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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The eighth session of the Sub-Committee on Ship Systems and Equipment (SSE), which was postponed to 2022 due to the COVID-19 pandemic, was held remotely from 28 February to 4 March 2022. The session was chaired by Mr. U. Şentürk (Turkey), who was unanimously re-elected as Chair for 2022 at the opening of the session. The Vice-Chair, Mr. C. Aliperta (Palau), was unanimously elected as Vice-Chair for 2022 at the opening of the session.

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 8/INF.1.

Opening address

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of the 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.

Measures taken to facilitate the remote session

1.5 The Sub-Committee noted that the Maritime Safety Committee (MSC), at its second extraordinary session, which was part of the extraordinary session of all IMO Committees (ALCOM/ES), had agreed to waive rule 3 of its rules of procedure, in part, to allow sessions to be held remotely. The Committees had jointly approved MSC-LEG-MEPC-TCC-FAL.1/Circ.1 on *Interim guidance to facilitate remote sessions of the Committees during the COVID-19 pandemic* (Interim Guidance), which was noted by the Council (ALCOM/ES/5/1, paragraph 3.5 and annex 1; C 124/D, paragraph 4.1.1; and MSC 102/24, paragraph 1.12).

Statements by delegations and the Secretary-General

Situation in Ukraine

1.6 The delegations of Australia, Belgium, Brazil, Canada, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Japan, Latvia, Malta, the Netherlands, New Zealand, Norway, Panama, the Philippines, Poland, Portugal, the Republic of Korea, the Russian Federation, Slovenia, Spain, Sweden, Turkey, Ukraine, the United Kingdom and the United States, and the observers from EC and ITF made statements with regard to the current situation in Ukraine. The full text of the statements is set out in annex 18 as requested by Members and observers.

1.7 In this regard, the Secretary-General expressed his deepest condolences for the victims of the security crisis in Ukraine and his sympathy for those seafarers who were impacted by the conflict. He noted that the shipping industry, in particular the seafarers, who were already having difficulties due to the COVID-19 pandemic while contributing to the global economy, should be protected as much as possible. The Secretary-General invited Member States to provide pertinent updates on the safety and security of seafarers.

Euroferry Olympia incident

1.8 The Sub-Committee noted, with appreciation, an update from the delegation of Greece regarding the fire incident of 18 February 2022 on board the **Euroferry Olympia**.

Villa de Pitanxo incident

1.9 The delegation of Spain made a statement with regard to the sinking of the fishing vessel **Villa de Pitanxo** on 15 February 2022. The full statement is set out in annex 18.

Adoption of the agenda and related matters

1.10 The Sub-Committee adopted the agenda (SSE 8/1/Rev.1) and agreed to be guided in its work, in general, by the annotations contained in document SSE 8/1/1/Rev.1 (Secretariat) and the arrangements in document SSE 8/1/2 (Secretariat).

1.11 Furthermore, the Sub-Committee noted a view in relation to document SSE 8/10/1 (China) that the proposals therein should be considered as part of the formal safety assessment (FSA) to be conducted by EMSA, which was initially proposed for consideration at a future session of the Sub-Committee, at which the expected FSA Experts Group's report would be considered (SSE 8/1/2/Add.1). Having agreed to consider the matter under agenda item 10 (see paragraph 10.5), the Sub-Committee endorsed the arrangements and the remaining actions proposed in document SSE 8/1/2, as may have been modified in document SSE 8/1/2/Add.1 (Chair), for agenda items and documents to be considered by correspondence prior to the virtual meeting.

1.12 The Sub-Committee also noted that the intention of considering selected agenda items and documents by correspondence was to use the limited time available efficiently; and that the proposed actions only concerned a selection of items and documents, where consideration by correspondence was considered to be feasible, with the understanding that any remaining documents submitted to this session would be considered under the relevant agenda items.

1.13 Additionally, the Sub-Committee noted that all relevant actions had been reflected in this report under the appropriate agenda items for the items wholly or partially considered by correspondence (see sections 2, 10, 13, 14, 15, 16, 18 and 19). In accordance with the relevant endorsed action, the Sub-Committee established the Experts Group on the Revision of the Code of Safety for Diving Systems under this agenda item, with the terms of reference based on the proposal by the Chair, as contained in document SSE 8/1/2/Add.1 for item 14 (see section 14).

2 DECISIONS OF OTHER IMO BODIES**General**

2.1 The Sub-Committee, having noted the decisions and comments pertaining to its work made by MSC 102, MSC 103, MSC 104, HTW 7 and MEPC 77, as reported in documents SSE 8/2, SSE 8/2/1, SSE 8/2/2 (Secretariat), as well as those made by HTW 8 in document (SSE 8/1/2/Add.1), agreed to take action, as appropriate, under the relevant agenda items.

Outcome of MSC 102

2.2 The Sub-Committee noted the decision of MSC 102 to transfer the output on "Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III" from the provisional agenda of SSE 8 to the provisional agenda of SDC 8 (MSC 102/24, paragraph 19.16).

Outcome of MSC 104

2.3 The Sub-Committee also noted that MSC 104 agreed to an ad hoc midterm amendment cycle under exceptional circumstances in order to minimize the disruption to the amendment cycle caused by the COVID-19 pandemic, in accordance with the *Guidance on entry into force of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1481), i.e. entry into force on 1 January 2026 for the draft amendments to SOLAS and related mandatory instruments under the purview of the Committee, adopted before 1 July 2024 (MSC 104/18, paragraph 3.16.1).

3 NEW REQUIREMENTS FOR VENTILATION OF SURVIVAL CRAFT

Background

3.1 The Sub-Committee recalled that SSE 7 had finalized draft amendments to the LSA Code for liferafts and partially enclosed lifeboats, thereby complementing the draft amendments for totally enclosed lifeboats previously agreed by SSE 5, as consolidated in annex 1 to document SSE 7/WP.3, with a view to consideration by the Committee once the draft amendments to the Revised Recommendation (resolution MSC.81(70)) were finalized (SSE 7/21, paragraph 3.20).

3.2 The Sub-Committee also recalled that, with regard to the draft amendments to the *Revised recommendation on testing of live-saving appliances* (resolution MSC.81(70)) on new ventilation requirements, SSE 7 had:

- .1 finalized the draft amendments with respect to paragraphs 6.10 (Lifeboat operational test) and 6.14 (Additional tests for totally enclosed lifeboats), as set out in annex 2 to document SSE 7/WP.3 (SSE 7/21, paragraph 3.23.1);
- .2 agreed to wait until the draft amendments to the Revised Recommendation were complete, so that they could be submitted to the Committee for consideration as a package, together with the draft amendments to the LSA Code (SSE 7/21, paragraph 3.23.2); and
- .3 not been able to finalize the draft amendments for liferafts and partially enclosed lifeboats, and had invited interested Member States and international organizations to submit proposals regarding test methods for the ventilation requirements of liferafts and long-term time-weighted average CO₂ concentration to this session (SSE 7/21, paragraph 3.22).

3.3 The Sub-Committee further recalled that in order to develop the draft amendments to the Revised Recommendation regarding the ventilation of partially enclosed lifeboats, SSE 7 had established the Correspondence Group on Life-saving Appliances (LSA) with the terms of reference set out in paragraph 3.26 of document SSE 7/21, and had instructed the Group to submit a report to this session.

3.4 The Sub-Committee recalled further that MSC 104, having considered the proposals in documents MSC 104/3/2 (Bahamas et al.) and MSC 104/INF.11 (Japan) to approve the draft amendments to the LSA Code for totally enclosed lifeboats agreed by SSE 7 (MSC 104/18, paragraph 3.16), had:

- .1 agreed to an ad hoc midterm amendment cycle under exceptional circumstances in accordance with the Guidance (MSC.1/Circ.1481), i.e. entry into force on 1 January 2026 for the draft amendments adopted before 1 July 2024, also applicable for the draft amendments on new ventilation requirements; and
- .2 instructed the Sub-Committee to finalize its work on the draft amendments on new ventilation requirements, with a view to approval by MSC 106 and to advise the Committee on the most suitable date of application of the amendments, in consultation with the industry representatives.

Report of the LSA Correspondence Group and related documents

3.5 The Sub-Committee considered the relevant part of the report of LSA Correspondence Group (SSE 8/3) dealing with this agenda item and, having approved it in general, noted the progress made on the draft amendments to the Revised Recommendation (resolution MSC.81(70)) for the testing of the means of ventilation for partially enclosed lifeboats.

3.6 In relation to the Group's report, the Sub-Committee:

- .1 noted the discussion and progress made by the Group on the draft amendments for partially enclosed lifeboats; and
- .2 agreed that the draft amendments to the LSA Code on ventilation requirements for survival craft should enter into force on 1 January 2026, taking into account the ad hoc midterm amendment cycle agreed by the Committee, provided that the amendments to the LSA Code, together with the amendments to the Revised Recommendation were finalized either at this session or SSE 9 at the latest, and adopted before 1 July 2024, as appropriate.

3.7 In this context, the Sub-Committee also considered document SSE 8/3/5 (IACS), commenting on the report of the Correspondence Group regarding the ventilation of survival craft; in particular, on the text in square brackets of paragraph 6.18.1 of the draft amendments to the Revised Recommendation (SSE 8/3, annex 1), together with the relevant part of document SSE 8/3/3 (Japan), in relation to the test procedure for partially enclosed lifeboats developed by the Group.

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

- .1 both documents SSE 8/3/3 and SSE 8/3/5 should be referred to the LSA Working Group, together with the Group's report, for further deliberation, if established;
- .2 all the draft amendments should be finalized at this session, taking into account MSC 104's consideration of the entry-into-force date;

- .3 referring to draft paragraph 6.18.1.2.7 of the Revised Recommendation (SSE 8/3, annex 1), if the text on alternative test methods to the satisfaction of the Administration were retained, the draft test procedure developed by the Group could be acceptable; and
- .4 as per the 24-hour criteria with respect to the already agreed powered ventilation (SSE 7/WP.3, annex 1), the proposed eight-hour working day exposure (SSE 8/3/5) did not consider short-term periods, but rather years of exposure during a worker's life; however, as for the 15,000 ppm allowance, this was necessary unless allowing time for equilibrium to occur. Therefore, the following modification (shown in track changes) was suggested:
- "6.18.1 For the means of ventilation required by paragraph 4.5.5 of the LSA Code, it should be demonstrated by the test that either:
- ...
- .2 the means of ventilation provides sufficient air to keep CO₂ concentration from exceeding a time-weighted average concentration of 5000 ppm, over a period of two hours, discarding the concentrations measured until equilibrium is reached [~~, including a 15-minute time-weighted average CO₂ concentration which never exceeds 15000 ppm]."~~

3.9 Following discussion, the Sub-Committee agreed to establish the Working Group on Life-saving Appliances (LSA) to finalize the draft amendments to the Revised Recommendation for partially enclosed lifeboats, taking into account the modification proposals in document SSE 8/3/5 (see paragraph 3.18).

Application provision of the draft amendments to the LSA Code

3.10 In relation to the application provision of the draft amendments to the LSA Code, the Sub-Committee considered document SSE 8/3/1 (IACS), proposing to clarify the "installation" application pertaining to the ventilation of survival craft.

3.11 Having agreed on the need for clarification of the application provision for all types of survival craft for a harmonized implementation, the Sub-Committee further instructed the LSA Working Group (see paragraph 3.18) to consider the appropriate application provision of the draft amendments to the LSA Code on new ventilation requirements, based on annex 1 to document SSE 7/WP.3 and taking into account document SSE 8/3/1.

Amendments to the LSA Code for liferafts

3.12 With regard to the amendments to the LSA Code for liferafts, the Sub-Committee considered the following documents:

- .1 SSE 8/3/2 (Japan), proposing to modify the draft requirement for ventilation of liferafts (SSE 7/WP.3, annex 1) with respect to the criterion for weather condition;
- .2 SSE 8/INF.3 (Japan), providing an example of evaluation of criterion for weather condition based on the possibility of ingress of seawater through an entrance of a liferaft, in support of document SSE 8/3/2; and

-
- .3 SSE 8/3/6 (Democratic People's Republic of Korea), commenting on document SSE 8/3/2 regarding the proposed modification to the phrase "even with the entrances closed" in the draft amendments to the LSA Code.

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

- .1 the proposals in document SSE 8/3/2 were considered acceptable and provided clarity with regard to safety under adverse conditions;
- .2 notwithstanding the view expressed in sub-paragraph 3.13.1 above, the proposed revision in document SSE 8/3/2 seemed more like an operational guide but not a certain criterion and, therefore, it would be difficult to certify a liferaft with the ventilation system that could only meet 5000 ppm CO₂ concentration standard, in combination with the entrance opening under a certain environmental condition;
- .3 operational measures stipulated in document SSE 8/3/2 should not be part of the solution in ensuring a habitable environment for liferafts, including those to be used in polar regions, where opening the entrances would compromise the safety of occupants in low air temperatures;
- .4 the draft amendments to the LSA Code relate to technical performance and, therefore, it would not be necessary to address weather conditions as suggested in document SSE 8/3/2; and
- .5 the requirements for ventilation of liferafts, as well as partially enclosed lifeboats, should not preclude the use of natural ventilation.

3.14 In view of the above, the Sub-Committee did not support the proposal in document SSE 8/3/2.

Amendments to the Revised Recommendation for liferafts

3.15 Pertaining to the amendments to the Revised Recommendation for liferafts, the Sub-Committee had the following documents for its consideration:

- .1 SSE 8/3/3 (Japan), discussing the need to develop a new test procedure method for evaluating natural ventilation performance of liferafts and informing of ongoing research in that regard, without boarding any person on liferafts;
- .2 SSE 8/INF.4 (Japan), providing information on the research on a new test procedure for evaluating natural ventilation performance of liferafts, in support of document SSE 8/3/3;
- .3 SSE 8/3/4 (China), providing proposals on the test methods and related matters for the ventilation requirements of liferafts, based on research results on the ventilation tests of liferafts; and
- .4 SSE 8/INF.8 (China), informing of a research report regarding the ventilation systems of liferafts, in support of document SSE 8/3/4.

3.16 During discussion, the following views were noted by the Sub-Committee:

- .1 the heat produced by the occupants inside a survival craft could drive the air circulation and provide a buoyancy driven ventilation to maintain the CO₂ concentration under 5,000 ppm; the heat effect could be considered during ventilation test as indicated in document SSE 8/3/4 and, therefore, the test method for partially enclosed lifeboats should be revised accordingly;
- .2 further research should not delay the finalization of the draft amendments and, therefore, the proposal in document SSE 8/3/4 was considered acceptable; and
- .3 the draft amendments should include test methods that had been sufficiently confirmed to be feasible and, therefore, as stated in document SSE 8/3/3, additional test results for liferafts were planned to be submitted to the next session of the Sub-Committee.

3.17 Following discussion, the Sub-Committee agreed to further instruct the LSA Working Group (see paragraph 3.18) to consider the proposals in the above-mentioned documents, with a view to finalizing the draft amendments to the Revised Recommendation for liferafts.

Establishment of the LSA Working Group

3.18 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 consider the proposals in documents SSE 8/3/3 and SSE 8/INF.4, and SSE 8/3/4 and SSE 8/INF.8, with a view to finalizing the draft amendments to the Revised Recommendation (resolution MSC.81(70)) on new ventilation requirements of partially enclosed lifeboats and liferafts, based on annex 1 to document SSE 8/3, and taking into account document SSE 8/3/5, together with the associated MSC resolution, for approval in principle by MSC 106 and subsequent adoption by MSC 107;
- .2 consider the appropriate application provision of the draft amendments to the LSA Code on new ventilation requirements, based on annex 1 to document SSE 7/WP.3 and taking into account document SSE 8/3/1;
- .3 with respect to the draft amendments to the LSA Code, prepare the associated draft MSC resolution and the check/monitoring sheet and the record format, as contained in annexes 2 and 3 to the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500/Rev.1), with a view to approval by MSC 106 and adoption by MSC 107; and
- .4 prepare necessary consequential draft amendments to the survival craft test forms in the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630), as well as other forms that may need revising in support of the draft amendments to the LSA Code and resolution MSC.81(70) on new ventilation requirements, together with the associated draft MSC circular(s), with a view to approval by MSC 107, in conjunction with the adoption of the draft amendments to the LSA Code and the Revised Recommendation.

Report of the LSA Working Group

3.19 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 8/WP.3), the Sub-Committee took actions as outlined in paragraphs 3.20 to 3.27 below.

Finalization of draft amendments to the LSA Code

3.20 With respect to the draft amendments to the LSA Code, the Sub-Committee noted a view that the draft ventilation requirements for liferafts presented complex challenges and the amendments should not be finalized at this session, while the experts were still requiring further research; and, therefore, in order not to delay the process, the amendments for liferafts should be separated from the package, and those for totally and partially enclosed lifeboats should be referred to the Committee for approval.

3.21 Notwithstanding the above view, considering that the amendments were sufficient as drafted, the Sub-Committee 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, prepared based on document SSE 8/3/1, and the associated draft MSC resolution; and
- .2 the check/monitoring sheet and the record format,

as set out in annex 1, with a view to approval by MSC 106 and adoption by MSC 107.

3.22 In this respect, the Sub-Committee agreed that:

- .1 the draft amendments to the LSA Code should be adopted before 1 July 2024 and enter into force on 1 January 2026; and
- .2 the draft new ventilation requirements should be applied to totally enclosed lifeboats, partially enclosed lifeboats and liferafts installed on or after 1 January 2029, so as to allow ample time for Administrations and manufacturers to implement the new ventilation requirements.

Finalization of draft amendments to resolution MSC.81(70)

3.23 With regard to the draft amendments to the Revised Recommendation (resolution MSC.81(70)), the Sub-Committee noted the Group's consideration that:

- .1 the rationale for having entrances closed in liferafts and lifeboats for testing purposes was to prove that the ventilation openings were sufficient to ensure a CO₂ concentration within the specified limits while the craft operated in conditions which did not allow the entrances to remain open as required by respective requirements in the LSA Code, e.g. in heavy seas. Consequently, it was required to keep entrances closed for the purpose of testing of partially enclosed lifeboats and liferafts.
- .2 the requirements for peak CO₂ concentrations were removed from the test requirements for partially enclosed lifeboats in draft provision 6.18.1.2, as well as for liferafts in draft provision 5.23.1.2. "Average wind" speed should

be used rather than "wind gust" for the test environment in draft provision 6.18.1.2.2, as well as for liferafts in draft provision 5.23.1.2.2.

3.24 Consequently, noting that the Group had finalized the draft amendments, the Sub-Committee agreed to:

- .1 the draft amendments to the Revised Recommendation (resolution MSC.81(70)), for adoption at MSC 107, in conjunction with the adoption of the associated LSA Code amendments (see paragraph 3.21), as set out in annex 2; and
- .2 keep the output on "New requirements for ventilation of survival craft" on the provisional agenda for SSE 9 to allow for new research reports to be considered, if any, which could require adjustments to the agreed draft amendments to the Revised Recommendation.

Consequential draft amendments to MSC.1/Circ.1630

3.25 Regarding consequential amendments to the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630), the Sub-Committee noted that the Group had been unable to consider them due to time constraints and therefore, agreed to re-establish the Correspondence Group on Life-saving Appliances and to task the Group with preparing such amendments (see paragraph 3.26).

Re-establishment of the LSA Correspondence Group

3.26 In order to progress the work on this output intersessionally, the Sub-Committee re-established the LSA Correspondence Group, under the coordination of the United States,¹ and instructed it, taking into account comments made and decisions taken at SSE 8, to:

- .1 prepare necessary consequential draft amendments to the survival craft test forms in MSC.1/Circ.1630, as well as other forms that may need revising in support of the draft amendments to the LSA Code and resolution MSC.81(70) on new ventilation requirements; and
- .2 submit a report to SSE 9.

Extension of the target completion year

3.27 In light of the above conclusion, the Sub-Committee invited MSC 106 to extend the target completion year for this output to 2023.

¹

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4 CONSEQUENTIAL WORK RELATED TO THE NEW INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS

Background

4.1 The Sub-Committee recalled that SSE 7, having considered matters with respect to expected time of rescue and anticipated performance of life-saving appliances; estimating exposure time or maximum expected time of rescue; and estimating energy demands, hydration requirements and nutritional needs, had agreed that (SSE 7/21, paragraphs 4.3 to 4.9):

- .1 more time and experience were needed before amending the *Interim guidelines on life-saving appliances and arrangements for ships operating in polar waters* (MSC.1/Circ.1614) with respect to the above-mentioned matters;
- .2 more research was needed concerning the recommended minimum food ration and freshwater requirements, as proposed in documents SSE 7/4/2 and SSE 7/INF.7 (Canada) and, therefore, these documents could be further considered in future, together with the results of any new research; and
- .3 consideration should be given to the determination of the maximum expected time of rescue and, therefore, invited interested Member States and international organizations to submit relevant proposals to this session.

Maximum expected time of rescue

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

- .1 SSE 8/4 (Canada), proposing a methodology for estimating exposure time in polar regions to be included in the Interim Guidelines (MSC.1/Circ.1614), which also considers the impact of vessels of opportunity (VOO) on estimated exposure time; and
- .2 SSE 8/INF.6 (Canada), providing information to supplement the proposed methodology for estimating exposure time in polar regions in document SSE 8/4.

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

- .1 due to the harsh environment and given the shortage of search and rescue resources in polar regions, the maximum expected time of rescue could be greater than five days, as stipulated in the Polar Code, and rescue capacity could be insufficient for cruise ships; therefore, the documents should be considered within the LSA Working Group for amending the Interim Guidelines; and
- .2 the LSA Working Group should also consider whether the Polar Code should be revised, taking into account the proposed methodology, which could require a new output.

