE BOATS)

5.2 RIGID RESCUE BOATS EVALUATION AND TEST REPORT

1 In the table of contents, a new entry: "5.2.1.7 Retro-reflective materials" is inserted after entry 5.2.1.6.

2 A new table 5.2.1.7 is inserted after table 5.2.1.6 and before table 5.2.2.1, as follows:

5.2.1.7 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre).	Type of retro-reflective tape---------- Passed Failed Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No? Passed Failed

	In the case of the rigid rescue boat is also a partially enclosed or totally enclosed lifeboats, such materials should be placed, as follows: .1 for detection by horizontal light beams - at suitable intervals at half the height between the gunwale and the top of the fixed cover; .2 for detection by vertical light beams (e.g. from helicopters) - at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover; and .3 on the bottom of rigid rescue boats which are not self-righting.	Passed Failed Passed Failed Passed Failed Comments/Observations

5.3 INFLATED RESCUE BOATS
EVALUATION AND TEST REPORT

3 In the table of contents, a new entry: "5.3.1.7 Retro-reflective materials" is inserted after entry 5.3.1.6.

4 A new table 5.3.1.7 is inserted after table 5.3.1.6 and before table 5.3.2.1, as follows:

5.3.1.7 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a bow cover canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the bow cover canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). In the case of inflated rescue boats which are not self-righting, such materials should be placed, on the bottom of inflated rescue boats.	Type of retro-reflective tape Passed Failed Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No? Passed Failed Passed Failed Comments/Observations

5.4 RIGID/INFLATED RESCUE BOATS EVALUATION AND TEST REPORT

5 In the table of contents, a new entry: "5.4.1.7 Retro-reflective materials" is inserted after entry 5.4.1.6.

6 A new table 5.4.1.7 is inserted after table 5.4.1.6 and before table 5.4.2.1, as follows:

5.4.1.7 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a bow cover canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the bow cover canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). In the case of rigid/inflated rescue boats which are not self-righting, such materials should be placed, on the bottom of rigid/inflated rescue boats.	Type of retro-reflective tape Passed Failed Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No? Passed Failed Passed Failed Comments/Observations

5.5 RIGID FAST RESCUE BOATS EVALUATION AND TEST REPORT

7 In the table of contents, a new entry: "5.5.1.6 Retro-reflective materials" is inserted after entry 5.5.1.5.

8 A new table 5.5.1.6 is inserted after table 5.5.1.5 and before table 5.5.2.1, as follows:

5.5.1.6 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below:	Type of retro-reflective tape Passed Failed
	Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible.	Passed Failed
	The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre).	Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed
	If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre).	Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No?
	In the case of the rigid fast rescue boat is also a partially enclosed or totally enclosed lifeboats, such materials should be placed, as follows:	Passed Failed
	.1 for detection by horizontal light beams - at suitable intervals at half the height between the gunwale and the top of the fixed cover;	Passed Failed

	.2 for detection by vertical light beams (e.g. from helicopters) - at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover; and	Passed Failed
	.3 on the bottom of rigid fast rescue boats which are not self-righting.	Passed Failed
		Comments/Observations

5.6 INFLATED FAST RESCUE BOATS EVALUATION AND TEST REPORT

9 In the table of contents, a new entry: "5.6.1.6 Retro-reflective materials" is inserted after entry 5.6.1.5.

10 New table 5.6.1.6 is inserted after table 5.6.1.5 and before table 5.6.2.1, as follows:

5.6.1.6 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below: Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a bow cover canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the bow cover canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre). In the case of inflated fast rescue boats which are not self-righting, such materials should be placed, on the bottom of inflated fast rescue boats.	Type of retro-reflective tape Passed Failed Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No? Passed Failed Passed Failed Comments/Observations

5.7 RIGID/INFLATED FAST RESCUE BOATS EVALUATION AND TEST REPORT

11 In the table of contents, a new entry: "5.7.1.6 Retro-reflective materials" is inserted after entry 5.7.1.5.

12 A new table 5.7.1.6 is inserted after existing table 5.7.1.5 and before table 5.7.2.1, as follows:

5.7.1.6 Retro-reflective materials	**Regulations: LSA Code I/1.2, 1.2.2.7**	
Test Procedure	Acceptance Criteria	Significant Test Data
Retro-reflective tape	Be fitted with approved patches of retro-reflective material as per resolution MSC.481(102) as detailed below:	Type of retro-reflective tape Passed Failed
	Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible.	Passed Failed
	The materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre).	Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed
	If a bow cover canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the bow cover canopy should be fitted with retro-reflective materials should be sufficiently wide and long to give a minimum area of 150 cm^2 and should be spaced at suitable intervals (approximately 80 cm from centre to centre).	Tape sizes (LXB) Total tape area Centre to centre spacing: Obscured: - Yes/No? Passed Failed
	In the case of rigid/inflated fast rescue boats which are not self-righting, such materials should be placed, on the bottom of rigid/inflated fast rescue boats.	Passed Failed Comments/Observations

***

ANNEX 15[*]

DRAFT MSC CIRCULAR

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (LAUNCHING AND EMBARKATION APPLIANCES)

1 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved the *Revised standardized life-saving appliance evaluation and test report forms*.

2 The original forms, as set forth in the *Standardized life-saving appliance evaluation and test report forms* (MSC/Circ.980) and its addenda, were developed on the basis of the requirements of the International Life-Saving Appliance (LSA) Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) by the Maritime Safety Committee, at its seventy-third session in 2001, with a view to providing guidance on how to conduct tests, record test data and verify tests. The Committee has since adopted seven amendments to the LSA Code and eight amendments to resolution MSC.81(70). These amendments have been incorporated in the original forms which, due to their volume, are now presented in six separate circulars, i.e. MSC.1/Circ.1628, MSC.1/Circ.1629, MSC.1/Circ.1630, MSC.1/Circ.1631, MSC.1/Circ.1632 and MSC.1/Circ.1633, pertaining to the equipment addressed in chapters II to VII of the LSA Code, respectively.

3 The forms annexed to this circular apply to the equipment addressed in chapter VI of the LSA Code, i.e. launching and embarkation appliances (launching and embarkation appliances; marine evacuation systems; and means of rescue).

4 The Committee, at its [109th session (2 to 6 December 2024)], approved draft amendments to the evaluation and test report forms with respect to retro-reflective materials used on launching and embarkation appliances. The text of the *Revised standardized life-saving appliance evaluation and test report forms (launching and embarkation appliances)* is set out in the annex.

5 The use of the revised forms will continue to be of benefit to Administrations and other parties, such as manufacturers, test facilities, owners and surveyors, and will be a major help in mutually accepting the type approval of appliances approved by other Administrations.

6 Member Governments are invited to bring the annexed, revised forms to the attention of all parties concerned with approving, manufacturing and testing life-saving appliances and to encourage them to use the forms.

7 This circular applies to the launching and embarkation appliances installed on or after [15 August 2025].

8 This circular supersedes ~~MSC/Circ.980~~ MSC.1/Circ.1632 as of [15 August 2025] .

[*] Modifications are indicated in grey shading. The annex indicates only modifications and the full text of the revised circular will be issued upon approval by the Committee, as appropriate, for dissemination as MSC.1/Circ.1632/Rev.1.

ANNEX

REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS (LAUNCHING AND EMBARKATION APPLIANCES)

**6.3 MEANS OF RESCUE
EVALUATION AND TEST REPORT**

1 In table 6.3.3.1, the columns for "Acceptance criteria" and "Significant Test Data" are amended, as follows:

6.3.3.1 Visual inspection of davit-launched means of rescue (continued)	**Regulations: MSC/Circular.810 -2.4.2.1, 2.4.2.2, 2.4.2.5 to 2.4.2.8 & 2.4.2.11**	
Test Procedure	Acceptance Criteria	Significant Test Data
.10 Retro-reflective material	Be fitted with retro-reflective tape in accordance with resolution ~~A.658(16)~~ MSC.481(102), annex 1, section 4 as follows: The materials should be sufficiently wide and long (to give a minimum area of 150 cm^2) and should be attached to the buoyancy chamber at suitable intervals (approximately 80 cm from centre to centre), in such a manner that they are visible both from the air and from a ship.	Type of retro-reflective tape Passed Failed Tape sizes (LXB) Total tape area Centre to centre spacing: Passed Failed

***

ANNEX 16*

DRAFT MSC CIRCULAR

REVISED STANDARDS FOR THE DESIGN, TESTING AND LOCATING OF DEVICES TO PREVENT THE PASSAGE OF FLAME INTO CARGO TANKS IN TANKERS

1 By resolution A.519(13), the Maritime Safety Committee was requested by the 1983 Assembly to finalize the Standards for devices to prevent the passage of flame into cargo tanks which the Committee was developing at the time, prior to the coming into force of the 1981 SOLAS amendments.

2 The Committee, at its forty-ninth session, (2 to 6 April 1984), adopted the standards so developed, which were attached to MSC/Circ.373.

3 The Committee agreed that the inert gas system was to be considered as equivalent to devices to prevent the passage of flame into cargo tanks only if vent outlets on ships fitted with inert gas systems were at least fitted with devices to prevent the passage of flame into cargo tanks, but that these devices need not comply with the test requirement for endurance burning. The Committee noted that, in the standards, emphasis was laid on compliance with test specifications rather than on construction. It was then understood that, in the case of a tanker fitted with an inert gas system, the provision of flashback would suffice and a well-designed and fitted flame screen could meet this criterion. In summary, if a flame screen met the standards, it would be accepted.

