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EQUIPMENT
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The Sub-Committee on Ship Systems and Equipment (SSE) held its ninth session from 27 February to 3 March 2023, chaired by Mr. U. Şentürk (Türkiye). The Vice-Chair, Mr. C. 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 9/INF.1.

Opening address

1.3 The Secretary-General opened the meeting by first expressing the Organization's sincere condolences and sympathy for the victims of the recent tragic earthquakes in the Syrian Arab Republic and Türkiye; and on the passing of Mrs. Mandana Mansourian, the long-time Deputy Permanent Representative of the Islamic Republic of Iran to IMO (see also paragraph 19.42). Many delegations joined the Secretary-General in expressing their own heartfelt condolences and sympathy. The full text of the Secretary-General's opening address 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, taking into account the relevant decisions of C 127 (C 127/D, paragraph 17.3).

1.6 In this regard, the Sub-Committee noted that C 127 had:

- .1 agreed to the use of hybrid facilities to complement in-person meetings from September 2022, for a trial period of one year;
- .2 agreed that the Rules of Procedure and the *Interim guidance to facilitate remote sessions of the Committees during the COVID-19 pandemic* (MSC-LEG-MEPC-TCC-FAL.1/Circ.1), as appropriate, should be applied and that only representatives of the Members attending the meeting in person at IMO Headquarters would be allowed to vote; and
- .3 invited other organs of the Organization to follow the above decisions and to report to a future session of the Council on their experience with hybrid meetings.

Update on the revised Organization and method of work (MSC-MEPC.1/Circ.5/Rev.4)

1.7 The Sub-Committee noted that MSC 106 and MEPC 79 had concurrently approved the fourth revision of the *Organization and method of work of the MSC and the MEPC and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.4), which provided a five working day

commenting period for delegations from the day of the publication of the final draft report, limited to editorial corrections and improvements, including finalizing individual statements, and that such comments should not reopen discussion on decisions taken during the session. Additionally, the Chair, supported by the Secretariat, would facilitate resolution of any comments received, as necessary and the Secretariat, in consultation with the Chair, would then publish a document on IMODOCS containing the comments received, together with an explanation of how they had been addressed. After the above document had been published, the final report would be prepared in due course for publication on IMODOCS.

1.8 In addition to the above, a revised paragraph 6.3 was included in MSC-MEPC.1/Circ.5/Rev.4, stating that documents should not be introduced in plenary unless the Chair decided that this was essential for the proper consideration of the matter concerned. However, submitters of documents could indicate if they had additional information or context required for the discussions, in order for the Chair to prioritize interventions.

Adoption of the agenda and related matters

1.9 The Sub-Committee adopted the agenda (SSE 9/1/Rev.1) and agreed to be guided in its work, in general, by the annotations contained in document SSE 9/1/1 (Secretariat) and the arrangements in document SSE 9/1/2 (Chair).

Grande California fire incident

1.10 The delegation of Spain made a statement with regard to the fire incident on **Grande California** on 19 February 2023, six miles north-west of the Traffic Separation Scheme of Finisterre off the coast of Galicia with a load of 4,000 vehicles, 40 of which had fully electric propulsion. In this regard, the delegation expressed their concerns about the succession of fires in car carrier-type ships. The full statement is set out in annex 22.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee, having noted the decisions and comments pertaining to its work made by MSC 105, C 127, III 8 and MSC 106, as reported in document SSE 9/2 (Secretariat) and under agenda item 1 (see paragraphs 1.5 to 1.9), agreed to take action, as appropriate, under the relevant agenda items.

3 NEW REQUIREMENTS FOR VENTILATION OF SURVIVAL CRAFT

Background

Consideration of the matter at SSE 8

3.1 The Sub-Committee recalled that SSE 8 had agreed to:

- .1 the draft MSC resolution on amendments to the International Life-Saving Appliances (LSA) Code (in relation to the ventilation requirements for survival craft in chapter IV), including the application provision, for totally and partially enclosed lifeboats, as well as liferafts, with a view to approval by MSC 106 and adoption by MSC 107 (SSE 8/20, paragraph 3.21 and annex 1);
- .2 the draft amendments to the *Revised recommendation on testing of live-saving appliances* (resolution MSC.81(70)), for adoption at MSC 107, in conjunction with the adoption of the associated LSA Code amendments (SSE 8/20, paragraph 3.24 and annex 2);

- .3 keep the output on "New requirements for ventilation of survival craft" on the provisional agenda of this session to allow for new research reports to be considered, if any, which could require adjustments to the agreed draft amendments to the Revised Recommendation; and
- .4 re-establish the Correspondence Group on Life-Saving Appliances and to task the Group with preparing consequential amendments to the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630).

Consideration of the matter at MSC 106

3.2 The Sub-Committee also recalled that MSC 106 had considered the draft amendments to the LSA Code and had (MSC 106/19, paragraphs 11.4 and 11.6):

- .1 approved the draft amendments to the Code for totally enclosed lifeboats as a matter of priority, with a view to adoption at MSC 107 and entry into force on 1 January 2026;
- .2 in line with the approval of draft amendments to the LSA Code concerning new ventilation requirements for totally enclosed lifeboats, approved the associated draft amendments to the Revised Recommendation (resolution MSC.81(70)) for totally enclosed lifeboats, in principle, with a view to adoption at MSC 107, in conjunction with the adoption of the associated LSA Code amendments; and
- .3 agreed to keep the agenda item on the agenda of the Sub-Committee for this session to consider any compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, for inclusion in both the LSA Code and resolution MSC.81(70).

Compelling need for ventilation requirements for partially enclosed lifeboats and liferafts

3.3 The Sub-Committee considered the compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, together with the following documents:

- .1 SSE 9/3/1 (Secretariat), providing information on the outcome of MSC 106 pertaining to new requirements for ventilation of survival craft;
- .2 SSE 9/3/4 (Austria et al.), providing arguments for the discussion of the compelling need to introduce ventilation requirements for partially enclosed lifeboats and liferafts;
- .3 SSE 9/3/6 (China) (the relevant part), discussing the compelling need to implement new ventilation requirements for partially enclosed lifeboats and liferafts; and
- .4 SSE 9/3/8 (Japan et al.), commenting on document SSE 9/3/1 and suggesting that a compelling need for revising the ventilation requirements for partially enclosed lifeboats and liferafts did not exist, based on empirical data from casualties where survival craft were deployed.

3.4 In particular, the Sub-Committee considered:

- .1 the compelling need to introduce ventilation requirements for partially enclosed lifeboats and liferafts, in light of the arguments put forward at MSC 106 and in documents SSE 9/3/4, SSE 9/3/6 and SSE 9/3/8; and
- .2 if needed, whether MSC 107 should hold the adoption of the amendments for totally enclosed lifeboats, with a view to adoption of the whole package by MSC 108.

3.5 In this respect, the following views were expressed:

In support of the compelling need:

- .1 as stated in documents SSE 9/3/4 and SSE 9/3/6, there was a compelling need for partially enclosed lifeboats and liferafts, as such survival craft had little space and a lack of ventilation could endanger the lives of survivors by increased CO₂ concentration, overheating and bad air quality, in particular those with large carrying capacities, as was already stated in various resources, including the SAREX Exercise, accident investigation report of the **MOL Comfort** accident, and in documents SSE 7/INF.10 and SSE 8/INF.8 (China);
- .2 the proposals in document SSE 9/3/6 were acceptable in general; however, careful consideration should be given to modifying the CO₂ levels substantially;
- .3 the term "sufficient air" contained in the LSA Code was not quantified, which could lead to inconsistent levels of ventilation achieved by different manufacturers or even among the survival craft produced by the same manufacturer;
- .4 for the sake of coherence, the expected safety level should be assumed to be the same, irrespective of the type of survival craft and, therefore, identical expected performance requirements should be considered for partially enclosed lifeboats and liferafts; and survivors should receive the same level of protection by a goal-based approach;
- .5 natural ventilation had not been excluded from the scope of the work and mechanical ventilation was one of the options; and therefore, proper design of hatches and openings could meet the expected criteria for partially enclosed lifeboats and liferafts;

Not supporting the compelling need:

- .6 notwithstanding the above views expressed, as stated in document SSE 9/3/8, a compelling need had not been established and, by design, partially enclosed lifeboats and liferafts included hatches and flaps that could be opened to provide sufficient air quality and ventilation;
- .7 the agenda item was originally considered for totally enclosed lifeboats to close the safety gap and, according to the exhaustive review of survival craft related investigations, no incidents resulted in death or injury of survivors due to poor ventilation had been reported;

- .8 opening of hatches in partially enclosed lifeboats and liferafts could be a concern for the accidents happening in the polar regions; however, such requirements were not considered appropriate for non-polar regions;
- .9 ventilation requirements for partially enclosed lifeboats and liferafts were considered arbitrary and unnecessarily burdensome, and additional requirements, including mechanical ventilation, would mean more complex systems with more maintenance burden; and, therefore, such craft should have simple ventilation means;
- .10 the draft amendments for totally enclosed lifeboats should be adopted at MSC 107 together with the associated amendments in order not to delay the planned entry into force (1 January 2026);
- .11 current regulations were already goal-based and further regulations were not necessary;
- .12 in real circumstances, the proposed maximum CO₂ concentration of 5,000 ppm level could not be achieved by natural ventilation alone and mechanical ventilation was not considered feasible for partially enclosed lifeboats and liferafts; and
- .13 as defined in the SOLAS Convention, partially enclosed lifeboats were installed on passenger ships owing to ease of accessibility and faster rescue capabilities; and this should be taken into account when considering new requirements.

3.6 Having noted that views on the matter were split, the Sub-Committee 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 this session, for timely entry into force of the draft amendments, following their expected adoption at MSC 107.

3.7 Therefore, the Sub-Committee agreed to keep the agenda item on the provisional agenda of SSE 10 for further discussion on the compelling need for partially enclosed lifeboats and liferafts, and deferred consideration of the specific proposals suggesting amendments to the LSA Code and the Revised Recommendation for partially enclosed lifeboats and liferafts in documents SSE 9/3/3 (India), SSE 9/3/5 (India) and the relevant part of SSE 9/3/6 (China) to the next session, together with any other relevant submissions to be made.

Report of the Correspondence Group

3.8 The Sub-Committee considered document SSE 9/3, containing the report of the LSA Correspondence Group relevant to this agenda item, providing draft consequential amendments to circular MSC.1/Circ.1630/Rev.1 for new ventilation requirements for survival craft in annex 1 to the report.

3.9 In this respect, having approved the report in general, the Sub-Committee, recalling its earlier discussion on the compelling need (see paragraph 3.6):

- .1 agreed to the draft amendments to circular MSC.1/Circ.1630/Rev.1 for totally enclosed lifeboats only; and
- .2 agreed to establish the LSA Working Group (see paragraph 3.14) and instructed the Group to finalize the draft amendments to the circular accordingly, based on annex 1 to document SSE 9/3, together with the associated draft MSC circular, with a view to approval by MSC 107 and dissemination as MSC.1/Circ.1630/Rev.2.

Amendments to resolution MSC.402(96) for new ventilation requirements

3.10 Regarding consequential amendments to *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats* (resolution MSC.402(96)) emanating from the new ventilation requirements, the Sub-Committee considered document SSE 9/3/7 (China), proposing to revise resolution MSC.402(96) to add examination of the ventilation systems fitted according to the new ventilation requirements for lifeboats in the items of annual thorough examination and operational testing of lifeboats.

3.11 Following discussion, the Sub-Committee:

- .1 agreed to the draft amendments to resolution MSC.402(96), in principle, with some adjustments regarding its wording and sequence in paragraph 6.2.3 of the resolution; and
- .2 instructed the LSA Working Group (see paragraph 3.14) to consider the draft amendments to the resolution in document SSE 9/3/7.

Testing of fast rescue boats

3.12 With regard to the implementation of ventilation requirements on fast rescue boats, the Sub-Committee considered document SSE 9/3/2 (India), providing information on the outcome of MSC 106 pertaining to new requirements for ventilation of survival craft and suggesting modifications to the Revised Recommendation (resolution MSC.81(70)) addressing unintentional applicability of new ventilation requirements to fast rescue boats.

3.13 Having agreed with the proposals, the Sub-Committee referred document SSE 9/3/2 to the LSA Working Group (see paragraph 3.14) for finalization of the relevant draft amendments to the Revised Recommendation.

Establishment of the LSA Working Group

3.14 Subsequently, the Sub-Committee established the Working Group on Life-Saving Appliances (LSA) and instructed it, taking into account the comments made and decisions taken in plenary, to:

- .1 finalize the draft amendments to the Revised Recommendation (resolution MSC.81(70)), taking into account document SSE 9/3/2;
- .2 finalize the draft amendments to MSC.1/Circ.1630/Rev.1 based on annex 1 to document SSE 9/3 for totally enclosed lifeboats only, with a view to approval by MSC 107 and dissemination as MSC.1/Circ.1630/Rev.2; and

- .3 consider the consequential draft amendments to resolution MSC.402(96) in document SSE 9/3/7 emanating from ventilation requirements, in conjunction with other modification proposals submitted under agenda item 19 for appropriate action.

Report of the LSA Working Group

3.15 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee took action as outlined in paragraphs 3.16 to 3.19 below.

Ventilation performance testing for fast rescue boats

3.16 With respect to the amendments to the Revised Recommendation (resolution MSC.81(70)) on excepting ventilation performance testing for fast rescue boats, the Sub-Committee agreed to the draft MSC resolution on amendments to the revised recommendation on testing of life-saving appliances (resolution MSC.81(70)), as set out in annex 1, with a view to adoption by MSC 107 together with the draft amendments previously approved, in principle, by MSC 106 (MSC 106/19, paragraph 11.6.1; and SSE 8/20, annex 2), in conjunction with the adoption of the draft amendments to the LSA Code on ventilation requirements for totally enclosed lifeboats.

Amendments to MSC.1/Circ.1630/Rev.1

3.17 Regarding draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630/Rev.1), the Sub-Committee agreed to the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (survival craft), as set out in annex 2, with a view to approval by MSC 107 and dissemination as MSC.1/Circ.1630/Rev.2, in conjunction with the adoption of the draft amendments to the LSA Code and resolution MSC.81(70) on ventilation requirements for totally enclosed lifeboats.

Consequential draft amendments to resolution MSC.402(96)

3.18 With regard to the consequential draft amendments to resolution MSC.402(96) emanating from new ventilation requirements suggested in document SSE 9/3/7, the Sub-Committee noted that the Group had agreed not to limit the application to totally enclosed lifeboats, considering that ventilation systems might also be fitted voluntarily on partially enclosed lifeboats and survivors would rely on such systems to be operational at all times; also, some lifeboats, other than totally enclosed lifeboats, might be fitted with air conditioning which also used ventilation systems.

3.19 Subsequently, the Sub-Committee agreed to draft revised paragraph 6.2.3 of resolution MSC.402(96), emanating from new ventilation requirements for survival craft, as set out in annex 3, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

Extension of the target completion year

3.20 In light of the above conclusion, the Sub-Committee invited MSC 107 to extend the target completion year for this output to 2024.

4 DEVELOPMENT OF AMENDMENTS TO THE LSA CODE TO REVISE THE LOWERING SPEED OF SURVIVAL CRAFT AND RESCUE BOATS FOR CARGO SHIPS

Background

4.1 The Sub-Committee recalled that MSC 99 had considered document MSC 99/20/2 (Japan) and had agreed to include in its post-biennial agenda an output on "Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ. The Committee had also agreed that (MSC 99/22, paragraphs 20.14 to 20.18):

- .1 the amendments to be developed should apply to all cargo ships to which SOLAS chapter III applied and to all launching appliances using falls and winches; and
- .2 the instrument to be amended was paragraph 6.1.2.8 of the LSA Code.

4.2 The Sub-Committee also recalled that SSE 8, having considered document SSE 8/16 (Japan), agreed to include the output in this session's provisional agenda, together with draft amendments (SSE 8/20, paragraph 16.9).

Minimum lowering speed

4.3 With regard to minimum lowering speed of survival craft and rescue boats, the Sub-Committee considered the relevant part of document SSE 9/4 (China), providing comments regarding amendments to paragraph 6.1.2.8 of the LSA Code on minimum lowering speed, in conjunction with the proposed amendments in document SSE 8/16.

4.4 In the ensuing discussion, the Sub-Committee supported the proposed draft amendments and noted that they should be applied to new installations only.

4.5 Following discussion, the Sub-Committee agreed to the draft amendments to paragraph 6.1.2.8 of the LSA Code and instructed the LSA Working Group (see paragraph 4.10) to finalize them, together with the associated draft MSC resolution containing an application provision, based on document SSE 8/16 and taking into account document SSE 9/4, with a view to approval by MSC 107.

Maximum lowering speed

4.6 With regard to the maximum lowering speed of survival craft and rescue boats, the Sub-Committee had the following documents for its consideration:

- .1 SSE 9/4 (China), proposing to revise paragraph 6.1.2.10 of the LSA Code to limit the maximum lowering speed of fully loaded survival craft and rescue boats, by analysing the lowering test results and conducting necessity study; and
- .2 SSE 9/INF.5 (China), providing the report on the test of the lowering speed of fully loaded survival craft and rescue boats for cargo ships, in support of document SSE 9/4.

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

- .1 whether the scope should be expanded; and
- .2 if so, whether the draft amendments to paragraph 6.1.2.10 of the LSA Code on maximum lowering speed of survival craft or rescue boat, were acceptable.

4.8 Having agreed with the draft amendments to paragraph 6.1.2.10 of the LSA Code on maximum lowering speed in principle, the Sub-Committee took action as follows:

- .1 agreed that the scope should be expanded accordingly to keep lowering speed of survival craft and rescue boats within a reasonable margin by limiting both minimum and maximum speeds for safety sake and invited MSC 107 to endorse such expansion; and
- .2 noted that consideration should be given to differentiating the implementation of such a requirement between the lifeboats and rescue boats.

Instructions to the LSA Working Group

4.9 Consequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (see paragraph 3.14), taking into account comments made and decisions taken in plenary, to finalize the draft amendments to the LSA Code with respect to lowering speed of survival craft and rescue boats, together with the associated draft MSC resolution containing an application provision, based on documents SSE 8/16 and SSE 9/4, and taking into account document SSE 9/INF.5, with a view to approval by MSC 107.

Report of the LSA Working Group

4.10 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee took action as outlined in paragraphs 4.12 to 4.14 below.

4.11 Having recalled that the output was limited to amendments to cargo ships only, the Sub-Committee noted the Group's conclusion that the draft revised requirements for the minimum lowering speed of survival craft and rescue boats would have no effect on passenger ships, which had already a davit height limitation as per SOLAS regulation III/24.

4.12 Therefore, the Sub-Committee invited MSC 107 to expand the application of the aforementioned draft amendments to chapter VI of the LSA Code for revised paragraphs 6.1.2.8 and 6.1.2.10 to passenger ships, so that the maximum lowering speed would also apply, noting that the Group had prepared the draft amendments so as to apply for both cargo and passenger ships.

4.13 Subsequently, the Sub-Committee agreed to a draft MSC resolution on amendments to the LSA Code for minimum and maximum lowering speed of survival craft and rescue boats, and check/monitoring sheet and the record format, as set out in annex 4, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

Completion of the work on the output

4.14 MSC 107 was invited to note that the work on this output had been completed.

5 REVISION OF SOLAS CHAPTER III AND THE LSA CODE

Background

- 5.1 The Sub-Committee recalled that SSE 8 had (SSE 8/20, paragraph 5.5):
- .1 endorsed the goals for SOLAS chapter III, together with the assigned hazards in five distinct "areas of concern" (i.e. major events) (SSE 8/3, paragraphs 9 and 10);
 - .2 endorsed associated high-level event sequence for the areas of concern to use when revising SOLAS chapter III and the LSA Code (SSE 8/3, annex 2);
 - .3 agreed to an intersessional working group, with the terms of reference set out in paragraph 5.15 of document SSE 8/20, and instructed the Group to submit a report to this session; and
 - .4 tasked the Correspondence Group on Life-Saving Appliances, with the terms of reference set out in paragraph 5.16 of document SSE 8/20, and instructed the Group to submit a report to this session.
- 5.2 The Sub-Committee also recalled that:
- .1 the meeting of the Intersessional Working Group on the Revision of SOLAS Chapter III and the LSA Code had been held in person in Hamburg (Germany) from 24 to 28 October 2022; and
 - .2 following the meeting, a group of interested parties had met virtually (6 and 7 December 2022) to further progress the work and had submitted a revised report.

Report of the Correspondence Group

- 5.3 The Sub-Committee considered the part of the report of the Correspondence Group on Life-Saving Appliances in document SSE 9/3 related to this agenda item. In this respect, having approved it in general, the Sub-Committee:
- .1 endorsed the categorization of documents SSE 7/5 (China), SSE 7/5/1 (CLIA), SSE 7/5/2 (CLIA and RINA), SSE 7/5/3 (Brazil), SSE 8/5 (Bahamas et al.) and SSE 8/5/1 (China) provided by the Correspondence Group in accordance with the criteria agreed at SSE 8 (SSE 8/20, paragraph 5.16.2);
 - .2 invited the co-sponsors of documents SSE 8/5 and SSE 8/5/1 to submit proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4); and
 - .3 having noted that document SSE 7/5 was categorized as urgent and was related to document SSE 9/17 (China), agreed to further consider the matter under agenda item 17 (Biennial status report and provisional agenda for SSE 10) (see paragraphs 17.4 and 17.5).

Report of the Intersessional Working Group and Group of Interested Parties

5.4 In relation to the progress made on hazard identification work intersessionally, the Sub-Committee had the following documents for its consideration:

- .1 SSE 9/5, providing the report of the Intersessional Working Group on the Revision of SOLAS Chapter III and the LSA Code, held in person in Hamburg/Germany from 24 to 28 October 2022; and
- .2 SSE 9/5/1, providing the report of the Group of Interested Parties on the Revision of SOLAS Chapter III and the LSA Code, held virtually on 6 and 7 December 2022, which further developed the outcome of the Intersessional Working Group in document SSE 9/5.

5.5 Having approved the report of the Intersessional Working Group (SSE 9/5) in general, the Sub-Committee noted the following views during its consideration:

- .1 in relation to document SSE 9/5/1, although the outcome of the discussion of the interested parties provided additional value to the discussions of this agenda item, the report of the interested parties could not be approved by the Sub-Committee, as it was not mandated by a relevant IMO body and the bulky outcome was provided through a link in the report, making it difficult to thoroughly examine it; however, it could be referred to the LSA Working Group as a reference;
- .2 intersessional working and correspondence groups should have the opportunity to meet virtually to facilitate the discussions, and this should be discussed by the LSA Working Group; and
- .3 so-called "unregulated ship condition", i.e. by neglecting a ship's existing means for survival that would normally be operational, should be clarified (see paragraph 5.6.4).

5.6 Following consideration, the Sub-Committee took action as follows:

- .1 noted the Group's discussion on risk indexing and scoring, and that the Group had finalized the draft risk indexing and scoring, based on appendix 4 to the Revised FSA Guidelines (MSC-MEPC.2/Circ.12/Rev 2), with minor editorial modifications to the severity index table for addressing perceived ambiguities (SSE 9/5, annex 2);
- .2 endorsed the editorial modifications proposed by the Group, with a view to taking them into account in the next revision of the Revised FSA Guidelines;
- .3 noted the discussion on hazard identification and that the Group further progressed the draft hazard identification matrix, as reported by the co-chairs, with a view to further developing at this session;
- .4 noted the Group's agreement that the hazard identification should be conducted based on so-called "unregulated ship condition", i.e. by neglecting ship's existing means for survival that would normally be operational;

- .5 instructed the LSA Working Group (see paragraph 5.11) to further develop the draft hazard identification matrix, based on annex 3 to document SSE 9/5 and taking into account document SSE 9/5/1, time permitting;
- .6 invited interested Member States and international organizations to submit specific casualty data relating to recovery post-abandonment, including survival time in water; and
- .7 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 Centre for its hospitality by providing the required facilities.

Technical submission

5.7 The Sub-Committee recalled that SSE 8 had agreed on the criteria to categorize technical submissions proposing amendments to SOLAS chapter III and/or the LSA Code that did not serve directly the primary objective of the output (SSE 8/20, paragraph 5.16).

5.8 In this respect, the Sub-Committee considered document SSE 9/5/2 (China), providing modifications to SOLAS regulation III/13 about the stowage of lifeboats on board.

5.9 During discussion, the Sub-Committee noted the following views:

- .1 the proposed modification could be addressed as part of the ongoing work on the revision of SOLAS chapter III;
- .2 the proposal should be thoroughly examined and any modifications should be applied to new installations only;
- .3 noting that SSE 7 and SSE 8 had some challenges regarding amendment proposals to SOLAS and the LSA Code that did not directly serve the primary objective of the output, consideration of such documents should not become a standardized practice; and, therefore, the proposal should be submitted as a new output for further consideration; and
- .4 as the proposal was pointing out a safety gap, the contents and category of document SSE 9/5/2 should be analysed by the LSA Working Group, based on the categorization agreed by SSE 8.

5.10 Taking into account the views expressed, the Sub-Committee agreed to instruct the LSA Working Group (see paragraph 5.11) to consider the category and contents of document SSE 9/5/2, based on the categorization agreed by SSE 8 (SSE 8/20, paragraph 5.16.2).

Instructions to the LSA Working Group

5.11 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (see paragraph 3.14), taking into account comments made and decisions taken in plenary, to:

- .1 further develop the draft hazard identification matrix, based on annex 3 to document SSE 9/5 and taking into account document SSE 9/5/1, if time permitted;

- .2 consider intersessional working arrangements to further progress the hazard identification work until SSE 10, if necessary; and
- .3 consider the contents and category of document SSE 9/5/2, based on the categorization agreed by SSE 8, as appropriate (SSE 8/20, paragraph 5.16.2); and recommend which option the document should follow, taking into account the Action Plan agreed by SSE 7 (SSE 7/21, annex 1).

Report of the LSA Working Group

5.12 Having considered the part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee took action as outlined below.

Proposed modifications to regulations on the stowage of lifeboats on board

5.13 With regard to the contents and category of document SSE 9/5/2, the Sub-Committee noted the Group's view that the output on the revision of SOLAS chapter III and the LSA Code should be based on submissions that fell within the scope of the approved Action Plan agreed at SSE 7 (SSE 7/21, annex 1) and that a submitter(s) should perform an assessment of their possible amendments to SOLAS and the LSA Code, and follow the usual methods of work of the Committee and its subsidiary bodies (MSC-MEPC.1/Circ.5/Rev.4). Therefore, this output was not intended to provide a shortcut method to amend regulations and should be discontinued.

Work on hazard identification

5.14 The Sub-Committee noted that, owing to time constraints, the Group did not embark on the work of hazard identification.

Re-establishment of the Intersessional Working Group

5.15 In view of the above, the Sub-Committee agreed to re-establish the Intersessional Working Group on the Revision of SOLAS chapter III and the LSA Code, and requested MSC 107 to endorse this, which should meet in person at a location to be confirmed in due course, in conjunction with subsequent virtual meetings to close outstanding matters, as necessary, with the following terms of reference (see paragraph 17.13):

- .1 further develop the hazard identification matrix, based on annex 3 to document SSE 9/5, taking into account documents SSE 8/3, annex 4, SSE 8/5/3 and SSE 9/5/1; and
- .2 submit a report to SSE 10.

6 REVIEW OF SOLAS CHAPTER II-2 AND ASSOCIATED CODES TO MINIMIZE THE INCIDENCE AND CONSEQUENCES OF FIRES ON RO-RO SPACES AND SPECIAL CATEGORY SPACES OF NEW AND EXISTING RO-RO PASSENGER SHIPS

Background

6.1 The Sub-Committee recalled that SSE 8 had (SSE 8/20, paragraphs 6.19 and 6.20):

- .1 further developed the draft amendments to SOLAS chapter II-2 and the FSS Code for new and existing ro-ro passenger ships;

- .2 discussed principal fire protection measures, such as fixed water-based fire-extinguishing system protecting weather decks, openings in ro-ro spaces provided with closing devices, video recording for existing ships, and safety distance from accommodation and openings of ro-ro spaces and weather ro-ro deck;
- .3 agreed that the implementation date for the draft amendments should be 1 January 2026 for new ships and 1 January 2028 for existing ships, provided that the amendments were adopted before 1 July 2024; and
- .4 re-established the Correspondence Group on Fire Protection to further progress the work intersessionally, with the terms of reference set out in paragraph 6.26 of document SSE 8/20, and instructed the Group to submit a report to this session.

Report of the Correspondence Group

6.2 The Sub-Committee considered:

- .1 the relevant part of the report of the Correspondence Group on Fire Protection in document SSE 9/6 related to this agenda item, including the various options provided in the document for the draft amendments; and
- .2 document SSE 9/6/1 (Japan), providing comments on the report with regard to the draft amendments to SOLAS chapter II-2 (SSE 8/WP.4, annex 1; SSE 9/6, annex 3) and chapter 9 of the FSS Code (SSE 9/6, annex 6).

6.3 Having approved the relevant part of the report of the Correspondence Group in general, the Sub-Committee noted the following views:

Arrangement of openings for new ro-ro passenger ships (SSE 9/6, annex 1)

- .1 for enhancing the level of safety through prescriptive requirements, option 1 provided in annex 1 of document SSE 9/6 was supported;
- .2 notwithstanding the view in paragraph 6.3.1, option 2 was supported, as relaxations could bring additional ambiguity or risks in implementation;
- .3 the last sentence in paragraph 5.2.1 (SSE 9/6, annex 1) on the safety distance measured horizontally should be removed;
- .4 regarding the fire integrity of the ships side in paragraph 5.2.2*bis* (SSE 9/6, annex 1), the "two decks above the openings" option was more preferable than the "6 m" option; and
- .5 both options 1 and 2 merited attention with respect to various risks involved and, therefore, they should be referred to the Working Group on Fire Protection for further consideration;

Arrangement of weather decks for new ro-ro passenger ships (SSE 9/6, annex 2)

- .6 option 1 was supported and the text in square brackets was acceptable; and
- .7 notwithstanding the view in paragraph 6.3.6, option 2 was a safer and clearer option;

Fixed water-based fire-extinguishing systems for existing ro-ro passenger ships (SSE 9/6, annex 3; and SSE 9/6/1, annex 2)

- .8 for existing ships, adding the application provision in new paragraph 2.1.3 (option 2) (SSE 9/6, annex 3) was more preferable;

Consistent wording in regulations II-2/7.5.2 and 23.6 (SSE 9/6, annex 4)

- .9 the draft modifications were agreeable;

Linear heat detection systems in SOLAS and the FSS Code (SSE 9/6, annex 6; and SSE 9/6/1, annex 1)

- .10 the draft modifications in annex 1 to document SSE 9/6/1 on linear heat detection systems were agreeable; however, further adjustment was necessary to clarify that the Administration could accept linear heat detectors as the required system for heat detection; and
- .11 the draft amendments to the FSS Code on linear heat detection system shall apply to all types of ships; and

Draft amendments to MSC.1/Circ.1430/Rev.2 (SSE 9/6, annex 7)

- .12 the draft modifications were agreeable.

6.4 Following consideration, and taking into account the majority of the views for some of the items above, the Sub-Committee agreed to establish the Working Group on Fire Protection (see paragraph 6.5) and agreed to instruct it to finalize the draft amendments to SOLAS chapter II-2, the FSS Code and MSC.1/Circ.1430/Rev.2 accordingly.

Establishment of the Fire Protection Working Group

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

- .1 finalize the draft amendments to SOLAS chapter II-2, based on annexes 1 to 4 to document SSE 9/6 and annexes 1 and 2 of document SSE 8/WP.4, and taking into account the relevant part of annex 1, and annex 2 to document SSE 9/6/1, together with the associated draft MSC resolution, and the check/monitoring sheet and the record format, with a view to approval at MSC 107 and subsequent adoption at MSC 108;
- .2 finalize the draft amendments to the FSS Code, based on annex 6 to document SSE 9/6 and annex 3 to document SSE 8/WP.4, and taking into account the relevant part of annex 1 to document SSE 9/6/1; and
- .3 finalize the draft amendments to MSC.1/Circ.1430/Rev.2 on the definition of the term "free height", based on annex 7 to document SSE 9/6, together with the associated draft MSC circular, with a view to approval at MSC 107.

Report of the FP Working Group

6.6 Having considered the part of the report of the FP Working Group dealing with this agenda item (SSE 9/WP.4), the Sub-Committee took action as outlined below.

Draft amendments to SOLAS II-2 and the FSS Code for new and existing ro-ro passenger ships

6.7 With regard to the draft amendments to SOLAS II-2 and the FSS Code for new and existing ro-ro passenger ships, the Sub-Committee noted that the Group had, in particular:

Arrangement of openings in ro-ro and special category spaces on new ro-ro passenger ships

- .1 agreed to only accept designs provided with "A-60" structural fire protection above openings and agreed that windows should be protected by "A-60" class or "A-0" class with a water-based system with an application rate of at least 5.0 L/min per square metre;

Arrangement of weather decks on new ro-ro passenger ships

- .2 agreed to include provisions to reduce the safety distance from 6.0 m to 3.0 m when the boundary within 6.0 m was protected by "A-60" class or alternatively, "A-0" class with a water-based system with an application rate of at least 5.0 L/min per square metre;

Water monitors for protection of weather deck on existing ro-ro passenger ship

- .3 agreed to introduce a retroactive requirement for water monitors to protect weather deck on existing ro-ro passenger ships and to provide more options for existing ro-ro passenger ships without installing extra pumps; and

Linear heat detectors

- .4 agreed to include linear heat detectors as an alternative to point heat detectors for ro-ro passenger ships as an amendment to SOLAS regulation II-2/20.4.

6.8 Subsequently, the Sub-Committee agreed to the draft amendments to SOLAS chapter II-2 concerning fire safety on ro-ro passenger ships, together with the associated check/monitoring sheet and the record format, as set out in annex 5, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

Draft amendments to the FSS Code

6.9 Regarding the draft amendments to the FSS Code, the Sub-Committee noted that the Group had considered applicable test standards for heat detectors and linear heat detectors in the FSS Code and agreed to specify the relevant EN 54 and IEC standards in the Code, while alternative standards could be accepted by the Administration. The Group also agreed that the draft amendments would be applicable to all ships.

6.10 Subsequently, the Sub-Committee agreed to draft amendments to the FSS Code, as set out in annex 6, with a view to approval by MSC 107 and subsequent adoption by MSC 108, together with the adoption of the associated draft amendments to SOLAS (see paragraph 6.8).

Revision of MSC.1/Circ.1430/Rev.2

6.11 Regarding the draft amendments to 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.2), the Sub-Committee agreed to the draft MSC circular on revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces, incorporating modifications on the use of the term "free height", as set out in annex 7, with a view to approval by MSC 107 and dissemination as MSC.1/Circ.1430/Rev.3.

Completion of the work on the output

6.12 The Committee was invited to note that the work on the output had been completed.

7 DEVELOPMENT OF AMENDMENTS TO THE LSA CODE FOR THERMAL PERFORMANCE OF IMMERSION SUITS**Background**

7.1 The Sub-Committee recalled that following the consideration of document MSC 84/22/5 (Japan), proposing to amend the requirements of the LSA Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) relevant to the evaluation of the thermal performance of immersion suits with a view to introducing a new test procedure based on the "reference test device" concept, MSC 84 had agreed to include, in the work programme of the DE Sub-Committee, a high-priority item on "Thermal performance of immersion suits", with two sessions to complete the item (MSC 84/24, paragraph 22.48).

7.2 The Sub-Committee also recalled that DE 56 had discussed the methodology for ensuring consistent outcomes of thermal testing using manikins instead of human test subjects (DE 56/25, paragraph 8.4) and DE 57 had agreed to defer consideration of this agenda item to SSE 1, owing to time constraints (DE 57/25, paragraph 9.3). Subsequently, SSE 1 had agreed to move this item to the Committee's post-biennial agenda while awaiting the outcome of the practical work identified as necessary, including the determination of suitable thermal resistance criteria, and the finalization and validation of testing methodology (SSE 1/21, paragraphs 9.1 to 9.5).

7.3 The Sub-Committee further recalled that SSE 8, having considered document SSE 8/16/1 (Canada), proposing to include the output on "Development of amendments to the LSA Code for thermal performance of immersion suits" in the agenda for this session and providing considerations for further discussion; had agreed accordingly to include this agenda item in the provisional agenda for this session (SSE 8/20, paragraphs 16.8 and 16.9).

Compressed air system when testing immersion suits and use of thermal manikins

7.4 With regard to testing of immersion suits, the Sub-Committee had the following documents for its consideration:

- .1 SSE 9/7 (Canada), providing the results of research using simple versus complex methods to disrupt the insulation boundary layer of water around a thermal manikin when testing the thermal performance of immersion suits and proposing to amend resolution MSC.81(70);

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- .2 SSE 9/INF.3 (Canada), providing results showing how a compressed air system is as effective at disrupting the insulation boundary layer of water around a thermal manikin compared with a mechanical stirring system during thermal performance testing of immersion suits, in support of document SSE 9/7;
- .3 part of SSE 9/7/1 (China), proposing to further study the feasibility of using thermal manikins in lieu of human subjects for the thermal performance test; and
- .4 SSE 9/7/2 (United States), commenting on document SSE 9/7 and providing a proposal for continuing the work on the development of test methods for the use of thermal manikins in the evaluation of immersion suits by considering the ongoing technical work within the ISO Sub-Committee on Personal Safety Equipment, suitable for meeting the objectives of this output.
- 7.5 In the ensuing discussion, the Sub-Committee considered, in particular:
- .1 the research on the method of using a compressed air system for disrupting the insulating boundary layer of water around a thermal manikin as a mechanical stirring system, and the associated amendments in document SSE 9/7, supported by the information in document SSE 9/INF.3;
- .2 the feasibility of using thermal manikins in lieu of human subjects for the thermal performance test discussed in document SSE 9/7/1; and
- .3 whether the ongoing revision of ISO 15027 should be finalized before considering amendments to resolution MSC.81(70), as suggested in document SSE 9/7/2.
- 7.6 During discussion, the following views were expressed:
- .1 given that there were a variety of options in the documents submitted, technical detailed consideration should be given by the LSA Working Group;
- .2 more research was needed to understand the impact of a mechanical water stirring system and associated safety risks on human test subjects, as the LSA Code did not distinguish between human test subjects and manikins; and
- .3 the ongoing revision of ISO 15027 should be completed before agreeing on a way forward to reference the standard in the LSA Code and the Revised Recommendation (resolution MSC.81(70)), in order not to duplicate the work between ISO and IMO.
- 7.7 Following discussion and noting the need for further technical deliberation, the Sub-Committee took action as follows:
- .1 instructed the LSA Working Group (see paragraph 7.11) to further consider the draft amendments to resolution MSC.81(70), based on documents SSE 9/7 and SSE 9/INF.3; and
- .2 invited interested Member States and international organizations to support the ongoing work in ISO TC 188 SC 1, as proposed in document SSE 9/7/2.