Instructions to the LSA Working Group

4.4 Following discussion, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.18), taking into account comments made and decisions taken in plenary, to consider the methodology for the calculation of the exposure time required, based on document SSE 8/4 and taking into account document SSE 8/INF.6, and if appropriate, prepare draft amendments for incorporating in the Interim Guidelines (MSC.1/Circ.1614), with a view to approval by MSC 106 and dissemination as MSC.1/Circ.1614/Rev.1.

Report of the LSA Working Group

4.5 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 8/WP.3), the Sub-Committee noted the Group's agreement on the proposed modifications in document SSE 8/4. Subsequently, the Sub-Committee agreed to the draft MSC circular on revised interim guidelines on life-saving appliances and arrangements for ships operating in polar waters, as set out in annex 3, with a view to approval by MSC 106 and dissemination as MSC.1/Circ.1614/Rev.1.

Completion of the work on the output

4.6 The Committee 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 7 had agreed to:

- .1 the Action plan on the revision of SOLAS chapter III and the LSA Code (SSE 7/21, annex 1), noting the related road map (SSE 7/WP.3, annex 4) that had been prepared based on the Action Plan, and had invited MSC 102 to endorse it (SSE 7/21, paragraph 5.14); and
- .2 consider the specific proposals in documents SSE 7/5 (China), SSE 7/5/1 (CLIA), SSE 7/5/2 (CLIA and RINA) and SSE 7/5/3 (Brazil) in the future, taking into account the Action Plan, as well as other proposals regarding the LSA Code in documents MSC 100/17/6 (Marshall Islands and RINA) and MSC 100/17/13 (ILAMA) (SSE 7/21, paragraph 5.10).

5.2 The Sub-Committee also recalled that MSC 102 had endorsed the Action Plan accordingly (MSC 102/24, paragraph 19.4).

5.3 The Sub-Committee further recalled that SSE 7 had tasked the Correspondence Group on Life-saving Appliances in order to progress the work, with the terms of reference set out in paragraph 5.15 of document SSE 7/21, and had instructed the Group to submit a report to this session.

Report of the LSA Correspondence Group and related documents

5.4 The Sub-Committee considered the relevant part of the report of the LSA Correspondence Group (SSE 8/3) dealing with this agenda item and, having approved it in general, noted the progress made, including reviewing of the previous work, identification of

goals and associated hazards, preparation of a high-level event sequence and a preliminary risk index.

5.5 In relation to the Group's report, the Sub-Committee:

- .1 endorsed the proposed goals in paragraph 9, together with the assigned hazards in five distinct "areas of concern" (i.e. major events) in paragraph 10 of the report;
- .2 endorsed associated high-level event sequence for the areas of concern, as set out in annex 2 to the report;
- .3 agreed to take into account these areas of concern and high-level event sequence when revising SOLAS chapter III and the LSA Code;
- .4 instructed the LSA Working Group to consider the most suitable methods to progress the work intersessionally, including the development of a list of hazards (see paragraph 5.13);
- .5 noted the draft risk index in annex 3 to the report to be used when providing a numerical score for each hazard identified under the areas of concern; and instructed the LSA Working Group to further consider the draft risk indexing and scoring, including how to address "multiple fatalities" and "the minimum score" for which to consider those hazards when revising SOLAS chapter III, based on annex 3 to document SSE 8/3 (see paragraph 5.13); and
- .6 noted the Group's view that there would be a need to provide a comprehensive gap analysis using the agreed methodology in annexes 3 and 4 to document SSE 7/WP.3; and agreed that such analysis should only be made once the work on the hazard identification (HazId) had been finalized and the gaps to be addressed were known, as stated in paragraph 18 of the report.

5.6 In this context, the Sub-Committee also considered document SSE 8/5/3 (China), commenting on the hazard identification matrix (SSE 8/3, annex 4) and providing relevant proposals, and referred the above document to the LSA Working Group to further develop the matrix (see paragraph 5.13).

Technical submissions

5.7 The Sub-Committee recalled that SSE 7 had agreed to postpone technical submissions that were not directly related to the scope of the output, taking into account the Action plan on the revision of SOLAS chapter III and the LSA Code (see paragraph 5.1).

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

- .1 SSE 8/5 (Bahamas et al.), proposing draft amendments to paragraph 4.6.3.1 of the LSA Code in order to remove ambiguity in the requirements for free-fall lifeboat safety harnesses; and
- .2 SSE 8/5/1 (China), proposing to add a requirement on the immersion suit donning training in SOLAS regulation III/19 by analysing the situation of the survivors' donning the immersion suit in distress after abandoning ship and the inspection deficiencies of the immersion suits.

Methodology on how to handle technical submissions

5.9 In noting the above documents, before discussing the substance of them, the Sub-Committee decided to first consider the methodology on how technical documents should be addressed, containing draft amendments to SOLAS chapter III and the LSA Code that were not directly related to the ongoing work to remove gaps, inconsistencies and ambiguities based on the safety objectives, functional requirements and expected performance.

5.10 In this regard, the Sub-Committee considered:

- .1 document SSE 8/5/2 (United States), providing comments on document SSE 8/5 and a proposal for addressing the numerous technical submissions under this agenda item; and
- .2 the Chair's proposed way forward, as follows:
 - .1 postpone the consideration of technical submissions proposing amendments to prescriptive requirements of SOLAS chapter III and/or the LSA Code that do not directly serve the primary objective of the output, together with the commenting documents, to a future session until the final step (Drafting of prescriptive regulations, step 6) of the Action Plan (SSE 7/21, annex 1) begins, together with any other such technical submissions to be made in the future;
 - .2 in the final step, evaluate the contents of the technical submissions made so far when drafting prescriptive regulations; and
 - .1 if the proposals are considered substantial and overarching, invite the submitter(s) to submit new output proposals to the Committee; and
 - .2 if the proposals are considered not requiring a new output, then proceed with consideration of such documents;
 - .3 if, in the interim, proposals of an urgent nature are needed to be considered, then submit proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.2); and
 - .4 finally, if the proposed draft amendments are considered as minor corrections, then follow the established procedure by the Council and submit proposals under "Any other business" (paragraph 3.2(vi) of C/ES.27/D).

5.11 During discussion, the Sub-Committee noted that there was a need to define a method on how to handle such technical documents, which provided valuable inputs to enhance safety; and, therefore, agreed that the LSA Working Group should examine both above-mentioned proposals thoroughly.

5.12 Following discussion, the Sub-Committee instructed the LSA Working Group to consider a methodology on how technical submissions made so far, proposing amendments to SOLAS chapter III and/or the LSA Code that did not directly serve the primary objective of the output, should be addressed (see paragraph 5.13).

Instructions to the LSA Working Group

5.13 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.18), taking into account comments made and decisions taken in plenary, to:

- .1 consider the most suitable methods to progress the work intersessionally under this output, including the development of a list of hazards, i.e. intersessional working group meeting (in person or virtual) and/or LSA Correspondence Group; and develop relevant draft terms of reference for such group(s); and

if time permitted:

- .2 further consider the draft risk indexing and scoring, including how to address "multiple fatalities" and "the minimum score" for which to consider those hazards when revising SOLAS chapter III, based on annex 3 to document SSE 8/3;
- .3 further develop the hazard identification matrix, based on annex 4 to document SSE 8/3 and taking into account document SSE 8/5/3; and
- .4 consider a methodology on how technical submissions made so far, proposing amendments to SOLAS chapter III and/or the LSA Code that do not serve directly the primary objective of the output, including documents SSE 8/5 and SSE 8/5/1, should be addressed (SSE 7/21, annex 1), by taking into account document SSE 8/5/2 and the Chair's proposed way forward (see paragraph 5.10.2), as well as the feasibility and urgency of such documents.

Report of the LSA Working Group

5.14 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 8/WP.3), the Sub-Committee noted that the Group had not been able to consider all the terms of reference related to that agenda item and the Group's suggestion to establish an in-person intersessional experts group meeting, as correspondence groups and virtual meetings have found it difficult to work on the complex hazard identification process.

5.15 Having considered the Group's recommendation, the Sub-Committee agreed to a meeting of an in-person intersessional experts group, subject to subsequent endorsement by the Council and any decision to open the IMO Headquarters for physical meetings; and invited MSC 105 to approve the establishment of such a group, under the coordination of Germany,² as an urgent matter and instructed the group, taking into account comments made and decisions taken at SSE 8, to:

²

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- .1 finalize the draft risk indexing and scoring, including how to address "multiple fatalities" and "the minimum score" for which to consider those hazards when revising SOLAS chapter III, based on annex 3 to document SSE 8/3;
- .2 further develop the hazard identification matrix, based on annex 4 to document SSE 8/3 and taking into account document SSE 8/5/3;
- .3 liaise with the intersessional LSA Corresponding Group on the progress made (see paragraphs 3.26 and 5.16); and
- .4 submit a report to SSE 9.

Instructions to the LSA Correspondence Group

5.16 The Sub-Committee, noting the limited progress made at this session regarding technical submissions (see paragraphs 5.11 and 5.12) and the need to progress the work intersessionally, instructed the LSA Correspondence Group established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.26), taking into account the comments made and decisions taken at SSE 8, to:

- .1 consider the specific proposals in 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.), SSE 8/5/1 (China) and SSE 8/5/2 (United States), taking into account the action plan, as well as other proposals regarding the LSA Code in documents MSC 100/17/6 (Marshall Islands and RINA) and MSC 100/17/13 (ILAMA) (SSE 7/21, paragraph 5.10), and;
- .2 select the appropriate action under one of the following three categories:
 - Category 1:* Recommend postponing the consideration of the proposed amendments, together with the commenting document, to a future session until step 6 of the Action Plan endorsed by MSC (MSC 102/24, paragraph 19.4) is reached. Under step 6, evaluate the contents of the technical submission when drafting prescriptive regulations.
 - Category 2:* Recommend that the proposed amendments are considered of an urgent nature, and invite the sponsor(s) to submit draft proposals for a relevant new output in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.2).
 - Category 3:* Recommend that the proposed draft amendments are considered as minor corrections, and invite the sponsor(s) to follow the procedure by the Council and submit proposals under "Any other business" (C/ES.27/D, paragraph 3.2(vi)).

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 7 had considered the report of the Experts Group on Formal Safety Assessment (FSA), which had been tasked by MSC 101 to review the

FIRESAFE I and II studies addressing fire safety on ro-ro passenger ships, and had noted the Group's view that (SSE 7/21, paragraph 6.5):

- 1 the studies were conducted in compliance with the *Revised Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule-making process* (MSC-MEPC.2/Circ.12/Rev.2); and
- .2 the conclusions and recommendations were credible and required immediate action for improving the fire safety on ro-pax ships, which should be considered by the Sub-Committee.

6.2 The Sub-Committee also recalled that SSE 7 had (SSE 7/21, paragraph 6.20):

- .1 not been able to discuss in detail the draft amendments due to time constraints;
- .2 agreed to the items identified for further consideration by the FP Correspondence Group, as set out in annex 1 to document SSE 7/WP.4; and
- .3 agreed that a new output to address safety concerns on new types of vehicles, such as battery-powered vehicles and alternatively fuelled vehicles, would be required.

6.3 The Sub-Committee further recalled that SSE 7 had:

- .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, with the terms of reference set out in paragraph 6.22 of document SSE 7/21, and had instructed the Group to submit a report to this session.

Report of the FP Correspondence Group and related documents

6.4 The Sub-Committee considered the part of the report of FP Correspondence Group (SSE 8/6) dealing with this agenda item and, having approved it in general, noted the progress made regarding the draft amendments to SOLAS for new and existing ships, as well as the associated draft amendments to the FSS Code.

6.5 In this regard, the Sub-Committee had the following documents commenting on the Group's report:

- .1 SSE 8/6/2 (Austria et al.), suggesting that further technical discussions should be held on certain issues, including linear heat detection, steel dampers, deluge nozzles, fire-resistant materials and closing devices, and some additional cost-effective risk control options;
- .2 SSE 8/6/4 (Japan), providing technical comments and modifications to the draft new regulations on matters including arrangement of openings,

retro-fitting of heat detectors in addition to smoke detectors, video monitoring, application provisions and clarification of the expression "vehicles", together with some editorial modifications; and

- .3 SSE 8/6/5 (ICS and INTERFERRY), providing modifications to new draft SOLAS regulations II-2/20.5.2 and 20.5.3 on safety distances for the arrangements of openings in ro-ro spaces and special category spaces, and the weather decks intended for the carriage of vehicles, respectively.

6.6 In relation to this matter, the delegation of Panama made a statement about the recent fire (16 February 2022) on board the Panamanian flagged car carrier **Felicity Ace**, which was carrying electric vehicles at the time of the incident. They underlined the compelling need to adopt pertinent provisions to minimize the risks on these types of ships. The full text of their statement is set out in annex 18.

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

- .1 all documents should be referred to the FP Working Group for further consideration, except for the modifications to draft SOLAS regulations II-2/20.5.2 and II-2/20.5.3 (SSE 8/6/5, paragraph 16), as they had been already discussed in the past;
- .2 although more stringent regulations would be desirable, the draft amendments should be finalized at this session without needing to wait for any inputs emanating from new research studies;
- .3 the deletion of the word "permanent" in draft new SOLAS regulation II-2/20.5.2.1 could cause severe problems in implementation and ship design;
- .4 regarding the safety distance from openings, more consideration was necessary, as pointed out in document SSE 8/6/5;
- .5 careful consideration should be given to the implementation of new requirements on existing ships;
- .6 developing sound and well-balanced regulations were more important than the finalization of the draft amendments at that session, which would not impact the entry into force, even if they were finalized at SSE 9; and
- .7 consistency should be observed between the Interim Guidelines (MSC.1/Circ.1615) and new draft regulations, in particular, regarding safety distances to essential equipment.

6.8 Considering the above views and that more technical deliberations would be needed on the outcome of the Correspondence Group's report, together with the commenting documents, the Sub-Committee agreed to establish the FP Working Group and to refer them for further consideration (see paragraph 6.17).

6.9 Additionally, in considering the actions requested by the FP Correspondence Group (SSE 8/6, paragraph 42), the Sub-Committee:

- .1 elaborated on the options defined for SOLAS regulation II-2/20.6.2.1 (SSE 8/6, annex 1, paragraph 11) and having agreed on option 2 (nozzles

with release controls), referred annex 1 to the report containing draft amendments to SOLAS chapter II-2 for new ro-ro passenger ships, to the FP Working Group for further consideration (see paragraph 6.17);

- .2 noted a view that any applicability to existing ships should be associated with special survey or other dry-docking to enable the changes to be made in a safe manner; and referred annex 2 to the report containing draft amendments to SOLAS chapter II-2 for existing ro-ro passenger ships to the FP Working Group for further consideration (see paragraph 6.17);
- .3 referred annex 3 to the report containing draft amendments to chapters 7 and 9 of the FSS Code to the FP Working Group for further consideration (see paragraph 6.17); and
- .4 noted:
 - .1 the Group's consideration on the items not discussed in detail by the FP Working Group at SSE 7, in particular that alternatively powered vehicles should be considered under a new output, pending the decision of MSC 105 (MSC 104/15/19 (China)); and
 - .2 a view that the rate of temperature rise and resultant protection measures should not be left vague; and the maximum likely temperature rise needed to be categorized such that suitable protection measures could be chosen, as was proposed in document SSE 7/6/1 (Austria et al.).

6.10 In this regard, the Sub-Committee noted, with appreciation, the information provided in document SSE 8/INF.7 (China) on the results of an experiment on shore-based supplement of fire-extinguishing agent for ro-ro passenger ships in China for the enhancement of fire-extinguishing capacity of ro-ro passenger ships whilst at port.

Other submissions

Clarification of the terms used in MSC.1/Circ.1430/Rev.2

6.11 Regarding the clarification of the term "free height", the Sub-Committee recalled that SSE 7 had prepared draft amendments to the Revised Guidelines (MSC.1/Circ.1430/Rev.1), regarding the clarification of the term "free height" and minimum water discharge density (SSE 7/21, annex 2), which had been then approved by MSC 102 and incorporated in the second revision (MSC.1/Circ.1430/Rev.2).

6.12 In this regard, the Sub-Committee considered document SSE 8/6/1 (China and IACS), presenting a basis for a definition of the term "free height" used in the *Revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces* (MSC.1/Circ.1430/Rev.2).

6.13 Having agreed on the need for clarification of the term "free height", the Sub-Committee instructed the FP Working Group to consider the draft amendments to MSC.1/Circ.1430/Rev.2 on the definition of the term "free height", based on document SSE 8/6/1, including the implementation provision (see paragraph 6.17).

Fire safety of lift trunks in ro-ro passenger ships

6.14 In relation to fire safety of lift trunks, the Sub-Committee considered document SSE 8/6/3 (China), proposing amendments to SOLAS chapter II-2 on fire safety of lift trunks passing through ro-ro spaces, special category spaces and accommodation spaces in ro-ro passenger ships, based on an analysis of recent accidents that happened in China to avoid secondary accidents in accommodation spaces, as the fire could spread via lift trunks when a vehicle explosion happens in special spaces or ro-ro spaces.

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

- .1 since the proposal needed a preliminary discussion and that it was based on accident reports which were not accessible to assess, the suggestions should be considered under a new output to examine the matter in more detail; and
- .2 notwithstanding the view in paragraph 6.15.1, structure and equipment of the lift trunks should be improved as suggested in the document, in order to avoid accumulation and spread of flames in an emergency.

6.16 Following discussion, taking into account the majority of the views that suggested a relevant new output, the Sub-Committee did not support the proposals at this stage and 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.2).

Establishment of the FP Working Group

6.17 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 further develop the draft amendments to SOLAS chapter II-2 and the FSS Code for new and existing ro-ro passenger ships, based on document SSE 8/6, and taking into account documents SSE 8/6/2, SSE 8/6/4 and SSE 8/6/5, with a view to finalization; and
- .2 consider the draft amendments to MSC.1/Circ.1430/Rev.2 on the definition of the term "free height", based on document SSE 8/6/1, including the implementation provision in the cover note of the draft circular, with a view to approval by MSC 106.

Report of the FP Working Group

6.18 Having considered the relevant part of the report of the FP Working Group dealing with this agenda item (SSE 8/WP.4), the Sub-Committee took actions, as outlined in paragraphs 6.19 to 6.27 below.

Draft amendments to SOLAS II-2 for new ro-ro passenger ships

6.19 Regarding the draft amendments to SOLAS chapter II-2 for new ro-ro passenger ships, the Sub-Committee noted the Group's discussion on the matter, in particular that:

- .1 the term "fire detection and alarm system" needed to be substituted with "fire detection and fire alarm system" in SOLAS regulations II-2/7.5.2

and II-2/23.6.10; however, due to time restrictions, the Group recommended that this matter be referred to a correspondence group;

- .2 the implementation date for the draft amendments should be 1 January 2026 for new ships and 1 January 2028 for existing ships;
- .3 for the fixed water-based fire-extinguishing system protecting weather decks on new ro-ro passenger ships, such systems shall primarily use water monitor(s), with nozzles being acceptable for areas which monitors could not cover;
- .4 openings in ro-ro spaces provided with closing devices, such as steel A-class ramps and steel A-class doors, should be permitted below survival craft and accommodation spaces (including service spaces and control stations); and that alternative arrangements could achieve the same protection goals; and
- .5 safety distance from accommodation, openings of ro-ro spaces and weather ro-ro deck, should be further discussed by a correspondence group.

6.20 Consequently, the Sub-Committee agreed to the draft amendments to SOLAS chapter II-2 for fire safety of new ro-ro passenger ships, in principle, as set out in annex 1 to document SSE 8/WP.4, bearing in mind that the draft amendments to SOLAS regulation II-2/20.5 would need to be further considered by a correspondence group (see paragraph 6.26).

Draft amendments to SOLAS II-2 for existing ro-ro passenger ships

6.21 In relation to draft amendments to SOLAS II-2 for existing ro-ro passenger ships, the Sub-Committee noted, in particular, that the Group had:

- .1 not been able to discuss if a fixed water-based fire-extinguishing system for the protection of weather decks should also be required for existing ships due to time constraints; and that the matter should be discussed by a correspondence group; and
- .2 agreed to reduce the proposed period for video recording for existing ships from seven days to 24 hours.

6.22 Subsequently, the Sub-Committee agreed, in principle, to the draft amendments to SOLAS chapter II-2 for fire safety of existing ro-ro passenger ships, as set out in annex 2 to document SSE 8/WP.4, bearing in mind that the matter of extending the scope of application of the requirements for a fixed water-based extinguishing systems to existing ships, would need to be further considered by a correspondence group (see paragraph 6.26).

Draft amendments to the FSS Code

6.23 Pertaining to the draft amendments to the FSS Code, the Sub-Committee noted that the Group had not been able to discuss the possibility of linear heat detection in the FSS Code (SSE 8/6/2) due to time constraints and that the matter should be considered by a correspondence group.

6.24 Consequently, the Sub-Committee agreed, in principle, to the draft amendments to the chapters 7 and 9 of the FSS Code, bearing in mind that the issue of the additional

requirements for linear heat detection system in the FSS Code would need to be further considered by a correspondence group (see paragraph 6.26).

Draft amendments to MSC.1/Circ.1430/Rev.2 on the definition of the term "free height"

6.25 The Sub-Committee, having noted the Group's discussion that the term "free height" could mean "deck to deck" or "deck to beam" and that further discussion was needed, agreed to refer the draft amendments in document SSE 8/6/1 to a correspondence group, for further consideration and finalization of the draft amendments to MSC.1/Circ.1430/Rev.2 (see paragraph 6.26).