4 The Committee, at its fifty-fifth session (11 to 22 April 1988), adopted amendments to the standards contained in MSC/Circ.373 and disseminated them as MSC/Circ.373/Rev.1.

5 The Committee, at its sixty-fourth session (5 to 9 December 1994), recognizing the necessity to clarify some provisions in the revised standards, adopted further amendments thereto, which are incorporated in the ~~test set out in the annex~~ *Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers* (MSC/Circ.677).

6 The Committee, at its [109th session (2 to 6 December 2024)], recalling previous amendments made to the Revised standards (MSC/Circ.677) by MSC.1/Circ.1009 and MSC.1/Circ.1324, and having noted a need to revise an ISO standard reference therein, approved *Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers* for circulation as MSC.1/Circ.677/Rev.1.

7 Member Governments are invited to give effect to the revised standards in conjunction with the application of regulation II-2/~~594~~.5.3 of the 1974 SOLAS Convention, as amended.

8 This circular applies to the devices installed on or after [approval date + 2 years].

9 The present circular supersedes MSC/Circ.677, as amended by MSC.1/Circ.1009 and MSC.1/Circ.1324, as of [approval date + 2 years].

* Draft modifications to MSC/Circ.677 include those agreed by SSE 10 and the modifications introduced by MSC.1/Circ.1009 and MSC.1/Circ.1324. The modifications are indicated in grey shading.

ANNEX

REVISED STANDARDS FOR THE DESIGN, TESTING AND LOCATING OF DEVICES TO PREVENT THE PASSAGE OF FLAME INTO CARGO TANKS IN TANKERS

CONTENTS

1 INTRODUCTION

1.1 Purpose

The 1981 and the 1983 amendments to the International Convention for the Safety of Life at Sea, 1974 (SOLAS) include revised requirements for fire safety measures for tankers, which were incorporated in the revised SOLAS chapter II-2 in 2000 amendments. ~~Regulation II-2/59 of these amendments contains provisions concerning venting, purging, gas-freeing and ventilation.~~ SOLAS regulation ~~II-2/59.1.5~~ II-2/4.5.3.3 states:

> "The venting system shall be provided with devices to prevent the passage of flame into the cargo tanks. The design, testing and locating of these devices shall comply with the requirements established by the Administration which shall contain at least the Standards adopted by the Organization."

1.2 Application

1.2.1 These Standards are intended to cover the design, testing, locating and maintenance of "devices to prevent the passage of flame into cargo tanks" (hereafter called "devices") of tankers and combination carriers carrying crude oil and petroleum products having a flashpoint of 60°C (closed cup) or less, and a Reid vapour pressure below atmospheric pressure and other products having a similar fire hazard.

1.2.2 Oil tankers and combination carriers fitted with an inert gas system in accordance with SOLAS regulation ~~62~~ II-2/4.5.5 should be fitted with devices which comply with these Standards, except that the tests specified in 3.2.3 and 3.3.3.2 are not required. Such devices are only to be fitted at openings unless they are tested in accordance with 3.4.

1.2.3 These Standards are intended for devices protecting cargo tanks containing crude oil, petroleum products and flammable chemicals. In the case of the carriage of chemicals, the test media referred to in section 3 can be used for products having an MESG of 0.9 mm and greater. However, devices for chemical tankers certified for the carriage of products with an MESG[6] less than 0.9 mm should be tested with the following media based on the apparatus group assigned as per column i" of the IBC Code, chapter 17:

.1 Apparatus Group II B - ethylene (MESG = 0.65 mm); and

.2 Apparatus Group II C - hydrogen (MESG = 0.28 mm).

Where no apparatus group is assigned in column i", the device should be tested in accordance with the requirements for Apparatus Group II B.

1.2.4 Devices should be tested and located in accordance with these standards. In addition to these standards, pressure/vacuum valves should comply with ISO standard 15364:2021 "Ships and marine technology — Pressure-vacuum valves for cargo tanks and devices to prevent the passage of flame into cargo tanks".

1.2.5 Devices are installed to protect:

.1 openings designed to relieve pressure or vacuum caused by thermal variations (regulation ~~II-2/59.1.2.1~~ II-2/11.6.1.1);

[6] Reference is made to ~~IEC Publication 79-1~~ IEC 60079, Electrical Apparatus for Explosive Gas Atmospheres.

.2 openings designed to relieve pressure or vacuum during cargo loading, ballasting or during discharging (regulation ~~II-2/59.1.2.2~~ II-2/11.6.1.2); and

.3 outlets designed for gas-freeing (regulation ~~II-2/59.2.2.3~~ II-2/16.3.2.2.3).

1.2.6 Devices should not be capable of being bypassed or blocked open unless they are tested in the bypassed or blocked open position in accordance with section 3.

1.2.7 These Standards do not include consideration of sources of ignition such as lightning discharges since insufficient information is available to formulate equipment recommendations. All cargo handling, tank cleaning and ballasting operations should be suspended on the approach of an electrical storm.

1.2.8 These Standards are not intended to deal with the possibility of the passage of flame from one cargo tank to another on tankers with common venting systems.

1.2.9 When outlet openings of gas-freeing systems on tankers not fitted with inert gas systems are required to be protected with devices, they should comply with these Standards except that the tests specified in 3.2.3 and 3.3.3.2 are not required.

1.2.10 Certain of the tests prescribed in section 3 of these Standards are potentially hazardous, but no attempt is made in this circular to specify safety requirements for these tests.

1.3 Definitions

For the purpose of these Standards, the following definitions are applicable.

1.3.1 "Flame arrester" is a device to prevent the passage of flame in accordance with a specified performance standard. Its flame-arresting element is based on the principle of quenching.

1.3.2 "Flame screen" is a device utilizing wire mesh to prevent the passage of unconfined flames, in accordance with a specified performance standard.

1.3.3 "Flame speed" is the speed at which a flame propagates along a pipe or other system.

1.3.4 "Flashback" is the transmission of a flame through a device.

1.3.5 "High velocity vent" is a device to prevent the passage of flame, consisting of a mechanical valve which adjusts the opening available for flow in accordance with the pressure at the inlet of the valve in such a way that the efflux velocity cannot be less than 30 m/s.

1.3.6 "Pressure/vacuum valve"[7] is a device designed to maintain pressure and vacuum in a closed container within preset limits.

2 STANDARDS

2.1 Principles

2.1.1 Depending on their service and location, devices are required to protect against the propagation of:

.1 moving flames; and/or

[7] Pressure/vacuum valves are devices to prevent the passage of flame when designed and tested in accordance with these Standards.

.2 stationary flames from pre-mixed gases,

after ignition of gases resulting from any cause.

2.1.2 When flammable gases from outlets ignite, the following four situations may occur:

.1 At low gas velocities, the flame may:

.1 flashback; or

.2 stabilize itself as if the outlet were a burner.

.2 At high velocities, the flame may:

.1 burn at a distance above the outlet; or

.2 be blown out.

2.1.3 In order to prevent the passage of flame into a cargo tank, devices must be capable of performing one or more of the following functions:

.1 permitting the gas to pass through passages without flashback and without ignition of the gases on the protected side when the device is subjected to heating for a specified period;

.2 maintaining an efflux velocity in excess of the flame speed for the gas, irrespective of the geometric configuration of the device and without the ignition of gases on the protected side when the device is subjected to heating for a specified period; and

.3 preventing an influx of flame when conditions of vacuum occur within the cargo tanks.

2.2 Mechanical design standards

2.2.1 The casing or housing of devices should meet similar standards of strength, heat resistance and corrosion resistance as the pipe to which they are attached.

2.2.2 The design of devices should allow for ease of inspection and removal of internal elements for replacement, cleaning or repair.

2.2.3 All flat joints of the housing should be machined true and should provide for a joint having an adequate metal-to-metal contact.

2.2.4 Flame arrester elements should fit in the housing in such a way that flame cannot pass between the element and the housing.

2.2.5 Resilient seals may be installed only if their design is such that if the seals are partially or completely damaged or burned, the device is still capable of effectively preventing the passage of flame.

2.2.6 Devices should allow for efficient drainage of moisture without impairing their efficiency to prevent the passage of flame.

2.2.7 The casing and element and gasket materials should be capable of withstanding the highest pressure and temperature to which the device may be exposed under both normal and specified fire test conditions.

2.2.8 End-of-line devices should be so constructed as to direct the efflux vertically upwards.

2.2.9 Fastenings essential to the operation of the device, i.e. screws, etc., should be protected against loosening.

2.2.10 Means should be provided to check that any valve lifts easily without remaining in the open position.

2.2.11 Devices in which the flame arresting effect is achieved by the valve function and which are not equipped with the flame arrester elements (e.g. high velocity valves) must have a width of the contact area of the valve seat of at least 5 mm.

2.2.12 Devices should be resistant to corrosion in accordance with 3.5.1

2.2.13 Elements, gaskets and seals should be of material resistant to both seawater and the cargoes carried.

2.2.14 The casing or housing should be capable of passing a hydrostatic pressure test, as required in 3.5.2.

2.2.15 In-line devices should be able to withstand, without damage or permanent deformation, the internal pressure resulting from detonation when tested in accordance with section 3.4.

2.2.16 A flame arrester element should be designed to ensure quality control of manufacture to meet the characteristics of the prototype tested, in accordance with these Standards.