Low-temperature tolerance time threshold

7.8 Regarding low-temperature tolerance time threshold of immersion suits, the Sub-Committee considered the relevant part of document SSE 9/7/1, through analysing the complexity of human body temperature and skin temperature characteristics, proposing to amend paragraph 3.2.3 of resolution MSC.81(70) on low-temperature tolerance time threshold value.

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

- .1 medical expertise might be required to assess a low-temperature tolerance time threshold value and it could be premature to amend paragraph 3.2.3 of resolution MSC.81(70) owing to the ongoing work of ISO on the revision of the ISO 15027:2012 series; and
- .2 the matter could be further discussed by the technical experts in the LSA Working Group.

7.10 Noting the need for further technical deliberations, the Sub-Committee instructed the LSA Working Group to further consider the draft amendments to resolution MSC.81(70), based on document SSE 9/7/1, on the low-temperature tolerance time threshold.

Instructions to the LSA Working Group

7.11 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (see paragraph 3.14), taking into account comments made and decisions taken in plenary, to consider thermal performance of immersion suits and draft amendments to resolution MSC.81(70), taking into account documents SSE 9/7 and SSE 9/INF.3, SSE 9/7/1 and SSE 9/7/2.

Report of the LSA Working Group

7.12 Having considered the part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee took actions as outlined below.

Compressed air system when testing immersion suits and use of thermal manikins

7.13 With respect to compressed air system when testing immersion suits and use of thermal manikins, the Sub-Committee endorsed the Group's views that:

- .1 it was premature to include the proposed amendments to paragraph 3.2.1 of resolution MSC.81(70) in document SSE 9/7; and
- .2 the feasibility of using the thermal manikin in lieu of the human subject for the thermal performance test suggested in document SSE 9/7/1, was considered outside the scope of the current output.

Low-temperature tolerance time threshold

7.14 Regarding low-temperature tolerance time threshold, the Sub-Committee noted that the Group had agreed to the proposal in document SSE 9/7/1 and had included a 15-minute time frame, so that a test would be stopped if the falling rate of the core temperature was more than 1.5°C per hour after the first half hour, if the skin temperature of the hand, foot or lumbar region should fall below 10°C "for more than 15 minutes".

7.15 Subsequently, the Sub-Committee agreed to the draft amendment to paragraph 3.2.3 of resolution MSC.81(70) concerning thermal protective tests of immersion suits, including the associated draft MSC resolution, as set out in annex 1, with a view to adoption by MSC 107.

Consequential draft amendments to MSC.1/Circ.1628

7.16 Regarding consequential draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628), the Sub-Committee agreed to the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances), emanating from the draft amendments on thermal manikin tests, as set out in annex 8, with a view to approval by MSC 107 in conjunction with the adoption of the associated draft amendments to resolution MSC.81(70) and dissemination as MSC.1/Circ.1628/Rev.1.

Consideration of the item at the next session

7.17 Noting that further discussion would be required on thermal performance of immersion suits, the Sub-Committee agreed to keep the agenda item on the provisional agenda of SSE 10 (see annex 19).

8 DEVELOPMENT OF AMENDMENTS TO THE LSA CODE AND RESOLUTION MSC.81(70) TO ADDRESS THE IN-WATER PERFORMANCE OF SOLAS LIFEJACKETS

Background

8.1 The Sub-Committee recalled that SSE 8 had:

- .1 discussed requirements on marking, righting tests, spray hood with respect to lifejackets' in-water performance and relevant draft amendments to the LSA Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) (SSE 8/20, paragraphs 8.4 to 8.12);
- .2 agreed to postpone the consideration of the draft guidance on the in-water performance of lifejackets and considerations for selection of a lifejacket (MSC 101/21/6, annex 1) to a future session, while the draft amendments to the LSA Code and the Revised Recommendation progressed, as the amendments could have consequential impacts on the draft guidance (SSE 8/20, paragraph 8.13);
- .3 agreed to consider consequential draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628) at a later stage when the draft amendments had been finalized (SSE 8/20, paragraph 8.14); and
- .4 noted that the LSA Working Group had been unable to discuss this agenda item and had agreed to refer the matter to the LSA Correspondence Group, with the terms of reference set out in paragraph 8.17 of document SSE 8/20 (SSE 8/20, paragraph 8.16).

Report of the Correspondence Group and commenting documents

8.2 The Sub-Committee considered the following documents:

- .1 SSE 9/3, containing the report of the LSA Correspondence Group relevant to this agenda item;
- .2 SSE 9/8/1 (China), providing comments on documents SSE 9/3 and MSC 101/21/6, and seeking further clarification on "no turn", minimum buoyancy of 150 Newtons and retention devices; and
- .3 SSE 9/8/2 (United States), commenting on the report of the LSA Correspondence Group (SSE 9/3), specifically pertaining to the proposed amendments regarding righting test requirements.

8.3 Having approved the relevant part of the Correspondence Group in general (SSE 9/3), the Sub-Committee noted the following views:

- .1 as proposed in document SSE 9/8/2, to acknowledge the performance-based nature of in-water testing, the new draft text in square brackets in paragraph 2.2.1.X of annex 2 and in paragraph 2.2 of annex 3 to document SSE 9/3, should be removed;
- .2 the conduct of righting test in RTD (Reference Test Device), with the replacement of subjects of same height and weight category where no turns recorded, was supported;
- .3 the proposed modification in paragraph 8 of document SSE 9/8/2 was not supported, as this proposal majorly focused on the no turn in the RTD, instead of candidate lifejacket; and, therefore, the respective draft paragraph in annex 3 to document SSE 9/3 should be modified accordingly;
- .4 fitting of ride-up prevention devices was a simple and effective way of ensuring that a lifejacket would perform its function on a wide range of body shapes and sizes; table 2.1 (Test subject selection for adult lifejackets) in annex 3 to document SSE 9/3 contained some ranges of body sizes; however, it did not fully capture other sizes and, therefore, the provision of a ride-up device would mean that such persons would have lifejackets on them in extreme sea conditions;
- .5 the draft modifications to paragraph 2.5.2 in annex 3 to document SSE 9/3 was supported;
- .6 providing a minimum buoyancy for SOLAS lifejackets would assist in public perception of lifejacket safety and, therefore, 150N minimum buoyancy was supported, which provided safe and reliable results;
- .7 appropriate use of RTD was the most effective method to reduce human test subject variability; and notwithstanding the view in paragraph 8.3.6, the suggested prescriptive value of 150 N minimum buoyancy was considered arbitrary and did not account for the actual in-water performance of candidate lifejacket; and more innovative lifejacket designs should not be penalized which could provide better performances with less buoyant material and bulk;

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- .8 evaluating the turning of a human subject in RTD was an evaluation of the test subject but not of RTD nor of the candidate device; and making a decision on the suitability of a subject without knowing the result of the turn test in both RTD and the candidate lifejacket would be premature;
 - .9 regarding the righting tests, RTD was intended to give baseline performance for each of the 12 selected test subjects and that any candidate lifejacket must outperform these baseline performances; and a candidate lifejacket should demonstrate its ability to perform with the 12 test subjects during testing, including the ability to turn them from a face-down to a face-up position; and
 - .10 the LSA Working Group should be provided with some direction and confirm either if "no turns" were acceptable for subjects wearing the RTD, then the candidate jacket must still turn all test subjects during testing, or alternatively both RTD and the candidate jacket should turn the same group of test subjects.

8.4 Following discussion, the Sub-Committee agreed to instruct the LSA Working Group (see paragraph 8.10) to further consider the draft amendments to the LSA Code and resolution MSC.81(70) in annexes 2 and 3 of document SSE 9/3, respectively, taking into account documents SSE 9/8/1 and SSE 9/8/2.

New righting test procedure for lifejackets using buoyancy materials

8.5 With regard to a new righting test procedure for lifejackets, the Sub-Committee had the following documents for its consideration:

- .1 SSE 9/8 (Japan), providing a draft new righting test procedure for lifejackets using buoyancy materials and recommending the Sub-Committee to invite interested Member States and international organizations to conduct the draft new righting test procedure, as a trial, to evaluate the new test, with a view to developing a better test procedure for lifejackets; and
- .2 SSE 9/INF.2 (Japan), providing the results of righting tests of lifejackets using buoyancy materials and with clothing, in support of document SSE 9/8.

8.6 During discussion, the Sub-Committee supported the draft new righting test procedure for lifejackets using buoyancy materials in general, as it would simulate the effect of clothing and provide better repeatability towards the assessment of turning time; and noted a view that the ongoing research should take into account the following issues:

- .1 Should the research work include both rigid lifejackets and inflatable life jackets, as both lifejackets are bound by the same self-righting requirement?
- .2 Should the research work be extended to child and infant lifejackets?
- .3 Would the draft new test procedure be compatible with the immersion suit tests?

8.7 Following discussion, the Sub-Committee invited interested Member States and international organizations to conduct righting tests in accordance with the draft new righting test procedure for lifejackets using buoyancy materials set out in the annex to document SSE 9/8, as a trial, to evaluate the draft new test procedure; and to report back to the Sub-Committee for further consideration.

Draft guidance on lifejackets and consequential amendments to MSC.1/Circ.1628

8.8 The Sub-Committee recalled that SSE 8 had agreed to:

- .1 postpone consideration of the draft guidance on the in-water performance of lifejackets and considerations for selection of a lifejacket (MSC 101/21/6, annex 1) to a future session, while the draft amendments to the LSA Code and the Revised Recommendation progressed; and
- .2 consider consequential draft amendments to the *Revised evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628) at a later stage.

8.9 Noting the progress made in respect of the agenda item, the Sub-Committee tasked the LSA Working Group (see paragraph 8.10) with considering the draft guidance and consequential amendments to MSC.1/Circ.1628, subject to the completion of the draft amendments to the LSA Code and resolution MSC.81(70).

Instructions to the LSA Working Group

8.10 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.14), taking into account the comments made and decisions taken in plenary, to:

- .1 further consider the draft amendments to the LSA Code and resolution MSC.81(70) in annexes 2 and 3 of document SSE 9/3, respectively, taking into account documents SSE 9/8/1 and SSE 9/8/2;

Subject to the completion of the relevant amendments to the LSA Code and resolution MSC.81(70):

- .2 consider draft MSC circular on guidance on the in-water performance of lifejackets and considerations for selection of a lifejacket, based on annex 1 of document MSC 101/21/6; and
- .3 prepare consequential draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)* (MSC.1/Circ.1628).

Report of the Working Group

8.11 Having considered the part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee took action as outlined in paragraphs 8.12 to 8.19 below.

Amendments to the LSA Code with respect to lifejackets' in-water performance

8.12 The Sub-Committee noted that the Group had agreed:

- .1 to remove the requirement for a minimum buoyancy of 150 N in the draft LSA Code amendments for section 2.2 of chapter II of the LSA Code; and
- .2 not to include new draft paragraph 2.2.1.X requiring a retention device.

8.13 Subsequently, the Sub-Committee agreed to the draft amendments to chapter II of the LSA Code together with associated check/monitoring sheet and the record format, as set out in annex 4, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

Consequential amendments to resolution MSC.81(70)

8.14 The Sub-Committee noted that the Group had:

- .1 not included the proposed new text to paragraph 2.5.2 of the resolution with respect to the test using a ride-up prevention device for the shoulder lift test, recalling its earlier consideration that such device was not required (see paragraph 8.12.2); and
- .2 agreed that "no turn" did not contain the static balance phase, as queried in document SSE 9/8/1.

8.15 Subsequently, the Sub-Committee agreed to the draft MSC resolution on amendments to the Revised Recommendation (resolution MSC.81(70)) with respect to lifejackets' in-water performance, as set out in annex 9, with a view to approval in principle by MSC 107 and adoption by MSC 108, in conjunction with the adoption of the associated draft amendments to the LSA Code (see paragraph 8.13).

Consequential draft amendments to MSC.1/Circ.1628

8.16 The Sub-Committee also agreed to the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances), emanating from the draft amendments on lifejackets' in-water performance, as set out in annex 10, with a view to approval by MSC 108, in conjunction with the adoption of the associated draft amendments to the LSA Code and resolution MSC.81(70), for dissemination as MSC.1/Circ.1628/Rev.2 (see paragraph 7.16).

Draft guidance on the in-water performance of lifejackets

8.17 The Sub-Committee noted that the Group had not developed guidance on the in-water performance, owing to the lack of information on the benefits, listing only concerns without concrete recommended actions.

Status of the work on the output

8.18 With respect to the status of the work on the output, the Sub-Committee agreed to place output 7.39 on "Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets" back on the Committee's post-biennial agenda, noting that the Group had completed the draft amendments to resolution MSC.81(70) on in-water performance of lifejackets; however, additional testing requirements were currently being developed (see paragraph 8.7) and new requirements might need to be incorporated in the future.

8.19 In this respect, the Sub-Committee invited MSC 107 to endorse its recommendation to place the output on the Committee's post-biennial agenda, for revisiting in the future.

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

Background

9.1 The Sub-Committee recalled that, following consideration of document MSC 86/23/17 (Secretariat), providing a justification for a new work programme item to align the requirements of SOLAS and the MODU Code with the most recent requirements of the ICAO Convention, 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 FP Sub-Committee, as necessary and when requested by the DE Sub-Committee (MSC 86/26, paragraph 23.39).

9.2 The Sub-Committee also recalled that the 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 subsequently, SSE 8 had agreed to include the item in this session's provisional agenda.

Postponement of the agenda item

9.3 Owing to time constraints, the Sub-Committee agreed to defer the consideration of this agenda item to the next session.

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 (SSE 8/20, paragraph 10.6) and had:

- .1 agreed to a road map 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) in order to identify the regulatory gaps, with a view to developing relevant draft amendments to SOLAS and the FSS Code addressing fire safety on containerships, as well as identifying gaps in all relevant IMO instruments for a holistic approach, as appropriate, in accordance with the *Generic guidelines for developing IMO goal-based standards* (MSC.1/Circ.1394/Rev.2);
- .2 having noted the CARGOSAFE FSA Study to be conducted by EMSA (SSE 8/10/3), invited MSC 105 to establish an FSA Experts Group to review the outcome of any relevant studies on the matter embodying an FSA approach, which would report directly to an appropriate session of the SSE Sub-Committee for consideration of the Group's report;
- .3 requested the Secretariat to submit draft terms of reference for the FSA Experts Group to MSC 105 for consideration, as appropriate; and
- .4 deferred consideration of documents SSE 8/10/1 (China) and SSE 8/10/2 (Denmark), containing technical proposals, to a future session which would also consider the expected FSA Experts Group's report, so that the proposal would be discussed in conjunction with the results from the FSA studies for a holistic approach, after review by the FSA Experts Group.

10.2 The Sub-Committee also recalled that MSC 105 had postponed the consideration of the establishment of an FSA Experts Group to MSC 106, owing to time constraints.

10.3 The Sub-Committee further recalled MSC 106 had agreed to establish an FSA Experts Group to review the outcome of any relevant FSA studies concerning detection and control of fires in cargo holds and on the cargo deck of containerships with the agreed terms of reference; that such studies should be submitted to the Committee and forwarded to the Group by the Secretariat; 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 (MSC 106/19, paragraphs 9.3 and 9.4).

10.4 In this regard, the Sub-Committee noted that the CARGOSAFE FSA study had been completed and its report would be reviewed for submission to the Committee in due course (see paragraph 10.3).

Technical proposals

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

- .1 SSE 9/10 (Qatar et al.), proposing a fixed water monitor as an alternative means for a mobile water monitor to improve the fire-fighting capability for the cargo deck area of containerships; and
- .2 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.

10.6 Having recalling that SSE 8 had deferred the consideration of technical proposals for a holistic approach (see paragraph 10.1.4), the Sub-Committee discussed how these documents should be addressed.

10.7 Following a brief discussion and having noted 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, the Sub-Committee agreed to postpone the consideration of the proposals in documents SSE 9/10 and SSE 9/10/1 to the next session, with a view to taking a holistic approach on this output.

11 DEVELOPMENT OF AMENDMENTS TO SOLAS CHAPTER II-2 AND MSC.1/CIRC.1456 ADDRESSING FIRE PROTECTION OF CONTROL STATIONS ON CARGO SHIPS

Background

11.1 The Sub-Committee recalled that SSE 8 had considered draft amendments to SOLAS chapter II-2 and *Unified interpretations of SOLAS chapter II-2 and the FSS and FTP Codes* (MSC.1/Circ.1456) addressing fire protection of control stations on cargo ships through the Working Group on Fire Protection established at the last session.

11.2 The Sub-Committee also recalled that SSE 8 had noted that the Group had (SSE 8/20, paragraph 11.8):

- .1 supported, in general, requiring fire detection for control stations but could not agree if this was necessary for CO₂ rooms and similar spaces; and

- .2 not been able to discuss how to handle service spaces owing to time constraints and, therefore, this matter was referred to the FP Correspondence Group, with the terms of reference set out in paragraph 11.9 of document SSE 8/20.

Report of the Correspondence Group

11.3 The Sub-Committee considered the part of the report of the Correspondence Group on Fire Protection (SSE 9/6) related to this agenda item and approved it in general.

Draft amendments to SOLAS chapter II-2

11.4 Having agreed with the draft amendments to SOLAS chapter II-2 on fire detection within control stations for new ships in SOLAS regulation II-2/7.5.5 in general, the Sub-Committee agreed to instruct the FP Working Group (see paragraph 11.6) to finalize the draft amendments, based on annex 5 to document SSE 9/6.

Draft consequential amendments to MSC.1/Circ.1456

11.5 The Sub-Committee also agreed to the draft consequential amendments to MSC.1/Circ.1456 in general and agreed to instruct the FP Working Group (see paragraph 11.6) to finalize the draft amendments, based on annex 8 to document SSE 9/6.

Instructions to the FP Working Group

11.6 Subsequently, the Sub-Committee instructed the FP Working Group, established under agenda item 6 (see paragraph 6.5), taking into account the comments made and decisions taken in plenary, to finalize:

- .1 the draft amendments to SOLAS regulation II-2/7.5.5, based on annex 5 to document SSE 9/6, together with the associated draft MSC resolution, and the check/monitoring sheet and the record format, with a view to approval by MSC 107 and adoption by MSC 108; and
- .2 consequential draft amendments to MSC.1/Circ.1456 emanating from draft amendments to SOLAS regulation II-2/7.5.5, and the associated draft MSC circular, based on annex 8 to document SSE 9/6, with a view to approval in conjunction with the adoption of the related draft amendments to SOLAS, and dissemination as MSC.1/Circ.1456/Rev.1.

Report of the Working Group

11.7 Having considered the part of the report of the FP Working Group (SSE 9/WP.4) dealing with this agenda item, the Sub-Committee took actions as outlined below.

Draft amendments to SOLAS regulation II-2/7.5.5

11.8 Regarding the draft amendments to SOLAS regulation II-2/7.5.5, the Sub-Committee noted that the Group had considered fire detection within control stations and remote service spaces on cargo ships and had agreed that the term "continuously manned central control station", as proposed by the Correspondence Group report (SSE 9/6), should be replaced by the term "all control stations and cargo control rooms".

11.9 Subsequently, the Sub-Committee agreed to the draft amendments to SOLAS regulation II-2/7.5.5, together with the associated check/monitoring sheet and the record format, as set out in annex 5, with a view to approval by MSC 107 and adoption by MSC 108.

Revision of MSC.1/Circ.1456

11.10 The Sub-Committee agreed to the draft MSC circular on revised unified interpretations of SOLAS chapter II-2 and the FSS and FTP Codes incorporating consequential draft amendments (see paragraph 11.9), as set out in annex 11, with a view to approval by MSC 108 in conjunction with adoption of the associated draft amendments to SOLAS and dissemination as MSC.1/Circ.1456/Rev.1.

Completion of the work on the output

11.11 The Committee was invited to note that the work on the output had been completed.

12 REVISION OF THE CODE OF SAFETY FOR DIVING SYSTEMS (RESOLUTION A.831(19)) AND THE GUIDELINES AND SPECIFICATIONS FOR HYPERBARIC EVACUATION SYSTEMS (RESOLUTION A.692(17))

12.1 The Sub-Committee recalled that SSE 8 had progressed the work on the revision of the 1995 Code of Safety for Diving Systems, which was intended to replace the *Code of Safety for Diving Systems* (resolution A.831(19)) and the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)). In particular, the Sub-Committee (SSE 8/20, paragraphs 14.8 to 14.12) had:

- .1 agreed on the structure and use of non-mandatory language of the draft revised Code;
- .2 discussed options on the application provisions and date of application, and agreed that a minimum of six-month notification period would be needed for the industry to prepare to meet the new standards after the adoption of the new Code;
- .3 agreed that the certification of existing diving units or systems which had been certified and operated under the existing Code should continue to be valid for a period after the implementation of the new revised Diving Code and that appropriate text was needed to be incorporated in the new Code to that effect;
- .4 discussed a draft guidance on hyperbaric evacuation for search and rescue operations and its structure; and
- .5 discussed relevant instruments that had been referred to in the draft revised Diving Code that might require consequential amendments to these instruments.

12.2 The Sub-Committee also recalled that SSE 8 had re-established the Correspondence Group on the Revision of the 1995 Code of Safety for Diving Systems to further progress the work intersessionally, with the terms of reference set out in paragraph 14.13 of document SSE 8/20, and had instructed the Group to submit a report to this session.

12.3 The Sub-Committee further recalled that MSC 106 had authorized SSE 9 to establish an experts group at this session to progress the work on the safety of diving systems (MSC 106/19, paragraph 11.32).

Report of the Correspondence Group

12.4 The Sub-Committee considered document SSE 9/12, containing the report of the Correspondence Group on the Revision of the 1995 Code of Safety for Diving Systems and, having approved it in general, noted that the Group had made good progress in developing the draft international code of safety for diving operations (draft revised diving code), while recognizing that there was still work to be done before finalization of the draft revised code.

12.5 In this regard, the Sub-Committee agreed to establish an experts group (see paragraph 12.8) and, instructed it to further develop the draft revised diving code and discuss the issuance of the proposed guidance document as an individual circular set out in annex 2 to the report, with a view to advising the Sub-Committee.

12.6 Additionally, the Sub-Committee noted some modification proposals to the IAMSAR Manual with respect to coordination of SAR resources for diving units in SSE 9/J/8 (Bahamas), for further consideration within the experts group.

12.7 With respect to the revision work, the Sub-Committee noted that the options on the replacement of the existing Code or adoption of a second revised Code additionally for new diving systems/units and hyperbaric craft would need to be further discussed by the experts group in the form of an MSC resolution or an Assembly resolution, as appropriate.

Establishment of the Experts Group

12.8 Subsequently, the Sub-Committee established the Experts Group on the Revision of the Code of Safety for Diving Systems and instructed it, taking into account the comments made and decisions taken in plenary, to:

- .1 further develop the draft text of the international code of safety for diving operations, with a view to finalization, together with an associated draft MSC resolution or an Assembly resolution, as appropriate, for consideration by the Committee, based on annex 1 to document SSE 9/12;
- .2 consider the draft guidance on implementation of the code of safety for diving operations, including paragraph 4.3 (Alternative Time Limited Approach to Surface Orientated Systems) therein; and the options on how the draft guidance should be issued, i.e. as an individual circular or as part of the draft revised Code, based on annex 2 to document SSE 9/12; and
- .3 consider suitable options for further work on coordination of SAR resources for diving units as a separate output, based on annex 3 (Guidelines for preparing plans for cooperation between search and rescue services and diving units) in annex 1 to document SSE 9/12, and taking into account SSE 9/J/8.

Report of the Experts Group

12.9 Having considered the report of the Experts Group (SSE 9/WP.5) and approved it in general, the Sub-Committee took action as outlined below.

Draft international code of safety for diving operations

12.10 With respect to the draft international code of safety for diving operations, the Sub-Committee noted that the Group had:

- .1 avoided the use of the term "requirement" in general and made necessary adjustments in the terminology used throughout the Code owing to its non-mandatory nature, including the section on alternative arrangements;
- .2 conducted a technical review and, in particular, considered that simply revising the existing 1995 Code (resolution A.831(19)) and the associated Guidelines (resolution A.692(17)) to harmonize them with the current industry best practices would not achieve the goal of enhancing commercial diving safety, since the existing Code only addressed the diving unit as an entity and did not address the suitability of the vessel to act as a platform from which to conduct diving operations; and
- .3 preferred to develop a new instrument (2023 Diving Code, subject to adoption in 2023) in a goal-based standard approach, which would apply to ships carrying diving systems, irrespective of type (fixed or temporary, surface orientated or saturation).

Relation with the existing 1995 Code and the application provisions

12.11 Regarding the draft 2023 Diving Code, the Sub-Committee noted that the Group had:

- .1 considered that the 1995 Code (resolution A.831(19), as amended) and the Guidelines (resolution A.692(17)) would need to coexist along with the 2023 Code upon its expected adoption, and to be produced as a combined single instrument addressing both the diving safety and the specifications for hyperbaric evacuation systems; and
- .2 developed necessary application provisions within the Code itself (rather than in the associated resolution) to ensure the clarity of relations between two different versions of the Diving Codes and the date of the ship building on which diving systems were installed.

Draft resolution

12.12 With regard to the suitability of the adoption of the new Code as a new instrument by the Assembly or the Committee, the Sub-Committee noted that the Group had considered that the Committee had full competence in adopting a new Code of this technical nature since the adoption of resolution A.886(21) in 1999 and, therefore, had developed a draft associated MSC resolution accordingly.

Error identified in resolution A.831(19)

12.13 The Sub-Committee noted the Group's consideration that, when the Assembly adopted the 1995 Diving Code (resolution A.831(19)), operative paragraph 4 inadvertently revoked the original version of the Diving Code adopted by resolutions A.536(13) in 1983, as amended by resolution A.583(14). This was an editorial error which could be rectified by deleting operative paragraph 4 of the resolution.

12.14 In this respect, the Sub-Committee invited MSC 107 to recommend to the Assembly to take appropriate action to reinstate the revoked resolutions A.536(13) and A.583(14), possibly by deleting operative paragraph 4 of resolution A.831(19).

Implementation guidance

12.15 With regard to the draft guidance on the implementation of the code of safety for diving operations, the Sub-Committee noted that the Group had:

- .1 agreed that the draft guidance should be applicable for all types of the diving systems; and
- .2 agreed that it should become one of the appendices within the Code and therefore, incorporated it as appendix 3.

12.16 Subsequently, the Sub-Committee:

- .1 having noted that the work undertaken to develop a new code in lieu of reviewing the existing 1995 Diving Code could be considered beyond the original scope given by the Committee, invited MSC 107 to endorse the expansion of the output, given that a new instrument in parallel to the existing 1995 Diving Code had been developed; and
- .2 agreed to the draft International Code of Safety for Diving Operations, 2023 (2023 Diving Code) and the associated draft MSC resolution, as set out in annex 12, with a view to adoption by MSC 107.

Coordination of SAR resources for diving units and amendments to the IAMSAR Manual

12.17 With respect to draft guidelines for preparing plans for cooperation between SAR services and diving units, the Sub-Committee noted the Group's view that the development of such guidelines would go beyond what was included in the scope of this output, which was to review the 1995 Diving Code, although it was recognized that this was an important work linked directly to the safety of life at sea. In this respect, the Sub-Committee invited interested Member States and international organizations to consider proposing a new output to the Committee, on coordination of SAR resources for diving units.

12.18 In relation to the proposal in document SSE 9/J/8 to amend the IAMSAR Manual, the Sub-Committee noted that the Group had been unable to thoroughly consider the matter. However, noting that amending the IAMSAR Manual was within the competence of the NCSR Sub-Committee and that there was an existing output for amendments to the IAMSAR Manual which would allow for submission of proposals to the ICAO/IMO Joint Working Group (JWG) on SAR, interested parties could submit such proposals directly to the JWG.

Completion of the work on the output

12.19 The Committee was invited to note that the work on the output had been completed.

13 VALIDATED MODEL TRAINING COURSES

Background

13.1 The Sub-Committee recalled that MSC 100 had instructed the Sub-Committees to consider whether certain model courses under their respective responsibility (namely Model Courses 3.03 to 3.06 for the SSE Sub-Committee) might need to be revised and, if that had been 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.1) at the earliest opportunity, in consultation with the Secretariat in order to streamline the process (MSC 100/20, paragraph 10.3).

13.2 The Sub-Committee also recalled that SSE 7 had discussed the need for revising model courses under the purview of the Sub-Committee and the applicable procedures for doing so, 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 (SSE 7/21, paragraphs 20.30 and 20.31).

13.3 The Sub-Committee further recalled that SSE 8 had (SSE 8/20, paragraphs 13.3 to 13.5):

- .1 approved the draft terms of reference for the course developer and the review group, with a view to validation of the revision at this session;
- .2 established a review group to work between sessions by correspondence to review the revision of Model Course 3.03; and
- .3 noted, with appreciation, the offer of IACS to undertake the role of course developer as in-kind contribution.

Draft revised Model Course 3.03

13.4 The Sub-Committee considered document SSE 9/13 (Secretariat), containing the report of the Review Group relating to draft revised Model Course 3.03 on Survey of Machinery Installations.

13.5 In this regard, the Sub-Committee noted that the draft revised Model Course 3.03 had been developed by Ms. Banerjee (IACS) and reviewed by Mr. Mohla (GlobalMET), and expressed its appreciation for their hard work.

13.6 Having agreed to the draft revision in principle, the Sub-Committee agreed to establish a Drafting Group on Model Courses (see paragraph 13.9) and instructed it to finalize the draft revised Model Course 3.03 and the associated compendium, based on document SSE 9/13, with a view to validation.

Next revision work for the other model courses under the purview of the Sub-Committee

13.7 The Sub-Committee recalled that SSE 7 had agreed to give priority to the revision of Model Course 3.03, and that the following courses should also be revised in due course:

- .1 3.04 on Survey of Electrical Installations;
- .2 3.05 on Survey of Fire Appliances and Provisions; and
- .3 3.06 on Survey of Life-Saving Appliances and Arrangements.

13.8 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 draft terms of reference for the next review group accordingly, based on the progress to be made by the Group on the finalization of the work on Model Course 3.03.

Establishment of a Drafting Group

13.9 Subsequently, 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 the draft revised Model Course 3.03 and the associated compendium, based on document SSE 9/13, with a view to validation; and
- .2 consider which of the model courses under the purview of the Sub-Committee should be revised next (SSE 7/21, paragraph 20.27) and prepare the draft terms of reference for the course developer(s) and the review group reporting to SSE 10 accordingly.

Report of the Drafting Group

13.10 Having considered the report of the Drafting Group on Model Courses (SSE 9/WP.7), the Sub-Committee took action as outlined below.

Revision of Model Course 3.03 and its Compendium

13.11 The Sub-Committee noted that the Group had, in particular:

- .1 aligned the general structure of the model course as per the nomenclature prescribed in the revised *Guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15/Rev.2);
- .2 reviewed entry standards, course intake limitations, staff requirements, teaching aids in part A (Course framework); duration of the course in part B (General outline); the action verbs for the KUPs in part C (Detailed outline); and deleted the number of hours allocated to the specific topics in part D (Instructor manual); and
- .3 reviewed the nomenclature and references to SOLAS regulations in the associated Compendium, and introduced necessary modifications.

Validation of the revision of Model Course 3.03 and its Compendium

13.12 Subsequently, the Sub-Committee validated:

- .1 revised Model Course 3.03; and
- .2 revised Compendium of Model Course 3.03,

and requested the Secretariat to finalize and publish them, as soon as possible.

Revision of Model Course 3.04

13.13 The Sub-Committee noted the Group's recommendation that the next model course to be revised should be Model Course 3.04 on Survey of Electrical Installations (2004) and that the Group had prepared draft terms of reference for the course developer(s) and the review group.

Establishment of the next Review Group and terms of reference

13.14 In this respect, the Sub-Committee:

- .1 agreed with the recommendation of the Group (see paragraph 13.13) and established a Review Group to work intersessionally by correspondence to review the draft revision of Model Course 3.04 on Survey of Electrical Installations, with the terms of reference for the course developer(s) and the review group set out in the annex to document SSE 9/WP.7;
- .2 invited Member States and international organizations to take on the role as review group coordinator, course developer and members of the review group;
- .3 invited interested delegations to notify the Secretariat of the contact details of participating members of the Group within one month from the publication of the report of this session, through the following registration form link: <https://forms.office.com/e/TsX2K2rx8H>; 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.

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

Background

14.1 The Sub-Committee recalled that this was a continuous item on its biennial agenda and that A 28 had expanded the output to include all proposed unified interpretations of provisions of IMO safety, security and environment-related conventions, so that any newly developed or updated draft unified interpretation could be submitted for the consideration of the Sub-Committee, with a view to developing an appropriate IMO interpretation.

14.2 The Sub-Committee also recalled that, owing to time constraints, SSE 8 had postponed consideration of 13 documents, namely, SSE 8/15 (IACS), SSE 8/15/1 (IACS), SSE 8/15/2 (IACS), SSE 8/15/3 (IACS), SSE 8/15/4 (China), SSE 8/15/6 (IACS), SSE 8/15/7 (Marshall Islands et al.), SSE 8/15/8 (IACS), SSE 8/15/9 (IACS), SSE 8/15/10 (IACS), SSE 8/15/11 (United States), SSE 8/15/12 (United States) and SSE 8/15/13 (IACS), to SSE 9 (SSE 8/20, paragraph 15.10).

14.3 The Sub-Committee further recalled that SSE 8 had deferred consideration of documents SSE 8/15/5 (IACS) and SSE 8/15/14 (ILAMA), submitted under this agenda item, on the implementation 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)), taking into account the expected input from the Committee (SSE 8/20, paragraph 15.9). In this respect, the Sub-Committee agreed to consider these documents under agenda item 19 (Any other business) for the integrity of the discussion on the revision of resolution MSC.402(96) (see paragraph 19.9).

LSA-RELATED DOCUMENTS

LED torches in survival craft

14.4 The Sub-Committee considered document SSE 8/15/7 (Marshall Islands et al.), proposing a unified interpretation of paragraphs 4.1.5.1.13, 4.4.8.16 and 5.1.2.2.7 of the LSA Code; paragraph 3.8.10 of annex 10 of the 1994 HSC Code; and paragraph 3.8.10 of annex 11 of the 2000 HSC Code, in order to reflect current technology and clarify the use of light emitting diode (LED) torches.

14.5 In the ensuing discussion, the Sub-Committee supported the proposal in general, noting however that the proposed expression "the light intensity is not significantly diminished" was considered vague, which could lead to non-uniform interpretation; and, therefore agreed to remove the expression accordingly.

14.6 In view of the above, the Sub-Committee agreed to the draft MSC circular on unified interpretations of the LSA Code, and the 1994 and 2000 HSC Codes, on the use of LED torches, as modified, together with the associated draft MSC circular, as set out in annex 13, for approval by MSC 107.

Lifeboat exterior colour

14.7 The Sub-Committee considered document SSE 8/15/12 (United States), proposing a revision of the *Unified interpretation of paragraph 1.2.2.6 of the LSA Code concerning lifeboat exterior colour* (MSC.1/Circ.1423), concerning the extent to which the lifeboat exterior must be of a highly visible colour.

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

- .1 the "canopy" should be clearly defined by adding the wording "which is used to provide the occupants a weatherproof shelter" in the first paragraph of the draft modifications;
- .2 there could be equivalents to a highly visible colour different to the one specified in the document and, therefore, the second draft paragraph should be made more general by replacing the wording "the use of electronic locating technologies" with "an equivalent";
- .3 the proposal could be considered under a new output, as it referred to reporting requirements; and
- .4 the second paragraph of the proposal should be carefully considered, as electronic locating devices would need additional power supply, and search and rescue time would be limited; and, therefore, such technologies should be considered supplementary.

14.9 Following discussion, the Sub-Committee invited the United States, and other interested Member States and international organizations, to submit proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4).

Launching of rescue boats on a cargo ship

14.10 With regard to launching arrangements of rescue boats on a cargo ship, the Sub-Committee had the following documents for its consideration:

- .1 SSE 8/15/2 (IACS), seeking clarification of paragraph 6.1.2.2 of the LSA Code with regard to slewing out a dedicated rescue boat on a cargo ship from its stowed position to ship's side;
- .2 SSE 9/14/3 (IACS), seeking clarification on the implementation of paragraphs 6.1.1.3 and 6.1.2.6 of the LSA Code with respect to the hoisting-up of a dedicated rescue boat on a cargo ship from its stowed position for subsequent slewing out to ship's side, and proposing an interpretation, with a view towards facilitating universal and uniform implementation; and
- .3 SSE 9/14/7 (China), providing comments on documents SSE 8/15/2 and SSE 9/14/3, with regard to the clarification of paragraphs 6.1.1.3, 6.1.2.2 and 6.1.2.6 of the LSA Code.

14.11 In particular, the Sub-Committee considered:

- .1 whether paragraphs 6.1.1.3 (manual hoisting), 6.1.2.2 (actuation from the ship's deck and within the rescue boat) and 6.1.2.6 (hand gear for recovery) of the LSA Code needed unified interpretations; and if so,
- .2 whether the draft UIs in documents SSE 9/14/3 or SSE 9/14/7 were acceptable.

14.12 Having agreed in principle with the proposals to establish a unified interpretation on the requirement for manual hoisting of a dedicated rescue boat in the LSA Code, and noting that further consideration was necessary intersessionally, the Sub-Committee agreed to re-establish the LSA Correspondence Group (see paragraph 14.13) and instructed it to consider documents SSE 8/15/2, SSE 9/14/3 and SSE 9/14/7, with a view to finalization of a relevant unified interpretation.