Re-establishment of the FP Correspondence Group

6.26 In order to progress the work on this output intersessionally, the Sub-Committee re-established the FP Correspondence Group, under the coordination of Norway,³ and instructed it, taking into account comments made and decisions taken at SSE 8, to:

- .1 consider the draft amendments to SOLAS regulation II-2/20.5, in particular proposed SOLAS regulations II-2/20.5.2 and 20.5.3, on the issue of the safety distance, based on annex 1 to SSE 8/WP.4, and finalize the draft amendments to SOLAS chapter II-2 for new ro-ro passenger ships;
- .2 consider the issue of extending the scope of application of the requirements for fixed water-based extinguishing systems to existing ships, based on the text in the draft amendments of SOLAS regulation II-2/20.6.2 in annex 1 and the draft amendments of the FSS Code regulation 7.2.5 in annex 3 to SSE 8/WP.4, and finalize the draft amendments to SOLAS chapter II-2 for existing ro-ro passenger ships;
- .3 consider the proposal in documents SSE 7/6/1 and SSE 8/6/2 regarding the addition of the possibility of linear heat detection in the FSS Code, based on annex 3 to SSE 8/WP.4, and finalize the draft amendments to chapter 7 and 9 of the FSS Code;
- .4 consider the draft amendments to MSC.1/Circ.1430/Rev.2 on the definition of the term "free height", based on document SSE 8/6/1, for finalization;
- .5 prepare necessary draft amendments to SOLAS chapter II-2 concerning the term "fire detection and fire alarm system", based on the proposals in paragraphs 16 and 17 of document SSE 8/6/4; and
- .6 submit a report to SSE 9.

Extension of the target completion year

6.27 In light of the above conclusion, the Sub-Committee invited MSC 106 to extend the target completion year for this output to 2023.

³

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7 AMENDMENTS TO GUIDELINES FOR THE APPROVAL OF FIXED DRY CHEMICAL POWDER FIRE-EXTINGUISHING SYSTEMS FOR THE PROTECTION OF SHIPS CARRYING LIQUEFIED GASES IN BULK (MSC.1/CIRC.1315)

Background

7.1 The Sub-Committee recalled that SSE 7 had:

- .1 made progress with regard to the draft amendments to the *Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk* (MSC.1/Circ.1315), as set out in annex 3 to document SSE 7/WP.4, but could not finalize the draft amendments (SSE 7/21, paragraph 7.10);
- .2 agreed that the requirement for thermogravimetric (TGA) analysis should be deleted in the draft revision of the guidelines (MSC.1/Circ.1315) (SSE 7/21, paragraph 7.5.1);
- .3 agreed that the scope of the output should be expanded in order to address potential issues regarding maintenance and inspection of dry chemical fire-extinguishing systems in the *Revised guidelines for the maintenance and inspection of fire protection systems and appliances* (MSC.1/Circ.1432), and, therefore, invited interested Member States and international organizations to submit relevant proposals to MSC 102 for the expansion of the output (SSE 7/21, paragraph 7.5.3);
- .4 agreed to keep the provision with regard to the prohibition of sodium bicarbonate as a main component in dry powder agents (SSE 7/21, paragraph 7.7); and
- .5 noted the future need to develop additional realistic test procedures, such as a pool fire test using flammable liquefied gases and a jet fire test, and invited interested parties to engage in any standardization work, e.g. in the framework of ISO/TC 8, with a view to their eventual inclusion in the Revised Guidelines (SSE 7/21, paragraph 7.11.1).

Modifications to the draft revision of MSC.1/Circ.1315

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

- .1 SSE 8/7 (United States), providing updated information and a final technical report on dry chemical powder agents, properties and suitability of standard ISO 7202 testing;
- .2 SSE 8/INF.2 (United States), providing information on research to supplement the proposals in document SSE 8/7;
- .3 SSE 8/7/1 (Republic of Korea), proposing modifications to the draft revision of MSC.1/Circ.1315 regarding the safety concerns of dry chemical powders, restrictions on main component and content ratio; and
- .4 SSE 8/7/2 (China), commenting on document SSE 8/7 on prohibiting the use of sodium bicarbonate as a main component in dry powder agents; analysing

the properties and tests requirements of dry powder agents; and providing suggestions.

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

- .1 performance-based approach was preferred rather than a prescriptive approach in order not to restrict further research and development and, therefore, the prohibition of sodium bicarbonate in the draft revised guidelines should be removed by deleting paragraphs 2.9 and 3.6, as proposed in documents SSE 8/7, SSE 8/7/1 and SSE 8/7/2; and
- .2 regarding the proposed modifications on harmful substances in dry chemical powder (SSE 8/7/1, paragraph 14):
 - .1 the proposal would bring additional restrictions to the Administrations without any scientific acceptance criteria; and the proposal did not contain any precise values and thresholds, which could then lead to unharmonized implementation among various Administrations; and
 - .2 it should not be the responsibility of an Administration to ensure that toxic, corrosive, explosive substances were not generated and/or released during storage and fire-extinguishing operation of dry chemical powder.

7.4 Following discussion, the Sub-Committee agreed to:

- .1 remove the prohibition of sodium bicarbonate in the draft revised guidelines by deleting paragraphs 2.9 and 3.6; and
- .2 refer documents SSE 8/7 and SSE 8/INF.2, and SSE 8/7/2 to the FP Working Group, with a view to finalization of the draft revision of the guidelines (MSC.1/Circ.1315) (see paragraph 7.6).

7.5 In this regard, the Sub-Committee noted a statement by the delegation of the Republic of Korea that in order to remove the potential hazards of dry chemical powder to crew members, it was necessary to discuss the relevant safety requirements in the near future. The full text of their statement is set out in annex 18.

Instructions to the FP Working Group

7.6 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 6.17), taking into account comments made and decisions taken in plenary, to finalize the draft revision of the Guidelines (MSC.1/Circ.1315), based on annex 3 to document SSE 7/WP.4, taking into account documents SSE 8/7 and SSE 8/INF.2, and SSE 8/7/2, with a view to approval by MSC 106.

Report of the Working Group

7.7 Having considered the relevant part of the report of the FP Working Group dealing with this agenda item (SSE 8/WP.4), the Sub-Committee noted that the Group had:

-
- .1 finalized the draft revision of the Guidelines by following the principle of performance-based requirements;
 - .2 agreed to delete paragraph 3.2 in the appendix to the draft revised guidelines in annex 3 to document SSE 7/WP.4, considering that this paragraph was directly derived from regulation 11.4 of the IGC Code and the discharge duration test provisions in the existing MSC.1/Circ.1315; and that the quantity required in the IGC Code did not account for the fire-extinguishing capability of the dry chemical powder; and
 - .3 considered that it was premature to add a reference to a future ISO standard for jet fire testing it until ISO finalized developing such standard and that the Sub-Committee could revisit the issue at a later stage.

7.8 Subsequently, the Sub-Committee:

- .1 having noted a view that sufficient preparation time should be provided to the industry for implementation of the draft revised guidelines, agreed to apply them for the approval of such systems installed on or after 1 July 2023; and
- .2 agreed to the draft MSC circular on revised guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk, as modified, as set out in annex 4, with a view to approval by MSC 106 and dissemination as MSC.1/Circ.1315/Rev.1.

Completion of the work on the output

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

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 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 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).

8.2 The Sub-Committee also recalled that the Committee had instructed the Sub-Committee to take into account the following issues (MSC 101/24, paragraph 21.7):

- .1 annex 4 to document MSC 101/21/6 should not be used as a base document for the discussion, since further detailed consideration was needed; and
- .2 the approval of the output should not be interpreted to mean that the use of existing lifejackets was not safe and the retroactive application of any requirements for new equipment to existing ships should be carefully considered.

8.3 The Sub-Committee further recalled that SSE 7, having considered document SSE 7/18 (Austria et al.), containing proposals to review the in-water performance of SOLAS lifejackets, had agreed to include this output in the provisional agenda of this session (SSE 7/21, paragraph 20.20), which had then been approved by MSC 102 (MSC 102/24/Add.1, annex 25).

Marking requirements

8.4 Regarding the proposed additional marking requirements for lifejackets, the Sub-Committee considered document SSE 8/8 (Japan and United States), providing comments on the draft amendments to the LSA Code in annex 2 to document MSC 101/21/6.

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

- .1 a mandatory requirement was considered necessary for a marking which would give the expiry date according to the manufacturer of lifejackets; and
- .2 since there was limited space available on a lifejacket, as proposed in document SSE 8/8, additional markings could create confusion in an emergency.

8.6 Following discussion, the Sub-Committee, noting that the proposal in document SSE 8/8 was fully supported, agreed to instruct the LSA Working Group to prepare draft amendments to the LSA Code, based on annex 2 to document MSC 101/21/6 and taking into account document SSE 8/8 (see paragraph 8.15).

Righting test requirements

8.7 Regarding righting test requirements for lifejackets, the Sub-Committee considered the following documents:

- .1 SSE 8/8/1 (Japan), pointing out to problems of draft amendments to the LSA Code and resolution MSC.81(70) proposed in annexes 2 and 3 to document MSC 101/21/6, respectively, with regard to the righting test for lifejackets; and
- .2 SSE 8/INF.5 (Japan), providing a progress report on the development of a new righting test method for lifejackets, in support of document SSE 8/8/1.

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

- .1 tests with subjects wearing clothing should be included in the LSA Code, as it would enhance the safety; and mandatory language should be used therein;
- .2 the fundamental principle of the righting test should only be considered successful, if a candidate ended facing upward and therefore being righted from face down to face up position;
- .3 the introduction of a new righting test method required a lot of testing and verification work and, therefore, the relevant outcome of the test method's verification would be shared with the Sub-Committee at a future session;

- .4 removal of a reference to clothing test was considered acceptable; ISO had been working on such tests, which had proved that clothing tests were difficult to conduct in a repeatable manner; and
- .5 the testing method should not be amended prior to the conclusion of the discussion on righting test with clothing; and to ensure the safety of a person on the water surface, the position of such person should be as indicated in figure 4 (Static balance measurements) in paragraph 2.8.6 of the Revised Recommendation.

8.9 Following discussion, the Sub-Committee agreed to instruct the LSA Working Group to further consider the proposals in document SSE 8/8/1 (see paragraph 8.15).

Spray hood requirements

8.10 With respect to spray hood requirements for lifejackets, the Sub-Committee considered document SSE 8/8/2 (Japan), pointing out the issues to be considered when discussing the necessity of spray hoods for SOLAS lifejackets.

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

- .1 the inclusion of spray hood protection on lifejackets would be beneficial with the exception of lifejackets for passenger vessels designed for dry-shore evacuation;
- .2 materials for spray hoods that would shorten the life of a lifejacket should not be used; and
- .3 the proposed spray hoods were not supported with enough evidence and data on their need and, therefore, further study should be carried out; and ISO 12402 did not mandatorily require the use of spray hoods.

8.12 Following discussion, the Sub-Committee agreed to instruct the LSA Working Group to further consider the proposal in document SSE 8/8/2 (see paragraph 8.15).

Draft guidance on performance of lifejackets

8.13 With regard to the draft guidance on performance of lifejackets, the Sub-Committee recalled that in annex 1 to document MSC 101/21/6, draft guidance on the in-water performance of lifejackets and considerations for selection of a lifejacket had been submitted. In order to facilitate the discussion of this agenda item in an orderly manner, the Sub-Committee agreed to postpone the consideration of the draft guidance 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.

Draft consequential amendments to MSC.1/Circ.1628

8.14 Noting that the draft amendments to the LSA Code and the Revised Recommendation (resolution MSC.81(70)) would require consequential 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 consider consequential draft amendments to the Test report forms (MSC.1/Circ.1628) when the draft amendments had been finalized at a later stage.

Instructions to the LSA Working Group

8.15 Subsequently, the Sub-Committee instructed the LSA Working Group, established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.18), taking into account the comments made and decisions taken in plenary, to:

- .1 prepare draft amendments to the LSA Code with respect to lifejackets' in-water performance, based on annex 2 to document MSC 101/21/6 and taking into account documents SSE 8/8, SSE 8/8/1 and SSE 8/8/2; and
- .2 prepare draft amendments to the Revised Recommendation (resolution MSC 81.(70)), based on annex 3 to document MSC 101/21/6.

Report of the Working Group

8.16 Having considered the relevant part of the report of the LSA Working Group dealing with this agenda item (SSE 8/WP.3), the Sub-Committee noted that the Group had been unable to discuss agenda item 8 and agreed to refer the matter to the LSA Correspondence Group (see paragraph 8.17).

Instructions to the LSA Correspondence Group

8.17 In order to progress the work intersessionally, the Sub-Committee instructed the LSA Correspondence Group established under agenda item 3 (New requirements for ventilation of survival craft) (see paragraph 3.26), taking into account the comments made and decisions taken at SSE 8, to:

- .1 prepare draft amendments to the LSA Code with respect to lifejackets' in-water performance, based on annex 2 to document MSC 101/21/6 and taking into account documents SSE 8/8, SSE 8/8/1 and SSE 8/8/2; and
- .2 prepare draft amendments to the Revised Recommendation (resolution MSC.81(70)), based on annex 3 to document MSC 101/21/6.

9 REQUIREMENTS FOR ONBOARD LIFTING APPLIANCES AND ANCHOR HANDLING WINCHES

Background

9.1 The Sub-Committee recalled that SSE 7 had:

- .1 finalized the draft amendments to SOLAS chapter II-1 (SSE 7/21, annex 4) for approval by MSC 102, with a view to adoption, in conjunction with the approval of the associated draft guidelines for lifting appliances; and the draft guidelines for anchor handling winches once finalized (SSE 7/21, paragraph 9.15);
- .2 finalized the draft guidelines for lifting appliances (SSE 7/21, annex 5), and invited MSC 102 to approve in principle, with a view to final approval in conjunction with the adoption of the draft amendments to SOLAS chapter II-1 (SSE 7/21, paragraph 9.22);
- .3 not been able to finalize the draft guidelines for anchor handling winches due to time constraints, but had agreed to finalize the draft guidelines at this

session, with a view to subsequent approval by the Committee, in conjunction with the adoption of the relevant draft amendments to SOLAS chapter II-1 (SSE 7/21, paragraph 9.23); and

- .4 invited MSC 102 to refer the matter of training, familiarization and qualifications of shore-based personnel operating shipboard lifting appliances and loose gear to the FAL Committee for consideration and action, as appropriate, once the draft guidelines for lifting appliances had been approved, in principle, at MSC 102 (SSE 7/21, paragraph 9.20).

9.2 The Sub-Committee also recalled that MSC 102 had:

- .1 agreed that the amendments should be adopted as early as possible, outside the four-year amendment cycle due to exceptional circumstances; and approved the draft amendments to SOLAS chapter II-1 in principle, with a view to subsequent adoption at a future session of the Committee, in conjunction with the approval of the associated draft guidelines for lifting appliances and the draft guidelines for anchor handling winches, once finalized (MSC 102/24, paragraph 19.10); and
- .2 noted a statement by the observer from IACS making comments and raising concerns on the draft guidelines for lifting appliances; invited IACS to submit proposals to this session; and subsequently approved, in principle, a draft MSC circular on guidelines for lifting appliances, subject to final approval (MSC 102/24, paragraphs 19.11 and 19.12).

9.3 The Sub-Committee further recalled that SSE 7 had re-established the Correspondence Group on Onboard Lifting Appliances and Anchor Handling Winches (OLAW), with the terms of reference set out in paragraph 9.24 of document SSE 7/21.

Report of the OLAW Correspondence Group and related documents

9.4 The Sub-Committee considered the report of the OLAW Correspondence Group (SSE 8/9) and, having approved it in general, noted the progress made on the development of the draft guidelines for anchor handling winches.

9.5 In this context, the Sub-Committee also considered document SSE 8/9/3 (Japan), commenting on the report of the Correspondence Group and proposing modifications to the draft guidelines for anchor handling winches contained in the annex to document SSE 8/9, in relation to commissioning testing and load testing.

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

- .1 as this item had been long-standing on the agenda of the Sub-Committee, the draft amendments and instruments should be finalized at this session;
- .2 definitions in the draft guidelines, in particular, "wire", "tension control" and "spooling device" should be reviewed for their accuracy; and inclusion of sample certificates for loose gear and anchor handling winches would assist with the implementation of the guidelines;
- .3 lifting appliances and anchor handling winches had distinct characteristics, and some of the draft provisions prepared by the Group were not considered in line with the way that the winches were installed and operated;

- .4 the exact meaning of load testing should be clarified; and five-yearly load testing of anchor handling winches should be retained to ensure continued fitness and testing before first use; and
- .5 load test at the installation phase would be necessary; however, for the subsequent periodical testing, it would be difficult and dangerous; therefore, after the installation, the load test should only be conducted in case of repairs and alterations of major character.

9.7 Following discussion, the Sub-Committee agreed to establish the Working Group on Onboard Lifting Appliances and Anchor Handling Winches (OLAW) to finalize the draft guidelines on anchor handling winches, based on the annex to document SSE 8/9 and taking into account document SSE 8/9/3 (see paragraph 9.13).

Draft SOLAS regulations and guidelines on lifting appliances

9.8 In relation to the draft SOLAS regulations and guidelines on lifting appliances, the Sub-Committee considered the following documents:

- .1 SSE 8/9/1 (IACS), proposing several modifications to draft SOLAS amendments and draft guidelines for lifting appliances; and
- .2 SSE 8/9/2 (Japan), commenting on document SSE 8/9/1 and proposing ways forward on the proposals therein, in relation to:
 - .1 developing guidance for Administrations to use when determining the acceptable level of knowledge and experience of competent persons; and
 - .2 addressing the conflict of survey interval between ILO Convention No.152 (Occupational Health and Safety in Ports) and new draft SOLAS regulation for lifting appliances.

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

- .1 considering that lifting appliances were comprehensively covered under ILO Convention No.152 and that the new regulations should not conflict with the existing ILO Convention, the survey intervals between the ILO's and IMO's provisions should be harmonized; and therefore, the last part of draft paragraph 3.2.2.2 of the draft guidelines for lifting appliances, to permit up to three months' window of the due date of the annual thorough examination (SSE 8/9/1, paragraph 19), should be removed;
- .2 aligning the annual thorough examination of lifting appliances with annual SOLAS statutory surveys was considered an unnecessary flexibility and, therefore, informing the ILO Secretariat on new requirements and requesting them to take action would not solve the issue (SSE 8/9/2, paragraph 9);
- .3 in order to avoid the potential discrepancy between the survey intervals, either ILO's Convention No.152 could be amended or a circular could be issued by IMO for the recognition of the draft amendments and instruments developed;
- .4 the modifications to draft SOLAS amendments on the application provision,

could be considered by a drafting group of MSC, if established, that would finalize the draft amendments before the expected adoption by the Committee (SSE 8/9/1, paragraphs 7 and 8);

- .5 notwithstanding the view in paragraph 9.9.4 above, the OLAW Working Group could take into consideration the modification proposals to the draft SOLAS regulation; and
- .6 the suggested guidance for determining the acceptable level of competent persons should be developed before the expected entry into force of the draft amendments to SOLAS (SSE 8/9/2, paragraphs 3 and 4).

9.10 Following discussion, the Sub-Committee:

- .1 with regard to the modification proposals in document SSE 8/9/1:
 - .1 agreed to further instruct the OLAW Working Group (see paragraph 9.13) to consider the proposals in relation to the draft guidelines on lifting appliances and incorporate them, if appropriate, to finalize the draft guidelines on lifting appliances; and
 - .2 agreed that the points raised on the application provision of the draft amendments to SOLAS (SSE 8/9/1, paragraphs 7 and 8) could be addressed by a drafting group, if established by the Committee, that would finalize the draft amendments before adoption, together with relevant submissions in that regard to the Committee, if any; and
- .2 with regard to the proposals in document SSE 8/9/2:
 - .1 invited interested Member States and international organizations to submit proposals for a relevant new output to the Committee, in accordance with the Committees' method of work (MSC-MEPC.1/Circ.5/Rev.2) to develop guidance for determining the acceptable level of competent persons, based on the experience gained following the approval of the draft guidelines on lifting appliances; and
 - .2 requested the IMO Secretariat to inform the ILO Secretariat about the development of new requirements for lifting appliances and to request ILO to take appropriate action.

9.11 Given that the Sub-Committee did not modify the relevant draft amendments to SOLAS chapter II-1 (see paragraph 9.10.1.2), which had been already approved by MSC 102 in principle, invited MSC 106 to request the Secretary-General to circulate them in accordance with article VIII of the SOLAS Convention, with a view to adoption at MSC 107.

Entry-into-force date of the draft amendments to SOLAS and associated draft guidelines

9.12 Recalling the outcome of MSC 104 on the ad hoc midterm amendment cycle (MSC 104/18, paragraph 3.16.1), the Sub-Committee agreed that the draft amendments to SOLAS would enter into force on 1 January 2026, if the draft amendments were adopted by 1 July 2024. In that respect, the associated draft guidelines would also become effective from 1 January 2026, as appropriate.

Establishment of the OLAW Working Group

9.13 Subsequently, the Sub-Committee established the Working Group on Onboard Lifting Appliances and Anchor Handling Winches (OLAW) and instructed it, taking into account the comments made and decisions taken in plenary, to:

- .1 finalize the draft guidelines for anchor handling winches, based on the annex to document SSE 8/9, taking into account document SSE 8/9/3; and
- .2 consider the proposals in document SSE 8/9/1 and incorporate them, if appropriate, to finalize the draft guidelines on lifting appliances, based on annex 5 to document SSE 7/21,

with a view to approval by MSC 107, in conjunction with the adoption of the associated draft amendments to SOLAS chapter II-1, as appropriate.

Report of the Working Group

9.14 Having considered the report of the OLAW Working Group (SSE 8/WP.5), the Sub-Committee took actions as outlined in paragraphs 9.15 to 9.20 below.