2.3 Performance Standards

2.3.1 Devices should be tested in accordance with 3.5 and thereafter shown to meet the test requirements of 3.2 to 3.4, as appropriate.

2.3.2 Performance characteristics, such as the flow rates under both positive and negative pressure, operating sensitivity, flow resistance and velocity should be demonstrated by appropriate tests.

2.3.3 Devices should be designed and constructed to minimize the effect of fouling under normal operating conditions. Instructions on how to determine when cleaning is required and the method of cleaning should be provided for each device in the manufacturers' instruction manual.

2.3.4 Devices should be capable of operating in freezing conditions (such as may cause blockage by freezing cargo vapours or by icing in bad weather) and if any device is provided with heating arrangements so that its surface temperature exceeds 85°C, then it should be tested at the highest operating temperature.

2.3.5 Devices based upon maintaining a minimum velocity should be capable of opening in such a way that a velocity of 30 m/s is immediately initiated, maintaining an efflux velocity of at least 30 m/s at all flow rates and, when the gas flow is interrupted, be capable of closing in such a way that this minimum velocity is maintained until the valve is fully closed.

2.3.6 In the case of high velocity vents, the possibility of inadvertent detrimental hammering[8] leading to damage and/or failure should be considered, with a view to eliminating it.

2.4 Flame screens

2.4.1 Flame screens should be:

.1 designed in such a manner that they cannot be inserted improperly in the opening;

.2 securely fitted in openings so that flames cannot circumvent the screen;

.3 able to meet the requirements of these standards. For flame screens fitted at vacuum inlets through which vapours cannot be vented the test specified in 3.2.3 need not be complied with; and

.4 be protected against mechanical damage.

2.5 Sizing, location and installation of devices

2.5.1 For determining the size of devices to avoid inadmissible pressure or vacuum in cargo tanks during loading or discharging, calculations of pressure losses should be carried out. The following parameters should be taken into account:

.1 loading/discharge rates;

.2 gas evolution;

.3 pressure loss across devices, taking into account the resistance coefficient;

.4 pressure loss in the vent piping system;

.5 pressure at which the vent opens if a high velocity valve is used;

.6 density of the saturated vapour/air mixture; and

.7 to compensate for possible fouling of a flame arrester, 70% of its rated performance is to be used in the pressure drop calculation of the installation.

2.5.2 Devices should be located at the outlets to atmosphere unless tested and approved for in-line installation. Devices for in-line installation may not be fitted at the outlets to atmosphere unless they have also been tested and approved for that position.

2.5.3 End of line devices which are intended for exclusive use at openings of inerted cargo tanks need not be tested against endurance burning as specified in 3.2.3.

2.5.4 Where end-of-line devices are fitted with cowls, weather hoods and deflectors, etc. these attachments should be fitted for the tests described in 3.2.

2.5.5 Where detonation flame arresters are installed, as in-line devices venting to atmosphere, they should be located at a sufficient distance from the open end of the pipeline so as to preclude the possibility of a stationary flame resting on the arrester.

2.5.6 When venting to atmosphere is not performed through an end-of-line device according to 2.5.4, or a detonation flame arrester according to 2.5.5, the in-line device has to be specifically tested with the inclusion of all pipes, tees, bends, cowls, weather hoods, etc.,

[8] Hammering is rapid full stroke opening/closing, not intended by the manufacturer during normal operations.

which may be fitted between the device and atmosphere. The testing should consist of the flashback test of 3 2.2 and, if for the given installation it is possible for a stationary flame to rest on the device, the testing should also include the endurance burning test of 3.2.3.

2.5.7 Means should be provided to enable personnel to reach devices situated more than 2 m above deck to facilitate maintenance, repair and inspection.

3 TYPE TEST PROCEDURES

3.1 Principles

3.1.1 Tests should be conducted by a laboratory acceptable to the Administration.

3.1.2 Each size of each model should be submitted for type testing. However, for flame arresters testing may be limited to the smallest and the largest sizes and one additional size in between to be chosen by the Administration. Devices should have the same dimensions and most unfavourable clearances expected in the production model. If a test device is modified during the test programme, the testing should be started over again.

3.1.3 Tests described in this section using gasoline vapours (a non-leaded petroleum distillate consisting essentially of aliphatic hydrocarbon compounds with a boiling range approximating 65°C/75°C), technical hexane vapours, or technical propane, as appropriate, and referred to in this section, are suitable for all devices protecting tanks containing a flammable atmosphere of the cargoes referred to in 1.2.1. This does not preclude the use of gasoline vapours or technical hexane vapours for all tests referred to in this section.

3.1.4 After the relevant tests, the device should not show mechanical damage that affects its original performance.

3.1.5 Before the tests the following equipment as appropriate should be properly calibrated:

.1 gas concentration meters;

.2 thermometers:

.3 flow meters;

.4 pressure meters; and

.5 time recording devices.

3.1.6 The following characteristics should be recorded, as appropriate, throughout the tests:

.1 concentration of fuel in the gas mixture,

.2 temperature of the test gas mixture at inflow of the device; and

.3 flow rates of the test gas mixtures when applicable.

3.1.7 Flame passage should be observed by recording, e.g., temperature, pressure, or light emission by suitable sensors on the protected side of the device; alternatively, flame passage may be recorded on video tape.

3.2 Test procedures for flame arresters located at openings to the atmosphere

3.2.1 The test rig should consist of an apparatus producing an explosive mixture, a small tank with a diaphragm, a flanged prototype of the flame arrester, a plastic bag[9] and a firing source in three positions (see appendix 1).[10] Other test rigs may be used, provided the tests referred to in this section are achieved to the satisfaction of the Administration.

3.2.2 A flashback test should be carried out as follows:

.1 The tank, flame arrester assembly and the plastic bag[4] enveloping the prototype flame arrester should be filled so that this volume contains the most easily ignitable propane/air mixture[11]. The concentration of the mixture should be verified by appropriate testing of the gas composition in the plastic bag. Where devices referred to in 2.5.6 are tested, the plastic bag should be fitted at the outlet to atmosphere. Three ignition sources should be installed along the axis of the bag, one close to the flame arrester, another as far away as possible therefrom, and the third at the midpoint between these two. These three sources should be fired in succession, twice in each of the three positions. The temperature of the test gas should be within the range of 15°C to 40°C.

.2 If a flashback occurs, the tank diaphragm will burst and this will be audible and visible to the operator by the emission of a flame. Flame, heat and pressure sensors may be used as an alternative to a bursting diaphragm.

3.2.3 An endurance burning test should be carried out, in addition to the flashback test, for flame arresters at outlets where flows of explosive vapour are foreseeable:

.1 The test rig as referred to in 3.2.1 may be used, without the plastic bag. The flame arrester should be so installed that the mixture emission is vertical. In this position the mixture should be ignited. Where devices referred to in 2.5.6 are tested, the flame arrester should be so installed as to reflect its final orientation.

.2 Endurance burning should be achieved by using the most easily ignitable gasoline vapour/air mixture or the most easily ignitable technical hexane vapour/air mixture with the aid of a continuously operated pilot flame or a continuously operated spark igniter at the outlet. The test gas should be introduced upstream of the tank shown in appendix 2. Maintaining the concentration of the mixture as specified above, by varying the flow rate, the flame arrester should be heated until the highest obtainable temperature on the cargo tank side of the arrester is reached. Temperatures should be measured, for example, at the protected side of the flame quenching matrix of the arrester (or at the seat of the valve in case of testing high velocity vents according to 3.3). The highest obtainable temperature may be considered to have been reached when the rate of rise of temperature does not exceed 0.5°C per minute over a ten-minute period. This temperature should be maintained for a period of ten minutes, after which the flow should be stopped and the conditions observed. The temperature of the test gas should be within the range of 15°C to 40°C.

---

9 The dimensions of the plastic bag are dependent on those of the flame arrester, but for the flame arresters normally used on tankers, the plastic bag may have a circumference of 2 m, a length of 2.5 m and a wall thickness of 0.05 m.

10 In order to avoid remnants of the plastic bag from falling back on to the device being tested after ignition of the fuel/air mixture, it may be useful to mount a coarse wire frame across the device within the plastic bag. The frame should be so constructed as not to interfere with the test result.

11 Reference is made to IEC ~~Publication 79~~ 60079, Electrical Apparatus for Explosive Gas Atmospheres.

If no temperature rise occurs at all: inspect the arrester for a more adequate position of the temperature sensor, taking account of the visually registered position of the stabilized flame during the first test sequence. Positions which require the drilling of small holes into fixed parts of the arrester have to be taken into account. If all this is not successful, affix the temperature sensor at the unprotected side of the arrester in a position near to the stabilized flame.

If difficulties arise in establishing stationary temperature conditions (at elevated temperatures), the following criteria should apply: using the flow rate which produced the maximum temperature during the foregoing test sequence, endurance burning should be continued for a period of two hours from the time the above-mentioned flow rate has been established. After that period the flow should be stopped and the conditions observed. Flashback should not occur during this test.

3.2.4 When a pressure or/and vacuum valve is integrated to a flame arresting device, the flashback test has to be performed with the pressure or/and vacuum valve blocked open If there are no additional flame quenching elements integrated in a pressure valve, this valve has to be considered and tested as a high velocity vent valve according to paragraph 3.3.

3.3 Test procedures for high velocity vents

3.3.1 The test rig should be capable of producing the required volume flow rate. In appendices 2 and 3, drawings of suitable test rigs are shown. Other test rigs may be used, provided the tests are achieved to the satisfaction of the Administration.