Re-establishment of the LSA Correspondence Group

14.13 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 9, to:

- .1 consider documents SSE 8/15/2, SSE 9/14/3 and SSE 9/14/7 on a draft unified interpretation regarding manual hoisting of a dedicated rescue boat, with a view to finalization and advising SSE 10 accordingly; and
- .2 submit a report to SSE 10.

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FP-RELATED DOCUMENTS

Performance-based standard used to classify portable fire extinguishers

14.14 The Sub-Committee considered document SSE 8/15/11 (United States), proposing a draft unified interpretation of paragraph 4.3.1.1.1 of the FSS Code on the capacity of portable fire extinguishers.

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

- .1 referencing available international standards rather than "Standard for Rating and Testing of Fire Extinguishers (UL 711)" would be more appropriate for a unified implementation; and
- .2 performance-based standards should be considered under a relevant new output, as it might be necessary to amend the FSS Code.

14.16 In view of the above, the Sub-Committee invited the United States, and other interested Member States and international organizations to submit proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4), given that the proposals would require amendments to the FSS Code.

Means of escape from the steering gear space on cargo ships

14.17 The Sub-Committee considered document SSE 8/15/1 (IACS), responding to the outcome of SSE 6 relating to the means of escape from the steering gear space in cargo ships according to SOLAS regulation II-2/13.4.2 and offering an updated draft interpretation.

14.18 In the ensuing discussion, the Sub-Committee:

- .1 noted a view disagreeing on the applicability of the dispensation regardless of the ship's size proposed in paragraph 3 of document SSE 8/15/1; and
- .2 agreed in principle with paragraphs 1 and 2 of the draft unified interpretation (SSE 8/15/1, annex), and noted that further discussion would be necessary intersessionally, with a view to finalization.

14.19 Following discussion, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider paragraphs 1 and 2 of the draft unified interpretation (SSE 8/15/1, annex) on the means of escape from the steering gear space in cargo ships, with a view to finalization (see paragraph 14.41).

Cargo/vapour piping and related gas freeing piping/ducts on tankers

14.20 The Sub-Committee considered document SSE 8/15/9 (IACS), proposing a 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, developed based on the IACS's general practice presented in document SSE 7/2/2 (IACS).

14.21 Having agreed in principle with the proposal and noting that further discussion would be necessary intersessionally on some parts of the draft unified interpretation and the effective date, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider document SSE 8/15/9, with a view to finalization (see paragraph 14.41).

Testing requirements for the floor covering materials

14.22 The Sub-Committee considered document SSE 8/15/13 (IACS), proposing to revise *Unified interpretations of SOLAS chapter II-2, the FSS Code, the FTP Code and related fire test procedures* (MSC/Circ.1120) to address the testing requirements for the floor covering materials, with a view to ensuring consistent implementation.

14.23 Having agreed in principle with the proposal and noting that further consideration would be necessary intersessionally, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider document SSE 8/15/13, with a view to finalization (see paragraph 14.41).

Fire testing requirements for pipe couplings

14.24 The Sub-Committee considered document SSE 8/15 (IACS), proposing a clarification of the fire testing requirements for pipe couplings required to remain operational after a safe return to port (SRTP) fire casualty in the *Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty* (MSC.1/Circ.1369).

14.25 In this respect, the Sub-Committee noted that SDC 9 had considered a relevant agenda item on "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." Having noted that the proposals in document SSE 8/15 could form part of the work under the SDC Sub-Committee's relevant agenda item, the Sub-Committee endorsed the technical substance of the proposal and invited MSC 107 to endorse the Sub-Committee's recommendation to refer the document to the Correspondence Group on Revision of the Interim Explanatory Notes (MSC.1/Circ.1369) established at SDC 9, with the participation of fire safety experts in the discussions of the Correspondence Group for inclusion in the revision of the circular, as appropriate.

Valve arrangements in the FSS Code

14.26 The Sub-Committee considered document SSE 8/15/8 (IACS), proposing an interpretation on the application of non-return valve for a double-block and bleed arrangement and two shut-off valves in series with a venting valve in between, as required by paragraph 2.2.3.1.2 of chapter 15 of the FSS Code.

14.27 Having agreed in principle with the proposal and noting that further consideration would be necessary intersessionally, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider document SSE 8/15/8, with a view to finalization (see paragraph 14.41).

Detector spacing in SOLAS and the FSS Code

14.28 The Sub-Committee considered document SSE 8/15/10 (IACS), proposing a draft unified interpretation for the detector spacing for the activation of fixed extinguishing systems other than fixed water-based fire-extinguishing systems, as required by SOLAS regulation II 2/20.4.1.

14.29 Having noted some concerns on the context of the draft unified interpretation, the Sub-Committee did not endorse the proposed unified interpretation and invited the delegation of IACS, and interested Member States and international organizations to note the comments and take action, as appropriate.

Unified interpretation of paragraph 2.1.2.6 of chapter 5 of the FSS Code

14.30 The Sub-Committee considered document SSE 9/14/5 (China), proposing a unified interpretation of paragraph 2.1.2.6 of chapter 5 of the FSS Code concerning air testing fitting installed in the discharge piping of fixed carbon dioxide systems.

14.31 Having agreed in principle with the proposal and noting that further consideration would be necessary intersessionally, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider document SSE 9/14/5, with a view to finalization (see paragraph 14.41).

Unified interpretation of the number of portable foam applicators

14.32 The Sub-Committee considered document SSE 9/14/6 (China), proposing to amend the interpretation of the number of portable foam applicators in the combined engine/boiler room containing internal combustion machinery, oil fired boilers and oil fuel units in the appendix to *Unified interpretations of SOLAS chapter II-2, the FSS Code, the FTP Code and related fire test procedures* (MSC/Circ.1120), to align with the requirement of SOLAS regulation II-2/10.5.

14.33 Noting that the proposal could introduce possible inconsistencies in the application of the relevant SOLAS requirements and that it should be addressed under a new output, the Sub-Committee invited the delegation of China, and other interested Member States and international organizations to submit proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4).

Amendments to MSC.1/Circ.1276 on galley ducts

14.34 The Sub-Committee considered document SSE 9/14 (IACS), proposing to amend the interpretation of the separation of galley ducts from spaces contained in *Unified interpretations of SOLAS chapter II-2* (MSC.1/Circ.1276), to align with SOLAS, as amended by resolution MSC.365(93).

14.35 In particular, the Sub-Committee considered:

- .1 the proposed revision of MSC.1/Circ.1276, as set out in the annex of the document; and
- .2 the need to update the references to the ISO standard 15371:2009 in SOLAS regulations II-2/9.7.5.1.1.3, II-2/9.7.5.2.4 and II-2/10.6.4.1.

14.36 Following a brief discussion, the Sub-Committee:

- .1 agreed to the draft MSC circular on revised unified interpretations of SOLAS chapter II-2, with the expansion of the reference to SOLAS regulation II-2/9.7.5, as set out in annex 14, for approval by MSC 107 and dissemination as MSC.1/Circ.1276/Rev.1;
- .2 invited MSC 107 to authorize the Secretariat to take the appropriate action to replace the references to the ISO standard 15371:2009 in SOLAS regulations II-2/9.7.5.1.1.3, II-2/9.7.5.2.4 and II-2/10.6.4.1 with ISO 15371:2015 when preparing the next publication of the SOLAS Convention; and

- .3 agreed to further revise the above-mentioned references in the future publication of the SOLAS Convention when the ongoing revision work of the Standard (2015 edition) had been finalized in the future.

Unified interpretation of SOLAS regulations II-2/19.3.4.1 and II-2/19.3.5.4

14.37 The Sub-Committee considered document SSE 9/14/1 (IACS), proposing a revised draft interpretation of SOLAS regulations II-2/19.3.4.1 and II-2/19.3.5.4, pertaining to required air changes for the carriage of dangerous goods.

14.38 Having agreed in principle with the proposal and noting that further consideration would be necessary intersessionally, the Sub-Committee agreed to instruct the FP Correspondence Group to further consider document SSE 9/14/1, with a view to finalization (see paragraph 14.41).

Interpretation of SOLAS regulation II-2/9.7.4.5 on vertical ducts

14.39 The Sub-Committee considered document SSE 9/14/2 (IACS), proposing a draft interpretation of SOLAS regulation II-2/9.7.4.5, focusing on the fire insulation requirements for vertical ducts which pass through both a bulkhead and a deck, without serving the spaces they pass through.

14.40 Having noted some concerns on the complexity of the draft unified interpretation which might lead to misinterpretation, and that the matter could be addressed as part of the post-biennial output on "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements", the Sub-Committee agreed to consider the proposal under the post-biennial output agreed by MSC 105 (MSC 105/20, paragraphs 18.8 and 18.9) when appropriate.

Instructions to the FP Correspondence Group

14.41 The Sub-Committee instructed the FP Correspondence Group established under agenda item 15 (see paragraph 15.13), taking into account the comments made and decisions taken in plenary, to consider:

- .1 paragraphs 1 and 2 of the draft unified interpretation on the means of escape from the steering gear space in cargo ships set out in the annex to document SSE 8/15/1;
- .2 document SSE 8/15/9 on a draft unified interpretation regarding cargo/vapour piping and related gas freeing piping/ducts on tankers;
- .3 document SSE 8/15/13 on the draft amendments to MSC/Circ.1120 to address the testing requirements for the floor covering materials;
- .4 document SSE 8/15/8 on a draft unified interpretation on the application of non-return valve for a double-block and bleed arrangement and two shut-off valves in series with a venting valve in between;
- .5 document SSE 9/14/5 on a draft unified interpretation concerning air testing fitting installed in the discharge piping of fixed carbon dioxide systems;
- .6 document SSE 9/14/1 on a draft interpretation pertaining to required air changes for the carriage of dangerous goods,

with a view to finalization, and advising SSE 10 accordingly.

REMAINING DOCUMENTS

Supplementary lightning in the cabins of passenger ships

14.42 The Sub-Committee considered document SSE 8/15/4 (China), providing a draft unified interpretation of SOLAS regulation II-1/41.6, including the detailed safety arrangements of supplementary lightning in all cabins of passenger ships.

14.43 Having noted some concerns on the content of the draft unified interpretation, such as the context of the word "cabin" applicable for both passengers and crew, the Sub-Committee did not endorse the proposed unified interpretation and invited the delegation of China, and interested Member States and international organizations to note the comments and take action, as appropriate.

Revision of MSC.1/Circ.1557

14.44 The Sub-Committee considered document SSE 8/15/6 (IACS), proposing a revision of *Hazardous area classification (application of SOLAS regulation II-1/45.11)* (MSC.1/Circ.1557), based on the comments received from IEC/TC 18.

14.45 Following a brief discussion, the Sub-Committee agreed to the draft MSC circular on revised hazardous area classification (application of SOLAS regulation II-1/45.11), as set out in annex 15, for approval by MSC 107.

Single electric propulsion motors

14.46 The Sub-Committee 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.

14.47 In the ensuing discussion, the Sub-Committee considered whether the proposal should include other propulsion types, e.g. azimuth type, for a holistic approach to be reconsidered in the future, possibly under a new output, or whether it would currently suffice to address a specific design.

14.48 Having agreed that the proposal would improve the safety of ships with unconventional propulsion designs available as of today, the Sub-Committee agreed to the draft MSC circular on unified interpretation of SOLAS chapter II-1, as set out in annex 16, for approval by MSC 107; and noted that future submissions could be considered involving other unconventional propulsion designs for a more holistic approach.

Draft revision of MSC.1/Circ.1416/Rev.1 on non-traditional steering arrangements

14.49 The Sub-Committee considered document SSE 9/14/4 (IACS), proposing amendments to MSC.1/Circ.1416/Rev.1 to address modern combined propulsion/steering systems adequately.

14.50 While noting the support by several delegations to address this issue, and having noted that:

- .1 the proposal could be treated as an amendment to SOLAS rather than revising MSC.1/Circ.1416/Rev.1; and
- .2 the matter could be considered under the post-biennial output dealing with steering and propulsion requirements,

the Sub-Committee agreed to consider the proposal under the post-biennial output on "Revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems" agreed by MSC 105 (MSC 105/20, paragraphs 18.23 and 18.24), when appropriate, for a holistic approach (see also paragraph 17.9 on the transfer of the output to the SDC Sub-Committee).

15 DEVELOPMENT OF PROVISIONS TO PROHIBIT THE USE OF FIRE-FIGHTING FOAMS CONTAINING PERFLUOROCTANE SULFONIC ACID (PFOS) FOR FIRE-FIGHTING ON BOARD SHIPS

Background

15.1 The Sub-Committee recalled that SSE 8 had (SSE 8/20, paragraph 12.11):

- .1 agreed to the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes on the prohibition of perfluorooctane sulfonic acid (PFOS), respectively, with a view to approval by MSC 106 and subsequent adoption by MSC 107, with entry into force on 1 January 2026 (SSE 8/20, annexes 7 to 9); and
- .2 requested the Secretariat to make the necessary arrangements to develop a new GISIS module for the circulation of information available on PFOS disposal banking and reception facilities, taking into account the expected entry-into-force date of the draft amendments.

15.2 The Sub-Committee also recalled that MSC 106, having considered document MSC 106/11/5 (United Kingdom and IACS) and noted the need for further technical deliberation, had agreed to keep the agenda item on the agenda for this session and instructed the Sub-Committee to further consider the following matters, taking into account document MSC 106/11/5, and advise it accordingly (MSC 106/19, paragraph 11.27):

- .1 the prohibition of other fire-fighting foam types in addition to PFOS, such as PFOA, and whether the existing output should be expanded in that regard; and
- .2 the potential need to further revise the *Revised guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems* (MSC.1/Circ.1312).

15.3 The Sub-Committee further recalled that MSC 106 had approved draft amendments to SOLAS chapter II-2, the 1994 HSC Code and the 2000 HSC Code (MSC 106/19, paragraph 11.29, and MSC 106/19/Add.1, annexes 15 to 17), with a view to adoption at MSC 107.

Modifications to the draft amendments

15.4 Following the instructions given by MSC 106 (see paragraph 15.2), the Sub-Committee considered the following documents:

- .1 SSE 9/15 (Secretariat), providing information on the outcome of MSC 106 pertaining to the development of provisions to prohibit the use of fire-fighting foams containing PFOS on board ships, together with the draft revision of MSC.1/Circ.1312, which was prepared in accordance with the proposals in document MSC 106/11/5; and

- .2 SSE 9/15/1 (Norway et al.), considering the alternatives to fluorinated fire-fighting foam concentrates available for inclusion in ships' fire-fighting systems, and the intent of the PFOS ban approved by MSC 106; and commenting on the draft revised text of MSC.1/Circ.1312, submitted in document SSE 9/15.

15.5 Regarding the proposals in document SSE 9/15/1, the Sub-Committee considered in particular:

- .1 which approach should be taken, i.e. to replace the term PFOS with PFAS (fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom) in the draft amendments, or to expand the scope of the output for a more comprehensive discussion at the next session; and
- .2 the draft new paragraph 3.15 suggested for the Revised Guidelines (MSC.1/Circ.1312).

15.6 During discussion, the following views were expressed:

- .1 the proposal to replace the term PFOS with PFAS in document SSE 9/15/1 was not supported, as such a modification would not be consistent with the Stockholm Convention;
- .2 the expansion of the scope to prohibit fire-fighting foam types available on the market other than PFOS should be carefully and thoroughly analysed; and
- .3 the expected adoption of the amendments on the banning of PFOS by MSC 107, should proceed along with the approval of the associated draft modifications to MSC.1/Circ.1312 suggested in document SSE 9/15/1, while consideration should be given to the other substances under a revised scope while the item remained on the agenda with a revised title.

15.7 Following discussion, noting that further discussion was necessary on the prohibition of other fire-fighting foam types in addition to PFOS, the Sub-Committee:

- .1 invited MSC 107 to proceed with the expected adoption of the draft amendments to SOLAS and the HSC Codes; and
- .2 instructed the FP Working Group (see paragraph 15.8) to:
 - .1 prepare a justification with a revised title of the agenda item for further discussion of the matter at the next session; and
 - .2 consider consequential draft amendments to MSC.1/Circ.1312, taking into account the modifications in paragraph 14 of document SSE 9/15/1 for PFOS; and
- .3 invited interested Member States and international organizations to submit relevant submissions to the next session.

Instructions to the FP Working Group

15.8 Subsequently, the Sub-Committee instructed the FP Working Group, established under agenda item 6 (Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships) (see paragraph 6.5), taking into account the comments made and decisions taken in plenary, to:

- .1 prepare a draft justification with a revised scope and title of the agenda item to provide room for further discussion on the prohibition of all relevant fire-fighting foam types; and
- .2 consider consequential draft amendments to MSC.1/Circ.1312 on the banning of PFOS, based on the annex to document SSE 9/15 and taking into account document SSE 9/15/1.

Report of the Working Group

15.9 Having considered the part of the report of the FP Working Group dealing with this agenda item (SSE 9/WP.4), the Sub-Committee took action as outlined below.

Revision of the scope of the output

15.10 With regard to the current scope of the output, the Sub-Committee noted that the Group had established the following justification for revising the scope:

- .1 some perfluorinated substances, such as perfluorooctanoic acid (PFOA) and perfluorohexanesulfonic acid (PFHxS), had been recently banned or decided to be banned in the United Nations Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention);
- .2 banning shorter carbon chain fluorinated foams was premature;
- .3 availability of suitable alternative fluorine-free foam should be carefully considered;
- .4 existing alternatives for foam concentrate had different characteristics in terms of density and viscosity, which might affect existing fire-fighting systems and appliances on board ships; and
- .5 use of the term "PFAS" might cause confusion.

15.11 Based on the justification above, the Sub-Committee agreed to revise the title of the existing 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 invited MSC 107 to endorse:

- .1 the revised title and scope of the output for further discussion at SSE 10; and
- .2 the extension of the target completion year for this output to 2025.

Draft consequential amendments to MSC.1/Circ.1312

15.12 The Sub-Committee noted that, owing to time constraints and taking into account the need for the inputs of technical experts on this specific topic, the Group had not been able to finalize the work at this session and, therefore, had recommended the re-establishment of the FP Correspondence Group to further discuss the matter intersessionally.

Re-establishment of the FP Correspondence Group

15.13 In view of the above (see paragraph 15.12), the Sub-Committee re-established the FP Correspondence Group, under the coordination of Norway,² and instructed it, taking into account comments made and decisions taken at SSE 9, to:

- .1 further consider and finalize the draft amendments to MSC.1/Circ.1312, based on annex 10 to document SSE 9/WP.4; and
- .2 submit a report to SSE 10.

16 AMENDMENTS TO THE LSA CODE CONCERNING SINGLE FALL AND HOOK SYSTEMS WITH ON-LOAD RELEASE CAPABILITY**Background**

16.1 The Sub-Committee recalled that SSE 7 had considered the agenda item on amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability and had agreed to the draft amendments, in principle (SSE 7/21, paragraph 12.6; and SSE 7/WP.3, annex 5).

16.2 The Sub-Committee also recalled that MSC 106 had (MSC 106/19, paragraph 11.55):

- .1 considered document MSC 106/11/1 (Bahamas et al.), identifying an unforeseen consequence of the proposed deletion of paragraph 4.4.7.6.8 pertaining to off-load hooks; and
- .2 agreed that further consideration would be necessary and, therefore:
 - .1 reinstated the agenda item in this session's provisional agenda, and instructed the Sub-Committee to consider document MSC 106/11/1 (Bahamas et al.), together with any other relevant submissions to this session;
 - .2 redefined the scope of the output to include other sub-paragraphs of paragraph 4.4.7.6 of the LSA Code to provide the necessary clarity for consistent application of the requirements and rename it as "Amendments to the LSA Code concerning single fall and hook systems with on-load release capability"; and
 - .3 instructed the Sub-Committee to complete the output as a matter of priority in order to remain in the ad hoc midterm amendment cycle agreed by MSC 104, with a view to approval at MSC 107 and subsequent adoption at MSC 108.

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Draft amendments to the LSA Code

16.3 In accordance with the instructions by MSC 106 (see paragraph 16.2), the Sub-Committee considered documents:

- .1 SSE 9/16 (Secretariat), providing information on the outcome of MSC 106 pertaining to amendments to the LSA Code concerning single fall and hook systems with on-load release capability; and containing a draft MSC resolution incorporating proposed modifications in document MSC 106/11/1; and
- .2 SSE 9/16/1 (United States), commenting on document SSE 9/16 and proposing draft amendments to paragraph 4.4.7.6 of the LSA Code.

16.4 In particular, the Sub-Committee considered the options in document MSC 106/11/1 (as reflected in document SSE 9/16) and document SSE 9/16/1 as an alternative. In the ensuing discussion, the Sub-Committee noted the following views:

- .1 document MSC 106/11/1 was supported in general; however, the proposed insertion of "solid hook with a spring-loaded guard on the hook mouth or other mechanically simplistic off-load release hook with few moving parts" might give room for ambiguous interpretations;
- .2 as suggested in document SSE 9/16/1, the draft paragraph 4.4.7.6.17 of the LSA Code agreed by SSE 7 should be retained and paragraph 4.4.7.6.8 should be modified to clarify that hooks should not be able to support any load unless completely reset;
- .3 as the suggested modification in document MSC 106/11/1 contained vague expressions, document SSE 9/16/1 could serve as a base document to finalize the draft amendments; and
- .4 the inadvertent preclusion of the use of "solid hook with a spring-loaded guard on the hook mouth or other mechanically simplistic off-load release hook with few moving parts" should be avoided.

16.5 In view of the above, the Sub-Committee agreed to instruct the LSA Working Group (see paragraph 16.6) to finalize the draft amendments to the LSA Code, based on document SSE 9/16/1 and taking into account document MSC 106/11/1.

Instructions to the LSA Working Group

16.6 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (see paragraph 3.14), taking into account comments made and decisions taken in plenary, to finalize the draft amendments to the LSA Code on single fall and hook systems, based on the annex to document SSE 9/16/1 and taking into account document MSC 106/11/1, together with the associated MSC resolution, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

Report of the LSA Working Group

16.7 Having considered the part of the report of the LSA Working Group dealing with this agenda item (SSE 9/WP.3), the Sub-Committee agreed to draft amendments to paragraphs 4.4.7.6.8 and 4.4.7.6.17 (already agreed by SSE 7) of chapter IV of the LSA Code

on single fall and hook systems, together with the associated check/monitoring sheet and the record format, as set out in annex 4, with a view to approval by MSC 107 and subsequent adoption by MSC 108.

16.8 In this respect, the Sub-Committee agreed that solid hooks with a spring-loaded guard on the hook mouth should be deemed to meet the requirements of paragraph 4.4.7.6.8 of the LSA Code, as modified, where it resets automatically.

Completion of the work on the output

16.9 The Committee was invited to note that the work on the output had been completed.

17 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SSE 10

General

17.1 The Sub-Committee recalled that MSC 105 had agreed to include in its post-biennial agenda the following six new outputs that fell under the purview of the Sub-Committee (MSC 105/20, paragraphs 18.3 to 18.43):

- .1 "Development of amendments to chapter 6 of the 2009 MODU Code regarding electrical equipment capable of operation after shutdown";
- .2 "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";
- .3 "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";
- .4 "Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements";
- .5 "Revision of the Guidelines for the application of plastic pipes on ships (resolution A.753(18))"; and
- .6 "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".

17.2 The Sub-Committee also recalled that MSC 106 had agreed to include a new item on "Development of measures to ensure the safe operation of elevators on board ships", falling under the purview of the Sub-Committee, in its post-biennial agenda (MSC 106/19, paragraph 16.25); and had confirmed the biennial status report of the Sub-Committee for the 2022-2023 biennium and the provisional agenda for this session (MSC 106/19/Add.1, annexes 27 and 28).

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

17.3 Taking into account the progress made at the session, the Sub-Committee prepared the biennial status report (SSE 9/WP.2, annex 1) and the proposed biennial agenda for the 2024-2025 biennium (SSE 9/WP.2, annex 2), as set out in annexes 17 and 18, respectively, for consideration by MSC 107.

Proposed provisional agenda for SSE 10

Carriage of self-righting or canopied reversible liferafts

17.4 With regard to the provisional agenda of SSE 10, the Sub-Committee considered document SSE 9/17 (China), proposing to include the post-biennial 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" in the provisional agenda for SSE 10 (see paragraph 5.3.3).

17.5 Following consideration, the Sub-Committee agreed to include this post-biennial item in the provisional agenda for SSE 10.

Transfer of a post-biennial item to SDC 10's provisional agenda

17.6 The Sub-Committee recalled that SSE 7 had agreed to transfer the agenda item on "Safety objectives and functional requirements of the guidelines on alternative design and arrangements for SOLAS chapter II-1" to SDC 8's provisional agenda to balance the workload between the two Sub-Committees.

17.7 The Sub-Committee also recalled that SDC 9, when considering this agenda item, had agreed that functional requirements and expected performances of regulations II-1/28, II-1/29 and II-1/30 (steering and propulsion) should be considered under the post-biennial agenda for output on "Revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems" (SDC 9/7, annex 4), which had been included in the Committee's post-biennial agenda by MSC 105, assigning the SSE Sub-Committee as the coordinating organ, in association with the NCSR and SDC Sub-Committees (MSC 105/20, paragraph 18.23).

17.8 The Sub-Committee further recalled that SDC 9 had noted that, regardless of the work to be undertaken by the Sub-Committee on the new output on the revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements, there was a need to provide for alternative arrangements for the current SOLAS regulations II-1/28, II-1/29 and II-1/30.

17.9 In this respect, in accordance with consultation with the Chair of the SDC Sub-Committee and the Secretariat prior to the session, taking into account the excessive workload of the Sub-Committee and that these two agenda items had cross-cutting issues, the Sub-Committee agreed to the Chair's proposal to transfer the post-biennial agenda on "Revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems" to SDC 10's provisional agenda. Therefore, the Sub-Committee invited MSC 107 to endorse the transfer of the output.

17.10 Taking into account the progress made at the session and the proposals (see paragraphs 7.17, 15.11, 17.5 and 19.17), the Sub-Committee prepared the proposed provisional agenda for SSE 10 (SSE 9/WP.2, annex 3), as set out in annex 19, for consideration by MSC 107.

Correspondence groups established at the session

17.11 The Sub-Committee established correspondence groups on the following subjects, due to report to SSE 10:

- .1 life-saving appliances (see paragraph 14.13); and
- .2 fire protection (see paragraph 15.13).

Arrangements for the next session

17.12 The Sub-Committee agreed to establish at its next session, working and drafting groups on the following subjects:³

- .1 life-saving appliances (agenda items 3, 4, 5, 6, 7, 14 and 15);
- .2 fire protection (agenda items 8, 9, 10, 13 and 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 10 on the final selection of such groups.

Intersessional Working Group on the Revision of SOLAS Chapter III and the LSA Code

17.13 The Sub-Committee recalled that it had invited MSC 107 to approve an Intersessional Working Group on the Revision of SOLAS Chapter III and the LSA Code, to be held in-person at a location to be decided in due course, to further develop the hazard identification matrix (see paragraph 5.15).

Date of the next session

17.14 The Sub-Committee noted that its tenth session had been tentatively scheduled to take place from 4 to 8 March 2024.

18 ELECTION OF CHAIR AND VICE-CHAIR FOR 2024

18.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. Umut Şentürk (Türkiye) as Chair and Mr. Cristiano Aliperta (Palau) as Vice-Chair, both for 2024.

19 ANY OTHER BUSINESS**Draft OPS Guidelines**

19.1 The Sub-Committee recalled that:

- .1 SSE 7 had finalized the draft interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages, for submission to MSC 103 for approval, subject to consideration of the personnel, training and familiarization provisions by HTW 7 (SSE 7/21, annex 6), which had been then postponed to HTW 8 (HTW 7/16, paragraph 15.9);

³ The agenda item numbers refer to those contained in annex 20.

- .2 MSC 103 had considered modification proposals in document MSC 103/16/1 (IACS) and had noted the pending input from HTW 8; and, therefore, had referred the draft interim guidelines to SSE 8;
- .3 HTW 8 had considered the personnel, training and familiarization provisions in section 6 of the draft interim guidelines and had provided its input and modifications; and had identified an inconsistency in the terms and definitions in section 1.2 for SSE 8's consideration (HTW 8/16, paragraph 15.19; and HTW 8/WP.7, paragraphs 29 to 34 and annex 7); and finally,
- .4 SSE 8 had considered the draft interim guidelines, as revised, with additional modifications that had been proposed by the observers from IACS and ICS; and taking into account that more time would be required to finalize the draft interim guidelines, had invited relevant submissions to this session for finalization (SSE 8/20, paragraph 18.11).

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

- .1 SSE 9/19 (Secretariat), providing background information on consideration of draft interim guidelines, together with a consolidated draft text in the annex, incorporating all modification proposals submitted so far, for ease of reference;
- .2 SSE 9/19/3 (IACS), commenting on document SSE 9/19 and presenting further modifications to section 4 of the draft interim guidelines; and
- .3 SSE 9/19/10 (United States), commenting on document SSE 9/19 and providing modification proposals.

19.3 In the ensuing discussion, the Sub-Committee considered various options provided in the above documents, in particular, in relation to section 4 (Safety precautions before maintenance) of the draft interim guidelines, and agreed to the option provided in document SSE 9/19/10 as the basis.

19.4 Following discussion, the Sub-Committee agreed to establish a drafting group on onshore power supply (see paragraph 19.5) and referred documents SSE 9/19 and SSE 9/19/10 to the drafting group for the finalization of the draft interim guidelines.

Establishment of a drafting group

19.5 Subsequently, the Sub-Committee established the Drafting Group on Onshore Power Supply and instructed it, taking into account the comments made and decisions taken in plenary, to finalize the draft interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages, based on document SSE 9/19 and taking into account document SSE 9/19/10, with a view to approval by MSC 107.

Report of the Drafting Group on Onshore Power Supply

19.6 Having approved the report of the Drafting Group (SSE 9/WP.8) in general, the Sub-Committee took action as outlined in paragraphs 19.7 and 19.8 below.

19.7 The Sub-Committee noted that the Group had, in particular:

- .1 agreed to remove the definitions of high and low voltage in the draft interim guidelines in order to avoid confusion, noting some views that there was an inconsistency between the definitions of the term "high-voltage" of the interim guidelines and the ones in the 1978 STCW Convention;
- .2 agreed to delete the reference to IEC 62613-1, as IEC/IEEE 80005-1:2019 was already mentioned in the draft interim guidelines, which already had a reference to standard IEC 62613-1;
- .3 not referred to the latest version of "IEC/IEEE 80005 1:2019+Amd 1:2022" although it was publicly available, as the change of the edition of the standard would bring substantial changes to the draft interim guidelines; and
- .4 introduced some modifications for improvement and clarity, including on safety system, maintenance programme for OPS systems and procedures for shore power transfer.

19.8 Consequently, the Sub-Committee agreed to the draft MSC circular on interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages, as set out in annex 20, with a view to approval by MSC 107.

LSA matters

ISO standard 23678 and revision of resolution MSC.402(96)

Background

19.9 The Sub-Committee recalled that SSE 8 had considered documents SSE 8/15/5 (IACS) and SEE 8/15/14 (ILAMA), 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)), and had agreed to defer the matter, pending the expected input by the Committee (SSE 8/20, paragraph 15.9).

19.10 The Sub-Committee recalled also that MSC 106 had (MSC 106/19, paragraphs 18.16 to 18.18):

- .1 considered documents MSC 102/22/6 (ISO), MSC 103/20/15 (IACS), MSC 103/20/17 (ICS et al.), MSC 104/17/6 (CESA), MSC 105/19/1 (Secretariat), MSC 105/19/5 (ILAMA), MSC 105/19/6 (ISO), MSC 105/19/7 (CESA) and MSC 105/19/8 (IACS), MSC 106/18/3 (IACS), MSC 106/18/5 (ILAMA) relevant to this matter (MSC 106/19, paragraphs 18.14 and 18.15);
- .2 noted that ISO had recently published standard 23678:2022 (series) (MSC 106/18/5), changing its status from publicly available standard (PAS) to a full international standard;
- .3 agreed that it was premature to conclude on the matter of ISO standard 23678 and the implementation of resolution MSC.402(96), and that more discussion by the technical experts in the SSE Sub-Committee was necessary; and

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- .4 instructed the Sub-Committee to consider, as an urgent matter, all relevant submissions, with a view to reporting the outcome to MSC 107, in particular on the following aspects:
- .1 whether ISO 23678 could be referenced in resolution MSC.402(96) as a footnote and the resolution should be amended;
 - .2 clarification and implementation of resolution MSC.402(96), including "certification programme" and "make and type", with a view to revising the resolution;
 - .3 the draft MSC circular as proposed in documents MSC 102/22/6 and MSC 106/18/5, taking into account an additional paragraph proposed in this regard to read "Member Governments are invited to consider and bring to the attention of recognized organizations acting on their behalf standard ISO 23678:2022 when authorizing service providers in accordance with resolution MSC.402(96)"; and
 - .4 applicability of the Requirements (resolution MSC.402(96)) to inflated rescue boats, including the applicability of SOLAS regulation III/20.11; as well as to the LSA equipment installed on high-speed craft and mobile offshore drilling units.

Relevant documents for consideration

19.11 As instructed by MSC 106 (see paragraph 19.8), the Sub-Committee considered the relevant documents and in particular:

- .1 SSE 9/19/1 (Chair), providing background information on the outcome of MSC 106 on the revision of resolution MSC.402(96), together with some proposals;
- .2 SSE 9/19/6 (Canada et al.), containing a proposal for an MSC circular drawing Contracting Governments' attention to ISO 23678:2022 based on document MSC 106/18/5 and an additional paragraph presented to MSC 106 by the United Kingdom, proposing two options to amend paragraph 7.1.1 of resolution MSC.402(96), as well as a proposed way forward for referencing ISO as a footnote in the resolution;
- .3 SSE 9/19/8 (CESA), reiterating concerns regarding non-uniform interpretations of the terms "make" and "type", emphasizing the significance of competent personnel, which were trained and certified for identifiable LSA products and performs individual services using type specific tools and maintenance manuals; and proposing that uncertainties of the mandatory requirements be rectified by use of clear terminology within a revised resolution MSC.402(96), along with some modifications;
- .4 MSC 105/19/8 (IACS), seeking clarification as to whether SOLAS regulation III/20.11 and resolution MSC.402(96) were applicable to inflated rescue boats; and
- .5 MSC 106/18/3 (IACS), discussing the applicability of resolution MSC.402(96) to the life-saving appliances installed on the high-speed crafts subject to the 1994 and 2000 HSC Codes, and on the mobile offshore drilling units subject to the 1979, 1989 and 2009 MODU Codes, with a view to global and uniform implementation.

Method of work

19.12 The Sub-Committee, taking into account that the matter had been addressed since MSC 102 with a variety of aspects and MSC 106 had provided a list of issues to consider, as well as the documents submitted to this session, agreed to first consider the method of work.

19.13 In this respect, the Sub-Committee:

- .1 agreed to leave out the discussion on whether ISO/PAS standard could be referenced in a mandatory instrument from the scope, as it was not needed anymore (see paragraph 19.10.2); and
- .2 considered some options provided by the Chair on how to address comprehensive and complex matters on ISO 23678, and resolution MSC.402(96) and its implementation, together with other options suggested by the delegations.

19.14 In particular, the Sub-Committee had a lengthy discussion on the following options:

- .1 as also proposed in document SSE 9/19/6, ISO 23678 could be referenced in resolution MSC.402(96) as a minor correction, taking into account option 2 provided in paragraph 13 of document SSE 9/19/6 to reflect the status quo in the industry, with the associated draft MSC circular set out in the annex to the document;
- .2 as also proposed in document SSE 9/19/8, resolution MSC.402(96) could be comprehensively revised without referencing the ISO standard, taking into account previous relevant submissions under a new output, which could also cover consequential amendments to the relevant instruments, e.g. SOLAS, the HSC Codes and the MODU Codes;
- .3 ISO 23678 could be referenced in the resolution and agreed at this session, together with the associated MSC circular for MSC 107's consideration; however, a comprehensive revision could be made under a new output at a future session;
- .4 taking into account the heavy workload of the LSA Working Group, the LSA Correspondence Group, if established, could consider all submissions and analyse, with a view to providing advice and taking appropriate action; or consider a method of work on how to go about the consideration of the matter; and
- .5 the draft MSC circular (SSE 9/19/6, annex) could be agreed at this session without its last paragraph, bringing the standard to the attention of all relevant parties and the resolution could be revised under a new output.

19.15 During consideration, the Sub-Committee noted:

- .1 some split views on the appropriateness of referencing ISO 23678 in the resolution, the discrepancies between the definitions, terms and provisions used in the standard and the resolution;

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- .2 a statement made by the observer from ISO on the use of ISO 23678:2022 series as a recognized international standard, the full text of which is set out in annex 22; and
 - .3 another statement made by the observer from ILAMA on its role in representing life-saving appliance manufacturers, the full text of which is set out in annex 22.

19.16 Following discussion, the Sub-Committee 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 with considering the relevant submissions, subject to the Committee's agreement of the new output.

19.17 Therefore, the Sub-Committee prepared a relevant 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", as set out in annex 21; and invited MSC 107 to:

- .1 note the discussion of the Sub-Committee on the matter;
- .2 consider the draft justification for a new output for inclusion in the biennial agenda for 2022-2023 and the provisional agenda for SSE 10, and take action, as appropriate; and
- .3 endorse the instructions given to the LSA Correspondence Group established at this session (see paragraph 19.18) to consider the relevant documents and the proposals therein, and advise SSE 10 accordingly under the new output, if agreed by the Committee.