Draft guidelines for anchor handling winches

9.15 With regard to the draft guidelines for anchor handling winches, the Sub-Committee noted that the Group, in particular, had:

- .1 considered the definitions in the draft guidelines and included the definitions of the terms related to anchor handling winches, which were also included in the guidelines for lifting appliances with slight modifications;
- .2 agreed that the emergency release control should be placed at the main control station and emergency release function could be controlled by the local control station, so as to provide flexibility for design;
- .3 not included alternative design and arrangements in the draft guidelines, as they were already addressed in SOLAS;
- .4 deleted the provisions related to periodical load testing for anchor handling winches, which had been included in the draft guidelines for lifting appliances, taking into account the difficulty of safe implementation, noting that the load test for lifting appliances was clearly different from the one for anchor handling winches;
- .5 deleted the provision addressing cases where thorough examination of loose gear did not form part of SOLAS survey, for the reason that there would be no requirement of thorough examination for anchor handling winches other than draft SOLAS regulation II-1/3-13; and
- .6 finalized the draft guidelines for anchor handling winches.

9.16 In noting the fact that provisions on repairs, modifications or alterations of major character were relocated to section 3.2.1 (Commissioning test) as sub-paragraph 3.2.1.2, the observer from IACS made a statement on the consequences of such relocation, the full text of which is set out in annex 18.

9.17 Consequently, the Sub-Committee agreed to the draft MSC circular on guidelines for anchor handling winches, as set out in annex 5, with a view to approval by MSC 107, in conjunction with the adoption of the draft amendments to SOLAS regulation II-1/3-13 (see paragraph 9.10.1.2).

Draft guidelines for lifting appliances

9.18 Regarding the draft guidelines for lifting appliances, the Sub-Committee noted that the Group, in particular, had:

- .1 agreed to use the words "a person appointed by the master or company" in the definition of "responsible person", to allow more flexibility of procedures for appointing a responsible person;
- .2 considered the specific proposals in document SSE 8/9/1 and:
 - .1 regarding load testing and thorough examination, retained the text "to the satisfaction of the Administration" with respect to equivalency between the requirements of a classification society recognized by the Administration and standards acceptable to the Administrations;
 - .2 clarified the issue of no delay between the load/proof test and thorough examination, by reflecting the proposed changes in paragraphs 3.2.2.1 and 4.2.2.1 of the draft guidelines;
 - .3 added a sample form of Register of Ship's Lifting Appliances and Cargo Handling Gear as a new appendix 3 to the draft guidelines; and
 - .4 agreed not to include the proposed sample certificate for wire rope in the appendix to the draft guidelines, given that the draft guidelines did not have guidance on issuance of certificate of wire rope;
- .3 deleted the second sentence in paragraphs 3.2.2.2 and 4.2.2.2 of the draft guidelines pertaining to three months' postponement of the thorough examination, based on the understanding that the text "to the satisfaction of the Administration" used in the first sentence of paragraph 3.2.2.2 already addressed the Administration's discretion on the flexibility for the due date of the thorough examination;
- .4 inserted a table including minimum test loads for loose gear in paragraph 4.2.1 of the draft guidelines; and
- .5 finalized the draft guidelines for lifting appliances, as modified, which had been previously agreed in principle by MSC 102 (see paragraph 9.2).

9.19 Consequently, the Sub-Committee agreed to the draft MSC circular on guidelines for lifting appliances, as set out in annex 6, with a view to approval by MSC 107, in conjunction with the adoption of the associated draft amendments to SOLAS regulation II-1/3-13 (see paragraph 9.10.1.2).

Completion of the work on the output

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

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 MSC 103 had considered documents MSC 102/21/3 (Marshall Islands et al.), MSC 102/21/7 and Corr.1 (Bahamas et al.), MSC 102/INF.2 and MSC 102/INF.3 (IUMI), proposing a new output to evaluate the adequacy of fire protection, detection and extinction arrangements on board containerhips to fight container fires, with a view to amending SOLAS and the FSS Code, as required.

10.2 The Sub-Committee also recalled that, having noted the need for a holistic risk-based approach and prioritization of risk prevention and mitigation enhancement when developing amendments, the Committee had agreed to include in the biennial agenda of the Sub-Committee for 2022-2023 and the provisional agenda for SSE 8 an output 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 containerhips", with a target completion year of 2025, in association with the CCC Sub-Committee as and when requested by the SSE Sub-Committee (MSC 103/21, paragraph 18.8).

Proposals on containerhip fires

10.3 In relation to the matter, the Sub-Committee had the following documents for consideration (SSE 8/1/2, annex, item 10):

- .1 SSE 8/10 (Bahamas et al.), outlining a road map to provide a basis for future work on this output and providing an initial assessment of gaps and regulations which are considered neither practicable nor workable for fire detection and fire-fighting capabilities on board containerhips;
- .2 SSE 8/10/1 (China), proposing to enhance the capabilities of containerhips for early fire detection in cargo holds and on cargo deck through portable infrared thermal imagers and thermometers; and
- .3 SSE 8/10/3 (Germany et al.), setting out the need for a formal safety assessment (FSA) in accordance with the Revised FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.2) and recommending an approach focusing on risk prevention and goal-based standards.

10.4 In this regard, the Sub-Committee noted (SSE 8/1/2/Add.1, annex, item 10):

- .1 Australia's support for the proposed road map and the establishment of a correspondence or working group proposed in paragraph 3 of document SSE 8/10 to, inter alia, identify gaps and regulations which were neither practicable nor workable for containerhips, as well as for the establishment of an experts group to consider EMSA's CARGOSAFE study, as proposed in document SSE 8/10/3; and
- .2 Japan's comments on documents SSE 8/10 and SSE 8/10/3 with regard to the expected role of an FSA Experts Group that would review the results of the FSA study, after which working/correspondence groups could be established to consider possible amendments; and timely submission of the

outcome of the CARGOSAFE study to the Sub-Committee's attention, if possible.

10.5 With regard to document SSE 8/10/1, the Sub-Committee considered a proposal to evaluate the contents of the document as part of the FSA study to be conducted by EMSA (see paragraph 1.11). Following consideration, the Sub-Committee agreed that for a holistic approach, the document should be considered in conjunction with the FSA study's outcomes at a future session, together with any other relevant risk control options.

10.6 Subsequently, the Sub-Committee (SSE 8/1/2/Add.1, annex, item 10):

.1 taking into account the proposals in documents SSE 8/10 and SSE 8/10/3, agreed to the following road map, in accordance with the methodology set out in paragraph 3.1.1.1 of the *Revised guidelines for formal safety assessment (FSA) for use in the IMO rule-making process (MSC-MEPC.2/Circ.12/Rev.2)*:

- .1 identification of hazards;
- .2 risk analysis;
- .3 risk control options;
- .4 cost-benefit assessment; and
- .5 recommendations for decision-making,

with a view to developing relevant draft amendments to SOLAS and the FSS Code addressing fire safety on container ships, 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 taking into account the above-mentioned road map, and the information in document SSE 8/10/3 on "Study Investigating Cost-Efficient Measures for Reducing the Risk from Cargo Fires on Container Vessels (CARGOSAFE)" to be conducted by EMSA, invited MSC 105 to consider establishing an FSA Experts Group to review the outcome of any studies embodying an FSA approach to be submitted to the Group, once they are completed, reporting directly to an appropriate session of the Sub-Committee to consider the FSA Experts Group's report, subject to the outcomes of such studies were made available, together with any additional submissions in that regard, if any (see paragraph 16.15.1.2);

.3 requested the Secretariat to submit a working paper to MSC 105 containing draft terms of reference for the FSA Experts Group to be established for consideration, as appropriate; and

.4 deferred consideration of document SSE 8/10/1 to a future session of the Sub-Committee which would also consider the expected FSA Experts Group's report, if established, so that the proposal would be discussed in conjunction with the results from the FSA studies after review by the FSA Experts Group for a holistic approach (see paragraph 10.5 above).

Design, performance, testing and approval of water mist lance systems

10.7 In relation to water mist lance systems, the Sub-Committee considered document SSE 8/10/2 (Denmark), proposing draft guidelines for the design, performance, testing and approval of water mist lance used for the protection of on-deck cargo areas of ships designed and constructed to carry containers on or above the weather deck.

10.8 Following consideration and noting the merit of evaluating the proposal in light of the expected outcomes of the FSA studies, the Sub-Committee agreed to postpone the consideration of the proposal in document SSE 8/10/2 until the relevant studies had been concluded, for a holistic approach.

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 MSC 101, having considered document MSC 101/21/3 (Belgium et al.), proposing to introduce a requirement for fire detection and alarm systems in control stations on cargo ships including tankers in SOLAS chapter II-2, had 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 Sub-Committee as the coordinating organ. In this regard, the Committee had instructed the Sub-Committee to also investigate the need to expand the scope of the work to include remotely located service spaces (MSC 101/24, paragraph 21.3).

11.2 The Sub-Committee also recalled that SSE 7, having considered document SSE 7/20/4 (Belgium and Luxembourg), noting the preventive nature of these installations for a timely implementation and that the nature of the output would not increase the workload of the Sub-Committee significantly, had agreed that (SSE 7/21, paragraph 20.40):

- .1 the output be included in the provisional agenda of SSE 8; and
- .2 the draft amendment texts contained in document SSE 7/20/4 be taken into account when considering the matter at the next session.

Draft amendments to SOLAS chapter II-2 and MSC.1/Circ.1456

11.3 In relation to the matter, the Sub-Committee considered the following documents:

- .1 SSE 8/11 (Belgium et al.), proposing 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) to introduce a requirement for fire detection and alarm systems in control stations on cargo ships, including tankers; and
- .2 SSE 8/11/1 (China), providing draft amendments to SOLAS regulation II-2/7.5.5 and MSC.1/Circ.1456 on the protection requirements for fixed fire detection and fire alarm system of service spaces and control stations on cargo ships, to clarify the specific requirements of service spaces and control stations with different fire risks on cargo ships built with various protection methods.

11.4 The Sub-Committee considered, in particular:

- .1 which approach should be taken with respect to the draft amendments to SOLAS regulation II-2/7.5.5, i.e. whether to insert the wording "in all control stations" as in document SSE 8/11; or to amend the existing regulation by excluding "low risk service spaces", as in document SSE 8/11/1, considering that the service spaces with high or low fire risk should be treated differently; and
- .2 the draft amendments to MSC.1/Circ.1456.

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

- .1 the need for the provision of a detection system should be determined on the basis of fire risk and frequency of manning, rather than only on location, as proposed in document SSE 8/11/1;
- .2 draft amendments to SOLAS regulation II-2/7.5.5 were considered inconsistent with SOLAS regulation II-2/7.5.2; and for consistency, reference should be made to "carbon dioxide rooms" without the word "fixed"; and
- .3 fixed CO₂ rooms should not be excluded from the requirements and as the draft amendments were meant for new ships, the additional costs would be minimal and, therefore, document SSE 8/11 should be used as a basis.

11.6 In view of the above, recognizing the merit of the contents in both documents, the Sub-Committee agreed to instruct the FP Working Group to further consider the proposals in documents SSE 8/11 and SSE 8/11/1 (see paragraph 11.7).

Instructions to the FP Working Group

11.7 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 6.17), taking into account the comments made and decisions taken in plenary, to finalize the draft amendments to SOLAS regulation II-2/7.5.5 and MSC.1/Circ.1456 with respect to the protection of accommodation and service spaces and control stations, based on annexes 1 and 2 to document SSE 8/11, respectively, and taking into account the modifications in the annex to document SSE 8/11/1, with a view to approval by MSC 106 and adoption by MSC 107 for the SOLAS amendments, in conjunction with the approval of the draft amendments to MSC.1/Circ.1456, and dissemination as MSC.1/Circ.1456/Rev.1.

Report of the Working Group

11.8 Having considered the relevant part of the report of the FP Working Group dealing with this agenda item (SSE 8/WP.4), the Sub-Committee noted that the Group had:

- .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 due to time constraints and, therefore, recommended that this matter be further considered by the FP Correspondence Group.

Instructions to the FP Correspondence Group

11.9 In order to progress the work intersessionally, the Sub-Committee instructed the FP Correspondence 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 6.26), taking into account the comments made and decisions taken at SSE 8, to finalize the draft amendments to SOLAS regulation II-2/7.5.5 and MSC.1/Circ.1456 with respect to the protection of accommodation and service spaces and control stations, based on annexes 1 and 2 to document SSE 8/11, respectively, and taking into account the modifications in document SSE 8/11/1.

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

Background

12.1 The Sub-Committee recalled that MSC 101, having considered documents MSC 101/21/17 and MSC 101/INF.7 (Norway), proposing the prohibition of the use of fire-fighting foams containing perfluorooctane sulfonic acid (PFOS), had agreed to include in the post-biennial agenda of the Committee an output on "Development of provisions to prohibit the use of PFOS for fire-fighting on board ships", with one session needed to complete the item, assigning the Sub-Committee as the coordinating organ (MSC 101/24, paragraph 21.27).

12.2 The Sub-Committee also recalled that the Committee had agreed that the amendments should apply to new ships, and to new installations on existing ships; and a phase-out scheme for existing ships should be considered (MSC 101/24, paragraph 21.28).

12.3 The Sub-Committee further recalled that SSE 7, having considered document SSE 7/18/1 (Canada et al.), had agreed to (SSE 7/21, paragraph 20.24):

- .1 include the new output on the "Development of provisions to prohibit the use of fire-fighting foams containing perfluorooctane sulfonic acid (PFOS) for fire-fighting on board ships" in the provisional agenda of SSE 8;
- .2 invite MSC 102 to expand the scope of the output to include other regulations of SOLAS chapter II-2 and other instruments to be amended, in addition to SOLAS regulation II-2/10.4.1.3; and
- .3 the points made on the instruments to be amended contained in document SSE 7/18/1, which should be taken into account when drafting the amendments at the next session.

12.4 In this respect, the Sub-Committee noted that MSC 102 had approved the inclusion of this output in the provisional agenda of SSE 8, as well as the expansion of the scope to include other regulations of SOLAS chapter II-2 and other instruments to be amended, in addition to SOLAS regulation II-2/10.4.1.3 (MSC 102/24, paragraphs 19.30 and 19.31).

Proposals on the prohibition of PFOS

12.5 In relation to the matter, the Sub-Committee considered the following documents:

- .1 SSE 8/12 (Canada et al.), containing proposed draft amendments to SOLAS

chapter II-2 and the HSC Codes (1994 and 2000) to introduce the prohibition of use of fire-fighting foams containing PFOS for fire fighting on board ships; and

- .2 SSE 8/12/1 (China), providing amendments to SOLAS regulation II-2/10 to prohibit the use of fire-fighting foams containing PFOS in marine fire fighting.

12.6 The Sub-Committee considered, in particular:

- .1 which approach should be taken, i.e. whether to insert a new section in the SOLAS Convention and the HSC Codes, as in document SSE 8/12 or amend existing regulations in the SOLAS Convention, as in document SSE 8/12/1; and
- .2 whether PFOS reception facilities should be addressed in the draft amendments.

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

- .1 the formulation of the draft amendments in document SSE 8/12 should be used as a basis for simplicity and it would provide the advantage of extending the prohibition to all of the fire-extinguishing agents as necessary;
- .2 paragraph 11 of document SSE 8/12/1 should be taken into account, particularly for the protection of the environment to address the need for delivering PFOS to appropriate reception facilities;
- .3 the proposals in document SSE 8/12/1 addressed important aspects of safe onshore reception and the need for a phased removal in conjunction with dry-docking and, therefore, should be taken into account;
- .4 the MODU Codes would also need to be amended in line with the proposals for the amendments to the HSC Codes;
- .5 notwithstanding the view in paragraph 12.7.4, the scope of the output covered ships only, and currently, a relevant correspondence group under the SDC Sub-Committee was dealing with the prohibition of halon in MODUs;
- .6 the suggested modifications in document SSE 8/12/1 also covered portable extinguishers, which was considered outside the scope of the agenda; and
- .7 the prohibition of PFOS could be dealt with under the MARPOL Convention rather than the SOLAS Convention.

12.8 Following discussion, the Sub-Committee agreed to instruct the FP Working Group to further consider the proposals in document SSE 8/12 and paragraph 11 of document SSE 8/12/1 with regard to shore reception facilities (see paragraph 12.9).

Instructions to the FP Working Group

12.9 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 6.17), taking into account the comments made

and decisions taken in plenary, to finalize the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes on the prohibition of PFOS, including the application dates, based on annexes 1 to 3 to document SSE 8/12, respectively, and taking into account the relevant part of document SSE 8/12/1, with a view to approval by MSC 106 and subsequent adoption by MSC 107.

Report of the Working Group

12.10 Having considered the relevant part of the report of the FP Working Group dealing with this agenda item (SSE 8/WP.4), the Sub-Committee noted that the Group had:

- .1 not included halon in the draft new provision, as this substance was not explicitly prohibited by the SOLAS Convention for ships constructed before 1 January 1994;
- .2 agreed on the need to address the safe disposal of prohibited substances, including PFOS, to appropriate shore-based reception facilities in the draft amendments;
- .3 recommended considering the establishment of a related module within GISIS for listing of PFOS disposal banking and reception facilities; and
- .4 finalized the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes.

12.11 Consequently, the Sub-Committee:

- .1 agreed to the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes on the prohibition of PFOS, as set out in annexes 7 to 9, respectively, with a view to approval by MSC 106 and subsequent adoption by MSC 107, with the entry into force on 1 January 2026;
- .2 authorized the Secretariat to prepare check/monitoring sheet and records for regulatory development in accordance with the Guidance (MSC.1/Circ.1500/Rev.1); and
- .3 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.

Completion of the work on the output

12.12 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 its responsibility (namely model courses 3.03 to 3.06 for the SSE Sub-Committee) might need to be revised and, if that was 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 (SSE 7/21, paragraphs 20.30 and 20.31) had:

- .1 had a discussion on the need for revising model courses under the purview of the Sub-Committee and the applicable procedures for doing so, and agreed that all of the above-mentioned model courses should be revised in due course, given the fact that the model courses had not been updated since 2004;
- .2 agreed that priority should be given to the revision of Model Course 3.03 on Survey of Machinery Installations; and
- .3 decided to establish a drafting group at SSE 9 to prepare draft terms of reference for course developers for undertaking the revision work, with the understanding that other model courses would be revised subsequently.

Revision of Model Course 3.03

13.3 In this respect, the Sub-Committee considered document SSE 8/13 (Secretariat) containing the draft terms of reference for the course developer(s) and the review group for the revision of Model Course 3.03 on Survey of Machinery Installations (SSE 8/1/2, annex, item 13).

13.4 Following consideration, the Sub-Committee (SSE 8/1/2/Add.1, annex, item 13):

- .1 approved the draft terms of reference for the course developer(s) and the review group (SSE 8/13, annex), with a view to validation of the revision at SSE 9, as set out in annex 10;
- .2 established a review group to work between sessions by correspondence to review the revision of Model Course 3.03; and invited interested delegations to notify the Secretariat of the corresponding roles as course developer(s), coordinator of the review group and member of the review group, within one month from the closure of this session (SSE 8/13, paragraph 7); and
- .3 authorized the Secretariat to take the necessary action for the hiring of developer(s) for the revision work, in case no delegation nominates any developer, with the understanding that at least one coordinator should be nominated, otherwise the course could not be reviewed and finally validated.

13.5 In this regard, the Sub-Committee noted, with appreciation, the offer of IACS to undertake the role of course developer as in-kind contribution and invited IACS to make a relevant notification as prescribed in document SSE 8/13.

14 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))

Background

14.1 The Sub-Committee recalled that SSE 7 had agreed with the guiding principles for the revision of the 1995 Code of Safety for Diving Systems outlined in paragraph 9 of document SSE 7/14 (Bahamas et al.), with a view to developing a new code using the goal-based standards approach, incorporating relevant parts of the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) (SSE 7/21, paragraph 14.5).

14.2 The Sub-Committee also recalled that SSE 7 had established the Correspondence Group on the Revision of the 1995 Code of Safety for Diving Systems, with terms of reference as set out in paragraph 14.6 of document SSE 7/21, and had instructed the Group to submit a report to this session.

14.3 The Sub-Committee further recalled that MSC 102 had authorized SSE 8 to establish an experts group at this session to progress the work on the safety of diving systems (MSC 102/24, paragraph 19.24).

Report of the Correspondence Group

14.4 The Sub-Committee considered document SSE 8/14 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 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 its finalization (SSE 8/1/2, annex, item 14).

14.5 In this regard, the Sub-Committee noted a comment by the delegation of Liberia that some parts of the draft Code were drafted in mandatory language and if this was not intended, the experts group, if established, should be instructed to review the draft Code for the use of non-mandatory language (SSE 8/1/2/Add.1, annex, item 14).

Establishment of the Experts Group

14.6 Having considered the actions requested in paragraph 34 of the report of the Correspondence Group (SSE 8/14) and taking into account the comment in paragraph 14.5 above, 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 (SSE 8/1/2/Add.1, annex, item 14):

- .1 review the draft international code of safety for diving operations and finalize it for adoption by the Committee, based on annex 2 and taking into account annex 1 to document SSE 8/14, as well as the comments made by the delegation of Liberia with respect to using mandatory language therein, together with an associated draft MSC resolution;
- .2 consider the appropriate date of entry into force of the draft revised Diving Code;
- .3 consider any outstanding issues identified in annex 3 to document SSE 8/14 and take action, as necessary;

- .4 consider the treatment of existing ships under the new two-part certification process, taking into account paragraphs 21 and 22 of document SSE 8/14;
- .5 consider the options provided in appendix 1 to the draft revised Code on the model form of Diving Unit Safety Certificate and the draft guidance on hyperbaric evacuation for search and rescue operations;
- .6 consider whether, and which, other IMO instruments should reference the draft revised Diving Code and also consider how other IMO instruments could be impacted by the entry into force of the Code; and
- .7 consider whether it is necessary to re-establish the correspondence group to progress the work and, if so, prepare terms of reference for consideration by the Sub-Committee.

Report of the Experts Group

14.7 Having considered the report of the Experts Group on the Revision of the Code of Safety for Diving Systems (SSE 8/WP.7), the Sub-Committee took action as outlined in paragraphs 14.8 to 14.13 below.