3.3.2 A flow condition test should be carried out with high velocity vents using compressed air or gas at agreed flow rates. The following should be recorded:

.1 The flow rate. Where air or a gas other than vapours of cargoes with which the vent is to be used is employed in the test, the flow rates achieved should be corrected to reflect the vapour density of such cargoes.

.2 The pressure before the vent opens. The pressure in the test tank on which the device is located should not rise at a rate greater than 0.01 N/mm^2/min.

.3 The pressure at which the vent opens.

.4 The pressure at which the vent closes.

.5 The efflux velocity at the outlet which should not be less than 30 m/s at any time when the valve is open.

3.3.3 The following fire safety tests should be conducted while adhering to 2.3.6 using a mixture of gasoline vapour and air or technical hexane vapour and air, which produces the most easily ignitable mixture at the point of ignition. This mixture should be ignited with the aid of a permanent pilot flame or a spark igniter at the outlet:

.1 Flashback tests in which propane may be used instead of gasoline or hexane should be carried out with the vent in the upright position and then inclined at 10° from the vertical. For some vent designs further tests with the vent inclined in more than one direction may be necessary. In each of these tests the flow should be reduced until the vent closes and the flame is extinguished, and each should be carried out at least 50 times. The vacuum side of combined valves should be tested in accordance with 3.2.2 with the vacuum valve maintained in the open position for the duration of this test, in order to test the efficiency of the device which must be fitted.

.2 An endurance burning test, as described in 3.2.3, should be carried out. Following this test, the main flame should be extinguished and then, with the pilot flame burning or the spark igniter discharging, small quantities of the most easily ignitable mixture should be allowed to escape for a period of ten minutes maintaining a pressure below the valve of 90% of the valves opening setting, during which time flashback should not occur. For the purposes of this test the soft seals or seats should be removed.

3.4 Test rig and test procedures for detonation flame arresters located in-line

3.4.1 A flame arrester should be installed at one end of a pipe of suitable length and of the same diameter as the flange of the flame arrester. On the opposed flange a pipe of a length corresponding to 10 pipe diameters should be affixed and be closed by a plastic bag[12] or diaphragm. The pipe should be filled with the most easily ignitable mixture of propane and air, which should then be ignited. The velocity of the flame near the flame arrester should be measured and should have a value of that for stable detonations.

3.4.2 Three detonation tests should be conducted and no flashback should occur through the device and no part of the flame arrester should be damaged or show permanent deformation.

3.4.3 A drawing of the test rig is shown in appendix 4. Other test rigs may be used provided the tests are achieved to the satisfaction of the Administration.

3.5 Operational test procedures

3.5.1 A corrosion test should be carried out. In this test a complete device, including a section of the pipe to which it is fitted, should be exposed to a 5% sodium chloride solution spray at a temperature of 25°C for a period of 240 hours, and allowed to dry for 48 hours. An equivalent test may be used to the satisfaction of the Administration. Following this test, all movable parts should operate properly and there should be no corrosion deposits which cannot be washed off.

3.5.2 A hydraulic pressure test should be carried out in the casing or housing of a sample device, in accordance with 2.2.1.

4 MISCELLANEOUS

4.1 Marking of device

Each device should be permanently marked, or have a permanently fixed tag made of stainless steel or other corrosion-resistant material, to indicate:

.1 manufacturer's name or trade mark;

.2 style, type, model or other manufacturer's designation for the device;

.3 size of the outlet for which the device is approved;

.4 approved location for installation, including maximum or minimum length of pipe, if any, between the device and the atmosphere and the apparatus group assigned to the tested device;

[12] The dimensions should be at least 4 m circumference, 4 m length and a material wall thickness of 0.05 mm.

.5 direction of flow through the device;

.6 indication of the test laboratory and report number; and

.7 compliance with the requirements of ~~MSC/Circ.373/Rev.2~~ MSC.1/Circ.677/Rev.1.

4.2 Laboratory report

4.2.1 The laboratory report should include:

.1 detailed drawings of the device;

.2 types of tests conducted. Where in-line devices are tested, this information should include the maximum pressures and velocities observed in the test;

.3 specific advice on approved attachments;

.4 types of cargo for which the device is approved;

.5 drawings of the test rig;

.6 in the case of high velocity vent, the pressures at which the device opens and closes in the efflux velocity; and

7 all the information marked on the device in 4.1.

4.3 Manufacturer's instruction manual

4.3.1 The manufacturer should supply a copy of the instruction manual, which should be kept on board the tanker and which should include:

.1 installation instructions;

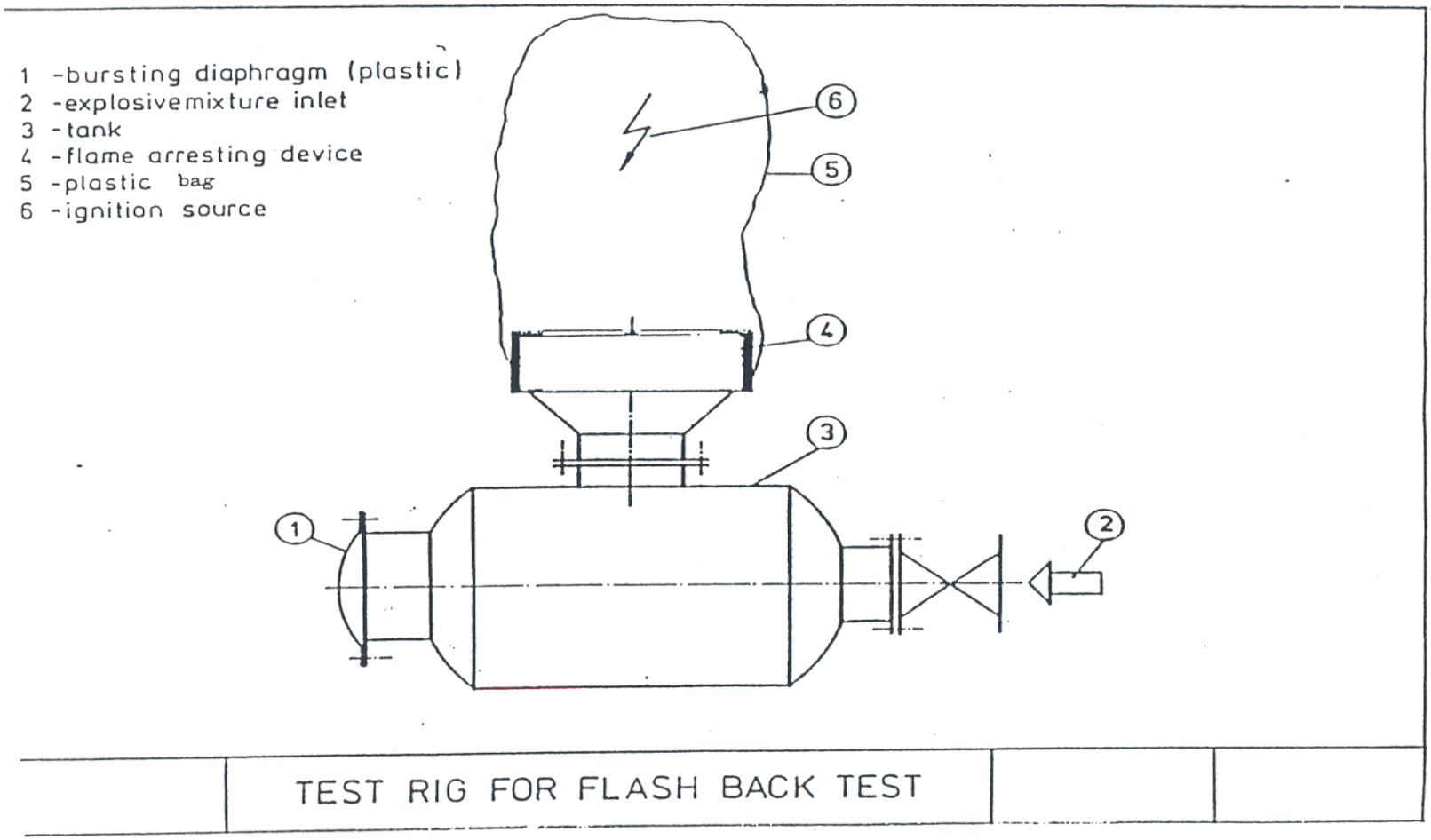
.2 operating instructions;

.3 maintenance requirements, including cleaning (see 2.3.3);