Instructions to the LSA Correspondence Group

19.18 In view of the above, subject to the Committee's approval of the new agenda item (see paragraph 19.17), the Sub-Committee instructed the LSA Correspondence Group established under agenda item 14 (see paragraph 14.13), taking into account documents MSC 102/22/6 (ISO), MSC 103/20/15 (IACS), MSC 103/20/17 (ICS et al.), MSC 104/17/6 (CESA), MSC 105/19/1 (Secretariat), MSC 105/19/5 (ILAMA), MSC 105/19/6 (ISO), MSC 105/19/7 (CESA), MSC 105/19/8 (IACS), MSC 106/18/3 (IACS), MSC 106/18/5 (ILAMA), SSE 8/15/5 (IACS), SEE 8/15/14 (ILAMA), SSE 9/19/1 (Chair), SSE 9/19/6 (Canada et al.), and SSE 9/19/8 (CESA), and the decisions taken by SSE 9, to:

- .1 identify the safety issues and barriers to consistent implementation of the Requirements contained in resolution MSC.402(96), including the ambiguity in the use of the terms "make", "type" and "certification programme"; and
- .2 prepare relevant draft terms of reference for the Working Group on Life-Saving Appliances to be established at SSE 10 to consider the safety issues and barriers identified in .1 above.

19.19 The Sub-Committee, taking into account the instructions by MSC 106, and the limited scope of the proposed new output, further instructed the LSA Correspondence Group (regardless of the approval of the new output, see paragraph 19.17), taking into account comments made and decisions taken at SSE 9, to consider the applicability of the Requirements (resolution MSC.402(96)) to:

- .1 inflated rescue boats, including the applicability of SOLAS regulation III/20.11, taking into account document MSC 105/19/8; and
- .2 the LSA equipment installed on high-speed craft and mobile offshore drilling units, taking into account MSC 106/18/3,

with a view to advising the Sub-Committee accordingly.

References to ISO standard 12402-7 in resolution MSC.81(70)

19.20 With respect to the references to ISO standard 12402-7 in resolution MSC.81(70), the Sub-Committee considered document SSE 9/19/9 (China), providing comments on the applicability of ISO 12402-7:2020 and proposing to update the references to standard ISO 12402-7:2020 in resolution MSC.81(70), as a minor correction.

19.21 Following consideration, the Sub-Committee agreed to the draft amendments to resolution MSC.81(70) as a minor correction in accordance with the decisions taken at C/ES.27 (C/ES.27/D, paragraph 3.2(vi)), as set out in annex 1, with a view to adoption at MSC 107.

Maintenance and inspection of suspension parts used with survival craft

19.22 In relation to the maintenance and inspection of suspension parts used with survival craft, the Sub-Committee considered document SSE 9/19/5 (ILAMA), sharing some concerns regarding the maintenance of specific parts used with craft launching systems, i.e. suspension parts, such as master links, turnbuckles or suspension chains, indicating possible gaps in the existing regulations that were applicable to such parts and proposing to consider options to address this issue.

19.23 In the ensuing discussion, the Sub-Committee agreed:

- .1 on the need for the maintenance of specific parts used with craft launching systems, which would enhance safety during evacuation and drills, as the thorough examination would need to be done for the entire system, including suspension parts; and
- .2 that this could better be achieved under a new output.

19.24 Following discussion, the Sub-Committee invited ILAMA and interested delegations to submit a proposal for a new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4).

FP matters**ISO standard 15364:2021 and revision of MSC/Circ.677**

19.25 With respect to ISO standard 15364:2021 and revision of MSC/Circ.677, the Sub-Committee recalled that MSC 106 had considered document MSC 105/19/2 (ISO), informing of the 2021 revision of the standard for ship pressure-vacuum relief valve and devices to prevent the passage of flame into cargo tanks (ISO 15364), and the resulting need to update the *Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers* (MSC/Circ.677) accordingly.

19.26 The Sub-Committee also recalled that MSC 106 had (MSC 106/19, paragraphs 18.19 and 18.20):

- .1 concluded that more discussion pertaining to the effective date of application of the revised circular, as well as some consequential technical modifications, was needed at the Sub-Committee level;
- .2 instructed the Sub-Committee to consider document MSC 105/19/2, with a view to revising MSC/Circ.677, under the agenda item "Any other business", for submission to MSC 107 for approval; and
- .3 invited relevant submissions to this session to contribute to the discussions.

19.27 In this respect, in addition to document MSC 105/19/2, the Sub-Committee considered the following documents:

- .1 SSE 9/19/1 (Chair), providing background information on the matter and the draft revision of MSC/Circ.677 in its annex for further discussion, taking into account the comments made at MSC 106; and
- .2 SSE 9/19/4 (IACS), suggesting due consideration of safety and environmental impacts with respect to pressure/vacuum (P/V) valves when amending MSC/Circ.677 regarding reference to ISO standard 15364.

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

- .1 MSC/Circ.677 only referred to a test method in the ISO standard and, even if the ISO edition was updated, the requirement on maximum leakage rate would not be applied, and therefore, the draft revision of MSC/Circ.677 could be agreed at this session, with the effective date of 1 January 2024; and
- .2 notwithstanding the view in paragraph 19.28.1, current SOLAS regulations should be compared to the referenced ISO standard, in particular regarding leakage rates of P/V valves, before the draft revision of the circular could be finalized and, therefore, further technical discussions could be held by the FP Correspondence Group.

19.29 Recognizing the need for further technical discussion intersessionally, the Sub-Committee instructed the FP Correspondence Group (see paragraph 15.13) to consider documents SSE 9/19/1 and SSE 9/19/4, together with the effective date of the draft revision of the circular, as appropriate (see paragraph 19.34).

Clarification on the applicable standards for fire-fighter's outfits

19.30 In relation to the applicable standards for fire-fighter's outfits, the Sub-Committee considered document SSE 9/19/7 (Republic of Korea), seeking clarification on the applicable equipment standards for fire-fighter's outfits, as required by SOLAS regulation II-2/10 and the FSS Code, in an effort to ensure safe and effective fire fighting by ships' crews in case of shipboard fire and to facilitate global and uniform implementation.

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

- .1 the proposal merited attention; however, the issue should be addressed under a new output rather than by developing a unified interpretation;
- .2 other equivalent national/international standards might need to be referenced in addition to those mentioned in the document and, therefore, the matter should be further considered by the FP Correspondence Group;
- .3 as various countries issued relevant national standards regarding fire-fighting outfits, and further analysis of relevant information with respect to accidents and injuries would be required, referencing certain standards would not be appropriate at this stage, and the guidance provided in resolution A.911(22) on *Uniform wording for referencing IMO instruments* should be followed;
- .4 the matter should be carefully considered, as ISO 11999-3 seemed to be addressing a fire scenario not covered by the FSS Code; and
- .5 ISO 22488:2011 provided guidance on outfits for ships' crews in fighting fires on board and, therefore, the inclusion of this standard could also be considered.

19.32 In view of the above divergent views and taking into account the need for further technical discussion intersessionally, the Sub-Committee:

- .1 instructed the FP Correspondence Group to further consider document SSE 9/19/7 (see paragraph 19.34); and
- .2 invited the Republic of Korea and interested delegations to submit a proposal for a new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.4), taking into account the expected outcome of the discussion of the FP Correspondence Group in that regard, as appropriate.

Remaining information documents on fire protection

19.33 The Sub-Committee noted the information provided in the following documents:

- .1 SSE 9/INF.4 (Japan), providing a brief report of a fire test using a battery electric vehicle (BEV) powered by lithium-ion battery, which was carried out to extinguish a fire on the said BEV with the results indicating that the flame was instantly extinguished by covering the burning BEV with high-expansion foam and the fire was soon successfully brought under control;

- .2 SSE 9/INF.6 (China), providing supplementary information on the output of "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", based on new research, with a view to being taken into account when the Sub-Committee considered the item on its agenda;
- .3 SSE 9/INF.7 (Republic of Korea), providing information regarding the explosion characteristics of hydrogen in the ventilation duct of a hydrogen-fuelled ship; and
- .4 SSE 9/INF.8 (Republic of Korea), providing information regarding the diffusion characteristics of hydrogen to determine the position of the gas detector.

Instructions to the FP Correspondence Group

19.34 In view of the above, the Sub-Committee instructed the FP Correspondence Group established under agenda item 15 (see paragraph 15.13), taking into account the comments made and decisions taken at SSE 9, to:

- .1 consider documents SSE 9/19/1 and SSE 9/19/4 on the revision of MSC/Circ.677, together with the effective date of the draft revision of the circular (SSE 9/19/1), as appropriate; and
- .2 consider document SSE 9/19/7 on the clarification on the applicable standards for fire-fighter's outfits,

with a view to advising SSE 10.

Remaining matters

SSE Sub-Committee's involvement in human element

19.35 The Sub-Committee recalled that HTW 8 had considered the need to arrange and coordinate the work on the human element holistically, encompassing the new strategic direction, the continuous output and the work on the human element conducted by all IMO bodies, taking into account the workload and necessary resources (HTW 8/16, paragraphs 4.6 to 4.10).

19.36 The Sub-Committee also recalled that MSC 105 had invited all relevant IMO bodies to assess their respective involvement in the human element within their remit and report back to the Committee, with a view to devising an outline for a holistic approach in this area, taking into account resources and budgetary implications within the Organization (MSC 105/20, paragraph 16.3).

19.37 In this respect, the Sub-Committee considered document SSE 9/19/2 (Secretariat), providing background information on the outcome of HTW 8 and MSC 105 regarding a holistic approach to human element matters in connection with all IMO bodies; and inviting the Sub-Committee to assess its involvement on these matters within its remit, with a view to contributing to the Committee's request.

19.38 In response to the request, the Sub-Committee noted a statement made by the delegation of the United Kingdom that highlighted the need to establish guiding principles to provide a regulatory framework addressing the human element more consistently and which might be applied across the work of this Sub-Committee and others. Accordingly, the delegation recommended adopting the principles of human-centred design, an approach to system design and development which placed focus on the end user and which yielded improvements to safety, usability and accessibility through the use of human factors and ergonomics. In this context, it was noted that ISO had developed standards 9241-210 – Ergonomics of human-system interactions: Human-centred design for interactive systems; and part 220: Processes for enabling, executing, and assessing human-centred design within organizations, and they could supplement this consideration. The delegation proposed, therefore, that the Sub-Committee note the potential benefit of adopting a human-centred design approach in its future regulatory work, invite concrete proposals to its next session related to the human element, and bring human-centred design to the attention of the Committee.

19.39 Having considered document SSE 9/19/2 and the recommendation by the delegation of the United Kingdom on adopting the principles of human-centred design, the Sub-Committee invited MSC 107 to note its discussion on the matter.

Experience gained with using the hybrid system

19.40 The Sub-Committee, in recounting its experience on the use of the hybrid system during the session, noted the following observations (see paragraph 1.6.3):

For the discussions in the Main Hall of IMO Headquarters

- .1 in general, the hybrid system had been serving well and the ability to switch modality between remote and physical participation during a meeting week, was appreciated;

For the discussions in the working/drafting/experts groups

- .2 current cut-off time of 18.00 (local time) for using the hybrid facilities should be further improved to allow working/drafting/experts groups to continue working beyond that time, subject to the chair's and group members' agreement;
- .3 alternative remote arrangements should be considered to work beyond 18.00 until a more sustainable solution was found on using hybrid facilities after the normal working hours, e.g. continuing the work only remotely by switching to an alternative online meeting platform;
- .4 if any group worked beyond normal working hours, for those delegations who would not be able to work remotely for various reasons, e.g. time zone differences, a brief summary should be provided by the respective chair of that group the next day for transparency;
- .5 an improvement to the hybrid meeting capability was required to ensure that when remote speakers took the floor and wished to comment on the document projected via screenshare, the text screen should remain visible (currently the ZOOM hybrid meeting showed the remote speaker only and the document screen was no longer visible); and

For the discussions in the correspondence groups

- .6 the correspondence groups should have the flexibility to supplement their work by virtual meetings when necessary.

19.41 In this regard, the Sub-Committee invited MSC 107 to note the above views with respect to the experience gained with using the hybrid system and forward them to the appropriate session of the Council to take action, as appropriate.

Expressions of condolence

19.42 The Sub-Committee noted with great sadness the recent passing of Mrs. Mandana Mansourian of the Islamic Republic of Iran, the former Vice-Chair of the Technical Cooperation Committee and long-time Deputy Permanent Representative of the Islamic Republic of Iran to IMO. The Sub-Committee appreciated her contribution to the work of the Organization, expressed its condolences to the Mansourian family and the delegation of the Islamic Republic of Iran, and requested that its sincere sympathy be conveyed to her family and colleagues.

Expression of appreciation

19.43 The Sub-Committee expressed its appreciation to the following delegates and members of the Secretariat who had recently retired or relinquished their duties for their invaluable contribution to its work:

- Ms. Christine Gregory (IMO) (on retirement)
- Mrs. Anneliese Jost (Germany) (on retirement)
- Mr. Siphon Mbahta (South Africa) (on transfer)

20 ACTION REQUESTED OF THE COMMITTEE

Action requested of the Committee

20.1 The Maritime Safety Committee, at its 107th 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 10 (paragraphs 3.3 to 3.7 and annex 19);
- .2 adopt the draft MSC resolution on amendments to the revised recommendation (resolution MSC.81(70)) with regard to excepting ventilation performance testing for fast rescue boats, together with the draft amendments previously approved in principle by MSC 106 in relation to ventilation requirements for totally enclosed lifeboats (SSE 8/20, annex 2), in conjunction with the adoption of the associated draft amendments to the LSA Code approved by MSC 106 (paragraph 3.16 and annex 1);
- .3 approve the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (survival craft), in conjunction with the adoption of the draft amendments to the LSA Code and resolution MSC.81(70) on ventilation requirements for totally enclosed lifeboats, for dissemination as MSC.1/Circ.1630/Rev.2 (paragraph 3.17 and annex 2);

- .4 approve the draft amendments to paragraph 6.2.3 of the Requirements (resolution MSC.402(96)), emanating from new ventilation requirements for survival craft, with a view to adoption by MSC 108 (paragraph 3.19 and annex 3);
- .5 expand the scope of the output of agenda item 4 (Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships), to keep lowering speed of survival craft and rescue boats within a reasonable margin by limiting both minimum and maximum speeds for safety's sake (paragraph 4.8);
- .6 expand the application of the draft amendments to chapter VI of the LSA Code for revised paragraphs 6.1.2.8 and 6.1.2.10 to passenger ships, as well, so that the maximum lowering speed would also apply to such ships (paragraph 4.12);
- .7 approve the draft MSC resolution on amendments to the LSA Code for minimum and maximum lowering speed of survival craft and rescue boats, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 108 (paragraph 4.14 and annex 4);
- .8 note that, owing to time constraints, the Sub-Committee could not progress the work on hazard identification for the revision of SOLAS chapter III and the LSA Code, and further discussion is necessary intersessionally (paragraph 5.14);
- .9 authorize the re-establishment of the Intersessional Working Group on the Revision of SOLAS chapter III and the LSA Code, to meet in person at a location to be confirmed in due course, in conjunction with subsequent virtual meetings to close outstanding matters (paragraphs 5.15 and 17.13);
- .10 approve the draft amendments to SOLAS chapter II-2 on fire safety of ro-ro passenger ships, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 108 (paragraph 6.8 and annex 5);
- .11 approve the draft amendments to the FSS Code on fire safety of ro-ro passenger ships, with a view to adoption by MSC 108, together with the adoption of the associated draft amendments to SOLAS (paragraph 6.10 and annex 6);
- .12 approve the draft MSC circular on revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces, incorporating modifications on the use of the term "free height", for dissemination as MSC.1/Circ.1430/Rev.3 (paragraph 6.11 and annex 7);
- .13 adopt the draft amendments to paragraph 3.2.3 of resolution MSC.81(70) concerning thermal protective tests of immersion suits (paragraph 7.15 and annex 1);
- .14 approve the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances), emanating from the draft amendments on thermal manikin tests,

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- in conjunction with the adoption of the associated draft amendments to resolution MSC.81(70), for dissemination as MSC.1/Circ.1628/Rev.1 (paragraph 7.16 and annex 8);
- .15 approve the draft amendments to chapter II of the LSA Code with respect to lifejackets' in-water performance, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 108 (paragraph 8.13 and annex 4);
- .16 approve, in principle, the draft MSC resolution on amendments to the revised recommendation (resolution MSC.81(70)) with respect to lifejackets' in-water performance, with a view to adoption by MSC 108, in conjunction with the adoption of the associated draft amendments to the LSA Code (paragraph 8.15, annex 9);
- .17 agree to the draft MSC circular on revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances), emanating from the draft amendments with respect to lifejackets' in-water performance, with a view to approval at MSC 108, in conjunction with the adoption of the associated draft amendments to the LSA Code and resolution MSC.81(70), for dissemination as MSC.1/Circ.1628/Rev.2 (paragraph 8.16 and annex 10);
- .18 endorse the Sub-Committee's recommendation to place output 7.39 on "Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets" on the Committee's post-biennial agenda, noting that additional testing requirements were currently being developed and new requirements might need to be incorporated in the future (paragraph 8.19);
- .19 note that, owing to time constraints, the Sub-Committee agreed to defer the consideration of the agenda item on "Revision of the provisions for helicopter facilities in SOLAS and the MODU Code" to the next session (paragraph 9.3);
- .20 note that the Sub-Committee agreed to postpone consideration of the proposals submitted under agenda item 10 on "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" to the next session, with a view to taking a holistic approach on this output, pending the expected outcome of the CARGOSAFE FSA study (paragraph 10.7);
- .21 approve the draft amendments to SOLAS regulation II-2/7.5.5 concerning fire detection within control stations and cargo control rooms, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 108 (paragraph 11.9 and annex 5);
- .22 agree, in principle, to the draft MSC circular on revised unified interpretations of SOLAS chapter II-2 and the FSS and FTP Codes, with a view to approval by MSC 108, in conjunction with adoption of the associated draft amendments to SOLAS concerning fire detection within control stations and cargo control rooms, for dissemination as MSC.1/Circ.1456/Rev.1 (paragraph 11.10 and annex 11);

- .23 recommend that the Assembly take appropriate action to reinstate the revoked resolutions A.536(13) and A.583(14), possibly by deleting operative paragraph 4 of resolution A.831(19) containing the 1995 Diving Code (paragraph 12.14);
- .24 endorse the expansion of the output on "Revision of the Code of Safety for Diving Systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))", given that a new instrument, in parallel to the existing 1995 Diving Code, has been developed (paragraph 12.16.1);
- .25 adopt the draft International Code of Safety for Diving Operations, 2023 (2023 Diving Code) and the associated draft MSC resolution (paragraph 12.16.2 and annex 12);
- .26 note that the Sub-Committee validated revised Model Course 3.03 and its associated compendium, with a view to publication (paragraph 13.12);
- .27 note that the Sub-Committee established a review group to work between sessions by correspondence to review the draft revision of Model Course 3.04 on Survey of Electrical Installations, reporting to SSE 10 (paragraph 13.14);
- .28 approve the draft MSC circular on unified interpretations of the LSA Code, and the 1994 and 2000 HSC Codes, on the use of LED torches (paragraph 14.6 and annex 13);
- .29 endorse the Sub-Committee's recommendation to refer document SSE 8/15 to the Correspondence Group on Revision of the Interim Explanatory Notes (MSC.1/Circ.1369) established at SDC 9, with the participation of fire safety experts in the discussions of the Correspondence Group for inclusion into the revision of the circular, as appropriate (paragraph 14.25);
- .30 approve the draft MSC circular on revised unified interpretations of SOLAS chapter II-2, for dissemination as MSC.1/Circ.1276/Rev.1 (paragraph 14.36.1 and annex 14);
- .31 authorize the Secretariat to take the appropriate action to replace the references to ISO 15371:2009 in SOLAS regulations II-2/9.7.5.1.1.3, II-2/9.7.5.2.4 and II-2/10.6.4.1, with ISO 15371:2015 when preparing the next publication of the 1974 SOLAS Convention (paragraph 14.36.2);
- .32 approve the draft MSC circular on revised hazardous area classification (application of SOLAS regulation II-1/45.11), for dissemination as MSC.1/Circ.1557/Rev.1 (paragraph 14.45 and annex 15);
- .33 approve the draft MSC circular on unified interpretation of SOLAS chapter II-1, on single essential propulsion components and their reliability (paragraph 14.48 and annex 16);
- .34 note the consideration of the Sub-Committee on agenda item 15 that further discussion was necessary on the prohibition of other fire-fighting foam types in addition to PFOS; however, the Committee should proceed with the expected adoption of the draft amendments to SOLAS and the HSC Codes on PFOS, approved by MSC 106 (paragraph 15.7);

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- .35 endorse the revision of the title of the existing 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 its scope, based on the justification agreed by the Sub-Committee, for further discussion at SSE 10 (paragraph 15.11);
- .36 approve the draft amendments to paragraphs 4.4.7.6.8 and 4.4.7.6.17 of the LSA Code on single fall and hook systems, taking into account the associated check/monitoring sheet and the record format, with a view to adoption by MSC 108 (paragraph 16.7 and annex 4);
- .37 consider the biennial status report of the Sub-Committee for the 2022-2023 biennium and take action, as appropriate (paragraph 17.3 and annex 17);
- .38 consider the proposed biennial agenda for the 2024-2025 biennium and take action, as appropriate (paragraph 17.3 and annex 18);
- .39 endorse the transfer of the post-biennial agenda on "Revision of SOLAS chapters II-1 (part C) and V and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems" to SDC 10's provisional agenda, in order to balance the workload between the two Sub-Committees and maintain the integrity of the relevant agenda items of the SDC Sub-Committee (paragraph 17.9);
- .40 consider the proposed provisional agenda for SSE 10 and take action, as appropriate (paragraph 17.10 and annex 19);
- .41 approve the draft MSC circular on interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages (paragraph 19.8 and annex 20);
- .42 note the discussion of the Sub-Committee on ISO standard 23678 and revision of resolution MSC.402(96) (paragraphs 19.9 to 19.17);
- .43 consider the draft 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", for inclusion in the biennial agenda for 2022-2023 and the provisional agenda for SSE 10, and take action, as appropriate (paragraph 19.17 and annex 21);
- .44 endorse the instructions given to the LSA Correspondence Group to consider the relevant documents and the proposals therein regarding comprehensive review of resolution MSC.402(96), and advise SSE 10 accordingly under the new output, if agreed by the Committee (paragraphs 19.17 and 19.18);
- .45 adopt the draft amendments to resolution MSC.81(70) with respect to updating the current references to standard ISO 12402-7 on tests of components and materials of lifejackets, as a minor correction (C/ES.27/D, paragraph 3.2(vi)) (paragraph 19.21 and annex 1);

- .46 note the discussion of the Sub-Committee on the Sub-Committee's involvement in the human element (paragraph 19.39);
- .47 note the observations made by the Sub-Committee with respect to the experience gained with using the hybrid system and forward them to the appropriate session of the Council to take action, as appropriate (paragraph 19.40); and
- .48 approve the report in general.

ANNEX 1*

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 (MSC.81(70)), set out in the annex to the present resolution;
- 2 RECOMMENDS Governments to ensure that life-saving appliances installed on or after [1 January 2029] conform to the amended prototype tests in sections 6 (Lifeboats) and 7 (Rescue boats and fast rescue boats), 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. SSE 9 agreed to the draft amendments to paragraphs 7.4.1, 7.5 and 7.6 of resolution MSC.81(70), in addition to the draft amendments to section 6 (Lifeboats) already approved in principle by MSC 106 (MSC 106/19, paragraph 11.6.1) on ventilation requirements, which are also included in this annex for ease of reference, with a view to adoption at MSC 107.

ANNEX

**AMENDMENTS TO THE REVISED RECOMMENDATION ON
TESTING OF LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))**

PART 1– PROTOTYPE TESTS FOR LIFE-SAVING APPLIANCES

2 LIFEJACKETS

2.4 Tests of components other than buoyancy materials

1 Footnote to paragraph 2.4 is amended, as follows:

"* Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 12402-7:2006/2020 Personal flotation devices. Part 7: Materials and components. Safety requirements and test methods."

2.6 Tests for lifejacket buoyancy material

Tensile strength test

2 Footnote to paragraph 2.6.8 is amended, as follows:

" * Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 12402-7:2006/2020, Personal flotation devices . Part 7: Materials and components . Safety requirements and test methods."

3 IMMERSION SUITS

3.2 Thermal protective tests

General

3 Paragraph 3.2.3 is amended, as follows:

"3.2.3 Where human subjects are used, the tests should always be conducted under the supervision of a physician. Emergency resuscitation equipment should be available during all tests. For safety reasons, ECG should be monitored during every test. Testing should be stopped at the wish of the test subjects, if the falling rate of the core temperature is more than 1.5 degrees C per hour after the first half hour, if the skin temperature of the hand, foot or lumbar region should fall below 10 degrees C for more than 15 minutes, or if the attending physician considers it advisable."

6 LIFEBOATS

6.10 Lifeboat operational test

Operation of engine and fuel consumption test

1 Paragraph 6.10.1 is amended, as follows:

"6.10.1 The lifeboat should be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine should be started and the lifeboat manoeuvred for a period of at least 4 h to demonstrate satisfactory operation. The lifeboat should be run at a speed of not less than 6 knots and, with the powered means of ventilation in operation if fitted, for a period which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity. The maximum towing force of the lifeboat should be determined. This information should be used to determine the largest fully loaded liferaft the lifeboat can tow at 2 knots. The fitting designated for towing other craft should be secured to a stationary object by a tow rope. The engine should be operated ahead at full speed for a period of at least 2 minutes, and the towing force measured and recorded. There should be no damage to the towing fitting or its supporting structure. The maximum towing force of the lifeboat should be recorded on the type approval certificate."

6.14 Additional tests for totally enclosed lifeboats

2 Paragraph 6.14.1 is amended, as follows:

"6.14.1 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. After release, the lifeboat should always return to the upright position without the assistance of the occupants. 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. These tests should be conducted in the following conditions of load:"

3 The following new paragraph 6.14.9 is added after the existing paragraph 6.14.8:

"Ventilation performance test

6.14.9 The ventilation rate required by paragraph 4.6.6.1 of the LSA Code should be measured under moored conditions. The test should be carried out with only the persons necessary on board to perform the test. All entrances and hatches should be kept closed. Ventilation openings should stay open. The measured ventilation rate should not be less than 5 m³/hour per person for the total number of persons which the lifeboat is permitted to accommodate."

7 RESCUE BOATS AND FAST RESCUE BOATS

7.4 Rigid fast rescue boats

4 Paragraph 7.4.1 is amended, as follows:

"7.4.1 Rigid fast rescue boats should be subjected to the tests prescribed in 6.2 to 6.12 (except 6.3, 6.4.2, 6.5, 6.6.2, 6.7.1, 6.9.6, 6.9.7, 6.10.1), ~~6.14~~ 6.14.1 to 6.14.8 (if a rigid fast rescue boat is self-righting), 7.1.2 to 7.1.4, 7.1.6, 7.1.7 (if a rigid fast rescue boat is not self-righting), 7.1.8, 7.1.9 and 7.2.4.2. In the case of open fast rescue boats, the self-righting test should only be done in the light condition, and 6.14.1.1, 6.14.3, 6.14.4, ~~and~~ 6.14.5 and 6.14.9 are not applicable. With regard to 6.14.2, a boat fitted with a helmsman's emergency release switch should be considered to be arranged to stop automatically when inverted."

7.5 Inflated fast rescue boats

5 Paragraph 7.5 is amended, as follows:

"Inflated fast rescue boats should be subjected to the tests prescribed in 6.4.1, 6.6.1, 6.7.2, 6.9.1 to 6.9.5, 6.10 (except 6.10.1), 6.11, 6.12, ~~6.14~~ 6.14.1 to 6.14.8 (if inflated fast rescue boat is self-righting), 7.1.2, 7.1.3, 7.1.6 (if inflated fast rescue boat is equipped with outboard motor), 7.1.7 (if inflated fast rescue boat is not self-righting), 7.1.8, 7.2.2 to 7.2.16 and 7.4.2."

7.6 Rigid/inflated fast rescue boats

6 Paragraph 7.6 is amended, as follows:

"Rigid/inflated fast rescue boats should be subjected to the tests prescribed in 6.2 (for hull), 7.2.14 (for inflated part), 6.4.1, 6.6.1, 6.7.2, 6.9.1 to 6.9.5, 6.10 (except 6.10.1) to 6.12, ~~6.14~~ 6.14.1 to 6.14.8 (if rigid/inflated fast rescue boat it self-righting), 7.1.2 to 7.1.4, 7.1.6 (if rigid/inflated rescue boat is equipped with outboard motor), 7.1.7 (if rigid/inflated fast rescue boat is not self-righting), 7.1.8, 7.2.2 to 7.2.11, 7.2.15, 7.2.16, 7.3.2 and 7.4.2."

APPENDIX 1

ADULT REFERENCE TEST DEVICE (RTD) DESIGN AND CONSTRUCTION

7 Paragraph 2 is modified, as follows:

"2 MATERIALS

All materials used should comply with ISO 12402-7:~~2006~~2020."

APPENDIX 2

CHILD REFERENCE TEST DEVICE (RTD) DESIGN AND CONSTRUCTION

8 Paragraph 2 is modified, as follows:

"2 MATERIALS

All materials used should comply with ISO 12402-7:~~2006~~2020."

APPENDIX 3

INFANT REFERENCE TEST DEVICE (RTD) DESIGN AND CONSTRUCTION

12 Paragraph 2 is modified, as follows:

"2 MATERIALS

All materials used should comply with ISO 12402-7: ~~2006~~2020

ANNEX 2*

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, 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 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. ~~The text of the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* is set out in the annex.~~
- 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) on ventilation requirements for totally enclosed lifeboats, 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 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.
- 7 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.
- 8 This circular supersedes MSC.1/Circ.1630/Rev.1.

* 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.2.

ANNEX

**REVISED STANDARDIZED LIFE-SAVING APPLIANCE EVALUATION AND TEST REPORT FORMS
(SURVIVAL CRAFT)**

**4.4 DAVIT-LAUNCHED LIFEBOATS
EVALUATION AND TEST REPORT**

1 In the table of contents, a new entry: "4.4.5.7 Ventilation performance test and opening arrangements (totally enclosed lifeboats)" is inserted after existing entry 4.4.5.6, as follows:

" 4.4.5 Operational tests

...

4.4.5.5 Compass test

4.4.5.6 Helpless person recovery

4.4.5.7 Ventilation performance test and opening arrangements (totally enclosed lifeboats)"

2 In the existing table 4.4.2.3, the column for "Acceptance criteria" is modified, 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/ 6.14.1/1.1/1.2/2.1/2.2
Test Procedure	Acceptance Criteria	Significant Test Data
<p>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:</p> <p>.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 82.5 kg, should be secured at each seat location and have its centre of gravity approximately 300 mm above the seat pan so as</p>	<p>After release, the lifeboat should always return to the upright position without the assistance of the occupants.</p> <p>At the beginning of these tests, the engine should be running in neutral position and:</p> <p>.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</p> <p>.2 if the engine is arranged to stop automatically when inverted, it should be</p>	<p>Loaded: Passed: _____ Failed: _____</p> <p>Light: Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p>

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/ 6.14.1/1.1/1.2/2.1/2.2
Test Procedure	Acceptance Criteria	Significant Test Data
<p>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</p> <p>.2 when the lifeboat is in the light condition.</p>	<p>easily restarted and run for 30 min after the lifeboat has returned to the upright position.</p> <p>Water does not enter the engine.</p> <p>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.</p>	<p>Passed: _____ Failed: _____</p> <p>Comments/Observations</p>

3 In the existing table 4.4.5.3, the column for "Test Procedure" is modified, as follows:

4.4.5.3 Endurance, speed and fuel consumption		Regulations: LSA Code 4.4.6.8; MSC.81(70) 1/6.10.1
Test Procedure	Acceptance Criteria	Significant Test Data
<p>The lifeboat should be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine should be started and the lifeboat manoeuvred for a period of at least 4 h to demonstrate satisfactory operation. The lifeboat should be run at a speed of not less than 6 knots and, with the powered means of ventilation in operation if fitted, for a period which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity.</p>	<p>The speed of a lifeboat when proceeding ahead in calm water when loaded with its full complement of persons and equipment and with all engine-powered auxiliary equipment in operation, should be at least 6 knots.</p> <p>Sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, should be provided to run the fully loaded lifeboat at 6 knots for a period of not less than 24 h.</p>	<p>Measured Speed (without spray system): _____ knots</p> <p>Measured Speed (with spray system): _____ knots</p> <p>Passed: _____ Failed: _____</p> <p>Consumption: _____ L/h</p> <p>Tank Capacity: _____ L</p> <p>Endurance: _____ hrs</p> <p>Sufficient tank capacity: Passed/Failed</p> <p>Comments/Observations</p>

4 The existing table 4.4.1.3 is modified, as follows:

4.4.1.3 Engine and starting system		Regulations: LSA Code 4.4.6.2/5/6/7/9/11/12 and 4.6.6.2
Test Procedure	Acceptance Criteria	Significant Test Data
<p>Visually inspect the lifeboat.</p> <p>Conduct measurements and verify clearances as required.</p>	<p>Type of starting system</p> <p>.1 Two independent rechargeable energy sources available for power starting systems.</p> <p>.2 Any required starting aids provided</p> <p>.3 Starting system is not impeded by engine casing, thwarts or other obstructions.</p> <p>.4 Propeller arranged to be disengaged from the engine.</p> <p>.5 Provision for ahead and astern propulsion.</p> <p>.6 Exhaust arranged to prevent water from entering engine in normal operation.</p> <p>.7 The lifeboat is designed with due regard to the safety of persons in the water and to the possibility of damage to the propulsion system by floating debris.</p> <p>.8 Engine casing made of fire-retardant material or other suitable arrangements providing similar protection.</p> <p>.9 Personnel are protected from hot and moving parts.</p> <p>.10 Shouted order can be heard with engine running at speed necessary for 6 knot operation.</p> <p>.11 Watertight casing around bottom and sides of starter batteries with a tightly fitting top which provides for necessary gas venting.</p> <p>.12 Means for recharging engine starting, radio and searchlight batteries provided by solar charge or ships power supply.</p> <p>.13 Radio batteries not used to provide power for engine starting or as an energy source in case of powered ventilation.</p> <p>.14 Recharging means provided for lifeboat batteries (not exceeding 50 V) from ship's power supply can be disconnected at the lifeboat embarkation station.</p> <p>.15 Instructions for starting and operating engine are water-resistant and mounted in a conspicuous place near the engine starting controls.</p>	<p>Manual/Power YES/NO/NOT APPLICABLE</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Fire-retardant materials used: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Comments/Observations</p>

5 A new table 4.4.5.7 is inserted after table 4.4.5.6 and before table 4.4.6.1, as follows:
"

4.4.5.7 Ventilation performance test and opening arrangements (totally enclosed lifeboats)	Regulations: LSA Code 4.6.6.1, 4.6.6.2, and 4.6.7; MSC.81(70) 1/ 6.14.9	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>The ventilation rate should be measured under moored conditions. The test should be carried out with only the persons necessary on board to perform the test. All entrances and hatches should be kept closed. Ventilation openings should stay open.</p>	<p>The measured ventilation rate should not be less than 5 m³/hour per person for the total number of persons which the totally enclosed lifeboat is permitted to accommodate.</p> <p>The means of ventilation should be operable from inside the lifeboat and be arranged to ensure that the lifeboat is ventilated without stratification or formation of unventilated pockets.</p> <p>Inlet and outlet openings of the ventilation means and their external fittings shall be located and designed in order to minimize the ingress of water through the openings, without using the means of closing.</p> <p>If the means of ventilation is powered, sufficient energy shall be provided for a period of not less than 24 hours.</p>	<p>Means of ventilation:</p> <p>Powered: _____ Unpowered: _____</p> <p>If powered, sufficient energy provided for 24 hours:</p> <p>Passed: _____ Failed: _____ NA: _____</p> <p>Ventilation Rate: _____ m³/hr/person</p> <p>Passed: _____ Failed: _____</p> <p>Ventilation means provided with means of closing:</p> <p>Passed: _____ Failed: _____</p> <p>Means of closing operable by a person from inside the lifeboat and can be kept closed while in the stowed position, and during the launching of the lifeboat:</p> <p>Passed: _____ Failed: _____</p>

4.4.5.7 Ventilation performance test and opening arrangements (totally enclosed lifeboats)	Regulations: LSA Code 4.6.6.1, 4.6.6.2, and 4.6.7; MSC.81(70) 1/ 6.14.9	
Test Procedure	Acceptance Criteria	Significant Test Data
		No ingress of water: Passed: _____ Failed: _____ Comments/Observations

"

4.5 FREE-FALL LIFEBOATS EVALUATION AND TEST REPORT

6 In the table of contents, a new line: 4.5.5.7 "Ventilation performance test and opening arrangements" is inserted, as follows:

4.5.5 Operational tests

...