Draft international code of safety for diving operations

14.8 Regarding the draft international code of safety for diving operations, the Sub-Committee noted that the Group had, in particular:

- .1 discussed the non-mandatory nature of the draft revised Code, terminology used therein and the GBS structure;
- .2 agreed to replace mandatory language ("shall") with non-mandatory language ("should"), together with further adjustments in place of "functional requirements" and "regulations";
- .3 eliminated the two-part structure of the draft Code, considering that this would not be necessary for a non-mandatory instrument; and
- .4 further developed the draft text, with the understanding that the work should progress intersessionally through a correspondence group.

Date of application and application provisions

14.9 With regard to date of application and application provisions, the Sub-Committee noted that the Group had:

- .1 considered the options of how *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) should be handled, whose provisions had been incorporated into the draft Revised Code, including the possibility of developing supplementary guidance to add on to the resolution, which would continue to be valid after the implementation of the new Code;
- .2 also considered potential implementation dates taking into account the Assembly's future sessions, as existing resolution A.692(17) might need to be revoked or replaced by the Assembly;

- .3 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; and
- .4 recommended that the application provisions should be considered in detail intersessionally through a correspondence group, bearing in mind that, unlike certain ships, diving units were not subject to certification in accordance with SOLAS.

Treatment of existing ships under the new two-part certification process

14.10 Regarding treatment of existing ships under the new two-part certification process, the Sub-Committee noted that the Group had 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.

Draft guidance on hyperbaric evacuation for search and rescue operations

14.11 Pertaining to the draft guidance on hyperbaric evacuation for search and rescue operations, the Sub-Committee noted that the Group had:

- .1 not agreed to the methodology of using MSC.1/Circ.1079/Rev.1 as a base, which was developed for passenger ships under mandatory requirements of SOLAS, while recognizing the need for similar guidelines for preparing plans for cooperation between SAR services and diving units;
- .2 recommended the development of such guidelines without referring to existing guidelines which had been developed on the basis of mandatory requirements; and
- .3 agreed that due consideration should be given to the possibility of having the SAR operation section related to diving units produced as a separate appropriate circular and referred to in the revised Diving Code as supplementary guidance.

Reference to the draft revised Diving Code in other IMO instruments

14.12 With regard to referencing to the draft revised Diving Code in other IMO instruments and the potential impact, the Sub-Committee noted that the Group had identified relevant instruments that had been referred to in the draft revised Diving Code. However, further careful consideration would be required for the development of necessary consequential amendments to other instruments.

Re-establishment of the Correspondence Group

14.13 In view of the above, in order to progress the work on this output intersessionally, the Sub-Committee re-established the Correspondence Group on the Revision of the 1995 Code of Safety for Diving Systems, under the coordination of the Bahamas,⁴ and instructed it, taking

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into account comments made and decisions taken at SSE 8, to:

- .1 further progress the development of the draft new international code of safety for diving operations (the Code), including associated draft MSC resolution, using the draft text set out in the annex to document SSE 8/WP.7 as a base, taking into account, in particular:
 - .1 that application provisions of the Code would require further consideration to provide clarity of the subject to be applied, bearing in mind that, unlike certain ships, diving units are not currently subject to certification in accordance with SOLAS;
 - .2 the need for guidelines for preparing plans for cooperation between search and rescue services and diving units, bearing in mind that diving units, unlike passenger ships, are not subject to SOLAS requirements;
 - .3 the relationship of the new Code with existing resolution A.692(17), which addresses Hyperbaric Survival Craft (HBSC), with possible recommendation for the Assembly to revoke, as appropriate. Further, to consider existing provisions to be entirely superseded by the new provisions for newly built HBSC, and the date of their application;
 - .4 the update of current references of existing IMO instruments, and the referral of the Code in other IMO instruments;
 - .5 review of the appropriate terms used in the draft Code, bearing in mind that this is a non-mandatory instrument; and
 - .6 whether a phased-in approach is needed to allow the industry to prepare for implementation of the new standards and for certification; and
- .2 submit a report to SSE 9.

Extension of the target completion year

14.14 In light of the above conclusion, the Sub-Committee invited MSC 106 to extend the target completion year for this output to 2024.

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

Background

15.1 The Sub-Committee recalled that this was a continuous item on the Sub-Committee's biennial agenda and that the Assembly, at its twenty-eighth session, had expanded the output to include all proposed unified interpretations 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.

Unified interpretations considered by correspondence

15.2 The Sub-Committee recalled that SSE 7, having considered the draft unified interpretations of SOLAS regulation II-2/9.7 regarding the details of duct penetrations in document SSE 7/16/7, had instructed the Correspondence Group on Fire Protection (FP) to further consider the matter and advise SSE 8 accordingly, with the terms of reference set out in paragraph 16.27 of document SSE 7/21.

Report of the FP Correspondence Group

15.3 The Sub-Committee considered the relevant part of the report of the FP Correspondence Group (SSE 8/6) dealing with this agenda item and, having approved it in general, noted the Group's consideration that the draft unified interpretation (UI) of SOLAS regulation II-2/9.7.3.1.2 on fire insulation of ducts passing through "A" class divisions; and that of SOLAS regulation II-2/9.7.3.2 on the penetration of the "B" class bulkheads, were recommended to be agreed; whereas a consensus had not been reached on the draft unified interpretation of SOLAS regulation II-2/9.7.3.1.1 regarding measuring the length of A-class sleeves (SSE 8/1/2, annex, item 15).

15.4 Following consideration, the Sub-Committee endorsed the Group's recommendation and agreed to the draft unified interpretations of SOLAS chapter II-2 (regulations 9.7.3.1.2 and 9.7.3.2), and the associated draft MSC circular, as set out in annex 11, for approval by MSC 106 (SSE 8/1/2, annex, item 15).

Implementation of resolution MSC.402(96)

15.5 Regarding the implementation of *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats* (resolution MSC.402(96)), the Sub-Committee recalled that MSC 104 had postponed the consideration of the status of ISO/PAS 23678 provided in document MSC 102/22/6 (ISO), together with the comments thereon in documents MSC 103/20/15 (IACS) and MSC 103/20/17 (ICS et al.), to MSC 105 (MSC 104/18, paragraphs 17.19 and 17.20).

15.6 The Sub-Committee also recalled that document MSC 105/19/1 (Secretariat) had been issued to facilitate the consideration of the matter at MSC 105, informing on the discussion related to the publication of ISO/PAS 23678, its status as a publicly available specification, making reference to it in resolution MSC.402(96), and clarifying some of the terms and requirements in the resolution; and that relevant submissions had been received for consideration at MSC 105.

15.7 In this respect, the Sub-Committee had the following documents for its consideration:

- .1 SSE 8/15/5 (IACS), discussing different views on the implementation of the requirements of resolution MSC.402(96) and proposing a draft unified interpretation to ensure uniform and global implementation; and
- .2 SEE 8/15/14 (ILAMA), recalling the decisions that took place at MSC 104, as reflected within documents MSC 104/18, MSC 105/19/1 and SSE 8/2/1, and commenting on document SSE 8/15/5, taking into account the inconsistencies in the implementation of resolution MSC.402(96), and providing ILAMA's definitions relating to "make" and "type".

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

- .1 as it was expected that MSC 105 would be held under time restrictions, the Committee might not have ample time to discuss the complex matter thoroughly. Given the urgent need for the industry to address the issues, the documents could be referred to the LSA Correspondence Group, if established, to initiate the analysis of issues which had emerged with the implementation of resolution MSC.402(96), and to progress the discussion intersessionally by taking into account the outcome of MSC 105, in order to make relevant recommendations to SSE 9;
- .2 MSC 105's discussion should take place before the Sub-Committee considered the proposals in the relevant documents; and
- .3 the definitions in document SSE 8/15/14 had been submitted to ISO for inclusion in ISO 23678 for becoming an international standard and it was expected that ISO would publish the new standard around the time of MSC 105, which would provide clarity on the matter.

15.9 In view of the above, considering that resolution MSC.402(96) was expected to be discussed at MSC 105, the Sub-Committee agreed to defer consideration of this matter to SSE 9, pending the expected discussion at MSC 105 and any relevant instructions by the Committee, as appropriate.

Remaining documents

15.10 Owing to time constraints, the Sub-Committee postponed consideration of documents 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.

16 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SSE 9

General

16.1 The Sub-Committee recalled that the Committee had had three sessions since the Sub-Committee's last meeting (SSE 7) in March 2020 (MSC 102, MSC 103 and MSC 104) and that, at each session, the Committee had approved and/or confirmed the Sub-Committee's biennial agenda. Additionally, MEPC 77 had included an item in SSE 8's provisional agenda.

16.2 In particular, the Sub-Committee noted that:

- .1 MSC 103 had included in its post-biennial agenda a new output on "Revision

of the 2010 FTP Code to allow for new fire protection systems and materials", with three sessions needed to complete the item, assigning the SSE Sub-Committee as the associated organ (MSC 103/21, paragraphs 18.28 and 18.29; and MSC 103/21/Add.1, annex 13).

- .2 MSC 104 had not been able to consider proposals for new outputs submitted relating to the Sub-Committee (MSC 104/WP.2) and agreed to postpone their consideration to MSC 105 (MSC 104/18, paragraph 15.10).
- .3 MSC 104, in considering the list of outputs on its post-biennial agenda and having noted that several outputs had been on the list for a very long time without being taken up, had agreed on the need to review the list, since some of the outputs might no longer be needed. Consequently, the Committee had instructed the Sub-Committees to review the list of outputs in the post-biennial agenda under their respective remits and advise the Committee accordingly (MSC 104/18, paragraph 15.14).
- .4 MEPC 77 had included a new output on "Review of the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66)) on fire protection requirements for incinerators and waste stowage spaces" in the biennial agenda of the Sub-Committee for the 2022-2023 biennium and the provisional agenda of this session, with a target completion year of 2022 (MEPC 77/16, paragraph 11.10).

Removal of post-biennial agenda items

16.3 In accordance with the instructions of MSC 104 (see paragraph 16.2.3), the Sub-Committee considered post-biennial agenda items that might no longer be needed and took action, as indicated in paragraphs 16.4 to 16.6 below.

Post-biennial agenda item no.65

16.4 The Sub-Committee recalled that MSC 91 and MSC 92 had considered development of general guidance on the drafting of amendments to the SOLAS Convention and related mandatory codes concerning their application. To that end, the post-biennial agenda item no.65 on "Application of amendments to SOLAS and related codes and guidelines" was added in the Committee's work programme (MSC 91/22, paragraphs 3.16 to 3.35; and MSC 92/26/Add.3, annex 45). As a result, MSC 93 had approved:

- .1 MSC.1/Circ.1481 on *Guidance on entry into force of amendments to the 1974 SOLAS Convention and related mandatory instruments*; and
- .2 MSC.1/Circ.1483 on *Interim guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments*.

16.5 The Sub-Committee also recalled that MSC 94 had revised the Interim Guidance (MSC.1/Circ.1483) and approved MSC.1/Circ.1500 on *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments*, and instructed its subsidiary bodies to start using the Guidance with immediate effect. Additionally, the Committee had instructed SSE 2 to follow the Guidance provided in paragraphs 4.1.6 and 4.2.6 of MSC.1/Circ.1500 when finalizing amendments to the relevant LSA Code under consideration (MSC 94/21, paragraphs 15.12 and 15.14). However, the post-biennial output no.65 had not been removed from the Committee's agenda.

16.6 In view of the above, the Sub-Committee agreed to recommend the removal of post-biennial agenda item No.65 (Application of amendments to SOLAS and related codes and guidelines) and invited MSC 106 to take action as deemed appropriate (SSE 8/1/2, annex, section 6).

Biennial agenda status report

16.7 Taking into account the progress made at the session, the Sub-Committee prepared the biennial status report for the 2022-2023 biennium (SSE 8/WP.2, annex 1), as set out in annex 12, for consideration by MSC 106.

Proposed provisional agenda of SSE 9

16.8 Regarding the provisional agenda of SSE 9, the Sub-Committee had the following documents for consideration:

- .1 SSE 8/16 (Japan), proposing to include the output on "Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships"; and
- .2 SSE 8/16/1 (Canada), proposing to include the output on "Development of amendments to the LSA Code for thermal performance of immersion suits" and providing considerations for further discussion.

16.9 Following consideration, the Sub-Committee agreed to include the following new agenda items in the provisional agenda for SSE 9, subject to endorsement by MSC 106:

- .1 Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships; and
- .2 Development of amendments to the LSA Code for thermal performance of immersion suits.

16.10 Additionally, the Sub-Committee considered a proposal that post-biennial agenda item no.158 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" be included in the provisional agenda of SSE 9, as it was considered critical to ensuring the safety of lives at sea and, therefore, should be urgently addressed.

16.11 Having noted that the content of post-biennial agenda item no.158 had been already included in document SSE 7/5 (China) and that the LSA Correspondence Group would be tasked with considering the specific proposals therein as part of agenda item 5 (Revision of SOLAS chapter III and the LSA Code), the Sub-Committee agreed not to include this item in the provisional agenda of SSE 9 at that stage (see paragraphs 3.26 and 5.16, and annex 12).

16.12 Taking into account the progress made at the session and the proposed items for inclusion in the provisional agenda for SSE 9 (see paragraph 16.9), the Sub-Committee prepared the proposed provisional agenda for SSE 9 (SSE 8/WP.2, annex 2), as set out in annex 13, for consideration by MSC 106.

Correspondence groups established at the session

16.13 The Sub-Committee established correspondence groups on the following subjects, due to report to SSE 9:

- .1 life-saving appliances (paragraph 3.26);
- .2 fire protection (paragraph 6.26); and
- .3 revision of the 1995 Code of Safety for Diving Systems (paragraph 14.13).

Arrangements for the next session

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

- .1 life-saving appliances (agenda items 3, 4, 5, 7 and 8);⁵
- .2 fire protection (agenda items 6, 9, 10 and 11);⁵
- .3 revision of the Code of Safety for Diving Systems (agenda item 12);⁵
- .4 validated model training courses (agenda item 13);⁵ and
- .5 Interim guidelines on safe operation of onshore power supply (OPS) (agenda item 17),^{5 6}

whereby the Chair, taking into account the submissions received on the respective subjects, would advise the Sub-Committee before SSE 9 on the final selection of such groups.

16.15 In this regard, the Sub-Committee requested that:

- .1 MSC 105 authorize the establishment of:
 - .1 an in-person intersessional Working Group on the Revision of SOLAS chapter III and the LSA Code to finalize the draft risk indexing and scoring (SSE 8/3, annex 3), as well as further develop the hazard identification matrix (SSE 8/3, annex 4 and SSE 8/5/3), reporting to SSE 9 (item 5); and
 - .2 an FSA Experts Group to review the outcome of relevant studies addressing detection and control of fires in cargo holds and on the cargo deck of containerhips, once they are completed, reporting directly to an appropriate session of the Sub-Committee to consider the FSA Experts Group's report, subject to the outcomes of such studies are made available (item 10); and
- .2 MSC 106 authorize the establishment of an experts group on the revision of the Code of Safety for Diving Systems at its next session (item 14).

⁵ Numbers refer to the agenda items contained in annex 13.

⁶ A drafting group may be established to finalize the draft interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages under agenda item 17 (Any other business).

Date of the next session

16.16 The Sub-Committee noted that its ninth session has been tentatively scheduled to take place from 27 February to 3 March 2023.

17 ELECTION OF CHAIR AND VICE-CHAIR FOR 2023

17.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. Umut Şentürk (Turkey) as Chair and Mr. Cristiano Aliperta (Palau) as Vice-Chair, both for 2023.

Expression of appreciation

17.2 The Sub-Committee expressed its sincere thanks and appreciation to the parting Vice-Chair, Mr. Sergey Tolmachev of the Russian Federation, for his important contributions to the work of the Sub-Committee.

18 ANY OTHER BUSINESS**Matters considered by correspondence*****Correction of references to standards for coated fabric material tests for inflatable liferafts***

18.1 The Sub-Committee considered document SSE 8/18 (Secretariat), providing consequential draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms (survival craft)* (MSC.1/Circ.1630), with a view to aligning them with the recent amendments made to the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) adopted by resolution MSC.488(103); and agreed to the proposed amendments to MSC.1/Circ.1630, as set out in annex 14, with a view to approval by MSC 106 for circulation as MSC.1/Circ.1630/Rev.1 (SSE 8/1/2, annex, item 18).

Consequential correction of forms of certificates

18.2 With respect to the correction of forms of certificates, the Sub-Committee considered document SSE 8/18/2 (IACS), proposing a minor correction to the forms of the record of equipment for certificates in SOLAS, the HSC Codes and the SPS Code pertaining to the type of immersion suits, to address the discrepancy with the expression used in the LSA Code; and the type of anti-exposure suits used in the form of the Record of Equipment for High-Speed Craft Safety Certificate, as amended by resolution MSC.207(81).

18.3 Following consideration, the Sub-Committee agreed to the draft amendments to the forms of the record of equipment for certificates of the above-mentioned instruments, as a minor correction, in accordance with paragraph 3.2(vi) of document C/ES.27/D (SSE 8/1/2, annex, item 18), as set out in:

- .1 annex 8 – 1994 HSC Code (Annex 1 (Form of Safety for High-Speed Craft));
- .2 annex 9 – 2000 HSC Code (Annex 1 (Form of High-Speed Craft Safety Certificate and Record of Equipment)); and
- .3 annex 15 – SOLAS Convention (Appendix (Certificates)),

with a view to approval by MSC 106 and subsequent adoption by MSC 107; and

- .4 annex 16 – SPS Code (Appendix (Record of Equipment for the Special Purpose Ship Safety Certificate)),

with a view to adoption by MSC 107, in conjunction with the adoption of the relevant amendments to SOLAS, and the 1994 and 2000 HSC Codes.

Use of IMOSpace

18.4 The Sub-Committee considered document SSE 8/18/3 (Norway and United States), discussing the use of IMOSpace as a tool for conducting the work of intersessional correspondence groups, and proposing the establishment of business rules and some improvements.

18.5 In this regard, the Sub-Committee noted a comment by the delegation of Germany, supporting the proposals in document SSE 8/18/3, and also proposing to develop a more user-friendly interface, especially for the Group's Coordinator, e.g. the search function for Group members could be further improved, and suggesting that compatibility with different Internet browsers should also be improved (SSE 8/1/2/Add.1, annex, item 18).

18.6 Subsequently, the Sub-Committee (SSE 8/1/2/Add.1, annex, item 18):

- .1 thanked the co-sponsors for sharing their experiences on the use of IMOSpace for the intersessional work of the Sub-Committee;
- .2 endorsed the view that IMOSpace was a suitable platform for conducting and archiving correspondence group work, and encouraged members to use it when coordinating groups;
- .3 endorsed the suggested improvements to IMOSpace for consideration by the Secretariat, as set out in paragraphs 6 to 9 of the document, as well as additional improvements suggested by the delegation of Germany with respect to more user-friendly interface and compatibility with different Internet browsers (see paragraph 18.5); and
- .4 invited MSC 106 to note the information provided on the experience gained using IMOSpace and consider the recommendations for improvement and action, as appropriate.

Draft interim guidelines on onshore power supply

18.7 Regarding the draft interim guidelines on onshore power supply, the Sub-Committee recalled that:

- .1 SSE 7 had agreed to the draft interim guidelines on safe operation of onshore power supply (OPS) service in port for ships engaged on international voyages, with a view to submission to MSC 103 for approval, subject to consideration of the personnel, training and familiarization provisions by HTW 7 (SSE 7/21, paragraph 11.22 and annex 6);
- .2 HTW 7, having recognized that thorough and detailed consideration of the personnel, training and familiarization provisions was required before the approval of the draft interim guidelines, had postponed the consideration of these provisions to HTW 8 (HTW 7/16, paragraph 15.9); and

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- .3 MSC 103 had considered document MSC 103/16/1 (IACS), commenting on the draft interim guidelines and proposing several modifications; and had referred the draft interim guidelines, together with the proposals by IACS, to SSE 8 for further consideration, with a view to finalization, taking into account the input from HTW 8 (MSC 103/21, paragraph 16.3).

18.8 In this context, the Sub-Committee also recalled that HTW 8 had considered the personnel, training and familiarization provisions in section 6 of the draft interim guidelines and provided its input; and had noted an inconsistency on the definition of "high voltage" in paragraph 1.2.5 with the one mentioned in the STCW Convention, as provided in document HTW 8/WP.7 (paragraphs 29 to 34 and annex 7).

18.9 In this regard, the Sub-Committee:

- .1 considered document SSE 8/18/1 (Secretariat) containing the draft text of the interim guidelines (SSE 7/21, annex 6) incorporating the proposed modifications in document MSC 103/16/1;
- .2 considered document SSE 8/18/6 (Japan), commenting on document SSE 8/18/1 and proposing further modifications to the draft interim guidelines with regard to safety precautions before maintenance, for clarity;
- .3 considered additional proposals to modify paragraphs 2.1.4 and 2.2.3 of the draft interim guidelines, which had been previously suggested for deletion in document MSC 103/16/1, as follows:
- "2.1.4 There should be a suitable cross-boundary ~~safety system~~ procedural requirement that is jointly controlled by the ship and shore persons in charge (PIC). This should include appropriate procedures for ensuring the integrity of any isolations, such as a 'lock out/tag out' system."
- "2.2.3 There should be a suitable cross-boundary ~~safety system~~ procedural requirement that is jointly controlled by the ship-side and shore-side PIC. This should include appropriate procedures for ensuring the integrity of any isolations, such as a 'lock out/tag out' system."; and
- .4 noted the input and modifications provided by HTW 8 (see paragraph 18.8).