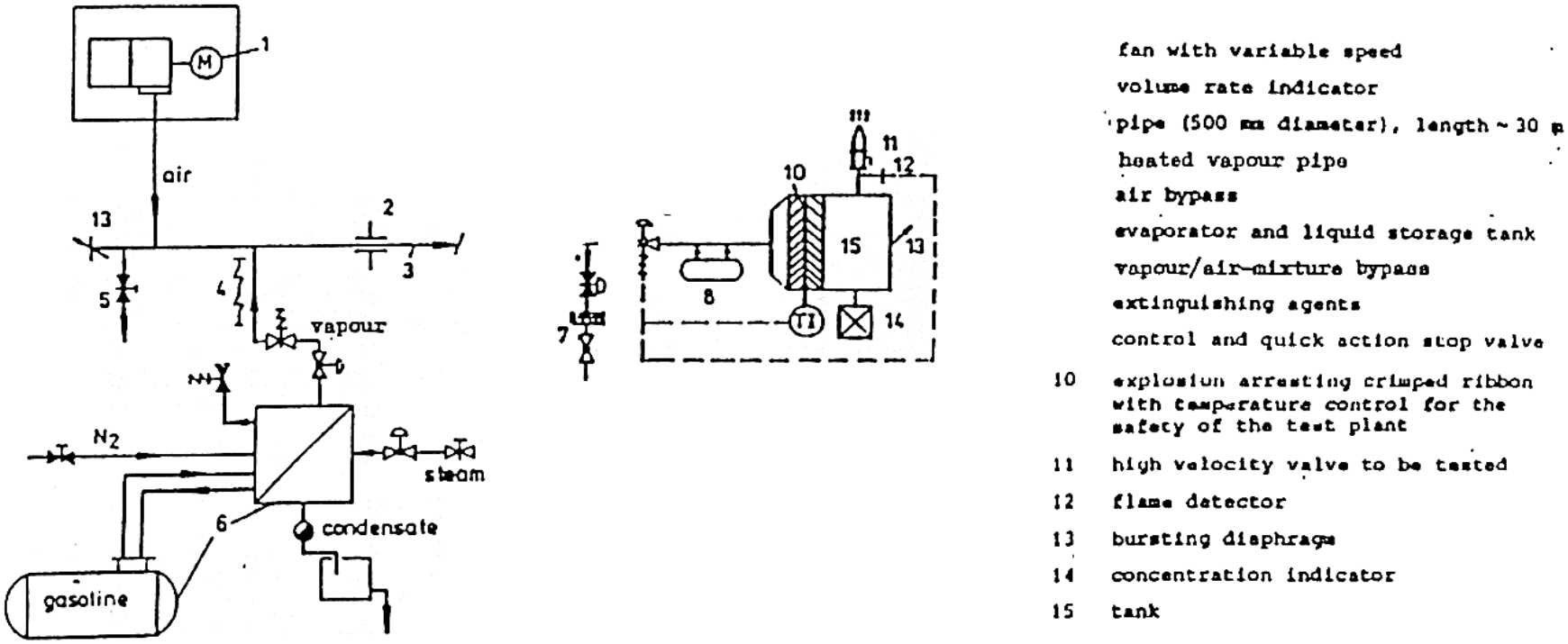
.4 copy of the laboratory report referred to in 4.2; and

.5 flow test data, including flow rates under both positive and negative pressures, operating sensitivity, flow resistance and velocity, should be provided.

APPENDIX 1


1 -bursting diaphragm (plastic)
2 -explosivemixture inlet
3 -tank
4 -flame arresting device
5 -plastic bag
6 -ignition source
1
2
3
4
5
6
TEST RIG FOR FLASH BACK TEST

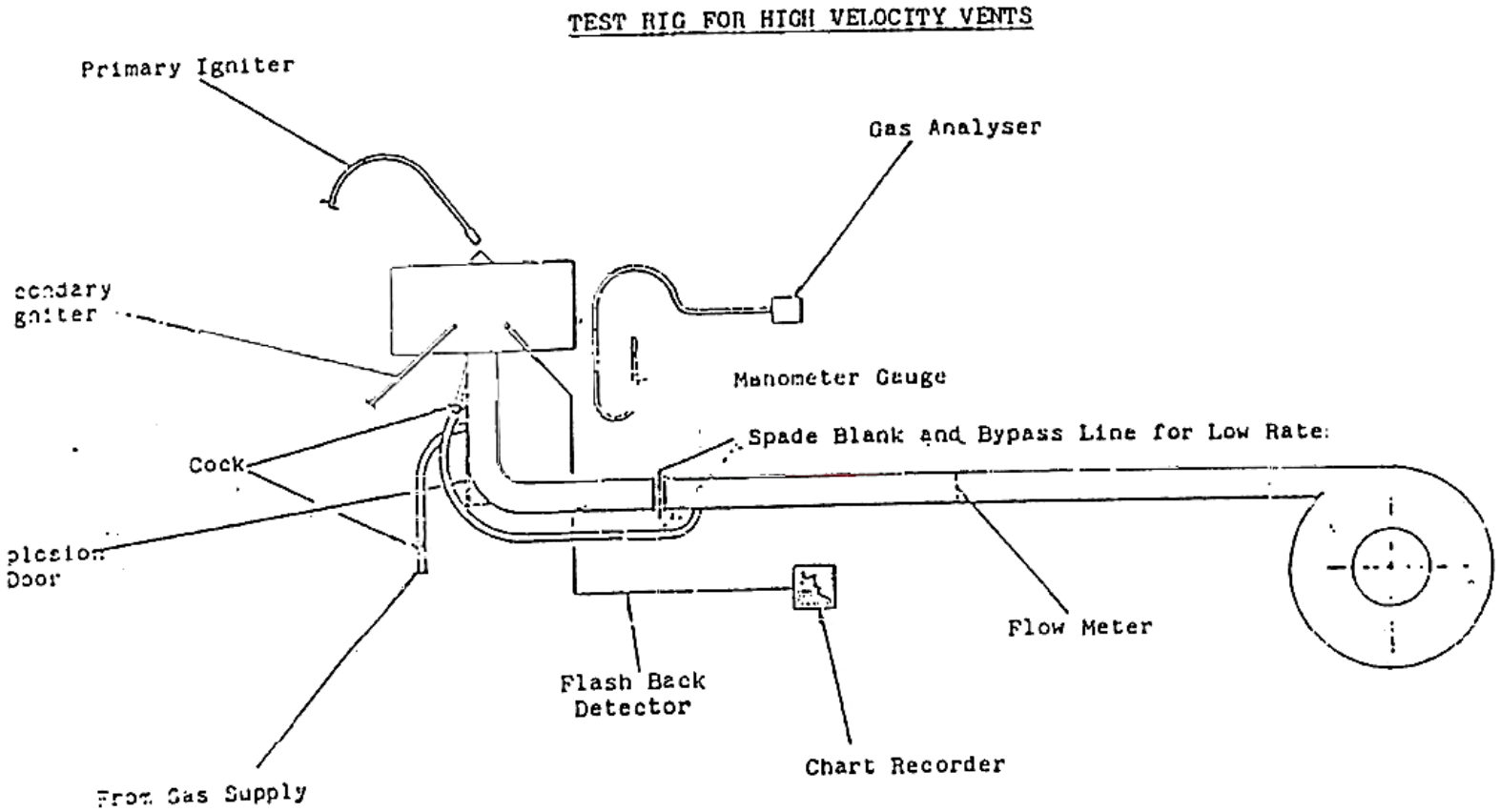
APPENDIX 2



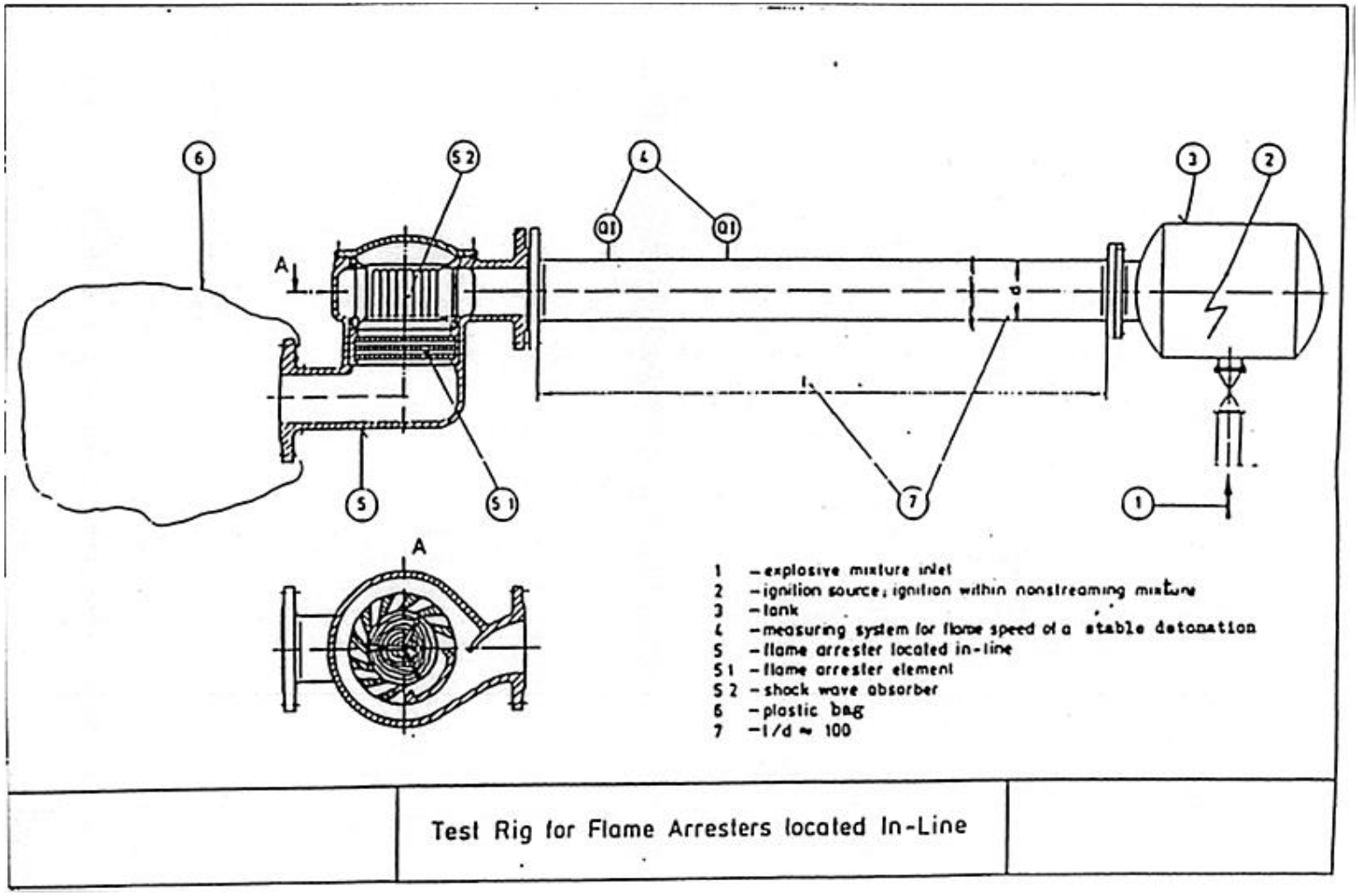
1 fan with variable speed
2 volume rate indicator
3 pipe (500 mm diameter), length ~ 30 m
4 heated vapour pipe
5 air bypass
6 evaporator and liquid storage tank
7 vapour/air-mixture bypass
8 extinguishing agents
10 control and quick action stop valve
10 explosion arresting crimped ribbon with temperature control for the safety of the test plant
11 high velocity valve to be tested
12 flame detector
13 bursting diaphragm
14 concentration indicator
15 tank