4.5.5.5 Compass test

4.5.5.6 Helpless person recovery

4.5.5.7 Ventilation performance test and opening arrangements

7 In the existing table 4.5.2.3, the column for "Acceptance Criteria" is modified, as follows:

4.5.2.3 Self-righting test		Regulations: LSA Code 4.6.3.2/4, 4.6.4.2; MSC.81(70) 1/6.14.1/1.1/1.2/2.1/2.2
Test Procedure	Acceptance Criteria	Significant Test Data
<p>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:</p> <p>.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 82.5 kg, 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</p> <p>.2 when the lifeboat is in the light condition.</p>	<p>After release, the lifeboat should always return to the upright position without the assistance of the occupants.</p> <p>At the beginning of these tests, the engine should be running in neutral position and:</p> <p>.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</p> <p>.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.</p> <p>Water does not enter the engine.</p> <p>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.</p>	<p>Loaded: Passed: _____ Failed: _____</p> <p>Light: Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Passed: _____ Failed: _____</p> <p>Comments/Observations</p> <p>Passed: _____ Failed: _____</p>

8 In the existing table 4.5.5.3, the column for "Test Procedure" is modified, as follows:

4.5.5.3 Endurance, speed and fuel consumption		Regulations: LSA Code 4.4.6.8; MSC.81(70) 1/ 6.10.1
Test Procedure	Acceptance Criteria	Significant Test Data
The lifeboat should be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine should be started and the lifeboat manoeuvred for a period of at least 4 h to demonstrate satisfactory operation. The lifeboat should be run at a speed of not less than 6 knots and, with the powered means of ventilation in operation if fitted, for a period, which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity.	<p>The speed of a lifeboat when proceeding ahead in calm water when loaded with its full complement of persons and equipment and with all engine-powered auxiliary equipment in operation, should be at least 6 knots.</p> <p>Sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, should be provided to run the fully loaded lifeboat at 6 knots for a period of not less than 24 h.</p>	<p>Measured Speed (without spray system): _____ knots</p> <p>Measured Speed (with spray system): _____ knots</p> <p>Passed: _____ Failed: _____</p> <p>Consumption: _____ L/h</p> <p>Tank Capacity: _____ L</p> <p>Endurance: _____ hrs</p> <p>Sufficient tank capacity: Passed: _____ Failed: _____</p> <p>Comments/Observations</p>

9 The existing table 4.5.1.3 is modified, as follows:

4.5.1.3 Engine and starting system		Regulations: LSA Code 4.4.6.2, 4.4.6.5/6/7/9/11/12, 4.6.4.1/3 and 4.6.6.2
Test Procedure	Acceptance Criteria	Significant Test Data
Visually inspect the lifeboat.	Type of starting system	Manual/ Power YES/NO/NOT APPLICABLE
Conduct measurements and verify clearances as required.	.1 Two independent rechargeable energy sources available for power starting systems	Passed: _____ Failed: _____
	.2 Any required starting aids provided	Passed: _____ Failed: _____
	.3 Starting system is not impeded by engine casing, thwarts or other obstructions	Passed: _____ Failed: _____
	.4 Propeller arranged to be disengaged from the engine	Passed: _____ Failed: _____
	.5 Provision for ahead and astern propulsion	Passed: _____ Failed: _____
	.6 Exhaust arranged to prevent water from entering engine in normal operation	Passed: _____ Failed: _____
	.7 The lifeboat is designed with due regard to the safety of persons in the water	Passed: _____ Failed: _____

4.5.1.3 Engine and starting system		Regulations: LSA Code 4.4.6.2, 4.4.6.5/6/7/9/11/12, 4.6.4.1/3 and 4.6.6.2
Test Procedure	Acceptance Criteria	Significant Test Data
	and to the possibility of damage to the propulsion system by floating debris	
	.8 Engine casing made of fire-retardant material or other suitable arrangements providing similar protection	Fire-retardant materials used: _____ Passed: _____ Failed: _____
	.9 Personnel are protected from hot and moving parts	Passed: _____ Failed: _____
	.10 Shouted order can be heard with engine running at speed necessary for 6 knot operation	Passed: _____ Failed: _____
	.11 Watertight casing around bottom and sides of starter batteries with a tightly fitting top which provides for necessary gas venting	Passed: _____ Failed: _____
	.12 Means for recharging engine starting, radio and searchlight batteries provided by solar charge or ships power supply	Passed: _____ Failed: _____
	.13 Radio batteries not used to provide power for engine starting or as an energy source in case of powered ventilation	Passed: _____ Failed: _____
	.14 Recharging means provided for lifeboat batteries (not exceeding 50 V) from ship's power supply can be disconnected at the lifeboat embarkation station	Passed: _____ Failed: _____
	.15 Instructions for starting and operating engine are water-resistant and mounted in a conspicuous place near the engine starting controls batteries with a tightly fitting top which provides for necessary gas venting	Passed: _____ Failed: _____ Comments/Observations

10 Add a new table 4.5.5.7 after table 4.5.5.6 and before table 4.5.6, as follows:

"

4.5.5.7 Ventilation performance test and opening arrangements		Regulations: LSA Code 4.6.6.1 and 4.6.7.3; MSC.81(70) 1/ 6.14.9
Test Procedure	Acceptance Criteria	Significant Test Data
The ventilation rate should be measured under moored conditions. The test should be carried out with only the persons necessary on board to perform the test. All entrances and hatches should be kept closed. Ventilation openings should stay open.	<p>The measured ventilation rate should not be less than 5 m³/hour per person for the total number of persons which the free-fall lifeboat is permitted to accommodate.</p> <p>The means of ventilation should be operable from inside the lifeboat and be arranged to ensure that the lifeboat is ventilated without stratification or formation of unventilated pockets.</p>	<p>Means of ventilation:</p> <p>Powered: _____ Unpowered: _____</p> <p>If powered, sufficient energy provided for 24 hours:</p> <p>Passed: _____ Failed: _____ NA: _____</p> <p>Ventilation Rate: _____ m³/hr/person</p>

4.5.5.7 Ventilation performance test and opening arrangements	Regulations: LSA Code 4.6.6.1 and 4.6.7.3; MSC.81(70) 1/ 6.14.9	
Test Procedure	Acceptance Criteria	Significant Test Data
	<p>The openings and their means of closing shall be designed to withstand the loads and to prevent ingress of water under the anticipated submerged condition of the lifeboat at the time of free-fall launching.</p> <p>If the means of ventilation is powered, sufficient energy shall be provided for a period of not less than 24 hours.</p>	<p>Passed: _____ Failed: _____</p> <p>Means of ventilation operable from inside the lifeboat:</p> <p>Passed: _____ Failed: _____</p> <p>_____</p> <p>_____</p> <p>Comments/Observations</p>

"

ANNEX 3*

DRAFT AMENDMENTS TO REQUIREMENTS FOR MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR OF LIFEBOATS AND RESCUE BOATS, LAUNCHING APPLIANCES AND RELEASE GEAR (RESOLUTION MSC.402(96))

ANNEX

6 SPECIFIC PROCEDURES FOR INSPECTION, MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR

6.2 Annual thorough examination and operational test

1 The existing paragraph 6.2.3 is amended, as follows:

"6.2.3 For lifeboats (including free-fall lifeboats), rescue boats and fast rescue boats, the following items shall be thoroughly examined and checked for satisfactory condition and operation:

- .1 condition of the boat structure including fixed and loose equipment (including a visual examination of the external boundaries of the void spaces, as far as practicable);
- .2 engine and propulsion system;
- .3 sprinkler system, where fitted;
- .4 air supply system, where fitted;
- .5 manoeuvring system;
- .6 power supply system;
- .7 bailing system;
- .8 fender/skate arrangements; ~~and~~
- .9 rescue boat righting system, where fitted; ~~and~~
- .10 ventilation system, where fitted."

* Modifications are indicated in grey shading.

ANNEX 4¹

DRAFT MSC RESOLUTION

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE (LSA) CODE

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution MSC.48(66), by which it adopted the International Life-Saving Appliance (LSA) Code ("the LSA Code"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation III/3.10 of the Convention concerning the procedure for amending the LSA Code,

HAVING CONSIDERED, at its [108th] session, amendments to the LSA Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the LSA Code the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on [1 July 2025] unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on [1 January 2026] upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES Contracting Governments to note the amendments in the annex are to be applied to life-saving appliances installed on or after [1 January 2026] where 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, the keels of which are laid or which are at a similar stage of construction on or after [1 January 2026], all installations of the specified type on board those ships; or
- (b) for ships other than those ships prescribed in (a) above, all installations of the specified type, having a contractual delivery date for the equipment or, in the absence of a contractual delivery date to the ship, actually delivered to the ship on or after [1 January 2026].

5 REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

¹ Modifications are indicated in grey shading. Appendices to this annex are provided in English only.

ANNEX

CHAPTER II PERSONAL LIFE-SAVING APPLIANCES

2.2 Lifejackets

2.2.1 General requirements for lifejackets

1 The existing paragraph 2.2.1.6.2 is modified, as follows:

"2.2.1.6 When tested according to the recommendations of the Organization on at least 12 persons, adult lifejackets shall have sufficient buoyancy and stability in calm fresh water to:

- .1 lift the mouth of exhausted or unconscious persons by an average height of not less than the average provided by the adult RTD minus 10 mm;
- .2 turn the body of unconscious, face-down persons in the water to a face-up position where the nose and mouth are clear of the water in an average time not exceeding that of the RTD plus 1 s;
- .3 incline the body backwards from the vertical position for an average torso angle of not less than that of the RTD minus 10°;
- .4 lift the head above horizontal for an average faceplane angle of not less than that of the RTD minus 10°; and
- .5 return at least as many wearers to a stable face-up position after being destabilized when floating in the flexed foetal position² as with the RTD when tested on the wearers in the same manner."

CHAPTER IV SURVIVAL CRAFT

4.4 General requirements for lifeboats

4.4.7 Lifeboat fittings

2 The existing paragraph 4.4.7.6.8 is modified, as follows:

".8 to prevent an accidental release during recovery of the boat, the hook shall not be able to support any load unless the hook is completely reset, ~~either the hook shall not be able to support any load, or~~ In the case of a hook which is capable of releasing the lifeboat or rescue boat with a load on the hook when it is not fully waterborne, the handle or safety pins shall not be able to be returned to the reset (closed) position, and any indicators shall not indicate the release mechanism is reset, unless the hook is completely reset. Additional danger signs shall be posted at each hook station to alert crew members to the proper method of resetting;"

² Refer to the illustration on page 9 of the *IMO Pocket Guide for Cold Water Survival*, 2010 Edition, and to the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70), as amended).

3 The existing paragraph 4.4.7.6.17 is modified, as follows:

"17 where a single fall and hook system is used for launching a lifeboat or rescue boat in combination with a suitable painter, the requirements of paragraphs 4.4.7.6.7, 4.4.7.6.8 and 4.4.7.6.15 need not be applicable, in such an arrangement a single capability to release the lifeboat or rescue boat, only when it is fully waterborne, will be adequate provided that the single fall and hook system does not have the capability to release the lifeboat or rescue boat with a load on the hook when it is not fully waterborne.

CHAPTER VI LAUNCHING AND EMBARKATION APPLIANCES

6.1.2 Launching appliances using falls and a winch

4 The existing paragraph 6.1.2.8 is modified, as follows:

"6.1.2.8 The speed at which the fully loaded survival craft or rescue boat is lowered to the water shall not be less than that obtained from the formula:

$$S = 0.4 + 0.02H, \text{ or } 1.0, \text{ whichever is less}$$

where:

S is the lowering speed in metres per second and

H is the height in metres from the davit head to the waterline with the ship at the lightest sea-going condition."

5 The existing paragraph 6.1.2.10 is modified, as follows:

"6.1.2.10 The maximum lowering speed shall be established by the Administration 1.3 m/s. The Administration may accept a maximum lowering speed other than 1.3 m/s, having regard to the design of the survival craft or rescue boat, the protection of its occupants from excessive forces, and the strength of the launching arrangements taking into account inertia forces during an emergency stop. Means shall be incorporated in the appliance to ensure that this speed is not exceeded."

APPENDIX 1

**CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING
THE CONVENTION AND RELATED MANDATORY INSTRUMENTS
(PROPOSAL/DEVELOPMENT) FOR MINIMUM AND MAXIMUM LOWERING SPEED OF
SURVIVAL CRAFT AND RESCUE BOATS**

Part III – Process monitoring to be completed during the work process at the sub-committee and checked as part of the final approval process by the Committee (refer to paragraph 3.2.1.3)

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 <i>Interim guidelines for the systematic application of the grandfather clauses</i> (MSC/Circ.765-MEPC/Circ.315).	N/A
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
13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	Yes
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 MINIMUM AND MAXIMUM LOWERING SPEED OF SURVIVAL CRAFT AND RESCUE BOATS

1	Title (number and title of regulation(s))
	LSA Code paragraphs 6.1.2.8 and 6.1.2.10 (Launching appliances using falls and a winch)
2	Origin of the requirement (original proposal document)
	MSC 99/20/2 (Japan)
3	Main reason for the development (extract from the proposal document)
	MSC 99/20/2 proposed amending the LSA Code paragraph 6.1.2.8 because the increase in the sizes of ships was not taken into consideration at the time of development of the requirement for lowering speed of survival craft and rescue boats in the LSA Code and that too high of a lowering speed is dangerous. Therefore, Japan proposed that the minimum lowering speed should be reviewed for safety, taking into account the increase of the sizes of cargo ships in recent years.
4	Related output
	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	MSC 99 considered document MSC 99/20/2 (Japan) and agreed to include in its post-biennial agenda an output on "Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ (MSC 99/22, paragraphs 20.14 to 20.18). The Committee also agreed that the amendments

<p>to be developed should apply to all cargo ships to which SOLAS chapter III applied and to all launching appliances using falls and winches; and the instrument to be amended was the LSA Code, paragraph 6.1.2.8.</p> <p>SSE 9 finalized the draft amendments, with a view to approval by MSC 107 and adoption by MSC 108.</p>	
6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
None	
7	Technical background
7.1	Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)
<p>The objective of this output was to evaluate the safety effects of the minimum lowering speed of davit-launched craft, taking into account the increase in sizes of cargo ships in recent years, in order to prevent excessive lowering speed relative to survival craft and rescue boat launching heights.</p>	
7.2	Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)
<p>The intent of these amendments is primarily to address davit heights over 30 m where the minimum lowering speed becomes relatively too high, therefore a threshold of 1.0 m/s is prescribed. Additionally, a maximum speed of 1.3 m/s was established as a safety factor to limit the physiological effects of rapid acceleration/deceleration on occupants in a davit-launched craft and to limit the operational risks of launching too fast.</p>	
7.3	Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)
<p>ISO 15516:2006 recognizes that when the launching height is more than 30 m, the minimum lowering speed should be no more than 1.0 m/s; or a value required by the Administration. Taking into account ISO 15516 as well as the national requirements of some flag States, some Administrations already were limiting the threshold of the minimum lowering speed to 1.0 m/s for davit heights above 30 m, and also limiting the maximum lower speed to 1.3 m/s. These amendments to the LSA Code will establish these standards consistently internationally through the LSA Code.</p>	
7.4	Short summary of requirement (what is the new requirement – in short and lay terms)
<p>Sets a threshold of 1.0 m/s for the minimum lowering speed for davit heights above the water that exceed 30 m, and sets a maximum lowering speed of 1.3 m/s for all davits, regardless of davit height above the water.</p>	
7.5	Points of discussions (controversial points and conclusion)
<p>An Administration may allow a higher maximum speed than 1.3 m/s in certain cases, for example where a highly trained crew can demonstrate the ability to safely launch the rescue boat, or fast rescue boat at lowering speeds greater than 1.3 m/s.</p>	

APPENDIX 2

**CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING
THE CONVENTION AND RELATED MANDATORY INSTRUMENTS
(PROPOSAL/DEVELOPMENT) FOR LIFEJACKETS' IN-WATER PERFORMANCE**

Part III – Process monitoring to be completed during the work process at the sub-committee and checked as part of the final approval process by the Committee (refer to paragraph 3.2.1.3)

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 <i>Interim guidelines for the systematic application of the grandfather clauses</i> (MSC/Circ.765-MEPC/Circ.315).	N/A
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
13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	Yes
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 LIFEJACKETS' IN-WATER PERFORMANCE

1	Title (number and title of regulation(s))
	LSA Code, paragraph 2.2.1.6.2 (General requirements for lifejackets), resolution MSC.81(70), paragraphs 2.8.2.1 and 2.8.7 and consequential amendments to MSC.1/Circ.1628.
2	Origin of the requirement (original proposal document)
	MSC 101/21/6 and MSC 101/INF.3 (Austria et al.)
3	Main reason for the development (extract from the proposal document)
	MSC 101/21/6 suggested that, based on technical evidence the international requirements for the design and testing of lifejackets within the LSA Code and resolution MSC.81(70) did not provide consistent assurance of the in-water performance of SOLAS lifejackets. It further argued that the output proposed would present improvements to the safety of life at sea by preventing drownings and in general enhancing the in-water performance of lifejackets to mitigate the risks associated with one or more seafarers becoming immersed in water while wearing SOLAS lifejackets.
4	Related output
	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	MSC 101, after considering documents MSC 101/21/6 and MSC 101/INF.3 (Austria et al.), had included in the post-biennial agenda of the Committee an output on "Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water

<p>performance of SOLAS lifejackets", aiming to enhance the in-water performance of lifejackets to mitigate the risks associated with seafarers becoming immersed in water, with two sessions required to complete the item, assigning the Sub-Committee as the coordinating organ (MSC 101/24, paragraph 21.6).</p> <p>SSE 8 included the matter in its agenda but had not been able to discuss the draft modifications owing to time constraint and referred the matter to the LSA Correspondence Group for further discussion.</p> <p>SSE 9 finalized the draft amendments, with a view to approval by MSC 107 and adoption by MSC 108.</p>	
6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
None	
7	Technical background
7.1	Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)
<p>The objective of this output was to promote safe shipping through adoption of the highest practicable standards of maritime safety, by ensuring a suitable in-water performance of lifejackets for the safety of seafarers.</p>	
7.2	Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)
<p>In July 2017, the United Kingdom's Marine Accident Investigation Branch reported on the deaths of three seafarers who had drowned while wearing SOLAS lifejackets. The sea and environmental conditions were calm; however, these seafarers were found by the rescue services in a face-down position. The investigatory group which investigated the accidents provided some modification proposals to the LSA Code and resolution MSC.81(70).</p>	
7.3	Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)
<p>The International Organization for Standardization produced guidance on the design and application of personal flotation devices for persons engaged in activities, whether in relation to their work or their leisure, in or near water. ISO 12402: Personal Flotation Devices provides guidance on personal flotation devices and the LSA Code already utilizes a reference to part 7 of ISO 12402 series with regard to tests of components other than buoyancy materials and tensile strength tests.</p>	
7.4	Short summary of requirement (what is the new requirement – in short and lay terms)
<p>The new requirement clarifies sufficient buoyancy and stability provisions of the SOLAS lifejackets for enhancing their in-water performance.</p>	
7.5	Points of discussions (controversial points and conclusion)
<p>Although SSE 9 completed the draft amendments to the LSA Code and associated instruments on in-water performance of lifejackets, additional testing requirements are currently being developed (see documents SSE 9/8 and SSE 9/INF.2 (Japan)) and new requirements might need to be incorporated in the future. Therefore, the Sub-Committee agreed to place the agenda item back in the post-biennial agenda of the Committee.</p>	

APPENDIX 3

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE CONVENTION AND RELATED MANDATORY INSTRUMENTS (PROPOSAL/DEVELOPMENT) FOR SINGLE FALL AND HOOK SYSTEMS

Part III – Process monitoring to be completed during the work process at the sub-committee and checked as part of the final approval process by the Committee (refer to paragraph 3.2.1.3)

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 <i>Interim guidelines for the systematic application of the grandfather clauses</i> (MSC/Circ.765-MEPC/Circ.315).	N/A
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
13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	Yes
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 SINGLE FALL AND HOOK SYSTEMS

1	Title (number and title of regulation(s))
	LSA Code, paragraphs 4.4.7.6.8 and 4.4.7.6.17 (lifeboat fittings)
2	Origin of the requirement (original proposal document)
	MSC 99/20/8 and MSC 99/20/8/Add.1 (Marshall Islands et al.)
3	Main reason for the development (extract from the proposal document)
	Lifeboats and rescue boats with single fall and hook systems face similar potential risks of accidental release during recovery operations to those with twin fall and hook systems. These systems are used and tested in a similar way to twin fall lifeboats and, therefore, should have similar safety standards.
4	Related output
	Amendments to the LSA Code concerning single fall and hook systems with on-load release capability.
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	MSC 99 considered document MSC 99/20/2 (Japan) and agreed to include in its post-biennial agenda an output on "Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ (MSC 99/22, paragraphs 20.14 to 20.18). SSE 6 included the matter in its agenda, but agreed that further consideration was necessary.

<p>SSE 7 considered draft amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability and agreed to the draft amendments, in principle (SSE 7/WP.3, annex 5).</p> <p>MSC 106 considered document MSC 106/11/1 (Bahamas et al.), identifying an unforeseen consequence of the proposed deletion of paragraph 4.4.7.6.8 pertaining to off-load hooks, and agreed that further discussion was necessary by SSE 9. Additionally, the Committee redefined the scope of the output to include other sub-paragraphs of paragraph 4.4.7.6 of the LSA Code to provide the necessary clarity for consistent application of the requirements and rename it as "Amendments to the LSA Code concerning single fall and hook systems with on-load release capability".</p> <p>SSE 9 finalized the draft amendments, with a view to approval by MSC 107 and adoption by MSC 108.</p>	
6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
None	
7	Technical background
7.1	Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)
The objective of this output was to amend the provisions for single fall lifeboat and rescue boat hooks in the LSA Code for improving crew safety while operating and testing these boats.	
7.2	Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)
As a result of the exemption provided in paragraph 4.4.7.6.17 of the LSA Code, lifeboats and rescue boats with single fall and hook systems have been installed with on-load release hooks, without the safety features specified in paragraph 4.4.7.6.8. Paragraph 4.4.7.6.17 of the LSA Code removes the requirement for single fall systems to have two release capabilities. However, it does not specify which type (off-load or on-load) of single release capability should be employed.	
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 new requirement increases safety standards of single fall and hook systems with on-load release hooks by removing the exemptions provided in paragraph 4.4.7.6.17 and by bringing in more clarity in paragraph 4.4.7.6.8 of the LSA Code.	
7.5	Points of discussions (controversial points and conclusion)
Although SSE 7 initially finalized the draft amendments, concerns about their unforeseen consequences were raised at MSC 106. The Committee then redefined its scope.	

ANNEX 5*

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

**CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION**

**Part C
Suppression of fire**

Regulation 7 – Detection and alarm

5 Protection of accommodation and service spaces and control stations

1 The existing paragraph 5.2 is amended, as follows:

"5.2 Requirements for passenger ships carrying more than 36 passengers

A fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in-service spaces, control stations and accommodation spaces, including corridors, stairways and escape routes within accommodation spaces. Smoke detectors need not be fitted in private bathrooms and galleys. Spaces having little or no fire risk such as voids, public toilets, carbon dioxide rooms and similar spaces need not be fitted with a fixed fire detection and fire alarm system. Detectors fitted in cabins, when activated, shall also be capable of emitting, or cause to be emitted, an audible alarm within the space where they are located."

2 The existing section 5.5 (Cargo ships) is amended, as follows:

"5.5 Cargo ships

(The requirements of paragraph 5.5 shall apply to ships constructed on or after 1 January 2026. Ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraph 5.5.)

Accommodation and service spaces and control stations of cargo ships shall be protected by a fixed fire detection and fire alarm system and/or an automatic sprinkler, fire detection and fire alarm system as follows depending on a protection method adopted in accordance with regulation 9.2.3.1.

5.5.1 Method IC

A fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms.

5.5.2 Method IIC

An automatic sprinkler, fire detection and fire alarm system of an approved type complying with the relevant requirements of the Fire Safety Systems Code shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces, except spaces which afford no substantial fire risk such as void

* Modifications are indicated in grey shading. The appendix to this annex is provided in English only.

spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms.

5.5.3 Method IIIC

A fixed fire detection and fire alarm system shall be so installed and arranged as to detect the presence of fire in all accommodation spaces and service spaces providing smoke detection in corridors, stairways and escape routes within accommodation spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms."

Regulation 9 – Containment of fire

6 Protection of cargo space boundaries

3 The existing paragraph 6.1 is deleted and the subsequent paragraphs are renumbered accordingly:

~~"6.1 In passenger ships carrying more than 36 passengers, the boundary bulkheads and decks of special category and ro-ro spaces shall be insulated to "A-60" class standard. However, where a category (5), (9) and (10) space, as defined in paragraph 2.2.3, is on one side of the division the standard may be reduced to "A-0". Where fuel oil tanks are below a special category space, the integrity of the deck between such spaces may be reduced to "A-0" standard."~~

Part G Special requirements

Regulation 20 – Protection of vehicle, special category and ro-ro spaces

4 The existing title of regulation 20 is amended, as follows:

"Regulation 20 Protection of vehicle, special category and ro-ro spaces, open and closed ro-ro spaces, and weather decks intended for the carriage of vehicles"

1 Purpose

5 The existing paragraph 1.1 is amended, as follows:

"1 Purpose

The purpose of this regulation is to provide additional safety measures in order to address the fire safety objectives of this chapter for ships fitted with vehicle, special category and ro-ro spaces. For this purpose, the following functional requirements shall be met:

- .1 fire protection systems shall be provided to adequately protect the ship from the fire hazards associated with vehicle, special category and ro-ro spaces, and weather deck intended for the carriage of vehicles;"

2 General requirements

2.1 Application

6 The following new paragraph 2.1.3 is added after existing paragraph 2.1.2:

"2.1.3 Ships constructed before 1 January 2026 shall also comply with regulations 20.4.1.6, 20.4.4 and 20.6.2.3, as adopted by resolution MSC.[...]."

3 Precaution against ignition of flammable vapours in closed vehicle spaces, closed ro-ro spaces and special category spaces

7 The existing paragraph 3.1.5 is amended, as follows:

"3.1.5 *Permanent openings*

In cargo ships, Ppermanent openings in the side plating, the ends or deckhead of the space shall be so situated that a fire in the cargo space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the cargo spaces."

4 Detection and alarm

8 The following new paragraph is added under the existing title of section 4 (Detection and alarm):

"Ships constructed before 1 January 2026 shall comply with the requirements of paragraph 4.1.6 not later than the first survey after 1 January 2028."

4.1 Fixed fire detection and fire alarm systems

9 The existing section 4.1 (Fixed fire detection and fire alarm systems) is amended, as follows:

"4.1 Fixed fire detection and fire alarm systems

~~Except as provided in paragraph 4.3.1, there shall be provided a fixed fire detection and fire alarm system complying with the requirements of the Fire Safety Systems Code. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. The type of detectors and their spacing and location shall be to the satisfaction of the Administration taking into account the effects of ventilation and other relevant factors. After being installed the system shall be tested under normal ventilation conditions and shall give an overall response time to the satisfaction of the Administration.~~

The requirements of paragraph 4.1.1 to 4.1.4 shall apply to passenger ships constructed on or after 1 January 2026. Ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraph 4.1.

4.1.1 In passenger ships, an individually identifiable fixed fire detection and fire alarm system shall be provided in vehicle, special category and ro-ro spaces. The system shall comply with the requirements of the Fire Safety Systems Code.

4.1.1.1 The fixed fire detection and fire alarm system shall provide smoke and heat detection throughout vehicle, special category and ro-ro spaces. The Administration may accept linear heat detectors as the required system for heat detection. The system shall be capable of rapidly detecting the onset of fire. The location of detectors shall be to the satisfaction of the Administration, taking into account the effects of ventilation and other relevant factors. After being installed, the system shall be tested under normal ventilation conditions and shall give an overall response time to the satisfaction of the Administration.

4.1.2 In passenger ships, if a fixed water-based deluge system is used for vehicle, special category and ro-ro spaces, then a fire detection and fire alarm system identifiable to the same sections of the deluge system shall be arranged.

4.1.3 In passenger ships, the fire detection and fire alarm system shall be designed with a system interface which provides logical and unambiguous presentation of the information, to allow quick and correct understanding and decision-making. In particular, the alarm system section numbering shall coincide with the sections of other systems, such as a fixed water-based fire-extinguishing system or video monitoring system, if available.

4.1.4 In passenger ships, a fixed fire detection and fire alarm system shall be provided for the area on the weather deck intended for the carriage of vehicles. The fixed fire detection system shall be capable of rapidly detecting the onset of fire anywhere on the area. The type of detectors and their spacing and location shall be to the satisfaction of the Administration, taking into account the effects of weather conditions, cargo obstruction and other relevant factors. Different settings may be used for specific operation sequences, such as during loading or unloading and during voyage, in order to reduce false alarms.

4.1.5 In cargo ships, there shall be provided a fixed fire detection and fire alarm system complying with the requirements of the Fire Safety Systems Code. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. The type of detectors and their spacing and location shall be to the satisfaction of the Administration, taking into account the effects of ventilation and other relevant factors. After being installed, the system shall be tested under normal ventilation conditions and shall give an overall response time to the satisfaction of the Administration.

4.1.6 For passenger ships built before 1 January 2026, a fixed fire detection and fire alarm system complying with the requirements of the Fire Safety Systems Code shall be provided in special category spaces, open and closed ro-ro and vehicle spaces. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. On passenger ships, the fixed fire detection and fire alarm system shall provide smoke and heat detection throughout vehicle, special category and ro-ro spaces. In this context, heat detectors shall comply with the spacing and coverage area requirements as applicable for smoke detectors. Heat detectors are only required where there is already a smoke detector."

4.3 Special category spaces

10 The existing paragraph 4.3.1 is amended, as follows:

"4.3.1 An efficient fire patrol system shall be maintained in special category spaces. ~~If an efficient fire patrol system is maintained by a continuous fire watch at all times during the voyage, a fixed fire detection and fire alarm system is not required.~~"

- 11 The following new section 4.4 is added after existing section 4.3 (Special category spaces):

4.4 Video monitoring

The requirements of paragraphs 4.4.1 and 4.4.2 apply to ships constructed on or after 1 January 2026. Passenger ships with vehicle, special category or ro-ro spaces constructed before 1 January 2026 shall comply with the requirements of paragraphs 4.4.1 and 4.4.2 not later than the first survey after 1 January 2028.

4.4.1 For passenger ships, an effective video monitoring system shall be arranged in vehicle, special category and ro-ro spaces for continuous monitoring of these spaces. The system shall be provided with immediate playback capability to allow for quick identification of fire location, as far as practicable. Cameras shall be installed to cover the whole space, high enough to see over cargo and vehicles after loading.

4.4.2 The videos recorded by this monitoring system shall be available for replay at a continuously manned control station or at the safety centre for at least seven days for installation on ro-ro passenger ships constructed on or after 1 January 2026 and 24 hours for existing ro-ro passenger ships constructed before 1 January 2026 and the correspondence between any one video camera and the section of the fixed water-based fire-extinguishing system it is covering shall be clearly displayed close to the video monitor. Continuous monitoring of the video image by the crew is not required."

5 Structural fire protection

- 12 The existing section 5 (Structural fire protection) is amended, as follows, together with the associated footnotes:

5 Structural fire protection and arrangement of openings

~~"Notwithstanding the provisions of regulation 9.2.2, in passenger ships carrying more than 36 passengers, the boundary bulkheads and decks of special category spaces and ro-ro spaces shall be insulated to "A-60" class standard. However, where a category (5), (9) or (10) space, as defined in regulation 9.2.2.3, is on one side of the division, the standard may be reduced to "A-0". Where fuel oil tanks are below a special category space or a ro-ro space, the integrity of the deck between such spaces may be reduced to "A-0" standard.~~

This paragraph applies to passenger ships constructed on or after 1 January 2026. Ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraphs 3 and 5 of this regulation.

5.1 Structural fire protection

5.1.1 In passenger ships carrying more than 36 passengers, the boundary bulkheads and decks of special category and ro-ro spaces shall be insulated to "A-60" class standard. However, where a category (5), (9) and (10) space, as defined in regulation 9.2.2.3, is on one side of the division, the standard may be reduced to "A-0". Where fuel oil tanks are below a special category space, the integrity of the deck between such spaces may be reduced to "A-0" standard.

5.1.2 Where a special category space or ro-ro space is subdivided with internal decks, the fire rating of these decks shall be determined based on the capacity and arrangement of the fixed water-based fire-extinguishing system. If the fixed water-based fire-extinguishing system cannot simultaneously cover the applicable area above and below a given deck, this deck shall be of "A-30" standard while any ramps and doors between decks shall be made of steel and of a design being as tight as practical.

5.2 Arrangement of openings in ro-ro spaces and special category spaces

5.2.1 Openings in the side plating, the ends or deckhead of the ro-ro space shall be situated and arranged so that a fire in the ro-ro space does not endanger:

- .1 stowage areas for survival craft;
- .2 embarkation stations and assembly stations, including access to such stations; and
- .3 accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses above the ro-ro space.

Openings are not permitted for all decks directly below these objects and within a safety distance of minimum 6.0 m measured horizontally.

5.2.2 This requirement does not apply to openings fitted with closing arrangements, such as ramps and doors. Ramps and doors shall be of steel for all decks directly below accommodation spaces, control stations and normally occupied service spaces, and minimum "A-0" for all decks directly below survival craft, embarkation stations and assembly stations.

5.2.3 Openings are, however, accepted in ro-ro spaces below accommodation spaces, control stations and normally occupied service spaces, when the fire integrity of the ship's side, including windows and doors, is "A-60" on boundaries in a rectangular area measured 6.0 m horizontally forward and aft of the openings and vertically minimum two deck levels above the deck level with the opening. "A-0" windows protected by a water-based system with an application rate of at least 5.0 L/min per square metre may be accepted as equivalent to "A-60" windows. Ventilation inlets shall be designed to minimize the risk of contamination.*

* Refer to regulations II-2/5.2, II-2/8.2, II-2/9.7.1.5 and II-2/20.3.1.4.

5.2.4 Openings for mechanical ventilation of ro-ro and special category spaces are permitted below accommodation spaces, service spaces and control stations in superstructures, if the opening is protected by a closing device, with a closing arrangement not likely to be cut off in case of a fire in the ro-ro spaces, capable of being closed from a readily accessible position. The closing device shall be made of steel or other fire-resistant material. Such openings are not permitted below survival craft, the emergency generator and air intakes for the engine-room(s).

5.2.5 Notwithstanding the above, air intakes serving machinery used for the ship's main propulsion, power generation and emergency power generation shall be in a position minimizing the risk of being contaminated by a fire in the ro-ro space or special category space.

5.3 Arrangement of weather decks intended for the carriage of vehicles

5.3.1 Appropriate arrangements shall be made so that a fully developed fire on weather decks intended for the carriage of vehicles does not endanger:

- .1 stowage areas for survival craft;
- .2 embarkation stations and assembly stations including access to these; and
- .3 accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses adjacent to the weather deck.

5.3.2 Appropriate arrangements shall be made providing a safety distance, measured horizontally, from the designated vehicle lanes of more than 6.0 m to accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses adjacent to the weather deck.

5.3.3 The safety distance can be reduced to 3.0 m when boundaries, including windows and doors, within 6.0 m are of "A-60" integrity. Alternatively, "A-0" boundaries protected by a water-based system with an application rate of at least 5.0 L/min per square metre may be accepted as equivalent.

5.3.4 Survival craft and embarkation stations, including access to these, shall be protected with a safety distance of more than 12.0 m. Safety distances shall be measured horizontally.

5.3.5 Notwithstanding the above, air intakes serving machinery used for the ship's main propulsion, power generation and emergency power generation shall be in a position minimizing the risk of being contaminated by a fire on the weather deck intended for carriage of vehicles.

6 Fire extinction

6.1 Fixed fire-extinguishing systems

13 The existing explanatory paragraph under the title of section 6.1 (Fixed fire-extinguishing systems) is amended, as follows:

"(The requirements of paragraphs 6.1.1 and 6.1.2 shall apply to ships constructed on or after 1 July 2014. Ships constructed before 1 July 2014 shall comply with the previously applicable requirements of paragraphs 6.1.1 and 6.1.2. The requirements of paragraph 6.2 shall apply to ro-ro passenger ships constructed on or after 1 January 2026. Passenger ships with vehicle, special category or ro-ro spaces constructed before 1 January 2026 shall comply with the requirements of paragraph 6.2.3 not later than the first survey after 1 January 2028.)"

14 The following new section 6.2 is inserted after existing section 6.1 and the subsequent paragraph is renumbered accordingly:

"6.2 Fixed water-based fire-extinguishing on weather decks intended for carriage of vehicles

6.2.1 In passenger ships, a fixed water-based fire-extinguishing system based on monitor(s) shall be installed in order to cover weather decks intended for the carriage of vehicles. The monitor(s) shall comply with the provisions of the Fire Safety Systems Code.

6.2.2 In passenger ships, drainage shall be provided where a fixed water-based fire-extinguishing system is installed to cover weather decks intended for carriage of vehicles. The system shall be sized to remove no less than 125% of the combined capacity of both the monitor(s) and the required number of fire hose nozzles.

6.2.3 For passenger ships built before 1 January 2026, a fixed water-based fire-extinguishing system based on monitor(s) shall be installed in order to protect areas on weather decks intended for the carriage of vehicles. Monitors shall be located in positions which ensure unobstructed protection of vehicles in the area on the weather deck intended for carriage for vehicles, as far as practicable. Operation of monitors shall be ensured by safe access ways or remote control not to be impaired by a fire in the area protected by that monitor. Capacity of each monitor shall be at least 1,250 L/min. The Administration may permit lower flow rates when the required rate is not practical given the size and arrangement of the ship. The Administration may also permit alternative arrangements for ships that have already installed a fixed water-based fire-extinguishing system based on monitor(s) prior to 1 January 2026."

15 The following new section 7 is added after existing section 6 (Fire extinction) with the associated footnotes:

"7 Decision-making

In passenger ships, vehicle, special category and ro-ro spaces, where fixed pressure water-spraying systems are fitted, shall be provided with suitable signage and marking on deckhead and bulkhead and on the vertical boundaries allowing easy identification of the sections of the fixed fire-extinguishing system. Suitable signage and markings shall be adapted to typical patterns of crew movement taking into consideration obstruction by cargo or fixed installations. Section number signs shall be of photoluminescent material.* The section numbering indicated inside the space shall be same as section valve identification and section identification at the safety centre or continuously manned control station.

* Refer to chapter 11 of the FSS Code for the evaluation and testing of photoluminescent material.

Regulation 23 – Safety centre on passenger ships

6 Control and monitoring of safety systems

16 The existing paragraph 6.10 is amended, as follows:

"Notwithstanding the requirements set out elsewhere in the Convention, the full functionality (operation, control, monitoring or any combination thereof, as required) of the safety systems listed below shall be available from the safety centre:

.10 fire detection and fire alarm system;"

APPENDIX 1

**CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE 1974 SOLAS
CONVENTION AND RELATED MANDATORY INSTRUMENTS
FOR AMENDMENTS TO BOTH SOLAS AND THE FSS CODE ON
RO-RO PASSENGER SHIP FIRE SAFETY**

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 <i>Interim guidelines for the systematic application of the grandfather clauses</i> (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).	N/A
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

13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	YES
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 BOTH SOLAS AND THE FSS CODE ON RO-RO PASSENGER SHIP FIRE SAFETY

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))
	SOLAS regulations II-2/7.5 (Detection and alarm), 9.6 (Containment of fire), 20 (Protection of vehicle, special category and ro-ro spaces) and 23.6 (Safety centre on passenger ships)
2	Origin of the requirement (original proposal document)
	MSC 97/19/3 (Austria et al.) and MSC 97/19/13 (Japan)
3	Main reason for the development (extract from the proposal document)
	Well-reported ro-ro passenger ships casualties have already demonstrated the vulnerability of ro-ro ships to fires on their vehicle decks. The severity of such fires, and therefore the ability to manage fire situations, has been highlighted and is of paramount importance for consideration by IMO.
4	Related output
	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (7.33)
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	MSC 97 agreed to include in the 2016-2017 biennial agenda of the SSE Sub-Committee and the provisional agenda for SSE 4 an output on "Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships," with a target completion year of 2019 in association with the SDC and HTW Sub-Committees as and when requested by the SSE Sub-Committee.
	SSE 4 , having considered the report of the Working Group (SSE 4/WP.5), endorsed the draft scope of work for and draft work plan on the review of SOLAS chapter II-2 and associated codes regarding ro-ro spaces and special category spaces of new and existing ro-ro passenger ships.