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

- .1 Regarding the definition of "high voltage", the STCW Convention and Code provided training and education requirements for electro-technical officer, chief engineer and the second engineer for high voltage, which was critical to conduct OPS operations. Therefore, the deletion of paragraph 1.2.6 (definition of low voltage) would provide clear guidance and address the inconsistency between the interim guidelines and the requirements in the STCW Convention and the Code.
- .2 Notwithstanding the view in paragraph 18.10.1, the definition of "high voltage" should be considered in conjunction with the training requirements for consistency; and the deletion of the definition of "low voltage" might not solve the inconsistency.

- .3 The proposals in document SSE 8/18/6 considered only air-insulated switchgear, while there existed other solutions, such as gas-insulated switchgear and, therefore, the interim guidelines should consider at least known major designs.
- .4 The original text in paragraph 4 of the draft interim guidelines (SSE 8/18/1) should be kept, as the proposed modifications to sub-paragraphs .2 and .5 (SSE 8/18/6) could cause confusion against the safety steps.
- .5 The proposed additional phrase "to discharge residual electric charge" in the modified sub-paragraph .5 of paragraph 4 (SSE 8/18/6) could give a false impression, as a grounding tool was not only for discharging residual electrical charges: the grounding tool must safely ground the workplace so that, if the line accidentally gets energized while working, the grounding tool has to carry and hold the full short circuit current until being deenergized.
- .6 "Set interlock" terminology (SSE 8/18/6) should be reconsidered, as it could lead to the misconception of mechanical/electrical tag out rather than a physical tag out.
- .7 Section 5 (Documentation) of the draft interim guidelines should be reviewed to precisely reflect the risk assessment and how to include the operation procedures in the ship's safety management system.

18.11 In view of the above and taking into account that more time would be required to finalize the draft interim guidelines, the Sub-Committee invited relevant submissions to SSE 9 for finalization.

Other documents

Referenced ISO standard 15370 in chapter 11 of the FSS Code

18.12 With regard to ISO standard 15370 referenced in the FSS Code, the Sub-Committee considered document SSE 8/18/4 (IACS), proposing replacement of the footnoted reference with the updated version of ISO standard 15370:2021 in paragraph 2.1 of chapter 11 of the FSS Code, as a minor correction.

18.13 Having agreed that the proposed modification was substantive and not a minor correction, the Sub-Committee invited IACS 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.2).

Proposal for amendment to resolution MSC.481(102)

18.14 Regarding the fitting of retro-reflective materials on the bottom of self-righting lifeboats and liferafts, the Sub-Committee considered document SSE 8/18/5 (China), proposing a minor correction to paragraph 2.1 of annex 1 to the *Revised recommendation on the use and fitting of retro-reflective materials on life-saving appliances* (resolution MSC.481(102)).

18.15 Having agreed that the proposed modification was substantive and not a minor correction, 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.2).

19 REVIEW OF THE 2014 STANDARD SPECIFICATION FOR SHIPBOARD INCINERATORS (RESOLUTION MEPC.244(66)) ON FIRE PROTECTION REQUIREMENTS FOR INCINERATORS AND WASTE STOWAGE SPACES

Background

19.1 The Sub-Committee recalled that SSE 7 had considered document SSE 7/20/7 (IACS), identifying several discrepancies between annex 2 to the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)) and SOLAS chapter II-2 concerning the fire protection requirements for incinerator spaces and waste stowage spaces, and proposing a course of action to remove those discrepancies. Following a brief discussion, the Sub-Committee had agreed on the need for clarifying the application of the fire protection provisions for incinerators and waste stowage spaces. Subsequently, the Sub-Committee had invited for relevant new output proposals to be submitted to MEPC for amending or deleting annex 2 to resolution MEPC.244(66), as appropriate (SSE 7/21, paragraphs 20.45 and 20.46).

19.2 The Sub-Committee also recalled that MEPC 77, having considered document MEPC 77/11 (China et al.) proposing a new output to develop amendments to resolution MEPC.244(66) by revising the provisions of its annex 2 on fire protection requirements for incinerators and waste stowage spaces to remove the discrepancies between the resolution and SOLAS chapter II-2, had agreed to include a new output on "Review of the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66)) on fire protection requirements for incinerators and waste stowage spaces" in the biennial agenda of the Sub-Committee for the 2022-2023 biennium and the provisional agenda of this session, with a target completion year of 2022 (MEPC 77/16, paragraphs 11.8 to 11.10).

Amendments to resolution MEPC.244(66)

19.3 In relation to the matter, the Sub-Committee considered document SSE 8/19 (IACS), proposing amendments to resolution MEPC.244(66) to remove the discrepancies between resolution MEPC.244(66) and SOLAS chapter II-2 (SSE 8/1/2, annex, item 19).

19.4 In this regard, the Sub-Committee noted a comment by the delegation of Liberia that although the proposed deletion of annex 2 to resolution MEPC.244(66) was supported, it would leave the status of non-SOLAS ships unsecured and, therefore, an MSC circular should be developed to recapture the fire safety issue, recommending meeting the SOLAS requirements unless applicable national requirements existed (SSE 8/1/2/Add.1, annex, item 19).

19.5 Subsequently, the Sub-Committee (SSE 8/1/2/Add.1, annex, item 19):

- .1 agreed to delete annex 2 to resolution MEPC.244(66), so that the requirements in SOLAS were implemented to alleviate possible inconsistencies or misunderstandings in the application of the fire safety provisions to incinerator and waste stowage spaces;
- .2 requested the Secretariat to prepare draft amendments to the resolution, based on the annex to document SSE 8/19, together with the associated draft MEPC resolution, with a view to adoption by MEPC 79; and
- .3 invited interested Member States and organizations to make relevant proposals to MSC or MEPC, as appropriate, relating to the comments made in paragraph 19.4 above.

19.6 Consequently, the Sub-Committee agreed to a draft MEPC resolution on amendments to the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66)), as set out in annex 17, for submission to MEPC 79 with a view to adoption.

Completion of the work on the output

19.7 The Committees were invited to note that the work on the output had been completed.

20 ACTION REQUESTED OF THE COMMITTEES

20.1 The Maritime Safety Committee, at its 105th session, is invited to authorize the establishment of:

- .1 an in-person intersessional experts group to progress the work on risk indexing and scoring, as well as developing hazard identification matrix with regard to the revision of SOLAS chapter III and the LSA Code, subject to subsequent endorsement by the Council and its decision to open the IMO Headquarters for physical meetings (paragraphs 5.15 and 16.15.1.1); and
- .2 an FSA Experts Group to review the outcome of any relevant studies embodying an FSA approach that would address detection and control of fires on containerships, to be submitted to the Group through the Secretariat, reporting directly to an appropriate session of the Sub-Committee to consider the FSA Experts Group's report, with a view to drafting relevant amendments (paragraphs 10.6.2 and 16.15.1.2).

20.2 The Maritime Safety Committee, at its 106th session, is invited to:

- .1 approve 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), taking into account the check/monitoring sheet and records for regulatory development, with a view to subsequent adoption (paragraph 3.21 and annex 1);
- .2 approve, in principle, the draft MSC resolution on amendments to the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)), with a view to subsequent adoption in conjunction with the adoption of the above amendments to the LSA Code on ventilation requirements of survival craft (paragraphs 3.24.1 and 20.2.1 and annex 2);
- .3 maintain the output on "New requirements for ventilation of survival craft" on the provisional agenda for SSE 9 to allow for new research reports to be considered, if any, which could require adjustments to the agreed draft amendments to the Revised Recommendation (paragraph 3.24.2);
- .4 approve the draft MSC circular on revised interim guidelines on life-saving appliances and arrangements for ships operating in polar waters, for dissemination as MSC.1/Circ.1614/Rev.1 (paragraph 4.5 and annex 3);
- .5 note the progress made with regard to the revision of SOLAS chapter III and the LSA Code (paragraphs 5.14 to 5.16);

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- .6 note the progress on the draft amendments to relevant IMO instruments regarding fire safety on ro-ro passenger ships (paragraphs 6.18 to 6.26);
 - .7 approve the draft MSC circular on revised guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk, with a view to dissemination as MSC.1/Circ.1315/Rev.1 (paragraph 7.8 and annex 4);
 - .8 note that the Sub-Committee agreed to continue the discussion intersessionally on amendments to the LSA Code and the Revised Recommendation (resolution MSC.81(70)) to address the in-water performance of SOLAS lifejackets through the LSA Correspondence Group (paragraphs 8.16 and 8.17);
 - .9 authorize the IMO Secretariat to inform the ILO Secretariat about the development of new requirements for lifting appliances and to request ILO to take appropriate action regarding survey intervals in ILO Convention No.152 (paragraph 9.10.2.2);
 - .10 request the Secretary-General to circulate the draft amendments to SOLAS chapter II-1 on onboard lifting appliances and anchor handling winches (SSE 7/21, annex 4) in accordance with SOLAS article VIII, which were already approved in principle by MSC 102, with a view to adoption at MSC 107 (paragraph 9.11);
 - .11 approve, in principle, the draft MSC circular on guidelines for anchor handling winches, with a view to final approval by MSC 107, in conjunction with the adoption of the associated draft amendments to SOLAS regulation II-1/3-13 (paragraphs 9.17 and 20.2.10 and annex 5);
 - .12 approve, in principle, the draft MSC circular on guidelines for lifting appliances, with a view to final approval by MSC 107, in conjunction with the adoption of the associated draft amendments to SOLAS regulation II-1/3-13 (paragraphs 9.19 and 20.2.10 and annex 6);
 - .13 note the discussion on development of amendments to SOLAS chapter II-2 and the FSS code concerning containership fires (paragraphs 10.6 to 10.8);
 - .14 note the discussion on the draft amendments to SOLAS regulation II-2/7.5.5 and MSC.1/Circ.1456 with respect to the protection of accommodation and service spaces and control stations (paragraphs 11.8 and 11.9);
 - .15 approve the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes on the prohibition of PFOS, as set out in annexes 7 to 9, respectively, taking into account the check/monitoring sheet and records for regulatory development prepared by the Secretariat (paragraph 12.11.1 and annexes 7 to 9, respectively);
 - .16 note the discussion on the draft revision of the Model Course 3.03 on Survey of Machinery Installations, which will be validated at SSE 9 in accordance with the terms of reference for the course developer(s) and the review group (paragraph 13.4 and annex 10);

- .17 note the progress made on the revision of the 1995 Code of Safety for Diving Systems (paragraphs 14.8 to 14.13);
- .18 approve the draft MSC circular on unified interpretations of SOLAS chapter II-2 (paragraph 15.4 and annex 11);
- .19 consider the recommendation on the removal of the post-biennial agenda item no.65 on "Application of amendments to SOLAS and related codes and guidelines", as it is no longer needed; and take action, as deemed appropriate (paragraph 16.6);
- .20 approve the biennial status report of the Sub-Committee for the 2022-2023 biennium (paragraph 16.7 and annex 12);
- .21 approve the proposed provisional agenda for SSE 9 (paragraph 16.12 and annex 13);
- .22 authorize the Sub-Committee to establish an experts group at SSE 9, in addition to the planned working and drafting groups, to deal with issues related to the revision of the 1995 Code of Safety for Diving Systems (paragraph 16.15.2);
- .23 approve the draft amendments to the *Revised standardized life-saving appliance evaluation and test report forms* (MSC.1/Circ.1630), with a view to circulation as MSC.1/1630/Rev.1 (paragraph 18.1 and annex 14);
- .24 approve the draft amendments regarding type of immersion suits and anti-exposure suits, as a minor correction (C/ES.27/D, paragraph 3.2(vi)), to the forms of the record of equipment for certificates in (paragraph 18.3):
 - .1 the 1994 and 2000 HSC Codes, and the SOLAS Convention, with a view to subsequent adoption by MSC 107 (annexes 8,9 and 15); and
 - .2 the SPS Code, in principle, with a view to subsequent adoption by MSC 107 (annex 16);
- .25 note the recommendations regarding the improvement of IMOSpace and take action, as appropriate (paragraphs 18.4 to 18.6);
- .26 note that the Sub-Committee concluded the review of *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)) and prepared necessary draft amendments, with a view to adoption at MEPC 79 (paragraph 19.6 and annex 17); and
- .27 approve the report in general.

20.3 The Marine Environment Protection Committee, at its seventy-ninth session, is invited to adopt the draft MEPC resolution on amendments to the *2014 Standard specification for shipboard incinerators* (resolution MEPC.244(66)) (paragraph 19.6 and annex 17).

ANNEX 1

DRAFT MSC RESOLUTION

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCES (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.88(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 [...] 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 Government to note that the provisions in the annex are to be applied to liferafts, totally enclosed lifeboats, and partially enclosed lifeboats installed on or after [1 January 2029] where the expression *installed on or after [1 January 2029]* means:

- (a) for ships for which the building contract is placed on or after [1 January 2029], or in the absence of the contract, constructed on or after [1 January 2029], any installation 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 of the equipment to the ship on or after [1 January 2029].

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.

ANNEX *

CHAPTER IV
Survival craft

4.1 General requirements for liferafts

1 The existing paragraph 4.1.1.5.4 is deleted and subsequent sub-paragraphs are renumbered accordingly. A new paragraph 4.1.1.6 is added:

"4.1.1.6 The liferaft shall admit sufficient air at all times to prevent a long-term CO₂ concentration of more than 5,000 ppm for the number of persons the liferaft is permitted to accommodate, even with the entrances closed.

4.1.1.6.1 The means of ventilation shall be operable from inside the liferaft and be arranged to ensure that the liferaft is ventilated without stratification or formation of unventilated pockets.

4.1.1.6.2 If the means of ventilation is powered, sufficient energy shall be provided for a period of not less than 24 hours."

4.5 Partially enclosed lifeboats

2 The existing paragraph 4.5.2.6 is deleted and subsequent sub-paragraphs are renumbered accordingly. A new paragraph 4.5.5 is added:

"4.5.5 The lifeboat shall admit sufficient air at all times to prevent a long-term CO₂ concentration of more than 5,000 ppm for the number of persons the lifeboat is permitted to accommodate, even with the entrances closed.

4.5.5.1 The means of ventilation shall be operable from inside the lifeboat and be arranged to ensure that the lifeboat is ventilated without stratification or formation of unventilated pockets.

4.5.5.2 If the means of ventilation is powered, sufficient energy shall be provided for a period of not less than 24 hours."

4.6 Totally enclosed lifeboats

3 The following new paragraphs 4.6.6 and 4.6.7 are inserted after existing paragraph 4.6.5:

"4.6.6 Ventilation means

4.6.6.1 A totally enclosed lifeboat shall be provided with means to achieve a ventilation rate of at least 5 m³/h per person for the number of persons which the lifeboat is permitted to accommodate and for a period of not less than 24 hours. The ventilation means shall be operable from inside the lifeboat and shall be arranged to ensure that the lifeboat is ventilated without stratification or formation of unventilated pockets.

* Modifications are indicated in grey shading.

4.6.6.2 Where the means of ventilation is powered, the source shall not be the radio batteries referred to by paragraph 4.4.6.11; and where dependent on the lifeboat engine, sufficient fuel shall be provided to comply with paragraph 4.4.6.8.

4.6.7 Openings of the ventilation system and their means of closing

4.6.7.1 Each opening of the ventilation means required in paragraph 4.6.6 shall be provided with means of closing. The means of closing shall be operable by a person from inside the lifeboat. Means shall be provided to ensure that the openings can be kept closed before, i.e. while in the stowed position, and during the launching of the lifeboat.

4.6.7.2 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 required in paragraph 4.6.7.1 and taking into consideration the requirements provided in paragraph 4.6.3.2.

4.6.7.3 For a free-fall lifeboat complying with the requirements of section 4.7, 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.

4.6.7.4 For a lifeboat with a self-contained air support system complying with the requirements of section 4.8, the openings and their means of closing shall be designed to maintain the pressure required by section 4.8.

4.6.7.5 For a fire-protected lifeboat complying with the requirements of section 4.9, the openings and their means of closing shall be designed to ensure that the capability of protecting persons in the lifeboat is not impaired, under the conditions specified in paragraph 4.9.1.

APPENDIX 1

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE (SOLAS) CONVENTION AND RELATED MANDATORY INSTRUMENTS*

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).	NO
11	The forms of certificates and records of equipment have been harmonized, where appropriate, between the Convention and its Protocols.	YES

* This appendix is reproduced in English only. Part III should be completed by the drafting/working group that prepared the draft text using "yes", "no" or "not applicable". For the draft amendments to be considered and finalized by sub-committees in plenary within one session, the Secretariat may be requested, when necessary, to complete part III of the check/monitoring sheet after the session, instead of establishing a specific working/drafting group. "Minor corrections" (C/ES.27/D, paragraph 3.2(vi)) may be excluded from application of the provisions for completion of the check/monitoring sheet.

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

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))
	LSA CODE, chapter IV (Survival craft), regulations 4.1, 4.5 and 4.6
2	Origin of the requirement (original proposal document)
	MSC 97/19/8 and MSC 97/INF.11
3	Main reason for the development (extract from the proposal document)
	Absence of specific ventilation provisions for survival craft in the LSA Code which can cause "overheating" and elevated levels of CO ₂ in the survival craft atmosphere; ventilation induced by engine operation is not sufficient to provide an adequate amount of air for breathing of personnel in a totally enclosed lifeboat while keeping hatches of a lifeboat open to provide air may lead to ingress of water into the lifeboat in rough weather and may reduce the lifeboat stability. MSC 97 agreed to broaden the scope of the work to include all survival craft.
4	Related output
	New requirements for ventilation of survival craft (output no. 7.36)
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	<p>MSC 98 agreed to include in the 2016-2017 biennial agenda of the SSE Sub-Committee and the provisional agenda for SSE 4, an output on "Develop new requirements for ventilation of survival craft", with a target completion year of 2018.</p> <p>SSE 6 discussed the draft amendments to the LSA Code regarding ventilation on totally enclosed lifeboats and made progress on the draft amendments to the <i>Revised recommendation on testing of live-saving appliances</i> (resolution MSC.81(70)) regarding the operation of engine and fuel consumption tests, and additional tests for totally enclosed lifeboats been unable to consider the draft amendments to the LSA Code on the ventilation requirement for survival craft other than totally enclosed lifeboats, owing to time constraints (SSE 6/18, paragraph 4.17)</p> <p>MSC 100 expressed concern regarding the practicalities and feasibility of the finalized ventilation requirements for totally enclosed lifeboats.</p> <p>SSE 7 agreed to the draft amendments to the LSA Code (SSE 7/WP.3, annex 1) but could not complete the associated amendments to resolution MSC.81(70) with respect to for liferafts and additional tests for partially enclosed lifeboats.</p> <p>SSE 8 finalized the LSA Code amendments for adoption by MSC 107, as well as the associated amendments to resolution MSC.81(70), to be adopted in conjunction with aforementioned LSA Code amendments.</p>

* For the draft amendments to be considered and finalized by sub-committees in plenary within one session, the Secretariat may be requested, when necessary, to complete the records for regulatory development after the session, instead of establishing a specific working/drafting group. "Minor corrections" (C/ES.27/D, paragraph 3.2(vi)) may be excluded from application of the provisions for completion of the records for regulatory development.

6	Impact on other instruments (codes, performance standards, guidance circulars, certificates/records format, etc.)
	MSC.1/Circ.1630
7	Technical background
7.1	<i>Scope and objective (to cross check with items 4 and 5 in part II of the checklist)</i>
	Amendment to the LSA Code and associated provisions in res. MSC.81(70) for ventilation requirements of survival craft, after research had shown that poor ventilation causes discomfort by "overheating" high concentration of carbon dioxide.
7.2	<i>Technical/operational background and rationale (e.g. summary of FSA study, if available, or engineering challenge posed)</i>
	MV MOL Comfort casualty and survivors' experience
7.3	<i>Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)</i>
	Finalization of LSA Code amendments by SSE 8 for adoption by MSC 107, as well as finalization of associated amendments to resolution MSC.81(70), to be adopted in conjunction with aforementioned LSA Code amendments
7.4	<i>Short summary of requirement (what is the new requirement – in short and lay terms)</i>
	New provisions for ventilation of liferafts and totally and partially enclosed lifeboats
7.5	<i>Points of discussions (controversial points and conclusion)</i>
	No major discrepancies in the development of the new requirements

ANNEX 2

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,

RECALLING that life-saving appliances which are installed on board on or after 1 July 1999 should meet the applicable requirements of resolution MSC.81(70), as amended by resolutions MSC.200(80), MSC.226(82), MSC.274(85), MSC.295(87), MSC.321(89), MSC.323(89), MSC.378(93) and MSC.472(101),

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 prototype tests, 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.

ANNEX*

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

PART 1 – PROTOTYPE TESTS FOR LIFE-SAVING APPLIANCES

5 LIFERAFTS – RIGID AND INFLATABLE

1 A new paragraph 5.23 is added after the existing paragraph 5.22, as follows:

5.23 Ventilation performance test

5.23.1 For the means of ventilation required by paragraph 4.1.1.6 of the LSA Code, it should be demonstrated by the test that either:

- .1 the means of ventilation achieves a ventilation rate of at least 5m³/hr/person, for the number of persons which the liferaft is permitted to accommodate, when tested in accordance with 6.14.9; or
- .2 the means of ventilation provides sufficient air to keep CO₂ concentration from exceeding a time-weighted average concentration of 5000 ppm, over a period of two hours, subject to the following criteria:
 - .1 The liferaft should be moored outdoors in ambient air with all entrances closed and any ventilation openings remaining fully open.
 - .2 The average wind speed of the test environment during the test period should measure no greater than force 2 on the Beaufort scale.
 - .3 To simulate the volume of persons inside the liferaft, the liferaft should be loaded with forms to represent the number of persons which the liferaft is permitted to accommodate, providing a volume displacement equal to a body volume of 75 L per person. The forms should be evenly distributed on the surface of the floor of the liferaft.
 - .4 If a heat source to simulate body heat is provided, it should be arranged at each position of the form with no more than 50 W per person.
 - .5 The CO₂ exhale rate should be simulated and be no less than 383 ml/min per person.
 - .6 The CO₂ concentration should be measured in accordance with an international standard acceptable to the Organization,* at a minimum of three locations: top of canopy, head level of a seated person and floor level of the test liferaft. Readings of CO₂ monitors at each test point should be taken at intervals of not more than 60 seconds.