Schematic Plan of the Test Plant for High Velocity Valves
(endurance burning test only)

APPENDIX 3


TEST RIG FOR HIGH VELOCITY VENTS
Primary Igniter
Gas Analyser
Manometer Gauge
Spade Blank and Bypass Line for Low Rate
Cock
Flow Meter
Flash Back
Detector
Chart Recorder
From Gas Supply

APPENDIX 4



Test Rig for Flame Arresters located In-Line

***

ANNEX 17*

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Part C
Suppression of fire

Regulation 11 – Structural integrity

2 Material of hull, superstructures, structural bulkheads, decks and deckhouses

1 Paragraph 2 is modified, as follows:

"The hull, superstructures, structural bulkheads, decks and deckhouses shall be constructed of steel or other equivalent material. For the purpose of applying the definition of steel or other equivalent material as given in regulation 3.43 the "applicable fire exposure" shall be according to the integrity and insulation standards given in tables 9.1 to ~~9.4~~9.8. For example, where divisions such as decks or sides and ends of deckhouses are permitted to have "B-0" fire integrity, the "applicable fire exposure" shall be half an hour."

4 Machinery spaces of category A

4.1 Crowns and casings

2 Paragraph 4.1 is modified, as follows:

"Crowns and casings of machinery spaces of category A shall be of steel construction and shall be insulated as required by tables 9.1 and 9.3 for passenger ships or tables 9.5 and 9.7 for cargo ships, as appropriate".

***

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

ANNEX 18

STATEMENTS BY DELEGATIONS AND OBSERVERS*

OPENING

Statement by the delegation of Australia

Australia thanks Bahamas and Japan for raising once again the plight of the GALAXY LEADER and the impact Houthi attacks on shipping more broadly. We applaud them for their leadership and perseverance championing the welfare of the 25 crew kept three months in captivity. Australia condemns Houthi attacks on commercial shipping. These attacks very purposefully target civilians, and those involved in the attacks know that the only injury and death on board these civilian ships will be of civilian seafarers. As well as targeting civilians, the attacks also erode navigational rights and freedoms, damage international trade, and increase broader maritime security risks such as piracy. The attack and subsequent sinking of the Belize-flagged RUBYMAR over the weekend is a catastrophe that has resulted in the massive release of oil and fertilizer into the marine environment. We understand the RUBYMAR left a 30km slick before sinking. The only positive being there was no loss of human life with this particular attack – but it may not be the case next time. We draw the attention of member states to Security Council Resolution 2722. Australia remains committed to upholding the rules-based order and the principle of freedom of navigation.

Statement by the delegation of the Bahamas

Thank you Chair, Secretary-General, Excellencies, Distinguish Delegates present and online, NGO's and IGO's Observers, Greetings. Chair as we begin this 10th Session of Ship Systems and Equipment, The Bahamas once again rise to keep the spotlight on the Safety and Welfare of the Twenty-Five (25) Crew Members of the Galaxy Leader, which was hijacked on November 19th, 2023, off the coast of Yemen in the Red Sea by an Armed Militant Group. Monday 19th February 2024 marked the three-month anniversary of the seizure of the ship and its crew. Three months away from family and friends, three months being kept in captivity and three months with little contact and freedom for simply doing their jobs as seafarers in maintaining 2 the world's supply of food, medicines, furniture, vehicles, and other necessities. Chair, The Bahamas in keeping with United Nations Security Council Resolution 2722 (2024): "1. Condemns in the strongest terms the Houthi attacks on merchant and commercial vessels since November 19, 2023, when the Houthis attacked and seized the Galaxy Leader and its crew. 2. Demands that the Houthis immediately cease all such attacks, immediately release the Galaxy Leader and its crew. 3. Affirms the exercise of navigational rights and freedoms by merchant and commercial vessels, and takes note of the right of Member States, in accordance with international law, to defend their vessels from attacks, including those that undermine navigational rights…… Chair, The Bahamas extends its thanks to the SecretaryGeneral and the Secretariat for the recent Communication to the Member States outlining the range and intensity of the incidents in the Red Sea and the Gulf of Aden that continues 3 to endanger the Safety and Welfare of Seafarers and threatens the Marine Environment of this Ecological Sensitive Sea Area. Chair, as this Sub-Committee on Ship Systems and Equipment (SSE) prepares to deal with a wide range of technical and operational matters related to systems and equipment on all types of ships, vessels, craft and mobile units covered by IMO instruments, The Bahamas again wish to draw Distinguish Delegates attention to an unfortunate outcome that

* Statements have been included in this annex in the order in which they are listed in the report, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided), without any editing.

I articulated at PPR 11 and it is that: “Emissions are expected to increase significantly as shipping lines avoid the Suez Canal and their vessels take the long route around southern Africa. In addition to the increase emission of Green House Gases, Cargo insurance rates have seen a sharp increase from 0.6 % to 2% for Red Sea and Bab al-Mandab voyages. Chair, War Risk premium is also added by Cargo Insurers, further increasing the price of not taking the Suez Canal route. Container vessels—and, to a lesser extent, Car Carriers—have 4 been rerouted with the most frequency, and often hold higher value—and therefore incur higher Insurance Costs—than Bulk Carriers or hydrocarbon tankers. Chair, the Red Sea crisis is directly responsible for Cargo Shipping delays and price Increases, which we will all have to pay because all nations rely on International Shipping to some degree, and International Shipping is dependent on our brave Seafarers. The Bahamas again demands that the Crew of the Galaxy Leader and the Crew of all ships being unduly detained be freed. Thank you Chair and I request that this statement be included in the report of the Sub-Committee.

Statement by the delegation of Belgium

Belgium, on behalf of the Member States of the European Union, strongly condemns the Houthis attacks on commercial ships, which are unacceptable violations of international law, the IMO Convention and present a threat to maritime security and peace in the region.

Belgium expresses its full solidarity with the Governments of Belize and the United Kingdom following the sinking of the Rubymar on Saturday 2 March. We are relieved that there was no loss of life.

The Rubymar is the first vessel to be lost since the start of the attacks in the region, this escalation must stop without delay.

We are also very concerned by the environmental risks that the tons of fertilizer the vessel was carrying and the leaks of its fuel oil present to the Red Sea marine ecosystems and especially, its coral reefs.

We also call for an immediate and unconditional release of the Galaxy Leader and its crew. Such attacks which endanger the lives of innocent seafarers while disrupting the global trade must cease.

The EU welcomes the adoption of the United Nations Security Council resolution 2722 of 10 January that is strongly condemning Houthi attacks on Red Sea shipping. Upholding freedom of navigation in the Red Sea is vital to the free flow of global commerce and regional security. As recalled by UNSC resolution 2722, States have the right to defend their vessels against these attacks in accordance with international law.

The EU echoes UN Security Council demand that these attacks, which impede global commerce and undermine navigational rights as well as regional peace and security, cease immediately.

The EU urges restraint by the Houthis to avoid further escalation in the Red Sea and the broader region. In this context, the EU recalls the obligation of all States to respect the arms embargo under the UN Security Council resolution 2216 (2015).

The EU maintains an active role through its presence in the Red Sea and the Gulf of Aden and we are considering further actions in order to protect the lives of seafarers and uphold the freedom of navigation in the area.”

We would like this statement to be attached to the report of the sub-committee.

Statement by the delegation of Canada

Canada takes the floor this morning to support the intervention made by the Bahamas, the United States, the United Kingdom, and Japan to express our deepest condolences to the families of the seafarers who's lives have been taken in this horrific attack. As we have stated many times, Canada condemns in the strongest possible terms these illegal and unjustifiable attacks by the Houthis militants on commercial vessels transiting in the Red Sea, and calls on Iran to immediately stop supporting their efforts. Seafarers are the backbone of our global supply chains, and Members of this organization have committed to ensuring the safety and security of these workers; they should not have to fear for their lives at the hands of politically motivated militants for doing their jobs. As stated so eloquently by the Secretary General on Monday and the Director this morning, innocent seafarers should never become collateral victims. We would also request that this statement be added to the report.