SSE 5 established the Correspondence Group to develop draft interim guidelines for minimizing the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships, and draft amendments to the 1974 SOLAS Convention and associated codes, taking into account their application to existing ships (SSE 5/17, paragraph 7.21).

SSE 6:

- .1 finalized the draft interim guidelines for minimizing the incidence and consequences of fires in ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (SSE 6/18, paragraph 6.19).
- .2 invited MSC 101 to consider establishing the FSA EG to review the FIRESAFE I and II studies and to instruct SSE 7 to consider the FSA EG report, and advise the Committee on how best to proceed (SSE 6/18, paragraph 6.12)

MSC 101 agreed to establish the FSA Experts Group to review the FIRESAFE I and II studies and that the Group would report its findings directly to SSE 7, with the terms of reference set out in paragraph 17.8 of document MSC 101/24 (MSC 101/24, paragraphs 17.3 and 17.4).

SSE 7:

- .1 prepared the draft amendments to 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.1), with a view to approval by MSC 102 (SSE 7/21, annex 2); and
- .2 re-established the Correspondence Group on Fire Protection (FP) to progress the work on drafting amendments to relevant IMO instruments regarding fire safety on new and existing ro-ro passenger ships

SSE 8:

- .1 further developed the draft amendments to SOLAS chapter II-2 and the FSS Code for new and existing ro-ro passenger ships;
- .2 discussed principal fire protection measures, such as fixed water-based fire-extinguishing system protecting weather decks, openings in ro-ro spaces provided with closing devices, video recording for existing ships, and safety distance from accommodation and openings of ro-ro spaces and weather ro-ro deck;
- .3 agreed that the implementation date for the draft amendments should be 1 January 2026 for new ships and 1 January 2028 for existing ships, provided that the amendments were adopted before 1 July 2024; and
- .4 re-established the Correspondence Group on Fire Protection to further progress the work intersessionally, with the terms of reference set out in paragraph 6.26 of document SSE 8/20.

SSE 9 finalized the draft amendments to SOLAS chapter II-2 for approval by MSC 107 and adoption by MSC 108.

6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
Not applicable	
7	Technical background
7.1	<i>Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)</i>
The draft amendments will present significant benefits to the safety of life at sea by enhancing the standards of safety of ro-ro vessels.	
7.2	<i>Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)</i>
Not applicable	
7.3	<i>Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)</i>
Not applicable	
7.4	<i>Short summary of requirement (what is the new requirement – in short and lay terms)</i>
The draft amendments to SOLAS chapter II-2 for new ro-ro passenger ships are expected to enter into force on 1 January 2026 and those for existing ro-ro passenger ships are expected to enter into force on 1 January 2028 if the amendments are adopted before 1 July 2024.	
7.5	<i>Points of discussions (controversial points and conclusion)</i>
Not applicable	

APPENDIX 2

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE 1974 SOLAS CONVENTION AND RELATED MANDATORY INSTRUMENTS ON FIRE SAFETY OF CONTROL STATIONS AND CARGO CONTROL ROOMS

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 <i>Interim guidelines for the systematic application of the grandfather clauses</i> (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.	N/A
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

13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	YES
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 ON FIRE SAFETY FOR CONTROL STATIONS AND CARGO CONTROL ROOMS

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))
	SOLAS regulation II-2/7.5 (Detection and alarm)
2	Origin of the requirement (original proposal document)
	MSC 101/21/3 (Belgium et al.)
3	Main reason for the development (extract from the proposal document)
	MSC.1/Circ.1456, annex 1, paragraph 2 states that control stations on cargo ships do not need to be covered by a fixed fire detection and fire alarm system. The co-sponsors are of the opinion that the safety of the ship could be impaired by the absence of such a system. During a ship's stay in port this could lead to a fire in a wheelhouse remaining undetected and as a result getting out of control. Furthermore some modern tankers have a combined engine/cargo control room which is unmanned and therefore unprotected at sea.
4	Related output
	Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships (7.40)
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	MSC 101 agreed to include in the post-biennial agenda of the Committee an output on "Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ. (MSC 101/24, paragraph 21.3)
	SSE 8 , having considered the report of the Working Group (SSE 8/WP.4), noted that:
.1	it supported, in general, requiring fire detection for control stations but could not agree if this was necessary for CO ₂ rooms and similar spaces; and

.2	it had not been able to discuss how to handle service spaces owing to time constraints and, therefore, recommended that this matter be further considered by the FP Correspondence Group.
SSE 9 finalized the draft amendments to SOLAS chapter II-2 for approval by MSC 107 and adoption by MSC 108.	
6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
Not applicable	
7	Technical background
7.1	<i>Scope and objective (to cross-check with items 4 and 5 in part II of the checklist)</i>
The draft amendments will allow for quick response to any fire or smoke related incidents in control stations and hence significantly reduce the consequences of any such incidents.	
7.2	<i>Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)</i>
Not applicable	
7.3	<i>Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)</i>
Not applicable	
7.4	<i>Short summary of requirement (what is the new requirement – in short and lay terms)</i>
The draft amendments will enhance fire protection level by extending fire detection requirements to control stations and remote service spaces on cargo ships.	
7.5	<i>Points of discussions (controversial points and conclusion)</i>
Not applicable	

ANNEX 6

DRAFT AMENDMENTS TO THE FSS CODE

CHAPTER 7

Fixed pressure water-spraying and water mist fire-extinguishing systems

2 Engineering specifications

1 The following new section 2.5 is added after existing section 2.4 (Fixed water-based fire-fighting systems for ro-ro spaces, vehicle spaces and special category spaces):

2.5 Fixed water-based fire-extinguishing on ro-ro passenger ships' weather decks intended for the carriage of vehicles

This chapter details the specification of fixed water-based fire-extinguishing on ro-ro passenger ships having weather decks intended for the carriage of vehicles as required by chapter II-2 of the Convention. The requirements of this chapter shall apply to ro-ro passenger ships constructed on or after 1 January 2026.

2.5.1 The protected area shall be the entire length and width of the weather deck intended for the carriage of vehicles. The fixed monitor(s) shall be capable of delivering water to:

- .1 the area of weather decks intended for carriage of vehicles; and
- .2 the area, including superstructure boundaries located up to 8.0 m, measured horizontally, from the area intended for vehicle storage, or the next vertical boundaries, whichever is less.

2.5.2 The combined capacity of all fixed monitors shall be minimum 2.0 L/min per square metre of the protected area, but in no case shall the output of any monitor be less than 1,250 L/min. Even distribution of water shall be ensured.

2.5.3 The distance from the monitor to the farthest extremity of the protected area forward of that monitor shall not be more than 75% of the monitor throw in still air conditions.

2.5.4 Each monitor shall be located outside the area which it protects, in a safe position, with access not likely to be cut off in case of fire.

Monitors shall be installed in positions which allow for unobstructed water coverage with vehicles stowed to maximum capacity of the weather deck. However, areas that cannot be covered by water monitors shall be protected by water nozzles. Nozzles shall be designed and installed taking into account weather conditions and provide 5.0 L/min per square metre for the area they cover and have release controls in a position being accessible in case of a fire.

2.5.5 The system shall be available for immediate use and capable of continuously supplying water. The water supply shall be capable of simultaneously supplying water at the required rate for the entire width of the weather deck intended for carriage of vehicles and a length of 40 m, or the entire length of the weather deck if this is less than 40 m. In no case shall the supply capacity be less than that required for the largest monitor.

2.5.6 The system may be supplied by the fire main, the pump(s) serving other fixed water-based fire-fighting systems or a dedicated pump providing a continuous supply of seawater.

Where the ship's fire pumps are used to feed the monitor(s):

- .1 it shall be possible to segregate the ship's fire main from the monitor(s) by means of a valve in order to operate both systems separately or simultaneously; and
- .2 the capacity of the pumps shall be sufficient to serve both systems simultaneously, including two jets of water at the required pressure from the fire main system. In case the weather deck shall also carry dangerous goods, capacity for four jets of water at the required pressure shall be provided.

Where another fixed water-based fire-fighting system is used to feed the monitor(s):

- .3 it shall be possible to segregate the other fixed water-based fire-fighting system from the monitor(s) by means of a valve in order to operate both systems separately or simultaneously; and
- .4 the capacity of the pump(s) shall, in case of open ro-ro spaces, be sufficient to serve both systems simultaneously, minimum two sections of the fixed water-based fire-fighting system being close to the openings facing weather deck and one monitor serving the weather deck. For closed ro-ro spaces and special category spaces, simultaneous operation is not required."

CHAPTER 9

Fixed fire detection and fire alarm systems

1 Application

2 The existing paragraph 1.1 is amended, as follows:

"1.1 This chapter details the specification of fixed fire detection and fire alarm systems as required by chapter II-2 of the Convention. Unless expressly provided otherwise, the requirements of this chapter shall apply to ships constructed on or after 1 July 2012. The requirements of 2.3.1.5 and 2.4.2.2 of this chapter shall apply to ships constructed on or after 1 January 2026."

2 Engineering specifications

2.3 Component requirements

3 The existing paragraphs 2.3.1.3 and 2.3.1.4 are amended to read as follows:

"2.3.1.3 Heat detectors and linear heat detectors shall be certified to operate before the temperature exceeds 78°C but not until the temperature exceeds 54°C, when the temperature is raised to those limits at a rate less than 1°C per min, when tested according to standards EN 54:2001 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration. At higher rates of temperature rise, the heat detector and linear heat detector shall operate within temperature limits to the satisfaction of the Administration having regard to the avoidance of detector insensitivity or oversensitivity.

2.3.1.4 The operation temperature of heat detectors and linear heat detectors in drying rooms and similar spaces of a normal high ambient temperature may be up to 130°C, and up to 140°C in saunas."

4 The following new paragraph 2.3.1.5 is inserted after the existing paragraph 2.3.1.4 and subsequent paragraphs are renumbered accordingly:

"2.3.1.5 Linear heat detectors shall be tested according to standards EN 54-22:2015 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration."

2.4 Installation requirements

2.4.2 Positioning of detectors

5 The existing paragraph 2.4.2.2 and table 9.1 (Spacing of detectors) therein are amended, as follows:

"2.4.2.2 The maximum spacing of detectors shall be in accordance with the table below:

Table 9.1 – Spacing of detectors

Type of detector	Maximum floor area per detector (m ²)	Maximum distance apart between centres (m)	Maximum distance away from bulkheads (m)
Heat	37	9	4.5
Smoke	74	11	5.5
Combined smoke and heat	74	9	4.5

2.4.2.2.1 The Administration may require or permit other spacing based upon test data which demonstrate the characteristics of the detectors. Detectors located below movable ro-ro decks shall be in accordance with the above.

2.4.2.2.2 The distance between two sensor cables of the linear heat detection system shall not be more than 9.0 m, while the distance between such cables and bulkheads shall not be more than 4.5 m."

2.5 System control requirements

2.5.1 Visual and audible fire signals

6 The following new paragraphs 2.5.1.2, 2.5.1.3 and 2.5.1.4 are inserted after existing paragraph 2.5.1.1 and the subsequent paragraphs are renumbered accordingly:

2.5.1.2 On ro-ro passenger ships constructed on or after 1 January 2026, alarm notifications shall follow a consistent alarm presentation scheme (wording, vocabulary, colour and position). Alarms shall be immediately recognizable on the navigation bridge and shall not be compromised by noise or poor placing.

2.5.1.3 On ro-ro passenger ships constructed on or after 1 January 2026, the interface shall provide alarm addressability, allow the crew to identify the alarm history, the most recent alarm and the means to suppress alarms while ensuring the alarms with ongoing trigger conditions are still clearly visible.

2.5.1.4 On ro-ro passenger ships constructed on or after 1 January 2026, the smoke detector function in special category and ro-ro spaces may be disconnected during loading and unloading of vehicles. The time of disconnection shall be adapted to the time of loading/unloading and be automatically reset after this predetermined time. The central unit shall indicate whether the detector sections are disconnected or not. Disconnection of the heat detection function or manual call points shall not be permitted."

ANNEX 7*

DRAFT MSC CIRCULAR

REVISED GUIDELINES FOR THE DESIGN AND APPROVAL OF FIXED WATER-BASED FIRE-FIGHTING SYSTEMS FOR RO-RO SPACES AND SPECIAL CATEGORY SPACES

1 The Maritime Safety Committee, at its eighty-fourth session (7 to 16 May 2008), approved the *Guidelines for the approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces equivalent to that referred to in resolution A.123(V)* (MSC.1/Circ.1272).

2 The Maritime Safety Committee, at its ninetieth session (16 to 25 May 2012), having considered a proposal by the Sub-Committee on Fire Protection, at its fifty-fifth session, with a view to updating and integrating the prescriptive requirements of the *Recommendation on fixed fire-extinguishing systems for special category spaces* (resolution A.123(V)) and the performance-based requirements of the *Guidelines for the approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces equivalent to that referred to in resolution A.123(V)* (MSC.1/Circ.1272), approved 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).

3 The Committee noted that MSC.1/Circ.1430 superseded MSC.1/Circ.1272, except that fire and component tests previously conducted in accordance with MSC.1/Circ.1272, remained valid for the approval of new systems.

4 The Maritime Safety Committee, at its 100th session (3 to 7 December 2018), approved draft amendments to the aforementioned Revised Guidelines (MSC.1/Circ.1430), as prepared by the Sub-Committee on Ship Systems and Equipment at its fifth session, for circulation of the amended Revised Guidelines as MSC.1/Circ.1430/Rev.1.

5 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved draft amendments to the titles of tables 4-2 and 4-3 of the aforementioned Revised Guidelines (MSC.1/Circ.1430/Rev.1), as prepared by the Sub-Committee on Ship Systems and Equipment, at its seventh session, for circulation of the amended Revised Guidelines as MSC.1/Circ.1430/Rev.2, as set out in the annex.

6 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], approved draft amendments to the aforementioned Revised Guidelines (MSC.1/Circ.1430/Rev.2) in relation to the use of the term "free height", as prepared by the Sub-Committee on Ship Systems and Equipment, at its ninth session, for circulation of the amended Revised Guidelines as MSC.1/Circ.1430/Rev.3, as set out in the annex.

76 Member Governments are invited to apply the annexed Revised Guidelines when approving fixed water-based fire-fighting systems for ro-ro spaces and special category spaces installed on or after ~~1 January 2024~~ 1 January 2024 and bring them to the attention of ship designers, shipowners, equipment manufacturers, test laboratories and other parties concerned.

* Modifications are indicated in grey shading. The full text of the revised circular will be issued following the approval by the Committee, as appropriate, with a view to dissemination as MSC.1/Circ.1430/Rev.3.

87 This circular supersedes MSC.1/Circ.1430/Rev.2 MSC.1/Circ.1272, MSC.1/Circ.1430 and MSC.1/Circ.1430/Rev.1, except that fire and component tests previously conducted in accordance with MSC.1/Circ.1272 or MSC.1/Circ.1430 or MSC.1/Circ.1430/Rev.1 remain valid for the approval of new systems. Existing fixed fire-extinguishing systems for special category spaces approved and installed based on resolution A.123(V), MSC.1/Circ.1272, MSC.1/Circ.1430, and MSC.1/Circ.1430/Rev.1 and MSC.1/Circ.1430/Rev.2 installed before 1 January 2024 should be permitted to remain in service as long as they are serviceable.

ANNEX

**REVISED GUIDELINES FOR THE DESIGN AND APPROVAL OF FIXED WATER-BASED
FIRE-FIGHTING SYSTEMS FOR RO-RO SPACES AND SPECIAL CATEGORY SPACES**

1 In the annex, the following new paragraph 2.19 is added after existing paragraph 2.18:

"2.19 *Height of the protected space* is the distance between the lower deck plate and upper deck plate within a protected space."

2 In the annex, The titles of tables 4-1 to 4-3 are amended to read, respectively, as follows:

"Table 4-1 Minimum required water discharge density and area of coverage for decks having a **free** height equal to or less than 2.5 m"

"Table 4-2 Minimum required water discharge density and area of coverage for decks having a **free** height in excess of 2.5 m but equal to or less than 6.5 m"

"Table 4-3 Minimum required water discharge density and area of coverage for decks having a **free** height in excess of 6.5 m but less than 10.0 m"

3 In the annex, the existing paragraph 4.3 is amended to read as follows:

"4.3 Automatic sprinklers or nozzles intended for decks with a **free** height equal to or less than 2.5 m should have a nominal operating temperature range between 57°C and 79°C and standard response characteristics. If required by ambient conditions, higher temperature ratings may be acceptable."

4 In the annex, the existing paragraph 4.4 is amended to read as follows:

"4.4 Automatic sprinklers or nozzles intended for decks with a **free** height in excess of 2.5 m and hoistable decks that can be raised above 2.5 m should have a nominal operating temperature range between 121°C and 149°C and standard response characteristics."

ANNEX 8*
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 ~~has since~~ adopted ~~seven~~ several amendments to the LSA Code and ~~eight~~ amendments to resolution MSC.81(70). These amendments ~~have been~~ were incorporated in the original forms which, owing to their volume, ~~are now~~ 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. The text of the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* 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 supersedes ~~MSC/Circ.980~~ MSC.1/Circ.1628.

* 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.1628/Rev.1.

ANNEX

**REVISED STANDARDIZED LIFE-SAVING APPLIANCE
EVALUATION AND TEST REPORT FORMS
(PERSONAL LIFE-SAVING APPLIANCES)**

- 1 Replace "non-isolated" by "non-insulated" in the header of test forms 2.3.1.1, 2.3.1.2, 2.3.1.3, 2.3.1.4, 2.3.1.5, 2.3.1.6, 2.3.1.8, 2.3.1.9, 2.3.1.10, 2.3.1.12, 2.3.1.14, 2.3.1.16, 2.3.1.17, 2.3.1.18, 2.3.1.19, 2.3.1.20, 2.3.1.21, 2.3.1.22, 2.3.1.25 and 2.1.3.26.
- 2 Existing table 2.3.1.24 is modified, as follows:

2.3.1.24 Thermal protective test (General)	Regulations: LSA Code II/2.3.2.1; MSC.81(70) 1/3.2.1 – 3.2.4	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>The thermal protective qualities may be measured using a thermal manikin, when such a method is required by an Administration and has been demonstrated to provide test results which correlate satisfactorily in all aspects to test results using human subjects.</p> <p>If human subjects are used, they should be medically examined before being accepted for the tests. Each design of immersion suit is to be tested by test subjects specified in 2.3.1.5.</p> <p>Where human subjects are used, the tests should always be conducted under the supervision of physician. Emergency resuscitation equipment should be available during all tests. For safety reasons, ECG should be monitored during every test. Testing should be stopped at the wish of the test subjects, or if the skin temperature of hand, foot or lumbar region should fall below 10°C for more than 15 minutes, or if the attending physician considers it advisable.</p>		<p>Comments/Observations</p>

2.3.1.24 Thermal protective test (General)	Regulations: LSA Code II/2.3.2.1; MSC.81(70) 1/3.2.1 – 3.2.4	
Test Procedure	Acceptance Criteria	Significant Test Data
When testing with human subjects, continuous body core temperature (rectal temperature) and skin temperature of lumbar region, both hands, calves, foot (foot instep) and heels, should be measured. The accuracy of the measuring system should be $\pm 0.2^{\circ}\text{C}$. Appropriate corresponding measurements should be taken if a manikin is used in lieu of human subjects.		

3 Existing table 2.3.2.24 is modified, as follows:

2.3.2.24 Thermal protective test (General)	Regulations: LSA Code II/2.3.2.2; MSC.81(70) 1/3.2.1 – 3.2.5	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>The thermal protective qualities may be measured using a thermal manikin, when such a method is required by an Administration and has been demonstrated to provide test results which correlate satisfactorily in all aspects to test results using human subjects.</p> <p>If human subjects are used, they should be medically examined before being accepted for the tests. Each design of immersion suit is to be tested by test subjects specified in 2.3.2.5.</p> <p>Where human subjects are used, the tests should always be conducted under the supervision of physician. Emergency resuscitation equipment should be available during all tests. For safety reasons, ECG should be monitored during every test. Testing should be stopped at the wish of the test subjects, if the falling rate of the core temperature is more</p>		Comments/Observations

2.3.2.24 Thermal protective test (General)		Regulations: LSA Code II/2.3.2.2; MSC.81(70) 1/3.2.1 – 3.2.5	
Test Procedure		Acceptance Criteria	Significant Test Data
<p>than 1.5°C per hour after the first half hour, if the skin temperature of the hand, foot or lumbar region should fall below 10°C for more than 15 minutes, or if the attending physician considers it advisable.</p> <p>When testing with human subjects, continuous body core temperature (rectal temperature) and skin temperature of lumbar region, both hands, calves, foot (foot instep) and heels, should be measured. The accuracy of the measuring system should be ±0.2°C. Appropriate corresponding measurements should be taken if a manikin is used in lieu of human subjects.</p>			

4 Existing table 2.4.24 is modified, as follows:

2.4.24 Thermal protective test (General)		Regulations: LSA Code II/2.4.2; MSC.81(70) 1/3.2.1 – 3.2.5	
Test Procedure		Acceptance Criteria	Significant Test Data
<p>The thermal protective qualities may be measured using a thermal manikin, when such a method is required by an Administration and has been demonstrated to provide test results which correlate satisfactorily in all aspects to test results using human subjects.</p> <p>If human subjects are used, they should be medically examined before being accepted for the tests. Each design of immersion suit is to be tested by test subjects specified in 2.4.5.</p> <p>Where human subjects are used, the tests should always</p>			Comments/Observations

2.4.24 Thermal protective test (General)	Regulations: LSA Code II/2.4.2; MSC.81(70) 1/3.2.1 – 3.2.5	
Test Procedure	Acceptance Criteria	Significant Test Data
<p>be conducted under the supervision of physician. Emergency resuscitation equipment should be available during all tests. For safety reasons, ECG should be monitored during every test. Testing should be stopped at the wish of the test subjects, if the falling rate of the core temperature is more than 1.5°C per hour after the first half hour. or if the skin temperature of hand, foot or lumbar region should fall below 10°C for more than 15 minutes, or if the attending physician considers it advisable.</p> <p>When testing with human subjects, continuous body core temperature (rectal temperature) and skin temperature of lumbar region, both hands, calves, foot (foot instep) and heels, should be measured. The accuracy of the measuring system should be +/- 0.2°C. Appropriate corresponding measurements should be taken if a manikin is used in lieu of human subjects.</p> <p>Prior to tests, the same amount of water resulting from the jump test in paragraph 2.4.15 should be poured into the dry suit worn over the dry test clothing specified in 2.4.7 by the test subject lying down.</p>		

ANNEX 9*

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 (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. The amendments are planned for adoption at MSC 108.

ANNEX

**AMENDMENTS TO THE REVISED RECOMMENDATION ON
TESTING OF LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))**

PART 1 - PROTOTYPE TEST FOR LIFE-SAVING APPLIANCES

2.8 Water performance tests

Test subjects

- 1 Add the following new paragraph 2.8.2.1 after existing paragraph 2.8.2:

"2.8.2.1 If a "no turn" is recorded for a test subject wearing the RTD during the righting tests in 2.8.5, the test subject may be replaced with one additional test subject from the same height and weight category and in accordance with 2.7.2."

Assessment

- 2 Existing paragraph 2.8.7.1 is modified, as follows:

"2.8.7 After the water tests described in 2.8.5 and .6 above:

- .1 *Turning time:* The average turn time for all subjects in the candidate lifejacket should not exceed the average time in the RTD plus 1 s, and the number of "no-turns", if any, should not exceed the number in the RTD and at the end of each righting test, each test subject should attain a face-up position where the nose and mouth are clear of the water;
- .2 *Freeboard:* The average freeboard of all the subjects should not be less than the average for the RTD minus 10 mm;
- .3 *Torso angles:* The average of all subjects' torso angles should be not less than the average for the RTD minus 10°;
- .4 *Faceplane (head) angles:* The average of all subjects' faceplane angles should be not less than the average for the RTD minus 10°; and
- .5 *Lifejacket light location:* The position of the lifejacket light should permit it to be visible over as great a segment of the upper hemisphere as is practicable."

ANNEX 10*
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 ~~has since adopted seven~~ ~~several~~ amendments to the LSA Code and ~~eight~~ ~~amendments~~ to resolution MSC.81(70). These amendments ~~have been~~ were incorporated in the original forms which, owing to their volume, ~~are now~~ 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 (*date*)], 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 (survival craft)* is set out in the annex.

6 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.

7 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.

8 This circular supersedes MSC.1/Circ.1628/Rev.1.

* Modifications are indicated in grey shading. The associated draft MSC circular is prepared subject to the draft amendments to the evaluation and test report forms are approved by MSC 107 (set out in annex 8) and dissemination as MSC.1/Circ.1628/Rev.1. 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.2.

ANNEX

**REVISED STANDARDIZED LIFE-SAVING APPLIANCE
EVALUATION AND TEST REPORT FORMS
(PERSONAL LIFE-SAVING APPLIANCES)**

1 Existing table 2.2.1.16 is modified, as follows:

2.2.1.16 Water performance tests- Preparation for water performance tests		Regulations: LSA Code II/2.2.1.2.5 & 2.2.1.3 - 2.2.1.4; MSC.81(70) 1/2.8 to 2.8.4, Annex 1, MSC.1/Circ.1470																																						
Test Procedure	Acceptance Criteria	Significant Test Data																																						
<p>This portion of the test is intended to determine the ability of the lifejacket to assist a helpless person or one in an exhausted or unconscious state and to show that the lifejacket does not unduly restrict movement.</p> <p>The in-water performance of a lifejacket is evaluated by comparison to the performance of a suitable size standard reference lifejacket, i.e. Reference Test Device (RTD) as specified in appendices 1 to 3.</p> <p>All tests should be carried out in fresh water under still conditions. Each test for a candidate lifejacket and the relevant RTD should be conducted on the same day.</p> <p>These tests should be carried out with at least 12 persons as mentioned in paragraph 2.2.1.15. Only good swimmers should be used, since the ability to relax in the water is rarely otherwise obtained.</p> <p>The test subjects should wear only swimming costumes.</p> <p>Each test subject should be made familiar with each of the tests in 2.2.1.17 and 2.2.1.18, particularly the requirements regarding relaxing and exhaling in the face-down position.</p>	<p>The RTD should be constructed and calibrated according to MSC.81(70), annex 1, and validated according to MSC.1/Circ.1470.</p>	<p>RTD Constructed by: _____ date: _____</p> <p>Validated by: _____ date: _____</p> <p>Calibrated by: _____ date: _____</p> <p>Test subjects same as in 2.2.1.15? If not, describe test subjects:</p> <table border="1"> <thead> <tr> <th>Subj</th> <th>SEX (M/F)</th> <th>HEIGHT (m)</th> <th>WEIGHT (kg)</th> <th>Good Swimmer? (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				Subj	SEX (M/F)	HEIGHT (m)	WEIGHT (kg)	Good Swimmer? (Yes/No)	1					2					3					4					5					6				
Subj	SEX (M/F)	HEIGHT (m)	WEIGHT (kg)	Good Swimmer? (Yes/No)																																				
1																																								
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2.2.1.16 Water performance tests- Preparation for water performance tests		Regulations: LSA Code II/2.2.1.2.5 & 2.2.1.3 - 2.2.1.4; MSC.81(70) 1/2.8 to 2.8.4, Annex 1, MSC.1/Circ.1470			
Test Procedure	Acceptance Criteria	Significant Test Data			
<p>The test subjects should don the lifejacket, unassisted, using only the instructions provided by the manufacturer. Prior to taking measurements, the proper fit, donning and fastening of the RTD on the subject should be checked and corrected as necessary.</p> <p>After entering the water, care should be taken to ensure that there is no significant amount of air unintentionally trapped in the lifejacket or swimming costume.</p> <p>If a "no turn" is recorded for a test subject wearing the RTD during the righting tests, the test subject may be replaced with one additional test subject from the same height and weight category.</p>		7			
		8			
		9			
		10			
		11			
		12			

2 Existing table 2.2.1.17 is modified, as follows:

2.2.1.17 Water performance tests – Righting test		Regulations: LSA Code II/ 2.2.1.6.2; MSC.81(70)1/ 2.8.5 and 2.8.7.1														
Test Procedure	Acceptance Criteria	Significant Test Data														
		Subj	CANDIDATE DEVICE TIME (sec) TRIAL						REFERENCE VEST TIME (sec) TRIAL							
			#1	#2	#3	#4	#5	#6	AVG *	#1	#2	#3	#4	#5	#6	AVG *
<p>Each test subject should assume a prone, face-down position in the water, but with the head lifted up so the mouth is out of the water. The subject's feet should be supported, shoulder width apart, with the heels just below the surface of the water.</p> <p>After assuming a starting position with the legs straight and arms along the sides, the subject</p>	<p>The period of time until the mouth of the test subject comes clear of the water should be recorded to the nearest 1/10 of a second, starting from when the subject's feet are released.</p> <p>The test should be conducted a total of six</p>	1														
		2														
		3														
		4														
		5														

2.2.1.17 Water performance tests – Righting test		Regulations: LSA Code II/ 2.2.1.6.2; MSC.81(70)1/ 2.8.5 and 2.8.7.1													
Test Procedure	Acceptance Criteria	Significant Test Data													
<p>should then be instructed in the following sequence to allow the body to gradually and completely relax into a natural floating posture: allow the arms and shoulders to relax; allow the legs to relax; and then the spine and neck, letting the head fall into the water while breathing out normally.</p> <p>During the relaxation phase, the subject should be maintained in a stable face-down position.</p> <p>Immediately after the subject has relaxed, with the face in the water, simulating a state of utter exhaustion, the subject's feet should be released.</p>	<p>times, and the highest and lowest times discarded. The test should then be conducted a total of six times in the RTD and the highest and lowest times discarded.</p> <p>Turning time: the average turn time for all subjects in the candidate lifejacket should not exceed the average time in the RTD plus 1 s, and at the end of each righting test each subject should attain a face-up position where the nose and mouth are clear of the water.</p> <p>The number of "no-turns", if any, should not exceed the number in the RTD.</p>	6													
		7													
		8													
		9													
		10													
		11													
		12													
		Average candidate turn time (sec):						Average RTD turn time (sec):							
		# of candidate no turns (NT):						# of RTD no turns (NT):							
		<p>(* Delete highest and lowest value)</p> <p>Average candidate turn time ≤ Average RTD turn time RTD +1s Passed _____ Failed _____</p> <p># of candidate no turns (NT) : ≤ # of RTD no turns (NT) : _____ Passed _____ Failed _____</p> <p>Comments/Observations:</p>													

ANNEX 11*

DRAFT MSC CIRCULAR

**REVISED UNIFIED INTERPRETATIONS OF
SOLAS CHAPTER II-2 AND THE FSS AND FTP CODES**

1 The Maritime Safety Committee, at its ninety-second session (12 to 21 June 2013), 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 FSS and FTP Codes, approved ~~unified interpretations of SOLAS chapter II-2 (annex 1), of the FSS Code (annex 2) and of the FTP Code (annex 3)~~ *Unified Interpretations of SOLAS chapter II-2 and the FSS and FTP Codes* (MSC.1/Circ.1456), prepared by the Sub-Committee on Fire Protection at its fifty-sixth session (7 to 11 January 2013).

2 The Maritime Safety Committee, at its [108th] session [date], approved draft amendments to the aforementioned unified interpretations (MSC.1/Circ.1456), as consequential amendments emanating from the amendments to SOLAS regulation II-2/7.5.5 adopted by resolution [MSC...(…)] with respect to the protection of accommodation and service spaces and control stations, for circulation of the amended unified interpretations as MSC.1/Circ.1456/Rev.1, as set out in the annex.

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

4 This circular supersedes MSC.1/Circ.1456.

ANNEX 1

REVISED UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

1 In annex 1, the existing section 2 (Control stations on cargo ships – application to cargo ships (regulation II-2/7.5.5)) is amended, as follows:

**"2 Control stations on cargo ships – application to cargo ships
(regulation II-2/7.5.5)**

As no reference to control stations is made for cargo ships constructed before 1 January 2026 for any of the protection methods provided in accordance with SOLAS regulations II-2/7.5.5.1, 7.5.5.2 and 7.5.5.3, control stations on these cargo ships do not need to be covered by a fixed fire detection and fire alarm system."

* 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.1456/Rev.1.

ANNEX 13

DRAFT MSC CIRCULAR

**UNIFIED INTERPRETATIONS OF THE LSA CODE
AND THE 1994 AND 2000 HSC CODES**

1 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], with a view to providing more specific guidance on paragraphs 4.1.5.1.13, 4.4.8.16 and 5.1.2.2.7 of the LSA Code; paragraph 3.8.10 of annex 10 to the 1994 HSC Code; and paragraph 3.8.10 of annex 11 to the 2000 HSC Code, approved unified interpretations of the LSA Code, the 1994 and 2000 HSC Codes, 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.

2 Member States are invited to use the annexed unified interpretations as guidance when applying paragraphs 4.1.5.1.13, 4.4.8.16 and 5.1.2.2.7 of the LSA Code; paragraph 3.8.10 of annex 10 to the 1994 HSC Code; and paragraph 3.8.10 of annex 11 to the 2000 HSC Code, and to bring the unified interpretations to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATION OF THE LSA CODE AND THE 1994 AND 2000 HSC CODES

Paragraphs 4.1.5.1.13, 4.4.8.16 and 5.1.2.2.7 of the LSA Code – Equipment of liferaft, lifeboat and rescue boat, respectively

Paragraph 3.8.10 of annex 10 to the 1994 HSC Code – Equipment of open reversible liferaft

Paragraph 3.8.10 of annex 11 to the 2000 HSC Code – Equipment of open reversible liferaft

1 One spare bulb should be provided for torches utilizing either a filament bulb or single LED to provide the light source. Where the light source is provided by more than one LED, a spare LED bulb is not required, provided the failure of any one LED does not prevent the other LED's from fully functioning.

2 Provision of a second ready for use waterproof electric torch suitable for Morse signalling can be accepted as an alternative to providing one spare set of batteries and one spare bulb in a waterproof container.

ANNEX 14*

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), ~~set out in the annex.~~

2 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], approved draft amendments to the unified interpretations of regulations II-2/9.7.2 and 9.7.5 – Separation of ducts from spaces, in the aforementioned unified interpretations (MSC.1/Circ.1276), in order to align with the provisions 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), for circulation of the amended revised unified interpretations as MSC.1/Circ.1276/Rev.1, as set out in the annex.

3 Member Governments are invited to use the annexed revised unified interpretations as guidance when applying relevant provisions 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 *[date of approval]*, and to bring the unified interpretations to the attention of all parties concerned.

4 This circular supersedes MSC.1/Circ.1276.

* 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.1276/Rev.1.

ANNEX

Regulations II-2/9.7.2.1, 9.7.2.2 and 9.7.5.2.1 – Separation of galley exhaust ducts from spaces

1 With respect to the application of SOLAS regulations II-2/9.7.2.1, 9.7.2.2 and 9.7.5.2.1, 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:

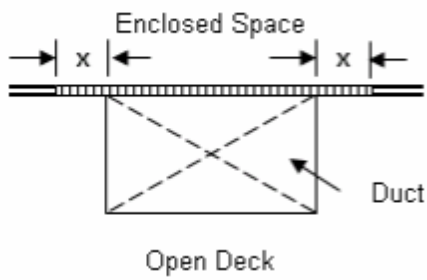


Figure 1

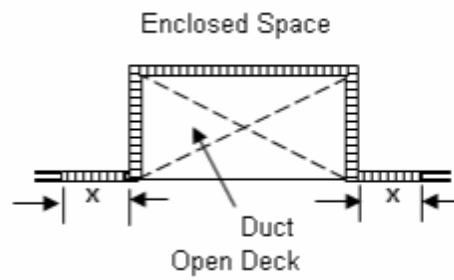


Figure 2

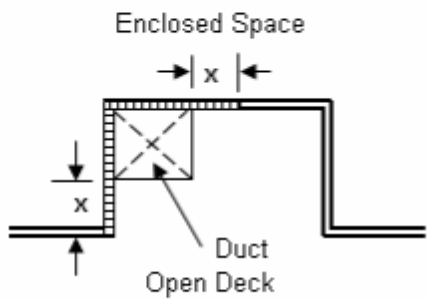


Figure 3

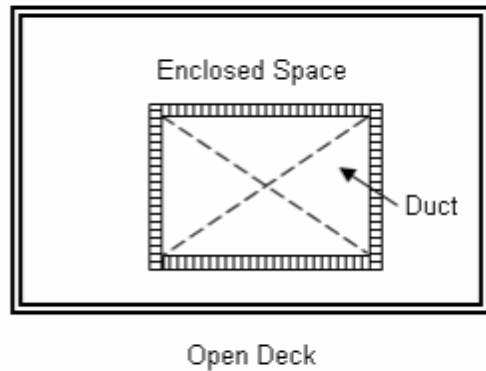



Figure 4

 = fire insulation
x = 450 mm

Examples of galley ducts contiguous to enclosed space

ANNEX 15*

DRAFT MSC CIRCULAR

**REVISED HAZARDOUS AREA CLASSIFICATION
(APPLICATION OF SOLAS REGULATION II-1/45.11)**

1 The Maritime Safety Committee, at its ninety-seventh session (21 to 25 November 2016), with a view to providing more specific guidance on hazardous area classification, having considered paragraph 12.32 of the report of the Sub-Committee on Ships Systems and Equipment (SSE 3/16) to the Committee, approved criteria for the application of SOLAS regulation II-1/45.11, as contained in *Hazardous area classification (application of SOLAS regulation II-1/45.11)* (MSC.1/Circ.1557), as set out in the annex.