* Modifications are indicated in grey shading.

* Refer to ISO 12039:2019 *Stationary source emissions — Determination of the mass concentration of carbon monoxide, carbon dioxide and oxygen in flue gas — Performance characteristics of automated measuring systems or other available standards.*

.7 The duration of the test may depend on the liferaft's internal volume and the simulated CO₂ exhale rate. The test may end when a balancing point has been reached at which the CO₂ levels remains stable.

.8 Alternative test methods to those prescribed in 5.23.1.2.1 to 5.23.1.2.7 may be acceptable to the satisfaction of the Administration to ensure the means of ventilation meets the criteria of 5.23.1.2.

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.

2 New section 6.18 is added after the existing section 6.17 (Measuring and evaluating acceleration forces) with its sub-paragraphs, as follows:

6.18 Additional tests for partially enclosed lifeboats

6.18.1 For the means of ventilation required by paragraph 4.5.5 of the LSA Code, it should be demonstrated by test that either:

.1 the means of ventilation achieves a ventilation rate of at least 5m³/hr/person, for the number of persons which the lifeboat is permitted to accommodate, when tested in accordance with 6.14.9; or

.2 the means of ventilation provides sufficient air to keep CO₂ concentration from exceeding a time-weighted average concentration of 5000 ppm, over a period of two hours, subject to the following criteria:

.1 The lifeboat should be moored outdoors in ambient air with all entrances and hatches closed, and any ventilation openings remaining fully open.

.2 The average wind speed of the test environment during the test period should measure no greater than force 2 on the Beaufort scale.

.3 To simulate the volume of persons inside the lifeboat, the lifeboat should be loaded with forms to represent the number of persons which the lifeboat is permitted to accommodate, providing a volume displacement equal to a body volume of 75 L per person. The forms should be located at the seating positions in the lifeboat.

.4 If a heat source to simulate body heat is provided, it should be arranged at each seating position with no more than 50 W per person.

.5 The CO₂ exhale rate should be simulated and be no less than 383 mL/min per person.

.6 The CO₂ concentration should be measured in accordance with an international standard acceptable to the Organization* at a minimum of three locations: top of canopy, head level of a seated person and floor level of the

test lifeboat. Readings of CO₂ monitors at each test point should be taken at intervals of not more than 60 seconds.

* Refer to ISO 12039:2019 Stationary source emissions — *Determination of the mass concentration of carbon monoxide, carbon dioxide and oxygen in flue gas — Performance characteristics of automated measuring systems* or other available standards.

.7 The duration of the test may depend on the lifeboat's internal volume and the simulated CO₂ exhale rate. The test may end when a balancing point has been reached at which the CO₂ levels remains stable.

.8 Alternative test methods to those prescribed in 6.18.1.2.1 to 6.18.1.2.7 may be acceptable to the satisfaction of the Administration to ensure that the means of ventilation meets the criteria of 6.18.1.2."

ANNEX 3*

DRAFT MSC CIRCULAR

REVISED INTERIM GUIDELINES ON LIFE-SAVING APPLIANCES AND ARRANGEMENTS FOR SHIPS OPERATING IN POLAR WATERS

1 The Maritime Safety Committee, at its 101st session (5 to 14 June 2019), having considered a proposal by the Sub-Committee on Ship Systems and Equipment, at its sixth session, and recognizing the importance of life-saving appliances and arrangements for ships operating in polar waters, with a view to providing interim guidance outlining possible means of mitigating hazards in order to comply with section 8.3 of part I-A of the International Code for Ships Operating in Polar Waters (Polar Code), approved the *Interim guidelines on life-saving appliances and arrangements for ships operating in polar waters* (MSC.1/Circ.1614), ~~as set out in the annex.~~

2 The Maritime Safety Committee, at its [106th session (2 to 11 November 2022)], approved amendments with respect to the new provisions concerning the methodology for the calculation of the maximum time of rescue.

3 2 Member States are invited to bring the annexed Interim Guidelines to the attention of ship designers, shipyards, shipowners, ship managers, ship operators and other organizations or persons responsible for life-saving appliances and arrangements for ships operating in polar waters.

4 3 Member States are also invited to bring the annexed Interim Guidelines to the attention of shipmasters, ships' officers and crew and all other parties concerned.

5 4 The Committee agreed to keep the Interim Guidelines under review, taking into account operational experience gained with their application.

6 This circular revokes MSC.1/Circ.1614.

* Modifications are indicated in grey shading.

ANNEX

REVISED INTERIM GUIDELINES ON LIFE-SAVING APPLIANCES AND ARRANGEMENTS FOR SHIPS OPERATING IN POLAR WATERS

1 GENERAL

1.1 These Interim Guidelines outline possible means of mitigating hazards in order to comply with section 8.3 of part I-A of the International Code for Ships Operating in Polar Waters (Polar Code) and are intended to assist ship designers and shipowners/operators, as well as Administrations, in the uniform implementation of the Polar Code.

1.2 Compliance with these Interim Guidelines does not necessarily mean that the ship complies with the Polar Code. There may be other hazards, conditions and mitigating means to be considered in the operational assessment required in section 1.5 of part I-A of the Code. The complexity of a prolonged survival time in a harsh environment should not be underestimated.

1.3 Survival after abandonment will rely on several factors, such as the types and combination of equipment, crew training and good leadership of each survival craft. The expected time of rescue is a defining factor for life-saving appliances and arrangements. Conditions that are not otherwise considered critical may become critical over time.

1.4 While equipment enhancement greatly improves survivability, the human element is a significant factor. The crew should have relevant knowledge of human behaviour in extended survival situations, medical first aid and the management of the resources available.

1.5 Key physical parameters for human survival and human behaviour in a crisis should be taken into account when considering life-saving appliances and arrangements for ships operating in polar waters.

1.6 All references to the LSA Code in these Interim Guidelines mean the International Life-Saving Appliance (LSA) Code, adopted by the Maritime Safety Committee of the Organization by resolution MSC.48(66), as amended.

1.7 Due to the variability of risk levels in polar waters, some of the mitigation means within these Interim Guidelines may not apply to all operations. Any risk mitigation measures applied should be based on the results of the assessment, as required by the Polar Code and the operational limitations identified on the Polar Ship Certificate.

2 CONDITIONS TO CONSIDER

2.1 The Polar Code considers hazards that may lead to elevated levels of risks due to an increased probability of occurrence and/or more severe consequences. The sources of hazards listed in section 3 of the introduction of the Code should be considered for both normal operation and emergency situations.

2.2 These Interim Guidelines are based on the following specific operational assessment criteria:

- .1 maximum expected time of rescue;

- .2 operation in low air temperatures (ships with an assigned Polar Service Temperature (PST));
- .3 operation in ice;
- .4 icing of life-saving appliances and arrangements;
- .5 the effect of operation in high latitudes;
- .6 operation in extended periods of darkness; and
- .7 abandonment onto ice or land.

2.3 In the following provisions, the mitigating means are organized based on their relevance in relation to the specific conditions. Some means may be relevant to more than one of the conditions. The final relevance for each individual ship is dependent on the results of the operational assessment required by section 1.5 of part I-A of the Polar Code.

3 MAXIMUM EXPECTED TIME OF RESCUE

3.1 This section provides guidance for the type and amount of survival equipment related to the maximum expected time of rescue. A methodology on how to estimate the calculation of the maximum expected time of rescue is set out in the appendix to these guidelines.

Personal and group survival equipment

3.2 The following equipment should be available to all persons after abandonment and for the maximum expected time of rescue; it can be stored in survival craft or be part of the personal survival equipment or group survival equipment; the Polar Water Operational Manual (PWOM) should take into consideration the location, stowage and transfer of life-saving equipment:

- .1 insulated immersion suit or thermal protective aid provided with gloves should be provided with separate gloves, which shall be permanently attached to the suit/protective aid;
- .2 food rations providing a minimum of 5,000 kJ (1,195 kcal) per person per day, which should be increased as necessary taking into account the operational assessment;
- .3 at least 2 litres of fresh water per person per day: de-salting apparatus or means to melt ice or snow may supply the amount exceeding the requirements of paragraphs 4.1.5.1.19 and 4.4.8.9 of the LSA Code and there should be a tank or a container of adequate size to collect water from the de-salting apparatus and rainwater collectors;
- .4 anti-seasickness medicine;
- .5 protective clothing of a material with thermal properties taking into account performance of the material when wet and type of survival craft, including head protection, neck and face protection, gloves/mittens, socks, boots, long underpants and sweaters;

- .6 sunglasses or ski goggles appropriate for the expected conditions to protect persons from snow blindness, UV rays, snow ingress and/or cold;
- .7 drinking vessel, preferably with a screw cap;
- .8 polar survival guidance;
- .9 a seasickness bag in addition to the one required by the LSA Code;
- .10 anti-bacterial gel or hand wipes;
- .11 blanket of a material with thermal properties suitable for use on the planned route, for each person on board; and
- .12 other equipment in accordance with section 9.1 of part I-B of the Polar Code, as deemed necessary.

3.3 Personal survival equipment should be packed in a waterproof floatable carrier bag. The personal survival equipment may be stored at the assembly or embarkation stations and should be clearly marked with the size of the person they are intended for (if applicable). The content should include, as a minimum, all equipment needed during the abandonment and the initial part of the survival phase. The carrier bag should also function as each person's personal storage area for equipment handed out during the survival phase in order to keep the survival craft or shelter tidy and habitable.

Capacity of survival craft

3.4 The capacity of each survival craft should comply with the following:

- .1 The seating capacity of each survival craft should be adjusted taking into account polar clothing, additional equipment – with the assumption that all persons are carrying their intended personal survival equipment – and space for occupants to stand and move in turns.
- .2 Where additional personal and group survival equipment is carried in accordance with paragraphs 8.3.3.2 and 8.3.3.3 of chapter 8 of part 1-A of the Polar Code, adequate space for the stowage of the equipment should be provided. The total combined weight including additional equipment may not exceed the weight determined for the type approval of the survival craft.

Equipment in survival craft

3.5 The following equipment should be available in the survival craft:

- .1 Effective means of communicating important messages from the person in charge of the survival craft, unless the Administration considers the survival craft small enough to ensure that all important messages can be heard by all persons on board, taking into account the noise level caused by the lifeboat engine, harsh weather, etc.
- .2 In addition to the tools required in paragraph 4.4.8.27 of the LSA Code, the lifeboat should be provided with tools and critical spare parts for minor adjustments of the equipment and components to ensure operability during the survival phase.

3.6 Notwithstanding the requirement in paragraph 4.4.8 of the LSA Code that all lifeboat equipment should be as small and of as little mass as possible, it is important that all items are robust to retain their functionality for the maximum expected time of rescue.

3.7 Survival craft should be of a type complying with the following:

- .1 Survival craft should be fitted with handholds or handhold lines to safeguard persons who are standing upright or moving inside the craft in a seaway.
- .2 Survival craft should provide a habitable environment for all persons on board that prevents exposure to a long-term CO₂ concentration of more than 5,000 ppm for the maximum expected time of rescue. The ventilation should be considered in context with heating requirements to achieve a habitable temperature in the survival craft.
- .3 Each seat in a lifeboat should be provided with a backrest.

4 SHIPS OPERATING IN LOW AIR TEMPERATURE

4.1 This section applies to ships intended to operate in low air temperatures, as defined in the Polar Code, part I-A, regulation 1.2.12.

4.2 All life-saving appliances and arrangements should remain operational and ready for immediate use at the polar service temperature (PST) or at the temperatures specified by the LSA Code, whichever is the lowest. The manufacturer should provide information about additional tests including temperature ranges which the equipment is intended for. This information should be part of the operating and maintenance manual.

4.3 In the survival craft, the combination of personal survival equipment, ventilation, insulation and heating means, if provided, should be capable of maintaining a habitable inside air temperature when the outside air temperature is equal to the PST. All cold surfaces should be insulated, in particular the surfaces in direct contact with the persons, e.g. seats.

4.4 Installed heating systems, if provided, and their power sources should be capable of operation during the maximum expected time of rescue.

4.5 Means should be provided to avoid icing or dew on the windows of the lifeboat steering position, in order to maintain a proper lookout.

4.6 In order to avoid exposure to cold air, toilet equipment should be provided inside the survival craft.

4.7 Liferafts should be provided with inflatable floors or equivalent and all persons should be wearing insulated immersion suits instead of thermal protective aids.

4.8 Survival craft and containers for group survival equipment in their stowed position should have means to mitigate the freezing of drinking water supplies.

4.9 Lifeboats should be provided with suitable low temperature grade fuel and lubrication oil for the engine and suitable low temperature grade oil for the steering gear, as necessary, or be fitted with a heating system to maintain fuel and lubrication oil at the appropriate viscosity for operation.

5 SHIPS OPERATING IN ICE

5.1 This section applies to Category A and B ships and ice strengthened Category C ships.

5.2 All survival craft should be arranged for launching in such a way that they will not be damaged or cause sufficient impact to injure persons on board.

5.3 Survival and rescue craft and their fittings should be so constructed as to prevent damage from contact with ice when loaded with its full complement of persons and equipment.

5.4 A survival craft should withstand a controlled deployment into the ice conditions expected for the operational area and its propeller, rudder or other external fittings should be capable of operating in such conditions.

6 SHIPS OPERATING IN CONDITIONS WITH RISK OF ICING OF LIFE-SAVING APPLIANCES AND ARRANGEMENTS

6.1 This section applies to ships operating in conditions where ice accretion is likely to occur on life-saving appliances and arrangements.

6.2 Means should be provided to ensure the function of launching appliances, release mechanisms, hydrostatic release units and marine evacuation systems in the expected conditions of icing.

6.3 Lifeboats and rescue boats should maintain positive metacentric height (GM) when loaded as required by paragraph 4.4.5.1 of the LSA Code and with an additional ice load of 30 kg/m² on exposed horizontal surfaces and 7.5 kg/m² for the projected lateral area of each side of the lifeboat.

6.4 Means for removing ice should be provided for all survival craft likely to accumulate ice.

6.5 Entrances, hatches and means of ventilation should be designed and equipped in a way that they can be operated during icing condition to allow mitigation of ice accretion and remove the accumulated ice.

7 SHIPS OPERATING IN HIGH LATITUDES

7.1 This section applies to ships operating in areas of high latitudes.

7.2 Lifeboats and rescue boats on ships proceeding to latitudes over 80°N should be fitted with a non-magnetic means for determining heading. It should be possible to supply the means with power from two independent batteries.

8 SHIPS OPERATING IN EXTENDED PERIODS OF DARKNESS

8.1 This section applies to all ships operating in polar waters during extended periods of darkness.

8.2 Survival craft exterior and interior lights should be capable of being in operation for the extended periods of darkness during the maximum expected time of rescue. Lifeboat searchlights should be capable of being in continuous operation for the maximum expected time of rescue.

9 ABANDONMENT ONTO ICE OR LAND

9.1 This section applies to ships where the assessment required by paragraph 1.5 of part I-A of the Polar Code identifies a potential of abandonment onto ice or land.

9.2 Special consideration should be given when operating in areas with dangerous wildlife. Additional flares and/or a flare gun should be provided.

Shelter

9.3 The combination of a chosen type of shelter, type of personal thermal protection and other mitigating means should provide a habitable environment on ice or land, while adequately protecting against cold, wind and sun.

9.4 When determining the capacity of the shelters, the expected environmental condition in the operating area should be considered. For ships operating in low air temperature, the calculation should take into account that it might be unsafe for persons to stay outside the shelter, even for short periods. Hence, the same considerations as for survival craft should be taken into account.

9.5 Shelters should have insulated floor or other means to minimize heat transfer to the surface.

Group survival equipment

9.6 The container for group survival equipment when fully loaded should have a size, shape and mass that enable it to be towed through icy water, and also allow two crew members to pull it out of the water and tow it on ice or on land.

9.7 Unless the group survival equipment is carried in the survival craft, means should be provided to launch the containers to water, ice or land without damage to the container or its contents. Means to launch such containers should be independent of the ship power system.

APPENDIX

METHODOLOGY ON HOW TO ESTIMATE THE MAXIMUM EXPECTED TIME OF RESCUE

1 The following equation may be used to estimate the maximum expected time of rescue without factoring in vessels of opportunity (VOO):

$$t = t_{comm} + t_{prep} + \frac{d_i}{v} + (t_{crew} + t_{fuel}) \times \beta + t_{search} \times n_l + t_{resc} \times l + \left(t_{shore} + 2 \frac{d}{v} \right) \times (l - 1)$$

Where:

t = the total estimated exposure time (h);

t_{comm} = the time elapsed between the stricken ship sending initial communication and SAR personnel receiving it (h);

t_{prep} = the time elapsed between receiving communication and deploying SAR resource (h);

d_i = the distance the rescue resource must travel from its initial location to the last known location of the distressed vessel (nm);

v = the cruising speed of the rescue resource (kt);

t_{crew} = the time for the crew to switch and relaunch (h);

t_{fuel} = the fuelling time of the craft (h);

β = the number of stops required;

$$= \lceil d_i / r \rceil - 1, \quad \{\beta \in \mathbb{N}\}$$

r = the range of the rescue craft (nm);

t_{search} = the time elapsed while searching for evacuees to rescue (h);

$$= (t_2 \times v_{drift}) / v_{search}$$

t_2 = the travel time to the incident location, including stops for fuel;

$$= d_i / v + (t_{crew} + t_{fuel}) \times \beta$$

v_{drift} = the drift speed of the survival craft (kt);

v_{search} = the search speed of the rescue craft (kt);

n_l = the number of lifeboats/life rafts containing the evacuees;

t_{resc} = the total rescue time per rescue attempt (h);

$$= t_{(r-marine)}$$

$$= t_{(r-air)} \times cap$$

$t_{(r-marine)}$ = the time elapsed during a rescue for a marine resource (h);

$t_{(r-air)}$ = the time elapsed during a rescue for an air resource (h);

cap = the total capacity of the rescue resources;

l = the number of loads (rounded to the highest non-decimal number);

= $[n / cap]$, $\{l \in N\}$

n = the number of evacuees;

t_{shore} = the time spent on shore activities when depositing the evacuees (h);

d = the distance to the nearest safe base to which the evacuees are brought if multiple loads of evacuees are required depending on the capacity of the SAR resource (nm).

It is recommended that local SAR experts be consulted to provide estimates for the variables in the above equation and that high end values be used to provide a factor of safety.

2 Assuming it is closer than a SAR resource, the following formula can be used to estimate the probability of a VOO (capable of affecting the rescue) impacting time to rescue:

$$\text{Probability of VOO} = \frac{\text{Total Count}}{\text{Total Days in Month}} \times 100\%$$

Where:

Total Count = the total number of days in which a VOO is present.

Total Days in Month = the total number of days in the month of interest.

For the calculated probability, the following formulae can be used to estimate the impact that VOO may have on time to rescue:

$$t = t_{comm} + t_{prep} + \frac{r_{voo}}{v} + (t_{crew} + t_{fuel}) \times \beta + t_{search} \times n_l + t_{resc} \times l + \left(t_{shore} + 2 \frac{d}{v} \right) \times (l - 1)$$

Where:

r_{voo} = the radial distance from the emergency location to a VOO (nm).]

ANNEX 4

DRAFT MSC CIRCULAR

REVISED GUIDELINES FOR THE APPROVAL OF FIXED DRY CHEMICAL POWDER FIRE-EXTINGUISHING SYSTEMS FOR THE PROTECTION OF SHIPS CARRYING LIQUEFIED GASES IN BULK

- 1 The Maritime Safety Committee, at its eighty-sixth session (27 May to 5 June 2009), having considered the proposal by the Sub-Committee on Fire Protection, at its fifty-third session, approved *Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk* (MSC.1/Circ.1315).
- 2 The Committee, at its [106th session (2 to 11 November 2022)], approved the *Revised guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk* (MSC.1/Circ.1315/Rev.1), prepared by the Sub-Committee on Ship Systems and Equipment, at its eighth session, as set out in the annex.
- 3 Member Governments are invited to apply the annexed Revised guidelines for the approval of fixed dry chemical powder fire-extinguishing systems installed on or after 1 July 2023 for the protection of ships carrying liquefied gases in bulk, and bring them to the attention of ship designers, shipowners, equipment manufacturers, test laboratories and other parties concerned.
- 4 This circular supersedes MSC.1/Circ.1315.

ANNEX

REVISED GUIDELINES FOR THE APPROVAL OF FIXED DRY CHEMICAL POWDER FIRE-EXTINGUISHING SYSTEMS FOR THE PROTECTION OF SHIPS CARRYING LIQUEFIED GASES IN BULK

1 Application

These Guidelines apply to fixed dry chemical powder fire-extinguishing systems for the protection of on-deck cargo areas of ships carrying liquefied gases in bulk in accordance with SOLAS regulation II-2/1.6.2 and chapter 11 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).

2 Definitions

2.1 *Caking* is a chemical reaction between dry chemical powder and moisture that causes individual particles of the medium to bind together to form an aggregate mass.

2.2 *Dry chemical powder* is an extinguishing medium composed of finely divided solid chemical products consisting of one or more components, which may be combined with additives to improve its characteristics to prevent packing and caking (moisture absorption) and to ensure consistent flow characteristics.

2.3 *Dry chemical powder unit* is a complete system including dry chemical storage container(s), pressurizing gas storage container(s), controls, piping and hand hose lines.

2.4 *Gas point* is a defined point in the discharge of a dry chemical powder unit when the discharge of dry chemical powder ends, and is marked by a change in the nozzle stream to the discharge of primarily pressurizing gas.