Thank you Chair.

Statement by the delegation of Cyprus

Thank you Chair,
The delegation of Cyprus is extremely concerned about the escalation of the situation in the Red Sea and therefore joins with the delegation of Belgium in demanding that these attacks cease immediately. We are appreciative of the efforts of the Secretary General to resolve this situation and we fully support his actions.

Cyprus is seriously concerned about the threat that these attacks pose to the safety of life at sea and in particular to the valuable lives of OUR seafarers.
The navigational rights and freedoms by merchant vessels, in accordance with international law, must be respected in order to safeguard life at sea and avoid negative impact on humanitarian efforts worldwide.

The Republic of Cyprus fully supports UNSC Resolution 2722 and hence we demand that these attacks which impede global commerce and undermine fundamental navigational rights as well as regional peace and security, cease immediately and the detained seafarers are released immediately.

Cyprus is thankful to all nations that maintain naval assets in the area defending the freedom of navigation.

We would kindly request that this statement be attached to the report of the subcommittee.

Thank you Chair.

Statement by the delegation of Japan

Japan cannot tolerate any actions that impede the free and safe navigation of vessels, including the "seizure" of a Japan-related vessel, Galaxy Leader, by the Houthis, and we firmly condemn such actions.

We recall that the UN Security Council adopted the resolution 2722 on January 10, which condemns the Houthis' attacks on vessels in the Red Sea and demands that the Houthis immediately cease all such attacks and immediately release the Galaxy Leader and its crew. In this regard, Japan strongly urges all parties to act in a good faith in accordance with the UNSC resolution.

Statement by the delegation of Malta

Malta expresses serious concerns regarding the ongoing security situation in the Red Sea and the Gulf of Aden. We condemn the escalating attacks on commercial vessels in the region, which have been posing threats to the safety and security of seafarers, as well as towards vessels and their cargoes.
To date, four Malta-flagged ships have been the subject of attacks in the said region.
Particularly for seafarers, this is an uncalled-for additional hazard that is now being faced, over and above the inherent perils in their regular call of duty. Furthermore, these illicit actions disrupt the free flow of international commerce and shipping, making it particularly difficult to reach the Mediterranean. Upholding freedom of navigation in the Red Sea is vital to global commerce and regional security. In this respect, we call for de-escalation of the situation in the Red Sea and the broader region and an immediate end to these attacks on shipping.
We also call for the for the immediate release of the Galaxy Leader and its crew.

Statement by the delegation of Palau

Thank you Mr. Chair , I would like to add our voice to the intervention made by many of member States regarding to the dangerous situation in the Red Sea . We would like to express our solidarity to all the flags suffered for an attacks Is would like to thank the SG for the continuous efforts made on this issue and the information provided. I paramount to ensure the freedom of navigation in the area, protection shipping line, maritime commerce , protection of the environment, and the life of the seafarers .

Statement by the delegation of Poland

Poland firmly supports Belgium's statement on behalf of EU Member States condemning the actions of the Houthis against commercial ships in the Red Sea. In line with Belgium's stance, we express sincere concern for the seafarers who are innocent victims of reprehensible acts of piracy and aggression and the environmental risks posed.
Poland fully endorses the UN Security Council's call for an immediate cessation of these attacks, emphasizing the need for concerted international efforts to ensure the safety and security of maritime activities in the region.

Statement by the delegation of the United Kingdom

Thank you, Chair

The ongoing Houthi attacks in the Red Sea are illegal, unacceptable, and profoundly destabilising. The attacks against merchant and commercial vessels threaten the safety of navigation and are strongly condemned by the UN Security Council and the Resolution 2722.

The international community has taken extensive steps to address these unlawful maritime attacks via diplomatic means. Despite these steps, the Houthis have continued to carry out their attacks, which put innocent lives at risk and impede the delivery of humanitarian aid. Threatening the stability of the coastal States of the Red Sea presents significant risks to wider international peace and security. There is no lawful justification for intentionally targeting civilian shipping and naval vessels. Securing the freedom of navigation serves as the bedrock of global trade in one of the world’s most critical waterways. We are determined to hold malign actors accountable for unlawful seizures and attacks and remain strongly committed to the international rules-based order, defending the freedom of navigation and safe passage at sea.

Thank you, Chair

Statement by the delegation of the United States

U.S. Statement on Houthi Maritime Attacks and Seizures IMO SSE 10, March 4, 2024

The United States thanks the Secretary-General for his continued focus on the dire impact of Houthi attacks on seafarers and commercial ships in the Red Sea and Gulf of Aden, and for keeping Member States apprised of the situation. We call attention to UN Security Council resolution 2722 that underscores support for the navigational rights and freedoms of vessels in the Red Sea, condemns these Houthi attacks, and demands that they cease.
We join other Member States in calling for the Houthis to immediately and unconditionally release the seized motor vessel (M/V) Galaxy Leader and its 25 crew members.
The United States shares the Secretary-General's concern that the Houthis' reckless attacks on commercial ships jeopardize the safety and welfare of seafarers whom this organization is charged to protect. We note again, as we have in other IMO meetings, that these attacks also threaten the marine environment and navigational safety.
These concerns are now even more urgent following the Houthis' February 18 attack on M/V Rubymar with an anti-ship ballistic missile. The Rubymar's crew was forced to abandon ship, fortunately without casualties, but after slowly taking on water since the attack, the ship sunk on March 2, posing a significant risk to navigational safety in this vital waterway and causing damage to the fragile marine environment.
Iran has made no secret of its support to the Houthis - supplying the Houthis with the weapons and training needed to carry out attacks like this. We know that without Iran's support, the Houthis would struggle to track and strike commercial vessels like M/V Rubymar. Every member of this organization– and especially those with direct -2- channels to Iran – should press Iran's leaders to cease providing these critical weapons and support to the Houthis immediately.
The United States seeks a resumption of safe transit through the Bab al Mandeb and the return of unimpeded global commerce for the United States and the more than 50 nations affected thus far by Houthi attacks.
Through our commitment to Operation Prosperity Guardian, we underscore the importance of enhancing international and regional cooperation to counter Houthi threats to peace and security in the region.
Colleagues, our aim is simple: to deescalate tensions and restore stability in the Red Sea, while protecting the safety of seafarers from Houthi attacks and upholding the fundamental principles of freedom of navigation.

AGENDA ITEM 12

Statement by the delegation of Finland

Good morning,

Please find below intervention of Finland under agenda item 12, related to documents SSE 8/15/3 and SSE 10/12/9 to aid the work of translators.

Finland thanks the Secretariat for the document SSE 10/12/3 and IACS for the further information submitted. After a year of consideration, we still have the concerns that the draft Unified Interpretation will have an impact on currently allowed designs and arrangements on cargo ships.

First, Finland would like to address the document SSE 8/15/3. SOLAS II-1/26.2 discusses reliability of a single essential propulsion component and emphasizes the need for special consideration in the case of unconventional arrangements. Paragraphs 6 and 8 of document SSE 8/15/3 suggest that some electric machines are unconventional arrangements or designs and some are conventional. However, SOLAS does not have any definitions for what is a conventional or an unconventional arrangement.

Document SSE 8/15/3 introduces an IEEE study from year 1985 on large electrical machines. As per the study, electrical machines in the power range relevant for propulsion motors have a failure rate where each electric motor would have a failure in less than every 5 years. Taking that number to accommodate worldwide fleet with electric propulsion, it would mean that each day three failures would occur. Finland is of the view that this is not the situation with electric propulsion motors that are manufactured and approved in accordance with the regulations of the classification societies. Our submission, SSE 10/INF.7 provides specific data on reliability on electric propulsion motors. The numbers of SSE 10/INF.7 are in the magnitude of 100 lower than in the IEEE study. The numbers in SSE 10/INF.7 are from propulsion motors in the maritime domain, whereas, in our understanding, the motors of the IEEE study are not.

For these reasons, we cannot support the proposed UI in document SSE 8/15/3 to be applied to cargo ships.

Second, on the urgency of the issue. IACS mentions in their document SSE 10/12/9 of two recent winding failures of vessels that have had two electric propulsion motors. It is very important to notice that the regulation SOLAS II-1/26.2, for which the proposed interpretation would apply, is not relevant for the said vessels. Regulation 26.2 is about reliability of single essential propulsion component and these mentioned vessels have had all essential propulsion components duplicated. Two propulsion lines. That is in our view, desingwise, one option, but not the only possible. By choosing duplication, special consideration with the design is not needed. And yes, we fully agree with IACS conclusion in paragraph 3 of the document SSE 10/12/9 that design solutions can mitigate the risks with regard to winding. If we look at the data presented in SSE 10/INF.7 it can be seen that the stator winding has a failure rate of 0.5 cases per 1000 years of operation or 0.1 losses per one million hours of operation. At least, in our view, based on these figures, winding is not a safety concern.

Third, the consequence of the proposed UI would be that in the future it would not be accepted to build cargo ships that currently are in accordance with SOLAS. The ships that exist today are not plenty, but Finland considers that to achieve the goals with regards to greener shipping, a ship type that has hybrid energy sources for propulsion should not be required to have duplicated electric motors. We consider that this type of cargo ships can be a solution for short sea shipping.