2 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], approved draft amendments to the Guidance (MSC.1/Circ.1557) in order to address inconsistencies between the standard IEC 60092-502 published by the International Electrotechnical Commission (IEC) and relevant IMO instruments, prepared by the Sub-Committee on Ship Systems and Equipment, at its ninth session (27 February to 3 March 2023), for circulation of the amended Revised Guidance as MSC.1/Circ.1557/Rev.1, as set out in the annex.

3 Member States are invited to use the annexed Revised Guidance when applying SOLAS regulation II-1/45.11 to hazardous areas on board ships constructed on or after [date of approval], and to bring this Revised Guidance to the attention of all parties concerned.

4 This circular supersedes MSC.1/Circ.1557.

* 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.1557/Rev.1.

ANNEX

**REVISED HAZARDOUS AREA CLASSIFICATION
(APPLICATION OF SOLAS REGULATION II-11/45.11)**

Hazardous area classification in respect of selection of electrical equipment, cables and wiring and positioning of openings and air intakes

Where the prescriptive requirements within SOLAS and related Codes (IBC and IGC Codes) and the standards published by the International Electrotechnical Commission (IEC), such as, but not limited to, IEC 60092-502:1999, are not aligned, the prescriptive requirements in SOLAS and other relevant IMO instruments should take precedence and be applied. The differences between the above-mentioned documents are listed in the appendix, as provided by IACS.

APPENDIX

SUMMARY OF DISCREPANCIES ON THE HAZARDOUS AREA CLASSIFICATION ISSUES AMONG THE SOLAS CONVENTION, THE IBC AND IGC CODES AND STANDARD IEC 60092-502:1999

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
1	Hazardous area and classification on open deck from the cargo tank ventilation outlet for smallflow by thermal variations	<p>Within 5 m radius; SOLAS regulation II-2/11.6.2.2.</p> <p>Reference is made to UI SC70 "Cargo tank vent systems and selection of electrical equipment".</p>			<p>Within 4.5 m radius; IEC 60092-502:1999, 4.2.2.7 and 4.2.3.1.</p> <p>Zone 1: open areas on deck within a 3 m radius.</p> <p>Zone 2: additional 1.5 m beyond Zone 1; IEC 60092-502:1999, 4.2.2.7 and 4.2.3.1.</p>	<p>Per UI SC70 and MSC.1/Circ.1120:</p> <p>Areas on open deck, or semi-enclosed spaces on open deck, within 3 m of cargo tank ventilation outlets which permit the flow of small volumes of vapour or gas mixtures caused by thermal variation are defined as Zone 1.</p> <p>Areas within 2 m beyond the zone specified above are to be considered Zone 2.</p>
2	The separation distance of the nearest air intakes for non-hazardous spaces from the tank ventilation outlet for	<p>At least 5 m; SOLAS regulation II-2/11.6.2.2.</p> <p>At least 10 m; the openings shall be</p>	<p>At least 10 m; IBC Code, paragraph 8.3.4.2.</p> <p>At least 15 m; IBC Code, paragraph</p>	<p>At least 10 m; IGC Code, paragraph 8.2.10 and 2014 amended IGC Code, paragraph 8.2.11.2.</p>	<p>At least 6 m; IEC 60092-502:1999, 4.2.2.7, 4.2.3.1 and 8.2.5.</p>	<p>For oil tankers, and chemical and gas carriers, the requirements of SOLAS, IBC Code and IGC Code are to</p>

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
	smallflow by thermal variations.	arranged in accordance with SOLAS regulation II-2/4.5.3.4.1 of referred to in SOLAS regulation II-2/11.6.2.	15.12.1.3 (although toxicity not flammability).	Cargo tank PRV vent exits: at least equal to Bor 25 m, whichever is less. For ships less than 90 m in length, smaller distances may be permitted; IGC Code, paragraph 8.2.10 and 2014 amended IGC Code, paragraph 8.2.11.1.		be met, as applicable.
	Hazardous zone in way of P/V breaker	SOLAS regulation II-2/11.6.2.2: at least 10 m.			10 m from a cargo gas outlet intended for the passage of large volumes of gas or vapour mixture during cargo loading; IEC 60092-502:1999, 4.2.2.8 & 4.2.3.2 based on UI SC140, otherwise 4.5 m from a P/V breaker which does not release large volumes of gas or vapour locally; IEC 60092-502:1999, 4.2.2.7 & 4.2.3.1.	For tankers, a minimum distance of 10 m applies.
3	The separation distance of the nearest air intakes for non-hazardous spaces from the tank	At least 10 m; SOLAS regulation II-2/4.5.3.4.1.3. At least 10 m; For tankers constructed	At least 10 m; IBC Code, paragraph 12.1.5. At least 15 m; IBC Code,	At least 10 m; IGC Code, paragraph 12.1.6. Cargo tank PRV vent	At least 11.5 m; IEC 60092-502:1999, 4.2.2.8, 4.2.3.2 and 8.2.5.	For oil tankers, and chemical and gas carriers, the requirements of SOLAS, IBC Code

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
	vent outlets for cargo loading, discharging and ballasting	on or after 1 January 2017 as per resolution MSC.392(95) SOLAS amendments of regulation II-2/11.6.2.2 referring back to SOLAS regulation II-2/4.5.3.4.1.	paragraph 15.12.1.3 (although toxicity not flammability).	exits: at least equal to B or 25 m, whichever is less. For ships less than 90 m in length, smaller distances may be permitted; 2014 amended IGC Code, paragraph 8.2.11.1. All other vent outlets connected to the cargo containment system: at least 10 m; 2014 amended IGC Code, paragraph 8.2.11.2.		and IGC Code are to be met, as applicable. Any other requirement on the location of air intakes and openings such as in SOLAS regulation II-2/4.5.2, IBC Code 3.2, IGC Code 3.2 is to be also complied with.
4	The separation distance of the nearest air intakes for non-hazardous areas from the ventilation exhaust outlet for hazardous areas (i.e. cargo compressor room, cargo pump-room, etc.)	MSC.1/Circ.1321, part IV chapter 3, paragraph 1.2: the position of the cargo pump-room vent outlet should be arranged at a distance of at least 3 m measured horizontally from any ignition source and from the nearest opening to accommodation, service or machinery spaces.	At least 10 m; IBC Code, paragraph 12.1.5.	At least 10 m; IGC Code, paragraph 12.1.6. Ventilation ducts, air intakes and exhaust outlets serving artificial ventilation systems shall be positioned in accordance with recognized standards;* 2014 amended IGC Code, paragraph 12.1.5.	At least 6 m; IEC 60092-502:1999, 4.2.2.7, 4.2.3.1 and 8.2.5.	For oil tankers, the minimum distance of MSC.1/Circ.1321 to be met. For chemical tankers, IBC Code 12.1.5 applies. For gas carriers, the minimum distance of 6 m per IEC standard 60092-502:1999 applies.

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
5	Hazardous area and classification on open deck from the cargo shore connection or spillage coaming		<p>Within the coaming required by 3.7.7 or within a 3 m radius beyond the coaming; IBC Code, paragraph 3.7.8.</p> <p>It should be noted that paragraph 3.7.8 only applies to stern or bow loading arrangements.</p>	<p>*IEC60092-502:1999</p> <p>Within 3 m radius; IGC Code, paragraph 3.8.6. It should be noted that paragraph 3.8.6 of the pre-2014 Code only applies to stern or bow loading arrangements.</p> <p>Within 3 m beyond the spillage coming up to a height of 2.4 m above the deck; 2014 amended IGC Code, paragraph 1.2.24.15.</p>	<p>Within 4.5 m radius; IEC60092-502:1999, 4.2.2.10 and 4.2.3.1.</p> <p>Zone 1: open areas on deck within a 3 m radius, up to a height of 2.4 m above the deck. Zone 2: additional 1.5 m beyond Zone 1; IEC 60092-502:1999, 4.2.2.10 and 4.2.3.1.</p>	<p>For bow and stern loading/unloading arrangements on oil tankers reference is made to IACS UR F16.</p>
6	Opening to main cargo control stations and service spaces not giving access to accommodations, control stations and similar spaces containing sources of ignition	<p>Subject to Administration; SOLAS regulation II-2/4.5.2.2.</p> <p>Note: SOLAS regulation II-2/4.5.2.2 does not categorize the space as hazardous or non-hazardous.</p>	IBC Code, paragraph 3.2.3.		The intent of a minimum distance of 1.5 m from the boundaries of any hazardous area is to be followed; IEC 60092-502:1999, 8.2.5.	
7	Openings to accommodation spaces, service spaces, control stations and machinery spaces	Not less than 4% of L, but not less than 3 m from the end of the superstructure or deckhouse. (This distance need not	Not less than 4% of L, but not less than 3 m from the end of the superstructure or deckhouse. (This distance need not	Not less than 4% of L, but not less than 3 m from the end of the superstructure or deckhouse. (This distance need	At least 1.5 m from the boundaries of any hazardous area; IEC 60092-502:1999, 8.2.5.	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
	facing the cargo area	exceed 5 m); SOLAS regulation II-2/4.5.2.	exceed 5 m); IBC Code, paragraph 3.2.3.	not exceed 5 m); IGC Code, paragraph 3.2.4 and 2014 amended IGC Code, paragraph 3.2.4.1.		
8	Access doors to forecastle spaces containing source of ignition facing the cargo area	<p>Access doors to forecastle spaces containing source of ignition shall not face the cargo area; SOLAS regulation II-2/4.5.2.1.</p> <p>Access doors to forecastle spaces containing source of ignition shall not face the cargo area and are to be at not less than 3 m from the end of the superstructure or deckhouse. (This distance need not exceed 5 m); SOLAS regulation II-2/4.5.2.1.</p> <p>Reference is made to UI SC120 "Access to forecastle spaces on tankers; SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code</p>	<p>Access doors to forecastle spaces containing source of ignition shall not face the cargo area; IBC Code, paragraph 3.2.3.</p> <p>Reference is made to UI SC120 "Access to forecastle spaces on tankers; SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code paragraph 3.2.3 and IGC Code paragraph 3.2.4".</p>	<p>Access doors to forecastle spaces containing source of ignition shall not face the cargo area; IGC Code, paragraph 3.2.4.1.</p> <p>Accesses to forecastle spaces containing sources of ignition may be permitted through a single door facing the cargo area, provided the doors are located outside hazardous areas as defined in chapter 10; 2014 amended IGC Code, paragraph 3.2.4.4.</p> <p>Reference is made to UI SC120 "Access to forecastle spaces on tankers; SOLAS regulations II-</p>	<p>The forecastle spaces installed the access doors facing the cargo area shall be designated as the hazardous area of Zone 2; IEC 60092-502:1999, 4.2.</p> <p>See also IEC 60092-502:1999, 4.2.3.6 as commented in item 18 below.</p>	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
		paragraph 3.2.3 and IGC Code paragraph 3.2.4".		2/4.5.2.1 and 4.5.2.2, IBC Code paragraph 3.2.3 and IGC Code paragraph 3.2.4".		
9	Ventilation of cargo pump-rooms (cargo handling spaces on chemical and gas carriers)	20 air changes/hour; SOLAS regulation II-2/4.5.4.1 and MSC.1/Circ.1321, part IV, chapter 3, paragraph 1.1.	30 air changes/hour; IBC Code, paragraph 12.1.3. 45 air changes/hour; IBC Code, paragraph 15.17 (toxic).	30 air changes/hour; IGC Code, paragraph 12.1.2 and 2014 amended IGC Code, paragraph 12.1.3.	Spaces containing sources of release: 30 air changes/hour; IEC 60092-502:1999, 8.1.3. Note: The IEC standard refer to spaces "containing sources of release", while the IBC and IGC Codes refer to spaces for "cargo handling operations".	For oil tankers, SOLAS regulation II-2/4.5.4.1 applies. (Reference is also made to IACS UR F21) For chemical tankers, the IBC Code requirements apply. For gas carriers, the IGC Code requirements apply. Note: The IEC standard refers to spaces "containing sources of release", while the IBC and IGC Codes refer to spaces for "cargo handling operations". Further, IEC does not consider the threat of toxicity.

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
10	Ventilation of hazardous spaces not containing source of release		<p>20 air changes/hour; spaces normally entered IBC Code, paragraph 12.2.</p> <p>8 air changes/hour; spaces not normally entered; IBC Code, paragraph 12.3 (16 air changes/hour if portable).</p>		Spaces not containing sources of release: 6 air changes/hour; IEC 60092-502:1999, 8.1.3.	The IBC Code categorization differs from that of IEC (spaces not normally entered not containing cargo handling equipment vs spaces not containing sources of release).
11	Concentration of gas implying that space is not hazardous (alarm limits)	<p>10% LFL (Lower Flammable Limit) for cargo pump-rooms in tankers; SOLAS regulation II-2/4.5.10.1.3.</p> <p>30% LFL for all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks in oil tankers of 20,000 tonnes deadweight and above; SOLAS regulation II-2/4.5.7.3 and the FSS Code, chapter 16,</p>	10% LFL for cargo pump-room; IBC Code, paragraph 11.1.1.7 (resolution MSC.219(82)), clarifying that SOLAS regulation II-2/4.5.10 applies, in which case "hydrocarbon gases" are replaced by "flammable vapours".	<p>Alarms should shall be activated for flammable products when the vapour concentration reaches 30% of the lower flammable limit, for the spaces of paragraph 13.6.72 of the IGC Code; IGC Code, paragraph 13.6.1015.</p> <p>30% LFL for the spaces specified in paragraph 13.6.2 of the amended IGC Code; 2014 amended IGC Code, paragraph 13.6.15.</p>	<p>30% LFL; IEC 60092-502:1999, 8.4.2.</p> <p>Note: The requirement of the standard applies to spaces protected by over-pressure.</p>	IEC 60092-502:1999, 8.4.2 applies to spaces protected by over-pressure. This is not considered equivalent to a cargo pump-room.

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
12	Fan monitoring (air lock)	paragraph 2.2.3.3.		<p>Monitoring of current or power in the electrical supply is accepted; IGC Code, paragraph 3.6.4 (MSC/Circ.406).</p> <p>Where spaces are protected by pressurization, the ventilation shall be designed and installed in accordance with recognized standards;* 2014 amended IGC Code, paragraph 3.6.2.</p> <p>*IEC 60092-502:1999 (1999).</p> <p>As per the Note to 8.4.3 of the standard, a fan motor or a fan rotation monitoring device will not satisfy this requirement.</p>	Motor running or rotating fan monitoring device is not accepted; IEC 60092-502:1999, 8.4.3.	Monitoring of current or power supply is not as reliable as a differential pressure or flow monitoring device.
13	Tanks for heated cargo	Tanker requirements apply to tankers carrying cargo with FP below 60°C; SOLAS regulation	Follows SOLAS principle related to flashpoint. However, the IBC Code considers non-		When carrying cargoes heated to temperature within 15°C of their flash point, hazardous zone	IEC 60092-502:1999, 4.3.2 and the IBC Code, paragraph 10.1.6 are in agreement.

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
		<p>II-2/1.6.1.</p> <p>For petroleum cargoes with FP of 60°C and above only deck foam requirements apply; SOLAS regulation II-2/1.6.4.</p> <p>Hazardous zone classification and electrical installation shall be complied with; IEC 60092-502:1999 (1999); SOLAS regulation II-1/45.11.</p>	<p>flammable products and products with a flashpoint of 60°C and above in a different way (paragraphs 11.1.2 and 11.1.3);</p> <p>In the case of a heated cargo, carriage conditions might need to be established and the requirements for cargoes having a flashpoint not exceeding 60°C applied; IBC Code, regulation paragraph 10.1.6.</p>		<p>classification for tankerscarrying cargoes with FP not exceeding 60°C applies; IEC 60092-502:1999, 4.3.2 referring back to 4.2.</p>	<p>SOLAS cites do not specifically address heated cargo.</p>
14	Classification of cargo pump-room	<p>Hazardous zone classification and electrical installation shall be complied with; IEC 60092-502:1999(1999); SOLAS regulation II-1/45.11.</p>		<p>IGC Code, paragraph 1.3.17.7; 2014 amended IGC Code, paragraph 1.2.24.6.</p>	<p>IEC 60092-502:1999, 4.1.4.1 Table 1 and 4.2.2.4 mayindicate that cargo pump-rooms are Zone 1. However, as ventilation is only running during cargo handling, the requirements may be interpreted that it is Zone 0 (flag Administration position</p>	<p>If hazardous area classification is dependent on ventilation, then ventilation is not expected to be discontinued.</p>

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
15	Discontinuation of ventilation for long periods		Spare parts shall be carried for each type of ventilation fan required on board; IBC Code, paragraph 12.1.9.	<p>Spare parts shall be carried for each type of ventilation fan required on board; IGC Code, paragraph 12.1.10.</p> <p>Where fans are required, full required ventilation capacity for each space shall be available after failure of any single fan, or spare parts shall be provided comprising a motor, starter spares and complete rotating element, including bearings of each type; 2014 amended IGC Code, paragraph 12.1.8.</p>	<p>may be required).</p> <p>IEC 60092-502:1999, 8.3.1 includes an assumption that ventilation shall not be discontinued for long periods.</p>	
16	Gas carrier ballast tanks			Ballast tanks may be connected to pumps in machinery spaces; IGC Code, paragraph 3.7.4; 2014 amended IGC Code, paragraph 3.7.5.	Ballast tanks on gas carriers, separated from a hold space, where cargo is carried in a cargo tank requiring a secondary barrier, by a single gastight boundary, are hazardous areas Zone 1.	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
17	Gas carrier hold space				Hold spaces of gas carriers (except those with C-tanks type C tanks), where a secondary barrier is required, are considered hazardous areas Zone 0; IEC 60092-502:1999, 4.4.1 and annex D.	
18	Access to forward spaces below level of main deck	Access openings to service spaces, control stations and machinery spaces are not to face the cargo area; SOLAS regulation II-2/4.5.2. Reference is made to UI SC120 " Access to fore-castle spaces on tankers "; SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code, paragraph 3.2.3 and IGC Code, paragraph 3.2.4".	Reference is made to UI SC120 " Access to fore-castle spaces on tankers "; SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code paragraph 3.2.3 and IGC Code paragraph 3.2.4".	Reference is made to UI SC120 " Access to fore-castle spaces on tankers "; SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code paragraph 3.2.3 and IGC Code paragraph 3.2.4".	It is implied that as long as the sill height is above 0.5 m then it is exempted from SOLAS and can face the cargo area; IEC 60092-502:1999, 4.2.3.6.	1. SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, etc. restrict the installation of openings (e.g. doors) facing cargo areas. 2. IEC 60092-502:1999 4.2.3.6 addresses classification of hazardous areas.
19	Hazardous zone classification on main deck of tankers with deck girders				The entire deck area upto 2.4 m is considered as Zone 1 if deck girders structures are	IACS considers that a more reasonable criterion might be that the zone from deck level up to the top of

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
					provided as they are considered to restrict natural ventilation; IEC 60092-502:1999, 4.2.2.11.	the structures should be zone 1 and the remaining zone up to 2.4 m should be considered zone 2.
20	Hazardous zone in way of P/V-breaker	<p>SOLAS regulation II-2/11.6.2.2: at least 5 m.</p> <p>SOLAS amended regulation II-2/11.6.2.2 as per resolution MSC.392(95): at least 10 m for tankers constructed on or after 1 January 2017.</p>			10 m from a cargo gas outlet intended for the passage of large volumes of gas or vapour mixture during cargo loading; IEC 60092-502, 4.2.2.8 & 4.2.3.2 based on UI SC140, otherwise 4.5 m from a P/V breaker which does not release large volumes of gas or vapour locally; IEC 60092-502, 4.2.2.7 & 4.2.3.1.	
2420	Location of fan motors for cargo pump-room and compressor room		To be located outside ducts; IBC Code, paragraph 12.1.8.	To be located outside ducts; IGC Code, paragraph 12.1.9. 2014 amended IGC Code, paragraph 12.1.7.	IEC 60092-502:1999; follows zone classification. i.e. if Zone 0, outside ventilation duct (based on 6.5.2). If Zone 1, inside OK, provided certified for Zone 1.	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
2221	Openings to accommodation spaces, service spaces, control stations and machinery spaces facing the cargo area	<p>Shall not face the cargo area. Can be located at the transverse bulkhead not facing the cargo area, at a distance of at least 4% of the length of the ship but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance need not exceed 5 m; SOLAS regulation II-2/4.5.2.1.</p> <p>Refer to SOLAS regulation II-2/4.5.2.2 for permitted access doors to main cargo control stations and service spaces and to wheelhouse doors and windows.</p>	<p>Shall not face the cargo area. They shall be located on the end bulkhead not facing the cargo area and/or on the outboard side of the superstructure or deck- house at a distance of at least 4% of the length (L) of the ship but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance, however, need not exceed 5 m. Refer to same paragraph for permitted access doors to spaces not having access to accommodation and service spaces and control stations, and wheelhouse doors and windows; IBC Code, paragraph 3.2.3.</p>	<p>Should Shall not face the cargo area. They should shall be located on the end bulkhead not facing the cargo area or on the outboard side of the superstructure or deck- house or on both at a distance of at least 4% of the length (L) of the ship but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance, however, need not exceed 5 m. Refer to same paragraph for wheelhouse doors and windows; IGC Code, paragraph 3.2.4.</p> <p>2014 amended IGC Code: paragraphs 3.2.4.1 and 3.2.4.2 (same requirements, except the amended Code uses "shall"</p>	<p>Access doors or other openings shall not be provided between an area intended to be considered as non-hazardous and a hazardous area, or between a space intended to be considered as Zone 2 and a Zone 1 space except where required for operational reasons. Where access doors or other openings are provided for operational reasons, 4.1.5.2, 4.1.5.3, 4.1.5.4 or 4.1.5.5 apply; IEC60092-502:1999, 4.1.5.</p> <p>Where a space has an opening into an adjacent, more hazardous space or area, it may be made into a less hazardous space or non-hazardous space by</p>	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
				instead of "should").	<p>pressurisation designed and operated in accordance with the requirements given in 8.2 and 8.4; IEC 60092-502:1999, 8.1.4.</p> <p>Note: SOLAS and Codes refer to permitted openings of spaces, while the IEC standard defines hazardous areas.</p>	
23	Protection by over-pressure			<p>IGC Code, paragraph 12.1.4. 2014 amended IGC Code, paragraph 12.1.4.</p>	<p>Protection by over-pressure where a non-hazardous space has openings into a hazardous space; IEC 60092-502, 8.4.</p>	
2422	Air locks			<p>IGC Code, paragraph 3.6.</p> <p>2014 amended IGC Code, paragraph 3.6.</p>	<p>IEC 60092-502:1999, 4.1.5.3.</p>	<p>The IGC Code is more specific for air locks installed between the hazardous area on the open weather deck and non-hazardous spaces, also attention is to be paid to the audible and visual alarm on both sides of air lock.</p>

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
2523	Earthed distribution systems and hull return systems	<p>Earthed distribution systems shall not be used in a tanker. The Administration may exceptionally permit in a tanker the earthing of the neutral for alternating current power networks of 3,000 V (line to line) and over, provided that any possible resulting current does not flow directly through any of the dangerous spaces; SOLAS regulation II-1/45.4.1.</p> <p>The hull return system of distribution shall not be used for any purpose in a tanker; SOLAS regulation II-1/45.3.1. The above regulation does not preclude under conditions approved by the Administration the use of:</p> <ul style="list-style-type: none"> - impressed 			<p>Distribution systems: Distribution systems shall comply with the provisions of IEC 60092-201:2019. Both insulated and earthed distribution systems are permitted; systems with a hull or structure return, other than those noted under 5.2.2, are not permitted; IEC 60092-502:1999, 5.2.1.</p> <p>The following systems are permitted to be of hull or structure return type:</p> <ul style="list-style-type: none"> - limited and locally earthed systems outside any hazardous area; - intrinsically- 	

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999	Explanatory Notes
		<p>current cathodic protective systems;</p> <ul style="list-style-type: none"> – limited and locally earthed systems; or – insulation level monitoring devices provided the circulation current does not exceed 30 mA under the most unfavourable conditions. <p>SOLAS regulation II-1/45.3.2.</p>			<p>safesystems;</p> <ul style="list-style-type: none"> – impressed current cathodic protective systems; <p>IEC 60092-502:1999, 5.2.2.</p> <p>The neutral and any conductor required for protection against electric shock shall not be connected together or combined in a singleconductor in a hazardous area; IEC 60092-502:1999, 5.2.3.</p>	
2624	Hazardous zone classification on main deck of tankers	<p>Hazardous zone classification and electrical installation shall be complied with IEC 60092-502:1999(1999); SOLAS regulation II-1/45.11.</p>	<p>IBC Code, chapter 10: IEC 60092-502:1999(1999).</p>	<p>IGC Code, paragraph 1.3.17.8. 2014 amended IGC Code, paragraph 1.2.24.9.</p>	<p>The cargo tanks, including all ballast tanks with cargo tank area; IEC 60092-502:1999, 4.2.2.11 and 4.2.3.5 (areas on open deck over cargo tanks as per the above IEC paragraphs do not coincide with the definition of the cargo area in SOLAS or the Codes).</p>	

ANNEX 16
DRAFT MSC CIRCULAR
UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-1

1 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], with a view to providing more specific guidance on SOLAS regulation II-1/26, approved unified interpretations of SOLAS chapter II-1, 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.

2 Member States are invited to use the annexed unified interpretations as guidance when applying SOLAS regulation II-1/26, and to bring the unified interpretations 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 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 17*
BIENNIAL STATUS REPORT (2022-2023)

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
1. Improve implementation	1.30	Review of the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66)) regarding fire protection requirements for incinerators and waste stowage spaces	2022	MEPC	SSE		Completed		SSE 8/20, Para. 19.7
Notes: MEPC 77/16/Add.1; SSE 8 completed and MSC 106 noted the completion.									
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	No work requested	MSC 94/21, paras. 18.5 and 18.6; MSC 96/25, paras. 10.1 to 10.3; MSC 97/22, para. 19.2; PPR 6/20, para. 3.39; MSC 102/24, para. 21.4; MSC 106/19, para. 16.42.
Notes: MSC 106 changed description in order to accommodate the consideration of alternative fuels not having a low flashpoint. This resulted in the deletion of output 2.24 on "Development of guidelines for the safety of ships using ammonia as fuel" to avoid duplication.									

* Modifications are shown in grey shading.

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	2.5	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	No work requested	MSC 82/24, para. 3.92; MSC 98/23, annex 38; MSC 102/24, para. 19.16. MSC 105/20, paras. 15.13 and 18.54 SSE 6/18, section 3; SSE 7, section 10
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	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2	2023	MSC	III / HTW / SDC	SSE	Extended	Completed	MSC 98/23, para. 20.36; SSE 7/21, section 11; HTW 8/16, section 15; SSE 8/20, section 18; SSE 9/20, section 19
2. Integrate new and advancing technologies in the regulatory framework	2.10	Development of revisions and amendments to existing instruments relating to the amendments to the 1974 SOLAS Convention for modernization of the GMDSS	2022	MSC	HTW / SSE	NCSR	Completed		MSC 105/20, paras. 3.42, 3.52 to 3.55, 3.60 to 3.62, 3.63.1 and 3.63.2; resolutions MSC.496(105), MSC.498(105), MSC.499(105), MSC.497(105), MSC.502(105), MSC.503(105), MSC.504(105), MSC.505(105), MSC.506(105), MSC.507(105), MSC.508(105), MSC.509(105), MSC.510(105), MSC.511(105), MSC.512(105), MSC.513(105), MSC.514(105), MSC.515(105), MSC.516(105) and MSC.517(105); MSC.1/Circ.803/Rev.1 and MSC.1/Circ.1645; MSC 106/19, para. 13.17, MSC.1/Circ.1656, MSC.1/Circ.1657, MSC.1/Circ.1658 and MSC.1/Circ.892/Rev.1 SSE 6/18, para. 17.8

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	2.16	Revision of SOLAS chapter III and the International Life-Saving Appliance (LSA) Code	2024	MSC	SSE		Ongoing	Ongoing	SSE 7/21, section 5; SSE 8/20, section 5; SSE 9/20, section 5
Notes:	To remove gaps, inconsistencies and ambiguities based on the safety objectives, functional requirements and expected performance for SOLAS chapter III								
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	No work requested	MSC 89/25, paras. 10.10, 10.16 and 22.39 and annex 21; MSC 100/20, para. 17.28
6. Address the human element	6.2	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing	Ongoing	MSC 100/20, paras. 10.3 to 10.6 and 17.28; MSC 105/20, section 16
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	CCC		No work requested	MSC 101/24, para. 21.48; MSC 104/18, para. 15.16; MSC 106/19, para. 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.								

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	7.1	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	Ongoing	MSC 76/23, para. 20.3; MSC 78/26, para. 22.12; SSE 7/21, section 16; SSE 9/20, section 14
7. Ensure regulatory effectiveness	7.15 (New)	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	Ongoing	Ongoing	MSC 103/21, para. 18.8; SSE 8/20, section 10; MSC 106/19, section 9; SSE 9/20, section 10
7. Ensure regulatory effectiveness	7.19	Revision of the Code of Safety for Diving Systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))	2024	MSC	SSE		Extended	Completed	MSC 99/22, para. 20.26; SSE 8/20, section 14; MSC 106/19, paras. 11.31 and 11.32; SSE 9/20, section 12
7. Ensure regulatory effectiveness	7.32	Requirements for onboard lifting appliances and anchor handling winches	2022	MSC	HTW	SSE	Completed		MSC 89/25, para. 22.26; MSC 98/23, annex 38; SSE 8/20, section 9; MSC 106/19, section 11
Notes: MSC 106 finalized the work and approved the draft guidelines in principle. MSC 107 is expected to adopt/approve the whole set.									

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	7.33	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2023	MSC	HTW / SDC	SSE	Extended	Completed	MSC 97/22, para. 19.19; MSC 98/23, para. 12.42; MSC 106/19, para. 16.55; SSE 9/20, section 6
Notes: MSC 106 extended TCY to 2023									
7. Ensure regulatory effectiveness	7.34	Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ship carrying liquefied gases in bulk (MSC.1/Circ.1315)	2022	MSC	SSE		Completed		MSC 98/23, para. 20.37; SSE 7/21, section 7; SSE 8/20, section 7; MSC 106/19, section 11; MSC.1/Circ.1315/Rev.1
7. Ensure regulatory effectiveness	7.36	New requirements for ventilation of survival craft	2024	MSC	SSE		Extended	Extended	MSC 97/22, para. 19.22; SSE 8/20, section 3; MSC 106/19, section 11; SSE 9/20, 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). SSE 9 requested the extension of TCY to 2024 to continue the discussion on the compelling need for ventilation requirements for partially enclosed lifeboats and liferafts.									

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	7.37	Consequential work related to the new International Code for Ships Operating in Polar Waters	2022	MSC	SSE/NCSR	SDC	Completed		MSC 93/22, paras. 10.44, 10.50 and 20.12; MSC 96/25, para. 3.77; MSC 97/22, paras. 8.32 and 19.25; MSC 101/24, paras. 7.9 and 11.18, and annex 31; MSC.1/Circ.1612; MSC 102/24, paragraph 19.3; SSE 8/20, section 4; MSC 106/19, section 11; MSC.1/Circ.1614/Rev.1 SSE 7/21, section 4;SSE 8/20, section 4
7. Ensure regulatory effectiveness	7.38	Revision of the Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79))	2023	MSC	SSE	SDC	No work requested	No work requested	MSC 102/24, para. 17.23; resolution MSC.188(79)/Rev.1
Notes:		MSC 105 extended TCY to 2023.							
7. Ensure regulatory effectiveness	7.39	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets	2023	MSC	SSE		In progress	Completed	MSC 101/24, para. 21.6; MSC 102/24, para. 21.19 SSE 7/21, para. 20.20;SSE 8/20, section 8; SSE 9/20, section 8
Notes:		SSE 9 requested to place output 7.39 on "Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets" back on the Committee's post-biennial agenda, noting that additional testing requirements of lifejackets, which were currently being developed, might need to be considered in the future.							

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	7.40	Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships	2023	MSC	SSE		In progress	Completed	MSC 101/24, para. 21.3; MSC 102/24, para. 21.19; SSE 8/20, section 11; SSE 9/20, section 11
7. Ensure regulatory effectiveness	7.41	Development of provisions to prohibit the use of fire-fighting foams containing perfluorooctane sulfonic acid (PFOS) for fire-fighting on board ships	2025	MSC	SSE		Extended	Extended	MSC 101/24, para. 21.27; MSC 102/24, paras. 19.31 and 21.19; SSE 8/20, section 12; MSC 106/19, section 11; SSE 9/20, section 15
Notes:	MSC 106 extended TCY to 2023; approved draft amendments to SOLAS, the 1994 and 2000 HSC Codes; and instructed SSE 9 to consider the prohibition of other fire-fighting foam types in addition to PFOS, such as PFOA, and whether the existing output should be expanded in that regard; and the potential need to revise the Revised Guidelines (MSC.1/Circ.1312). SSE 9 requested to revise the title of output as "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", with a revised scope.								
7. Ensure regulatory effectiveness	7.42 (New)	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, para. 18.31; MSC 105/20, paras. 15.24.2 and 18.54
7. Ensure regulatory effectiveness	7.47 (New)	Amendments to the LSA Code concerning single fall and hook systems with on-load release capability	2023	MSC	SSE		No work requested	Completed	MSC 106/19, section 11; SSE 9/20, section 16
Notes:	MSC 106 reinstated and renamed this output in the provisional agenda of SSE 9, redefining the scope of the output to include other sub-paragraphs of paragraph 4.4.7.6 of the LSA Code to provide the necessary clarity for consistent application of the requirements.								

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	7.48 (New)	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships	2024	MSC	SSE			Completed	MSC 99/22, para. 20.15; SSE 9/20, section 4
OW. Other work	OW 13 (New)	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	2024	MSC	SSE			Ongoing	MSC 86/26, para. 23.39; SSE 9/20, section 9
Notes:	MSC 86/26, paragraph 23.39								
OW. Other work	OW 14 (New)	Amendments to the LSA Code for thermal performance of immersion suits	2024	MSC	SSE			Ongoing	MSC 92/26, para. 13.34; SSE 9/20, section 7
...	...	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	2025	MSC	SSE			Ongoing	SSE 9/20, paragraph 19.17

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, para. 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, paras. 16.25 and .26
190	2022-2023	2	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	MSC	SDC / NCSR	SSE	2	MSC 105/20, paragraphs 18.23 and 18.24. MSC instructed the SSE to clarify the scope of the new output, in particular whether propellers of traditional propulsion systems were included, and advise the Committee accordingly.
SSE 9 requested that output no. 190 be included in the provisional agenda of SDC 10 for balancing the workload between the SDC and SSE Sub-Committees.								
158	2018-2019	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	MSC	SSE		2	MSC 99/22, paragraphs 20.22 and 20.23
SSE 9 agreed to insert output no.158 on the provisional agenda of SSE 10. See document SSE 9/17 (China).								

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
169	2018-2019	6	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	MSC		SSE	2	MSC 101/24, paragraph 21.15
183	2020-2021	6	Revision of the 2010 FTP Code to allow for new fire protection systems and materials	MSC	SSE		3	MSC 103/21, paragraph 18.28
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, paras. 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, paras. 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, para. 18.40

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
193	2022-2023	7	Evaluation of adequacy of fire protection, detection and extinction arrangements in vehicle, special category and re-re spaces in order to reduce the fire risk of ships carrying new energy vehicles	MSC	SSE		4	MSC 105/20, paras. 18.43 and 18.44
195	2022-2023	7	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	MSC	SSE	SDC	1	MSC 106/19, para.16.28
168	2018-2019	OW	Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes	MSC		SSE	4	MSC 101/24, paragraph 21.9
42	2012-2013	OW	Review of the 2009 Code on Alerts and Indicators	MSC	NCSR	SSE	2	MSC 89/25, para. 22.25
167	2018-2019 then 2022-2023	OW	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; and SSE 9/20, paragraph 8.19
SSE 9 addressed the output and developed draft amendments, but agreed that the matter could be revisited in the future and, therefore, requested that the output be placed back on the post-biennial agenda.								

ANNEX 18

PROPOSED BIENNIAL AGENDA FOR THE 2024-2025 BIENNIUM*

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)						
Reference to SD, applicable	Output if number	Description	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
1. Improve implementation	1.30	Review of the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66)) regarding fire protection requirements for incinerators and waste stowage spaces	MEPC	SSE		2022
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	MSC	HTW/PPR/ SDC/SSE	CCC	Continuous
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	MSC	SSE	SDC	2024
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2	MSC	III/HTW/SDC	SSE	2023
2. Integrate new and advancing technologies in the regulatory framework	2.10	Development of revisions and amendments to existing instruments relating to the amendments to the 1974 SOLAS Convention for modernization of the GMDSS	MSC	HTW/SSE	NGSR	2022

* Strikethrough text in grey indicates proposed deletions against the current biennial agenda.