For a more holistic approach Finland invites interested stakeholders to gather and submit up-to-date data with regard to reliability and failures of all single essential propulsion components used in cargo ships. As a conclusion, Finland cannot support the proposal in SSE 10/12/9 paragraph 13 for the need of immediate action and also we can not support the proposal in paragraph 14 to be applied to cargo ships.

Statement by the observer of IACS

Paper SSE 10/INF.7 challenges the relevance of the IEEE study. However, IACS notes that the paper is not evaluating the reliability of single electric propulsion motors compared to single components in conventional mechanical propulsion lines or elaborating on why electric motors should be considered differently from electrical components of a similar design such as generators and transformers, for which redundancy is required by SOLAS.

IACS acknowledges that electrical machines which are built according to the state-of-the-art standards, reach high reliability. At the same time IACS is aware that:

- failures of electrical machines do occur (same is mentioned in SSE 10/INF.7 and in the IEEE study);
- these failures are challenging to predict; and
- the failures in most cases are non-reparable onboard by the crew (same is mentioned in SSE 10/INF.7).

IACS emphasizes that these are safety critical aspects that differentiate such electrical components from the mechanical components in a conventional propulsion line.

IACS questions the use of failure statistics from one manufacturer as a basis for decisions by IMO on whether to place a safety net. Being data from one manufacturer, the statistics are heavily dependent on that manufacturer's procedures for systematic reporting. It is further understood that the data is collected, evaluated and concluded without any involvement of an independent 3rd party. As such IACS cannot recognize the information provided by one manufacturer as a basis for challenging the interpretation proposed in paper SSE 8/15/3.

IACS notes that the manufacturer has had challenges with respect to certain failure modes in the past but that these have been addressed through design modifications. Other design measures are mentioned, such as over dimensioning of insulation, increased lifetime criteria, increased monitoring, and redundancy of certain sub-components. Subject to consideration, IACS can agree that the reliability of these motors may be ensured through such measures. The challenge is however that such measures not being prescribed by any standards would come with an increased cost and are unlikely to be put in place voluntarily and consistently across the whole industry. Therefore, international regulatory instruments are needed.

In general, if occurrence of a failure is high and the consequence catastrophic, IMO would be regulating this design. If the occurrence is moderate or low but consequence is still catastrophic, IMO would be acting to manage the occurrence such that it would not lead to this catastrophic effect. This is what IACS proposed UI is offering - a mechanism how to manage the risk without banning the design.

As regards the need for more data, in paragraph 11 of document SSE 10/12/9, IACS points out that data on such failures will not be internationally available due to redundancy requirements for ships where such motors were installed. Now we are observing such motors being deployed where no redundancy is provided. In paragraph 12 of the same document, IACS refers to two incidents where failures of such motors led to the complete loss of propulsion motor; only because ships were designed with redundant motor, the incident did not lead to catastrophic loss of propulsion. On cargo ships such as gas carriers, tankers the complete loss of propulsion is a realistic result of the failure.

Whilst we regret that IACS was unable to convince all and everyone at SSE 10 of the real and present risk, we note that SSE 10 has made its decision which will be reported to MSC 109. In the meantime, IACS will review this outcome and consider its options.

CLOSING

Statement by the delegation of the Bahamas

Thank you Chair, Secretary-General, Excellencies, Distinguish Delegates present and online, NGO's and IGO's Observers, Greetings. Chair it is with a heavy heart that The Bahamas joins with the Secretary- General and all Member States in expressing our profound sympathy to the family and love ones of the three innocent Seafarers who lost their lives for simply doing their jobs when the Barbados Registered Dry Bulk Carrier True Confidence IMO # 9460784, enroute from China to Saudi Arabia was struck by an Anti-Ship Missile on Wednesday in the Gulf of Aden. The missile struck the crew cabins resulting in severe damage and a fire leading to the evacuation of the 20 crew members and three armed guards from the ship. Two other crew members were seriously injured. We wish to thank all involved 2 in the rescue efforts including the Indian Navy, which took the survivors and injured to hospital in Djibouti. Chair this unfortunate incident represents some 40 unnecessary and unprovoked attacks on International Shipping in the Red Sea and the Gulf of Aden, since The Bahamas Registered Galaxy Leader and its crew of 25 was Hijacked by members of the Houti Militia on 19th November last year. We Just witness the sinking of the Belize-flagged cargo ship Ruby Mar, with some 21,000 Metric tonnes of fertiliser with a potential to cause serious environmental damage in this ecological sensitive area should its cargo dissipate into the sea. The vessel also caused an 18-mile oil slick and presents a marine hazard for ships traversing the Red Sea. Chair, The Bahamas remains concerned for the safety of shipping in the Red Sea and for the safety of seafarers who are now risking their lives in order to provide security of the world's supply of food and goods. The Bahamas stands in solidarity with the delegations of Belize, United Kingdom, 3 Barbados, and Liberia with these latest attacks and urges restraint by the Houthis in the escalation of incidences in the Red Sea, which present a threat to the safety of navigation. Chair, The Bahamas reiterates the United Nations Security Council Resolution 2722 of January 10th, 2024: and strongly condemns Houthi attacks on Red Sea shipping. Upholding freedom of navigation in the Red Sea is vital to the free flow of global commerce and of regional security. The resolution also provides for the right of Member States, in accordance with international law, and IMO conventions to defend their vessels from attacks, including those that undermine navigational rights. Chair, The Bahamas calls upon all states to respect the Arms embargo of the United Nations Security Council 2216 of 2015, and to cease from providing equipment to the Houthis to be used in these attacks and to work to restore safety and peace for innocent seafarers in the Red Sea region. These unlawful attacks must stop. Kindly append this statement to the final report of SSE 10.

Statement by the delegation of Finland

Finland thanks the Director of Maritime Safety Division for sharing the message of the Secretary General. Finland expresses its deepest condolences to the families of the three seafarers that lost their lives in the illegal attack by the Houthis on the 6th of March against the Barbados flagged ship True Confidence. Finland condemns the attacks in the strongest possible terms.

Statement by the delegation of Germany

Thank you, Mr. Chair!

The recent attacks by the Houthis on the vessels Rubymar and True Confidence show the horrific consequences of the violent attacks for innocent seafarers, which many delegations in this organisation – including my own – have repeatedly condemned.

Our thoughts are with the seafarers and families affected by these attacks.

And we express our deepest condolences to these families.

Kindly include my statement to the final report.

Thank you, Mr. Chair!

Statement by the delegation of Italy

Our delegation conveys its heartfelt condolences to the families who have tragically lost their loved ones, and expresses our sympathy and support towards those who have been injured. We strongly condemn these attacks, considering them as acts of extreme disapproval. Additionally, we firmly assert that it is unacceptable for innocent seafarers to suffer as unintended casualties in such situations, In this regard We fully support the statement made by the Bahamas, the US, the UK and Belgium, and others. We kindly ask this statement be attached to the report."

Statement by the delegation of Spain

España desea expresar sus condolencias por las pérdidas humanas acaecidas en el último ataque ilegal al buque “True Confidence”.
España desea unirse a las expresiones de condena que hasta ahora se han realizado en esta sesión plenaria de estos actos que ponen en riesgo la seguridad del transporte marítimo internacional y la integridad de la gente de mar.
Esta delegación desea especialmente enviar todo su cariño a la delegación de Filipinas.
Presidente, le agradeceremos que esta declaración se refleje en el informe final.
Gracias Presidente

Statement by the delegation of the United Kingdom

Thank you, Chair. This delegation would like to join others in expressing our sincere condolences to the families of the seafarers who lost their lives during Houthi militant attack on the commercial vessel MV True Confidence which occurred on 6 March. Our thoughts are with the other crew members who were seriously injured. The UK would like to reiterate that the ongoing Houthi attacks in the Red Sea are illegal, unacceptable, and profoundly destabilising. The attacks against merchant and commercial vessels threaten the safety of navigation and are strongly condemned by the UN Security Council and the Resolution 2722. The Houthis have continued to carry out their attacks, which continue to put innocent lives at risk. There is no lawful justification for intentionally targeting civilian shipping and tragically now innocent seafarers have lost their lives. The United Kingdom remains determined to hold those responsible accountable and remain strongly committed to the international rulesbased order, defending the freedom of navigation and safe passage at sea. Thank you, Chair

Statement by the delegation of the United States

The United States is deeply saddened by the death of three innocent seafarers and injury of at least four others resulting from the Iran-backed Houthis’ attack on the M/V True Confidence on March 6. The Iran-backed Houthis fired an anti-ship ballistic missile at this commercial ship with utter contempt and disregard for the lives of the multinational civilian crew onboard.

The United States deplores this wanton attack and demands that the Houthi militants immediately cease attacking commercial ships to ensure the safety of seafarers, the security of international shipping, and the protection of the fragile marine environment.

We take this opportunity to once again call for the Houthis to immediately and unconditionally release the seized motor vessel (M/V) Galaxy Leader and its 25 crew members that they illegally seized on November 19, 2023.

Colleagues, as the United States has noted previously, Iran has made no secret of its support to the Houthis - supplying them with the weapons and training needed to carry out attacks like this. We know that without Iran's support, the Houthis would struggle to track and strike commercial vessels like M/V True Confidence.

Every member of this organization – and especially those with direct channels to Iran – should urgently press Tehran to cease providing these weapons and support to the Houthis before more innocent seafarers are killed by their reckless and abhorrent actions.

Thank you, and we request that this statement be included in the report of the Sub-committee.