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)						
Reference to SD, if applicable	Output number	Description	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
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	MSC	SSE		2024
6. Address the human element	6.1	Role of the human element	MSC/MEPC	III/PPR/CCC /SDC/SSE/ NCSR	HTW	Continuous
6. Address the human element	6.2	Validated model training courses	MSC/MEPC	III/PPR/CCC/SDC/SSE/ NCSR	HTW	Continuous
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	MSC	III/HTW/ PPR/SDC	CCC	2024
7. Ensure regulatory effectiveness	7.1	Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions	MSC/MEPC/ FAL/LEG	III/PPR/CCC/ SDC/SSE/ NCSR		Continuous
7. Ensure regulatory effectiveness	7.15 (New)	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	MSC	CCC	SSE	2025
7. Ensure regulatory effectiveness	7.19	Revision of the Code of safety for diving systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))	MSC	SSE		2024
7. Ensure regulatory effectiveness	7.32	Requirements for onboard lifting appliances and anchor handling winches	MSC	HTW	SSE	2022
7. Ensure regulatory effectiveness	7.33	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	MSC	HTW / SDC	SSE	2023

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)						
Reference to SD, if applicable	Output number	Description	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
7. Ensure regulatory effectiveness	7.34	Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ship carrying liquefied gases in bulk (MSC.1/Circ.1315)	MSC	SSE		2022
7. Ensure regulatory effectiveness	7.36	New requirements for ventilation of survival craft	MSC	SSE		2024
7. Ensure regulatory effectiveness	7.37	Consequential work related to the new International Code for Ships Operating in Polar Waters	MSC	SSE/NGSR	SDC	2022
7. Ensure regulatory effectiveness	7.38	Revision of the Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79))	MSC	SSE	SDC	2023
7. Ensure regulatory effectiveness	7.39	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in water performance of SOLAS lifejackets	MSC	SSE		2023
7. Ensure regulatory effectiveness	7.40	Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships	MSC	SSE		2023
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	MSC	SSE		2025
Note: SSE 9 requested to revise the title of the output, its scope and the target completion year.						
7. Ensure regulatory effectiveness	7.42 (New)	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	MSC	HTW/SSE	SDC	2024
7. Ensure regulatory effectiveness	7.47 (New)	Amendments to the LSA Code concerning single fall and hook systems with on-load release capability	MSC	SSE		2023

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)						
Reference to SD, if applicable	Output number	Description	Parent organ(s)	Associated organ(s)	Coordinating organ	Target completion year
7. Ensure regulatory effectiveness	7.48 (New)	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships	MSC	SSE		2024
OW. Other work	OW 13 (New)	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	SSE		2024
OW. Other work	OW 14 (New)	Amendments to the LSA Code for thermal performance of immersion suits	MSC	SSE		2024
...	...	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	MSC	SSE		2025
...	...	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	MSC	SSE		2025
....	...	Revision of the 2010 FTP Code to allow for new fire protection systems and materials	MSC	SSE		2026
...	...	Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes	MSC	SSE		2024
...	...	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	MSC	SSE		2025
...	...	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	MSC	SSE		2027

ANNEX 19

PROPOSED PROVISIONAL AGENDA FOR SSE 10

- 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
 - 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 Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes
 - 8 Revision of the 2010 FTP Code to allow for new fire protection systems and materials
 - 9 Revision of the provisions for helicopter facilities in SOLAS and the MODU Code (OW 13)
 - 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 (7.15)
 - 11 Validated model training courses (6.2)
 - 12 Unified interpretation of provisions of IMO safety, security and environment-related conventions (7.1)
 - 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 implementation of the requirements
 - 15 Development of 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

- 17 Biennial status report and provisional agenda for SSE 11
- 18 Election of Chair and Vice-Chair for 2025
- 19 Any other business
- 20 Report to the Maritime Safety Committee

ANNEX 20

DRAFT MSC CIRCULAR

INTERIM GUIDELINES ON SAFE OPERATION OF ONSHORE POWER SUPPLY (OPS) SERVICE IN PORT FOR SHIPS ENGAGED ON INTERNATIONAL VOYAGES

- 1 The Maritime Safety Committee, at its [107th session (31 May to 9 June 2023)], having considered a proposal made by the Sub-Committee on Ship Systems and Equipment at its ninth session (27 February to 3 March 2023), approved the *Interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages*, as set out in the annex, with a view to promoting safe operation of OPS service in port on ships.
- 2 The Committee agreed to keep the Interim Guidelines under review and to amend them in view of the experience gained with their application and/or as and when the circumstances so warrant.
- 3 Member States are invited to bring the annexed Interim Guidelines to the attention of all parties concerned.

ANNEX

INTERIM GUIDELINES ON SAFE OPERATION OF ONSHORE POWER SUPPLY (OPS) SERVICE IN PORT FOR SHIPS ENGAGED ON INTERNATIONAL VOYAGES

INTRODUCTION

With increasing requirements on marine environmental protection, the application of onboard clean energy solutions has been continuously promoted. The Paris Agreement has set arrangements for global response to climate change after 2020, in line with which many States have developed specific implementation plans.

IMO has always focused on ship energy conservation and emission reduction. The application of onshore power supply (OPS) (alternative maritime power (AMP), cold ironing, shore-side electricity and onshore power supply, high- or low-voltage shore connection, respectively) is gradually expanding. These Interim Guidelines have been developed to promote safe operation of OPS service in port on ships.

Taking into account that the OPS systems in port for vessels are installed and applied internationally and recognizing that safe operation of the OPS system requires special consideration, these Interim Guidelines have been developed to facilitate both ship- and shore-side.

Recognizing that standard IEC/IEEE DIS 80005-3, Utility connections in port – Part 3: Low Voltage Shore Connection (LVSC) Systems – General requirements, is under development, and that operational safety for low-voltage OPS systems is equally important as for high-voltage OPS systems, the procedures for low voltage should be revised when an international standard for low-voltage OPS systems has been published.

These Interim Guidelines are not intended to prohibit other measures of onboard clean energy application.

1 GENERAL

1.1 Application

1.1.1 This document is intended to provide Interim Guidelines for the safe operation of OPS service in port on ships engaged on international voyage. For tankers, the provisions in these Interim Guidelines may be specially considered. These Interim Guidelines do not apply to the electrical power supply during docking periods, e.g. dry docking and other out-of-service maintenance and repair.

1.1.2 The application of these Interim Guidelines to semi-automatic and fully automatic OPS processes is subject to further consideration.

1.2 Terms and definitions

1.2.1 *Onshore power supply (OPS) system* is the equipment that supplies onshore power to ships berthing in port, including ship-side installations and shore installations.

1.2.2 *Ship-side installations* are those onboard systems that are designed to accept shore power, typically involving incoming power receptacles and plugs, shore connection switchgear and protections, transformer (if applicable), incoming switchgear and protections at the main switchboard, power cables (hereinafter referred to as cables), automation, cable monitoring system and associated instrumentation.

1.2.3 *Shore installations* are the equipment that is installed at quay or port for OPS, typically involving switchgear and protections, transformers, frequency convertors (if applicable), output power receptacles and plugs, cable management and associated instrumentation.

1.2.4 *Cable management system* is all the equipment designed to control, monitor and handle the flexible power and control cables and their connection devices.

1.2.5 *Emergency shutdown* is manual and/or automatic shutdown in critical situations.

1.2.6 *The first connection* refers to the OPS connection on ship's first call at a shore power supply point.

1.2.7 *Operation* includes all activities necessary to permit the electrical installation to function. These activities include matters such as switching, controlling, monitoring and maintenance, as well as both electrical and non-electrical work.

1.2.8 *Shore-side circuit breaker* is the dedicated switching and protection device on the shore-side which connects and disconnects shore-side power to the ship.

1.2.9 *Ship-side circuit breaker* is the dedicated switching and protection device on the ship-side which connects and disconnects shore-side power on the ship.

1.3 General

1.3.1 Technical design, installation and testing requirements for the OPS system are provided by the standard: IEC/IEEE 80005-1:2019: Utility connections in port – Part 1: High Voltage Shore Connection (HVSC) Systems – General requirements or other equivalent standards.

1.3.2 The safety of ships, personnel and power supply systems should be ensured by the shore- and ship-side during the establishment of a connection of the shore power, during all operations, in the event of a failure, during disconnection and when the systems are not in use.

1.3.3 A compatibility assessment (for high voltage, see standard IEC/IEEE 80005-1:2019) or technical analysis (for low voltage) of the OPS system should be available to verify the possibility of connecting the ship electrical system to the shore installations.

1.3.4 An equipotential bonding between the ship hull and shore grounding electrode should be established.

1.3.5 Both shore- and ship-sides should specify responsibilities and assignments, including the person in charge (PIC) of the operation.

1.3.6 Both shore- and ship-sides should complete a pre-connection checklist (see paragraph 5.2.9) prior to the ship's arrival and connection at a shore supply point.

1.3.7 The PIC should confirm that there are no safety-critical operations on the ship prior to connecting to the shore power supply.

1.3.8 Communication

For reliable communication, the following provisions apply:

- .1 a voice communication link, e.g. communication devices or other equivalents should be provided to facilitate the communication between the operational personnel from both shore- and ship- side;
- .2 equipment for voice communication should be functional;
- .3 in case of any VHF or UHF voice communications, the ITU Maritime Mobile Services frequencies should be used;
- .4 voice communications should be carried out in the common working language of the terminal and the ship or in English; and
- .5 the ship should make a public address announcement advising the crew prior to OPS connection or disconnection.

2 VERIFICATION AND TESTING

2.1 Tests at the first call at a shore supply point

2.1.1 Prior to conducting the test referred to in this paragraph, the compatibility assessment or technical analysis, as appropriate, should be performed. Both shore- and ship-sides should cross-review the initial test reports before the tests at the first call at a shore supply point. The initial tests for high voltage should meet standard IEC/IEEE 80005-1:2019 requirements.

2.1.2 The following should be performed as an integration test by both shore- and ship-sides before the OPS connection:

- .1 visual inspection;
- .2 power frequency test for switchgear assemblies and voltage test for cable;
- .3 insulation resistance measurement;
- .4 measurement of the earthing resistance;
- .5 function test of the protection devices;
- .6 function test of the interlocking system;
- .7 function test of the control equipment;
- .8 equipotential bond monitoring test or equivalent;
- .9 phase-sequence test;
- .10 function test of the cable management system;
- .11 integration tests to demonstrate that the shore- and ship-side installations work properly together; and
- .12 function test of the emergency stops.

2.1.3 The tests in paragraphs 2.1.2.2 to 2.1.2.4 should be performed only if either of the installations, shore- or ship-side, has been out of service or not in use for more than 30 months.

2.1.4 There should be a suitable cross-boundary safety system, consisting of physical, operational and communications procedures, that is jointly controlled by both ship- and shore-side PICs. This should include appropriate procedures for ensuring the integrity of any isolations, such as a "lock out/tag out" system.

2.2 Tests at repeated calls of a shore supply point

2.2.1 The tests referred to in this paragraph should meet standard IEC/IEEE 80005-1:2019 requirements.

2.2.2 If the time between port calls (the same shore supply point) does not exceed 12 months and if no modifications have been performed either on the shore- or ship-side installations, the following verification should be conducted:

- .1 visual inspection;
- .2 confirmation that no earth fault is present;
- .3 statement of voltage and frequency;
- .4 an authorized switching and connection procedure; and
- .5 function test of the emergency stops.

2.2.3 There should be a suitable cross-boundary safety system, consisting of physical, operational and communications procedures, that is jointly controlled by both ship- and shore-side PICs. This should include appropriate procedures for ensuring the integrity of any isolations, such as a "lock out/tag out" system.

2.2.4 Taking into account paragraph 2.1.3, if the time between port calls (the same shore supply point) exceeds 12 months, then the tests in paragraphs 2.1.2.1 to 2.1.2.12 should be conducted.

3 OPERATION

3.1 Personal protective equipment

Personnel working on handling, connection and operation of OPS systems should wear the personal protective equipment (PPE) as required by national regulations (shore-side) or as specified in the ship safety management system (ship-side).

3.2 High voltage (HV)

3.2.1 Pre-connection and connection

The detailed procedures for shore power transfer should include:

- .1 a pre-connection safety inspection, which in turn should include:
 - .1 a visual inspection;
 - .2 the definition of restricted access areas on both ship- and shore-side connection;
 - .3 verification of the locations of the communication devices, i.e. walkie-talkie and telephone, fire-fighting equipment and first aid devices;
 - .4 verification of the PPE of the personnel involved; and
 - .5 confirmation that both shore- and ship-side circuit breakers are open and isolated, and circuits are earthed;

- .2 cross-check of the communication equipment;
- .3 confirmation that there are no safety-critical operations on the ship, prior to connecting to the shore power supply (see paragraph 1.3.7);
- .4 operation of the cable management system:
 - .1 ensure the power cables are de-energized;
 - .2 turn on the cable management system and deploy the cable(s);
 - .3 connect the cable and secure the connection; and
 - .4 activate the cable monitor systems to automatically observe the cable tension and length, and adjust, as necessary; and
- .5 simulation of the "safety circuit pilot loop operation" by both shore- and ship-sides to confirm the appropriate breakers will trip.

3.2.2 Supply of power

3.2.2.1 Where the shipboard generator is intended to run in parallel with the shore power for a period of time specified in the compatibility assessment, the operation procedure may include, but not be limited to, the following:

- .1 confirmation of the sequence of all switching operations;
- .2 both parties should confirm that the connection has been completed, the connection area made safe and earthing circuits have been removed;
- .3 the ship-side should communicate with the PIC indicating that it is safe to close the shore-side circuit breaker; and
- .4 the shore power transfer by the ship-side should be, as follows:
 - .1 ship's generator should synchronize with the shore-side grid;
 - .2 following synchronization, the load should be transferred between the shore supply and the ship source(s) of electrical power;
 - .3 the ship-side should gradually reduce the load for the ship's generators and transfer the load to the shore system; and
 - .4 once the ship's generators have reduced the load sufficiently, the generator breaker should be opened and the generator engine can then be shut down.

3.2.2.2 Where the load transfer is executed via blackout, the operation should follow the procedures in paragraph 3.2.2.1.1 to 3.2.2.1.3.

3.2.3 Disconnection

3.2.3.1 Shore power disconnection via parallel connection from the OPS should include the following detailed procedures:

- .1 a safety inspection, which in turn should include:
 - .1 verification of the locations of communication devices, i.e. walkie-talkie and telephone, fire-fighting equipment and first aid devices; and
 - .2 verification of the PPE of the personnel involved;
- .2 the PIC should confirm that there are no safety-critical operations on the ship prior to disconnecting from the shore power supply (see paragraph 1.3.7);
- .3 the shore power transfer by the ship-side, which should be as follows:
 - .1 the ship-side should start ship generator(s);
 - .2 ship's generator should synchronize with the shore-side grid;
 - .3 following synchronization, the load should be transferred between the shore supply and the ship source(s) of electrical power; and
 - .4 the ship-side should gradually increase the load for the ship's generators;
- .4 the ship-side requires disconnection from the OPS;
- .5 the ship-side may open the ship-side circuit breaker;
- .6 the ship-side should communicate with the PIC indicating that it is safe to open the shore-side circuit breaker;
- .7 both parties should confirm that both ship- and shore-side circuit breakers are isolated, connection area made safe and earthing circuits are completed;
- .8 the power and control cable (if applicable) should be disconnected; and
- .9 when the cable management system is installed on board, it should be operated to collect and store the shore cable as per the applicable procedures.

3.2.3.2 Shore power disconnection via a blackout connection should be in accordance with paragraph 3.2.3.1, except for paragraphs 3.2.3.1.3.2 to 3.2.3.1.3.4.

3.3 Low voltage (LV)

3.3.1 Technical analysis

A technical analysis should be conducted to confirm the suitability of both ship- and shore-side OPS arrangements.

3.3.2 Pre-connection and connection

Shore power transfer via parallel and via a blackout connection should include the following detailed procedures:

- .1 a pre-connection safety inspection, which in turn should include:
 - .1 a visual inspection;
 - .2 the definition of restricted access areas on both ship-side and shore-side connection;
 - .3 verification of the locations of the communication devices, i.e. walkie-talkie and telephone, fire-fighting equipment and first aid devices;
 - .4 verification of the PPE of the personnel involved; and
 - .5 confirmation that both shore- and ship-side circuit breakers are open and power circuits are de-energized;
- .2 cross-check of the communication equipment;
- .3 the PIC should confirm that there are no safety-critical operations on the ship prior to connecting to the shore power supply (see paragraph 1.3.7);
- .4 operation of the cable management system fit for the intended purpose; and
- .5 simulation of the "safety circuit pilot loop operation" by both shore- and ship-sides to confirm the appropriate breakers will trip.

3.3.3 Supply of power

3.3.3.1 Where the shipboard generator is intended to run in parallel with the shore power for a period of time specified in the technical analysis (see paragraph 3.3.1.1), the operation procedure may include, but not be limited to, the following:

- .1 confirmation of the sequence of all switching operations;
- .2 both parties should confirm that the connection has been completed, connection area made safe and, if applicable, earthing circuits have been removed;
- .3 the ship-side should communicate with the PIC indicating that it is safe to close the shore-side circuit breaker; and
- .4 the shore power transfer by the ship-side should be as follows:
 - .1 ship's generator should synchronize with the shore-side grid;
 - .2 following synchronization, the load should be transferred between the shore supply and the ship source(s) of electrical power;
 - .3 the ship-side should gradually reduce the load for the ship's generators and transfer the load to the shore system; and

- .4 once the ship's generators have reduced the load sufficiently, the generator breaker should be opened and the generator engine can then be shut down.

3.3.3.2 Where the load transfer is executed via blackout, operation procedure should be in accordance with paragraphs 3.3.3.1.1 to 3.3.3.1.3.

3.3.4 Disconnection

3.3.4.1 Shore power disconnection via parallel connection from the OPS should include the following detailed procedure:

- .1 a safety inspection, which in turn should include:
 - .1 verification of the locations of communication devices, i.e. walkie-talkie and telephone, fire-fighting equipment and first aid devices; and
 - .2 verification of the PPE of the personnel involved;
- .2 the PIC should confirm that there are no safety-critical operations on the ship prior to disconnecting from the shore power supply (see paragraph 1.3.7);
- .3 the shore power transfer by the ship-side, which should be, as follows:
 - .1 the ship-side should start ship generator(s);
 - .2 ship's generator should synchronize with the shore-side grid;
 - .3 following synchronization, the load should be transferred between the shore supply and the ship source(s) of electrical power; and
 - .4 the ship-side should gradually increase the load for the ship's generators;
- .4 the ship-side requires disconnection from OPS;
- .5 the ship-side may open the ship-side circuit breaker;
- .6 the ship-side should communicate with PIC indicating that it is safe to open the shore-side circuit breaker;
- .7 to ensure that the power circuit is de-energized, both parties should confirm that both ship- and shore-side circuit breakers are open, circuits are isolated, and, if applicable, earthed;
- .8 the power and control cable (if applicable) should be disconnected; and
- .9 when the cable management system is installed onboard, it should be operated to collect and store the OPS cable as per the applicable procedures.

3.3.4.2 Shore power disconnection via a blackout connection should be in accordance with paragraph 3.3.4.1, except for paragraphs 3.3.4.1.3.2 to 3.2.3.1.3.4.

4 SAFETY PRECAUTIONS BEFORE MAINTENANCE

The planned maintenance programme for OPS systems should include the following "lock out/tag out" and equipment grounding procedures to ensure personnel safety:

- .1 switch off the circuit breaker;
- .2 lock against reclosure;
- .3 confirm that lines and equipment are de-energized;
- .4 ground and short circuit the phases; and
- .5 cover, partition or screen of adjacent line sections.

5 DOCUMENTATION

5.1 OPS operation procedures should be included in the ship safety management system.

5.2 The following information should also be available onboard:

- .1 a complete system description, including circuit diagrams, operation instructions and specification of set points of protection, monitoring and alarming devices of the ship installations;
- .2 records of completed compatibility assessments, including port-specific information, such as agreed joint switching procedures;
- .3 step-by-step instructions for OPS connection and disconnection, including equipotential bonding and load transfer;
- .4 means to inhibit the starting of equipment which would result in failure, overloading or activation of automatic load reduction (if any) measures when a supply system is connected;
- .5 procedures for setting the transfer time limit, which may be adjustable in order to match the ability for an external source of electrical power to accept and transfer load, if applicable;
- .6 emergency shutdown and ship power restoration procedures;
- .7 appropriate provisions for the storage of OPS equipment when not in use;
- .8 a maintenance plan to establish periodic tests and maintenance procedures for the system; and
- .9 a pre-connection checklist, to include but not limited to berth, OPS supply point, communication method, operational limitations during berthing, contact information for PICs, estimated power consumption and agreed switching procedures.

6 PERSONNEL FAMILIARIZATION

6.1 The company, as defined in SOLAS regulation IX/1.2, should ensure that onboard personnel involved in OPS operation are familiarized with the onboard OPS system for safe operation in accordance with STCW regulation I/14, paragraph 1.5.

6.2 A PIC on board should be in charge of the ship-side installations in service. Only competent personnel who have received familiarization in accordance with paragraph 6.1 above and authorized by the PIC should be involved with the physical connection, power transfer and OPS disconnection procedures.

6.3 PICs of high or low-voltage OPS systems should be:

- .1 electrotechnical officers holding a certificate of competency in accordance with the requirements of regulation III/6 of the 1978 STCW Convention; or
- .2 chief engineer officers and second engineer officers holding a certificate of competency in accordance with the requirements of regulations III/2 or III/3 of the 1978 STCW Convention.

6.4 A PIC or personnel designated by a PIC should be on duty during the OPS service following connection and power transfer.

ANNEX 21

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

Introduction

1 This justification for a new output has been prepared 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.4), taking into account resolution A.1111(30) on *Application of the Strategic Plan of the Organization*.

2 It is proposed to add a new output on the "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.

3 Reference is made to documents MSC 102/22/6 (ISO), MSC 103/20/15 (IACS), MSC 103/20/17 (ICS et al.), MSC 104/17/6 (CESA), MSC 105/19/1 (Secretariat), MSC 105/19/5 (ILAMA), MSC 105/19/6 (ISO), MSC 105/19/7 (CESA), MSC 105/19/8 (IACS), MSC 106/18/3 (IACS), MSC 106/18/5 (ILAMA), SSE 8/15/5 (IACS), SEE 8/15/14 (ILAMA), SSE 9/19/1 (Chair), SSE 9/19/6 (Canada et al.), and SSE 9/19/8 (CESA), which highlight some of the challenges members and observer organizations have experienced in the implementation of resolution MSC.402(96). Following the discussion during SSE 9, the Sub-Committee agreed to develop a justification for a new output, for submission to MSC 107, in accordance with MSC-MEPC.1/Circ.5/Rev.4.

4 This proposal is submitted in accordance with annex 3 of resolution A.1111(30).

IMO objective

5 The proposal falls under the scope of IMO's mission and vision 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.

6 The proposal supports SD 7: Ensure regulatory effectiveness by ensuring that a universally adopted, effective, international regulatory framework is in place and implemented consistently.

Need

7 Though the Organization has made progress on addressing the risk of accidents with lifeboats, the lack of clear and unambiguous guidance related to the maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear, the authorization of service providers, and the certification of personnel who do the work leads to inconsistent application of the requirements and threatens the availability of adequate competent servicing of life-saving equipment installed on ships operating worldwide.

8 SSE 9 noted different interpretations or understanding of provisions of resolution MSC.402(96) by flag States, port State control officers and industry stakeholders. A number of flag States have issued instructions regarding the implementation of resolution MSC.402(96); the instructions differ in respect of issues related to the requirements, potentially leading to non-uniform implementation of resolution MSC.402(96).

Analysis of the issue

9 This Organization has previously considered the issue of the unacceptably high number of accidents with lifeboats in which crew have been injured, sometimes fatally, while participating in lifeboat drills and/or inspections, and identified inadequate maintenance of lifeboats, davits and launching equipment as a cause of such accidents. These concerns were addressed, in part, by requirements in MSC.1/Circ.1049, MSC.1/Circ.1093, and later by MSC.1/Circ.1206, MSC.1/Circ.1206/Rev.1, and MSC.1/Circ.1277, which were made mandatory by resolutions MSC.402(96) and MSC.404(96).

10 SOLAS regulations III/3.25 and III/20.11 specify that maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear shall be carried out in accordance with the requirements of resolution MSC.402(96).

11 Section 7.1 of resolution MSC.402(96) specifies the requirements for authorization of service providers. In particular, 7.1.1 addresses the requirements for the employment and documentation of personnel, and requires that personnel be "...certified in accordance with a recognized national, international or industry standard as applicable, or a manufacturer's established certification programme."

12 At the time of publication of resolution MSC.402(96), no national, international or industry standards for the certification of personnel had been identified. Subsequently, ISO published the series of standards ISO 23678:2022-Service personnel for the maintenance, thorough examination, operational testing, overhaul and repair of lifeboats (including free-fall lifeboats) and rescue boats (including fast rescue boats), launching appliances and release gear (ISO 23678:2022 series), with a view to supporting paragraph 7.1.1 of resolution MSC.402(96). The SSE Sub-Committee has determined that a review of this standard should be undertaken to evaluate whether it is appropriate for this purpose.

13 Paragraph 7.1.1 requires that, irrespective of the standard or certification programme used, it must "... comply with section 8 for each make and type of equipment for which service is to be provided" (emphasis added). The differing use of terms, such as "make", "type" and "certification programme" by flag Administrations, ROs, authorized service providers and manufacturers has caused inconsistent application of the Requirements (resolution MSC.402(96)) related to the required certification for servicing personnel and the broader application to the authorization of service providers.

14 Subsequent sub-paragraphs in 7.1 require that an authorized service provider have "sufficient tools, and in particular any specialized tools specified in the manufacturer's instructions, including portable tools as needed for work to be carried out on board ship; access to appropriate parts and accessories as specified for maintenance and repair; and availability of the manufacturer's instructions for repair work involving disassembly or adjustment of on-load release mechanisms and davit winches." It is not clear how this is to be achieved or demonstrated, which may lead to inconsistent application.

Analysis of implications

15 It is anticipated that this proposal does not incur any additional cost to the maritime industry. Conversely, embarking on this output would give industry the clarity required to ensure consistent application and, therefore, alleviate administrative burden created by following differing procedures when servicing ships of differing flags. The checklist for identifying administrative requirements is included in appendix C on this basis.

Benefits

16 It is expected that these amendments will clarify the application 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)).

17 The amendments will facilitate the global and consistent implementations of these provisions.

Industry standards

18 The ISO 23678:2022 series of standards seeks to provide a minimum standard of competency for the certification of servicing personnel, and should be reviewed for consistency with the Requirements issued by the Organization.

Output

19 The proposed new title of the output is "Comprehensive review 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)) to address challenges with implementation of the Requirements."

Human element

20 The completed *Checklist for considering and addressing the human element* (MSC-MEPC.1/Circ.5/Rev.4) is provided in appendix A.

Urgency

21 The concerns addressed by the proposed output had been raised at MSC 102, but, owing to the pandemic, discussion on this critical matter has been deferred for several years and MSC 106 instructed the Sub-Committee to consider this as an urgent item.

22 The work on the output should be completed in two sessions with the Sub-Committee on Ship Systems and Equipment (SSE) as the associated organ. The item should be included in the biennial agenda for 2022-2023 and the provisional agenda for SSE 10.

Action requested of the Committee

23 The Committee is invited to consider the above justification for a new output on "Comprehensive review 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)) to address challenges with implementation of the Requirements", for inclusion in the biennial agenda for 2022-2023 and the provisional agenda for SSE 10, and take action, as appropriate.

APPENDIX A

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

	1 Question	2 Yes/ No	3 IMO References	4 Considerations	5 Instructions
	Workload		<i>Other relevant references may be added</i> <i>Strike out references that are not relevant</i>	<i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
1	Does the "output" affect workload?	No		Proposed changes will not affect the workload of crew, as the potential modifications to the resolution relate to service providers and manufacturers of LSA.	
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	See 1 above	

	1 Question	2 Yes/ No	3 IMO References	4 Considerations	5 Instructions
			have been an issue (MSC/Circ.621)		
1.1.1	Operations including navigation, cargo and engineering	No		See 1 above	
1.1.2	Maintenance of the ships structure and its equipment	No		See 1 above	
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		Clarification of the terms and consistency with the relevant standards would not significantly affect shore parties listed here	
1.2.1	Companies' administration	No		See 1.2 above	
1.2.2	Flag State, port State and classification societies administration such that certification and other processes are compromised or delayed	No		See 1.2 above	

	1 Question	2 Yes/ No	3 IMO References	4 Considerations	5 Instructions
	Decision-making		<i>Other relevant references may be added</i> <i>Strike out references that are not relevant</i>	<i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
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 to the resolution 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 incomplete information	No		See 2 above	
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			<i>Other relevant references may be added</i> <i>Strike out references that are not relevant</i>	<i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
3	Does the "output" affect the living and working environment?	No	<i>Guidelines on the basic elements of a shipboard occupational health and safety programme (MSC-MEPC.2/Circ.3)</i> <i>Guidelines on fatigue (MSC.1/Circ.1598)</i>	Proposed changes will not affect the living and working environment of crew, as the potential modifications to the resolution 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 high-voltage, high-pressure fluids	No		See 3 above	
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 owing to noise, vibration, temperatures, dust and other contaminants	No		See 3 above	

	1 Question	2 Yes/ No	3 IMO References	4 Considerations	5 Instructions
	Operation and Maintenance		<p><i>Other relevant references may be added</i></p> <p><i>Strike out references that are not relevant</i></p>	<p><i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i></p>	<p><i>Identify how human element considerations should be addressed in the output</i></p>
4.	<p>Does the "output" affect the operation and maintenance of the ship, its structure or systems and equipment?</p>	No	<p>Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8)</p> <p>Guidelines for bridge equipment and systems, their arrangement and integration (BES) (SN.1/Circ.288)</p> <p>Principles of minimum safe manning (Resolution A.1047(27))</p> <p>Issues to be considered when introducing new technology on board ships (MSC/Circ.1091)</p> <p>Guideline on software quality assurance and human-centred design for e-navigation (MSC.1/Circ.1512)</p> <p>Guidelines for the standardization of user interface design for navigation equipment (MSC.1/Circ.1609)</p>	<p>Proposed changes will not affect the operation and maintenance of the LSA by crew, as the potential modifications to the resolution relate to service providers and manufacturers of LSA</p>	

	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 implementation date of the output	No		See 4 above	

	1 Question	2 Yes/ No	3 IMO References	4 Considerations	5 Instructions
	Measures to address the human element		<i>Other relevant references may be added</i> <i>Strike out references that are not relevant</i>	<i>If answer to question is "yes" identify considerations. If answer is "no" make proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
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	
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 B

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE CONVENTION AND RELATED MANDATORY INSTRUMENTS (PROPOSAL/DEVELOPMENT)

Part I – Submitter of proposal (refer to paragraph 3.2.1.1)*

1	<i>Submitted by SSE 9</i>
2	<i>MSC 107</i>
3	<i>3 March 2023</i>

Part II – Details of proposed amendment(s) or new mandatory instrument (refer to paragraphs 3.2.1.1 and 3.2.1.2)*

1	<i>Strategic direction</i>
<i>SD 7: Ensure regulatory effectiveness</i>	
2	<i>Title of the output</i>
<i>"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"</i>	
3	<i>Recommended type of amendments (MSC.1/Circ.1481) (delete as appropriate)</i>
<i>Four-year cycle of entry into force</i>	
4	<i>Instruments intended for amendment (SOLAS, LSA Code, etc.) or developed (new code, new version of a code, etc.)</i>
<i>Resolution MSC.402(96)</i>	
5	<i>Intended application (scope, size, type, tonnage/length restriction, service (International/non-international), activity, etc.)</i>
<i>All ships</i>	
6	<i>Application to new/existing ships</i>
<i>New and existing ships.</i>	
7	<i>Proposed coordinating sub-committee</i>
<i>SSE</i>	
8	<i>Anticipated supporting sub-committees</i>
<i>III</i>	
9	<i>Timescale for completion</i>
<i>Two sessions</i>	
Part II – Details of proposed amendment(s) or new mandatory instrument (refer to paragraphs 3.2.1.1 and 3.2.1.2)*	
10	<i>Expected date(s) for entry into force and implementation/application</i>
<i>1 January 2028</i>	
11	<i>Any relevant decision taken or instruction given by the Committee</i>
<i>SSE 9 was instructed by MSC 106 to address this as an urgent matter.</i>	

* Parts I and II should be completed by the submitter of a proposed new amendment, to the fullest extent possible.

APPENDIX C

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 <input type="checkbox"/> Start-up <input type="checkbox"/> 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 <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing	NR X	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> 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 <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
5. Other identified requirements?	NR X	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing

ANNEX 22*

STATEMENTS BY DELEGATIONS AND OBSERVERS

OPENING

Statement by the delegation of Spain

"Señor presidente, distinguidos delegados, hemos solicitado la palabra para poner en conocimiento del subcomité que durante la madrugada del día 19 de febrero el buque tipo car carrier Grande California, sufrió un incendio a bordo cuando se encontraba navegando a 6 millas al noroeste del dispositivo de separación de Trafico de Finisterre frente a las costas de Galicia con una carga de 4000 vehículos, 40 de los cuales eran de propulsión totalmente eléctrica.

Salvamento marítimo español movilizó diferentes unidades marítimas y aéreas para atender la emergencia, siendo el incendio finalmente controlado por la tripulación. Una vez que se constató que el incendio estaba extinguido y la temperatura controlada, la administración marítima española autorizó la entrada del buque en el puerto de Vigo para ser inspeccionado. Este caso se une a otros dos incendios acontecidos en buques del mismo tipo en marzo y mayo del año 2019, donde salvamento marítimo español desplegó sus medios para llevar a cabo el rescate de sus tripulaciones, participar en las labores de extinción de los incendios y posterior operación de remolque de dichos buques.

Desde la administración marítima española expresamos nuestra preocupación por la sucesión de incendios en buques tipo car carrier y hacemos un llamamiento a los estados de abanderamiento, a las organizaciones reconocidas que actúen en su nombre, así como a las compañías navieras que operan buques tipo car carrier y a sus tripulaciones, para que extremen las precauciones a la hora de inspeccionar y mantener los medios de detección y extinción de incendios en este tipo de buques, así como los procedimientos operativos para hacer frente a emergencias a bordo de conformidad con el código internacional de gestión de la seguridad.

Por último, alentamos a los estados rectores de puerto a que lleven a cabo campañas concentradas de inspección sobre los buques tipo car carrier que visiten sus puertos con el objeto de comprobar los aspectos que se han citado anteriormente."

AGENDA ITEM 19

Statement by the observer from ISO

"ISO would like to thank the sponsors of SSE 9-16-6. ISO prefers option 1 of paragraph 13 but could also support option 2. ISO would like to thank the secretariat for paper SSE 9 J/7 and the 5 options that it presents. ISO after careful consideration prefers option 1 but can also support option 3. Option 2 appears to focus on only the papers submitted by CESA and IACS and in particular SSE 9-19-8 submitted by CESA.

ISO feels it is imperative that submissions by technical experts such as ILAMA should not be disregarded, further, ISO would welcome the LSA correspondence group robustly scrutinising the compatibility of ISO 23678:2022 with MSC 402 (96).

MSC.402(96) 7.1.1 states employment and documentation of personnel certified in accordance with a recognized national, international or industry standard as applicable, or a manufacturer's established certification programme.

* Statements have been included in this annex sorted by agenda items and in the language of submission (including translation into any other language if such translation was provided).

ISO 23678:2022 series is a recognised international standard. To not recognise ISO 23678 as an international standard is very confusing to ISO. The ISO 23678:2022 series has been adopted by national standards bodies such as British Standards Institute, Danish Standards, it has been referenced in many member states policies related to the authorisation of service providers in accordance with the requirements of MSC. 402 (96) paragraphs 7.1.1 and section 8. The competency framework contained in ISO 23678 has been used to train and certify hundreds of personnel, therefore, by default, it is a recognised international standard. ISO would like to point out that the development process of the 23678:2022 series was robust and transparent, a cross section of all MSC. 402(96) stakeholders were consulted and engaged, the work group consisted of experts representing national standards bodies, flag Administrations, IACS members, OEMs of the equipment covered by the resolution and technical training experts that were previously involved with the STCW 95 competency framework.

Option 2 in document SSE 9/J/7, could potentially disregard the six years of hard work ISO has undertaken to produce the 23678:2022 series. The standards have gone through a rigorous consultation and balloting process to ensure that they are able to support the implementation of MSC 402 (96) effectively and most importantly safely.

The driving factor of MSC 402 (96) was to reduce accidents and incidents involving lifeboats, rescue boats, launching appliances and release gear. The ISO work group when it was first established was tasked to ensure that this overarching objective of the resolution was achieved, and additionally, add a layer of safety, not to dilute or reduce safety. ISO strongly believes that the 23678:2022 series has achieved this objective. This is validated by the fact that, to date a vast number of Service Providers have already been authorised based on the competency framework detailed in the standards. These service providers have completed thousands of inspections in a safe and effective manner, which demonstrates that the ISO standard is fit for purpose. Therefore, it does not seem a feasible option to roll back the clock and disregard the standards, the implications of which will certainly, negatively impact the shipping industry.

ISO believes it should be now left to the technical experts appointed by member states and NGOs to decide if ISO 23678:2022 recognised international standard is compatible with the requirements of MSC 402 (96). Rejecting the standards without deliberation by experts of an LSA work group would bring into question on a broader scale the ability of ISO to development training standards that are compatible with SOLAS.

As all in the room know, referencing ISO 23678:2022 in a footnote of a SOLAS statutory regulation does not make it a mandatory requirement. It provides an option in the view of ISO and many stakeholders, a solution to the disparity and complexity that has been experienced since MSC 402(96) came into force. The other options of a national standard, industry standard or established manufactures training programme can remain as described in SSE 9-19-6 paragraph 13 option 2. ISO would like to point out that to date a more comprehensive training framework does not exist and to disregard it could be a costly decision.

Finally, ISO fully recognises that the definitions within the standard and the resolution need to be fully aligned before ISO 23678 can be referenced, ISO remains confident that they are, however as stated within their paper submitted to MSC 105, should the subcommittee decide that the definitions are not aligned, ISO is prepared and standing by to amend the definitions and terms within ISO 23678:2022 part 1. It does not make sense to disregard a comprehensive competency framework based on essentially that agreement cannot be reached in respect of one definition, the word "type".

Statement by the observer from ILAMA

" Good day to you Chair and good day to all.

ILAMA acknowledges SSE 9/19/8 submitted by CESA. Regrettably, ILAMA finds it cannot support the proposals made within this paper. ILAMA is confused that although the paper purports to represent the views of LSA manufacturers, ILAMA, as the sole NGO here at the IMO that DOES represent lifesaving appliance manufacturers, were not consulted at all by CESA during the drafting of this paper nor at any other time.

Notably however, ILAMA were extensively consulted by ISO, during the drafting of ISO23678:2022 and our manufacturing members collaborated in actually defining "make and type".

Accordingly, these definitions were considered by ISO and ultimately included in the now finalised and published, international standard.

Finally, ILAMA supports option 1 in your paper SSE 9/J/7.

Thank you Chair."