2.5 *Hand hose line* is a hand-held dry chemical powder nozzle covering cargo areas not covered by a monitor, that is normally closed and opened by the individual operating the device at or just before the nozzle.

2.6 *Monitor* is a fixed dry chemical powder nozzle protecting cargo loading and discharge manifold areas.

2.7 *Packing* is a phenomenon that occurs when dry chemical powder stored in a container is subjected to vibration causing the smaller particles to move to the bottom of the container and the larger particles to travel to the top.

2.8 *Pressurizing medium* is the gas used to expel the dry chemical from the system, usually dry nitrogen.

3 Principal requirements for the dry chemical powder and the system

3.1 The system should be capable of manual release. A manual release station should be located adjacent to each hand hose line and each monitor. A back-up release station should be provided at the fixed dry chemical powder unit. The operation of any manual release station should initiate the pressurization of the fixed dry chemical powder unit and begin the discharge of dry chemical powder to all connected hand hose lines and monitors.

3.2 The system and its components should be designed to withstand ambient temperature changes, vibration, humidity, shock, impact and corrosion normally encountered on the open deck of ships, and manufactured and tested to the satisfaction of the Administration in accordance with the criteria given in the appendix.

3.3 Dry chemical storage should be designed to maintain the conditions on board in accordance with the manufacturer's recommendations.

3.4 Systems should be designed for the discharge characteristics and flow rates of a specific dry chemical powder medium (formulation and physical nature of composition). The specific type of dry chemical powder medium in the system should not be changed unless testing to verify performance is conducted by a laboratory to the satisfaction of the Administration. Different dry chemical powder media should not be mixed.

3.5 Dry chemical storage containers should be designed to pressure codes of practice acceptable to the Administration, for the maximum system pressure developed at 55°C.

3.6 Dry chemical powder should be tested as specified in the appendix.

3.7 A means for pressurizing the system using an inert gas, which is normally dry nitrogen, in high pressure cylinders should be provided. The inert gas should be industrial grade with a dew point of -50°C or lower. Pressure gauges should be provided for monitoring the contents of the cylinders. A pressure regulator should be installed to reduce the gas pressure to the required system operating pressure.

3.8 The quantity of expellant gas should be adequate for the system to discharge the entire charge of dry chemical powder within the time period specified in paragraph 1 of the appendix. If multiple gas cylinders are provided, they should be arranged with normally closed cylinder valves that are automatically opened by a pilot system when a release station is actuated. Each cylinder should have, in addition, the capability of manual operation.

3.9 System piping should be arranged to ensure that the required flow rates are achieved at each hand hose line and monitor. Flow through the piping should be based on flow calculation methods determined by the test laboratory for the specific dry chemical powder medium and equipment used.

3.10 Hand hose line nozzles, monitors and hose couplings should be constructed of brass or stainless steel. Piping, fittings and related components, except gaskets, should be designed to withstand 925°C.

3.11 Dry chemical storage container pick-up tubes and related internal structures should be shown to be resistant to corrosive effects of the dry chemical medium.

3.12 Dry chemical storage containers should have a fill opening of at least 100 mm to allow onboard recharging, and suitable connections to allow the dry powder charge to be fully agitated with nitrogen, in accordance with the system manufacturer's maintenance instructions.

3.13 Operating instructions for the system should be placed at each operating station.

3.14 Recharging instructions should be provided on a permanent nameplate affixed to the fixed dry chemical powder unit. As a minimum, the instructions should indicate the required type of dry chemical powder, the manufacturer of the powder and the required charge. The required pressurizing medium pressure, number of cylinders and regulator valve setting should also be provided.

3.15 An approved design, installation, operation and maintenance manual should be provided to the shipowner for each type of fixed dry chemical powder unit.

4 Onboard testing

After installation, the pipes, valves, fittings and assembled systems should be tested to the satisfaction of the Administration, including functional testing of the remote and local release stations. All distribution piping should be blown through with air to ensure that the piping is free of obstructions.

APPENDIX

APPROVAL TESTS

Except for paragraph 5, a fully charged fixed dry chemical powder unit conditioned at $21 \pm 3^{\circ}\text{C}$ for at least 24 h should be used.

Characteristics of the system

1 Discharge duration test

A fixed dry chemical powder unit should have a discharge duration of at least 45 s with all attached hand hose lines and monitors operating. The hand hose lines should be fully deployed for this test. To conduct the test, the hose lines and monitors should be held in a horizontal position and their discharge valves fully opened. The duration of discharge should be measured from the time dry chemical powder begins flowing from all attached devices until the gas point is reached at the first nozzle.

2 Maximum length of piping and fittings test

The discharge duration test should be conducted with the maximum length of discharge piping, elbows, tees and other fittings to be used on board, as recommended by the manufacturer. One nozzle should be located at the maximum height for which approval is requested.

3 Discharge range test

Dry chemical powder monitors should have a minimum discharge range as follows:

Monitor flow rate	Minimum range
10 kg/s	10 m
25 kg/s	30 m
45 kg/s	40 m

For monitors with a discharge rate between the above listed values, the minimum range should be determined by interpolation. The test should be conducted with the monitor positioned, 1 metre above the floor. The monitor should be capable of achieving the minimum range for at least 40 s of the 45 s discharge.

4 Flow rate test

The minimum flow rate of each type of hand hose line nozzle should be at least 3.5 kg/s and each type monitor should be at least 10 kg/s. The minimum flow rate should be determined based on the average of three discharge tests. The tests should be conducted with the nozzle/monitor discharged for at least 30 s. The fixed dry chemical powder unit should be placed on a load cell or weighed before and after testing to determine the quantity of medium discharged during the test.

5 Minimum temperature test

A fully charged fixed dry chemical powder unit conditioned at the minimum expected storage temperature for at least 24 h should be capable of discharging at least 85% of the dry chemical medium with all attached hand hose lines and monitors operating. The minimum expected storage temperature should be determined by the Administration.

6 Hand hose line hydrostatic test

A full-length representative sample of a hand hose line should be subjected to a hydrostatic pressure equal to two times the maximum operating pressure that would be developed in the line by a fully charged unit with the nozzle discharge valve closed. The hose should be capable of withstanding this test pressure for a period of 1 min without rupturing.

7 Salt spray test

7.1 Representative samples of valves, pressure regulators, gauges, releasing controls and related components that will be installed at locations exposed to the weather should be subjected to a salt spray within a fog chamber. Prior to exposure, any components with inlet or outlet orifices should be sealed.

7.2 The salt solution should be a 20% by mass sodium chloride solution in distilled water. The pH should be between 6.5 and 7.2 and the density between 1.126 g/mL and 1.157 g/mL when atomized at 35°C. Suitable means of controlling the atmosphere in the chamber should be provided. The specimens should be supported in their normal operating position and exposed to the salt spray (fog) in a chamber having a volume of at least 0.43 m³ in which the exposure zone should be maintained at a temperature of 35 ± 2°C. The temperature should be recorded at least once per day, at least 7 h apart (except weekends and holidays when the chamber normally would not be opened). Salt solution should be supplied from a recirculating reservoir through air-aspirating nozzles, at a pressure between 0.7 bar (0.07 MPa) and 1.7 bar (0.17 MPa). Salt solution run-off from exposed samples should be collected and should not return to the reservoir for recirculation. The samples should be shielded from condensate dripping.

7.3 Fog should be collected from at least two points in the exposure zone to determine the rate of application and salt concentration. The fog should be such that for each 80 cm² of collection area, 1 mL to 2 mL of solution should be collected per hour over a 16 h period and the salt concentration should be 20 ± 1% by mass.

7.4 The samples should withstand exposure to the salt spray for a period of 30 days. After this period, the samples should be removed from the fog chamber and allowed to dry for 4 to 7 days at a temperature of 20°C to 25°C in an atmosphere having a relative humidity not greater than 70%.

7.5 Following the drying period, the samples should be examined for evidence of failure. Any operating components should be functionally tested to verify continued operability. Gauges should remain watertight for at least 2 h when immersed in 0.3 m of water.

Characteristics of the dry chemical powder

8 Temperature test

Dry chemical powders should be tested at a temperature of 55°C or higher.

9 Dry chemical powder tests

Dry chemicals should be tested in accordance with ISO 7202:2018, as amended by paragraph 8 above.

10 Characteristics of the fire test

The dry chemical powder should be demonstrated capable of extinguishing fires in liquefied gas cargoes. Representative equipment should be subjected to full-scale fire tests to the satisfaction of the Administration. Fire test using heptane should be carried out in accordance with ISO 7202 standards, item 13.3.

10.1 Characteristics of fires to be extinguished during the fire test

10.1.1 The fire test should be conducted using heptane as outlined in section 8 of ISO 7165:2017 standards for a Class B fire, except as outlined in section 9 of the appendix to these guidelines.

10.1.2 The fire tests should be conducted in a controlled space/area with no restrictions on air supply with agreed standard test equipment. Wind speed should not exceed 3 m/s during the fire tests and oxygen concentration should not be lower than 20% throughout the fire test. The fire tests may be performed outside.

10.2 Establishment of acceptance criteria for extinguishment in the fire test

10.2.1 Test requirements:

- .1 temperature: 0°C to +30°C;
- .2 powder application rate should be measured;
- .3 the design of the hand hose line (including the nozzle) should be determined by the manufacturer and recorded in the test report; the system installed on board should match the qualification tests and be in accordance with the minimum requirements of resolution MSC.370(93); and
- .4 10 second discharge time after extinguishment;

10.2.2 Test fire arrangement/apparatus:

- .1 design and capacity of the storage tank containing the powder should be specified; similar storage tank should be on board in accordance with these qualification tests;
- .2 operating pressure of the extinguishing system should be recorded;
- .3 size and length of the piping should be recorded; and
- .4 the design of the fixed monitor (including the nozzle) should be determined by the manufacturer and recorded in the test report; the system installed on board should match the qualification tests and be in accordance with the minimum requirements of resolution MSC.370(93).

10.2.3 The fire tray should be constructed in accordance with paragraph 8.4.3 of standard ISO 7165:2017. The dimensions of fire tray should be based on the class 144B test fire given in table 9 of standard ISO 7165:2017.

10.2.4 The following parameters should be measured and recorded:

- .1 heptane volume for the fire scenario;
- .2 the discharge pressures at the inlet of fixed monitor and at the hand hose, at the outlet of the dry chemical powder container and at the outlet of the pressurizing gas container;
- .3 the mass of the dry chemical powder before and after the fire test; and
- .4 the time for extinction should be recorded for each test. The average time over all the tests performed is the extinction time.

10.2.5 Acceptance criteria:

- .1 the fire should be extinguished;
- .2 for any given configuration, the test should be performed 3 times out of which 2 should be successful. The maximum used powder quantity necessary to extinguish the fire in the 3 tests is the quantity needed to extinguish the fire; and
- .3 tests should be performed in such a way that they do not rely on skills of the fire-fighter operating the equipment and, therefore, a fixed monitor or hose line should be used.

10.2.6 Operation of the fire-fighting system during the tests:

- .1 the fires should be extinguished within discharge time for the fire from the activation of the fixed dry chemical powder unit;
- .2 for the fire a re-ignition test should be carried out to demonstrate that not all the fuel has been consumed; and
- .3 the monitor or hose line should be discharged continuously. The operator may move but should attack the fire from one side of the pan only, which should be the side judged most difficult to extinguish the fire.

11 Approval of the fire-extinguishing system

1 The Type Approval Certificate for fire-extinguishing system should include at least the following:

- .1 allowable storage temperature lower and higher range for the system;
- .2 name of the specific dry chemical powder tested and approved with the system;
- .3 allowable storage time;
- .4 approved manufacturer's product manual; and
- .5 checking/analyses intervals.

12 Dry chemical powder storage

Notwithstanding paragraph 8 above, the dry chemical powder should be tested for the expected maximum temperature to which it will be exposed during its storage on board and labelled accordingly.

ANNEX 5

DRAFT MSC CIRCULAR

GUIDELINES FOR ANCHOR HANDLING WINCHES

1 The Maritime Safety Committee, at its [107th] session ([.....]), having considered the proposal by the Sub-Committee on Ship Systems and Equipment, at its eighth session, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-13 adopted by resolution [...], which is expected to enter into force on [date of entry into force], approved *Guidelines for anchor handling winches*, as set out in the annex.

2 Member States are invited to use the annexed Guidelines when applying the SOLAS regulation II-1/3-13 and to bring it to the attention of ship designers, shipyards, shipowners, equipment manufacturers, and other organizations and parties concerned.

ANNEX

GUIDELINES FOR ANCHOR HANDLING WINCHES

1 Application

These Guidelines support the application of SOLAS regulation II-1/3-13 for anchor handling winches, associated equipment and loose gear used in association with anchor handling winches.

2 Definitions

For the purpose of these Guidelines, the following definitions should apply:

- .1 *Brake holding force* is the maximum force for which the winch brake is designed.
- .2 *Brake holding capacity* is the maximum line pull that the winch brake can withstand without slipping of the brake.
- .3 *Maximum line pull* is the maximum sustained force the winch is capable of pulling.
- .4 *Static bollard pull* is the maximum sustained pulling force a vessel is capable of generating at maximum power (i.e. 100% maximum continuous rating (MCR)) and zero forward speed.
- .5 A *wire* means a dedicated line (wire rope, synthetic rope or chain cable) used for the handling of anchors by means of an anchor handling winch. The wire may include connecting loose gear.
- .6 *Chain stopper* is a device used for securing and holding a section of wire, thereby relieving the load on the winch drum.
- .7 *Competent person* means a person possessing the knowledge and experience required for the performance of duties specified in these guidelines and acceptable as such to the Administration.
- .8 *Inspection* means an assessment carried out by a responsible person to ascertain if the anchor handling winches or associated loose gear are in good working condition for continued safe use.
- .9 *Responsible person* means a person appointed by the master or company as defined in SOLAS regulation IX/1, as appropriate, possessing the knowledge and experience required for the performance of duties specified in these Guidelines.
- .10 *Thorough examination* means a detailed assessment carried out by a competent person in order to determine whether or not the anchor handling winches or associated loose gear are in compliance with the applicable requirements of the Administration.

- .11 *Certified* means that the anchor handling winches or associated loose gear have been verified and documented as compliant to the satisfaction of the Administration or recognized organization acting on its behalf.
- .12 *Maintenance* means any activity carried out by a responsible person to keep the anchor handling winches or associated loose gear in good working condition for continued safe use.
- .13 *Operational testing* means a test carried out by a responsible person to verify the correct functioning of a component or operation of the anchor handling winches and/or associated loose gear.
- .14 *Load test* means a test in excess of the maximum line pull, carried out in the presence of a competent person in order to check the structural integrity of the anchor handling winches and their attachment to and adequacy of their supporting structure.

3 Anchor handling winches

3.1 Design, construction and installation

3.1.1 General

Anchor handling winches and associated equipment should be designed, constructed and installed in accordance with the requirements of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety. In addition to the above, anchor handling winches that fall under the scope of SOLAS regulation II-1/3-13.2.2 should also comply with the additional guidance specified under paragraphs 3.1.2 to 3.1.8 below.

3.1.2 Speed control and handling

3.1.2.1 The anchor handling winches should be capable of hoisting and lowering in a controlled manner, and should be provided with adjustable speed control between the minimum and maximum speeds.

3.1.2.2 The winch operating controls should be designed to pay out the wire by moving the control lever away from the winch operator and heave in by pulling the control lever towards the operator. All operating controls should be permanently marked with signs indicating their purpose and the operating direction.

3.1.2.3 The winch operating controls should be of the "hold-to run" type, which will cause the hoisting or lowering motion to automatically stop when the control lever is released by the operator.

3.1.3 Tension control

Anchor handling winches should be equipped with tension control to ensure that the system is not overloaded in the event that the anchor being handled gets stuck, entangled or is exposed to similar situations.

3.1.4 *Overload alarm and monitoring*

3.1.4.1 Winches should be provided with continuous load monitors and an audible and visual overload alarm.

3.1.4.2 The overload alarm should be programmable for lower levels of load.

3.1.5 *Control stations*

3.1.5.1 The main control station should be placed in a position on the bridge which has a clear view of the deck area. Operators should be able to visually monitor anchor handling winches and associated equipment and, if the view is obstructed, cameras or video monitoring devices may be used for this purpose.

3.1.5.2 The anchor handling winch may be controlled from more than one position provided that an arrangement to prevent more than one position from exercising control at any one time is fitted.

3.1.5.3 Each control station should be provided with:

- .1 means for two-way communication with the main control station;
- .2 an arrangement to prevent inadvertent actuation;
- .3 adequate protection of personnel; and
- .4 sufficient illumination.*

3.1.6 *Spooling device*

Anchor handling winches should be equipped with remotely operated spooling devices.

3.1.7 *Emergency release*

3.1.7.1 Anchor handling winches should be designed to facilitate emergency release of the load on the wire in a safe and controlled manner, both under normal as well as dead-ship conditions.

3.1.7.2 The controls for actuation of the emergency release should be placed at the main control station. Emergency release function may also be available at the local control station.

3.1.7.3 Emergency release control should be protected against unintentional activation.

3.1.7.4 The design and operation of the emergency release should take into consideration restrictions on the pay-out speed of the wire due to inertia and any restrictions due to onboard arrangements.

3.1.7.5 Instructions for the operation of the emergency release should be clearly displayed at the navigation bridge and locally at the winch.

3.1.7.6 After an emergency release, the complete anchor handling winch system should be inspected for signs of damage or deterioration. Any identified damage or deterioration should be rectified before the anchor handling winch is put back into service.

* The minimum lighting level is at least 320 Lux.

3.1.8 Associated anchor handling equipment

3.1.8.1 Chain stopper

3.1.8.1.1 Anchor handling vessels should be equipped with chain or wire stoppers (hereafter referred to as chain stoppers).

3.1.8.1.2 A chain stopper should be equipped with an audible alarm which is activated when the stopper is either being engaged or disengaged.

3.1.8.1.3 A chain stopper should be equipped with an emergency release that is functional in all conditions, including dead-ship situations.

3.1.8.1.4 Emergency release of chain stopper should include disengaging of pins and other equipment that may prevent releasing the wire or cause the wire to get stuck/entangled during release.

3.1.8.1.5 Emergency release of the chain stopper should be designed for remote operation in order to minimize the risk of injury to personnel.

3.1.8.1.6 The emergency release mechanism of the chain stopper should be protected against unintentional activation.

3.1.8.1.7 Instructions for the operation of the emergency release should be clearly displayed at the navigation bridge and locally at the emergency release control mechanism.

3.1.8.1.8 After an emergency release, the chain stopper system should be inspected for signs of damage or deterioration. Any identified damage or deterioration should be rectified before the chain stopper is put back into service.

3.2 Testing and thorough examination

3.2.1 Commissioning test

3.2.1.1 For anchor handling winches to which SOLAS regulation II-1/3-13.2.2 applies or after alterations or repairs of a major character, a commissioning test should be carried out according to the manufacturer's instructions and the requirements of a classification society which is recognized by the Administration in accordance with SOLAS regulation XI-1/1, or with applicable national or international standards acceptable to the Administration and which provide an equivalent level of safety. The commissioning test should include the following:

- .1 Function tests at light load to verify the correct working of the winch and its controls over the full operating range.
- .2 An overload test to verify the attachment of the winch to ship and the adequacy of the ship's supporting structure.
- .3 Test of emergency release and residual holding force in the wire. The test should be performed with the wire attached to an onshore strong point, an anchor on the seabed or a similar arrangement.
- .4 Residual brake holding force after emergency release should be verified by test.

- .5 Function test of the whole winch system including static bollard pull test and brake holding capacity test. Where it is not practicable to verify the brake holding capacity by testing, the same may be demonstrated through calculations.

3.2.1.2 Repairs, modifications or alterations of major character are those which:

- .1 change the rated wire pull of the anchor handling winch;
- .2 affect the strength, stability or service life of the anchor handling winch;
- .3 affect the primary load bearing structure of the anchor handling winch; or
- .4 modify the functionality of the anchor handling winch or any part thereof which may affect its strength or safety or structural integrity.

3.2.2 *Periodical testing*

Anchor handling winches and associated equipment should be operationally tested annually and five-yearly according to the manufacturer's recommendation and the requirements or recommendations of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1. The annual test should include function tests of all equipment. The Administration or recognized organization should witness the five-yearly test.

3.2.3 *Thorough examination*

3.2.3.1 Anchor handling winches and associated equipment should be subject to a thorough examination to the satisfaction of the Administration during annual surveys required by SOLAS regulations I/7 for passenger ships and I/10 for cargo ships, before re-entering service after any structural repairs or modifications of major character and after load testing.

3.2.3.2 If on completion of a thorough examination, the competent person considers the anchor handling winch to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that anchor handling winch should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The anchor handling winch should be clearly marked "not to be used" and the status should be recorded as outlined in 3.2.4. While out of service, the relevant actions for inoperative anchor handling winches as outlined under section 5 of these Guidelines should be followed.

3.2.4 *Records of testing and thorough examination*

Records of thorough examination and testing may be documented in any convenient form, provided each entry includes the necessary information, is clearly legible and is authenticated by the competent person. The relevant classification society or equivalent forms for documenting the thorough examination and testing should be considered for use.

3.3 ***Demonstration of compliance***

3.3.1 Before being put into use for the first time, anchor handling winches installed on or after [date] should be certified by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 as compliant with SOLAS regulations II-1/3-13.2.2 with the recommended scope for demonstration of compliance of anchor handling winches comprising the following:

- .1 a plan appraisal of the anchor handling winch and foundation connections;
- .2 verification of materials;
- .3 survey, testing and examination during fabrication;
- .4 verification of component certificates including its loose gear; and
- .5 testing and thorough examination when installed on board.

3.3.2 Anchor handling winches installed before [date] should be certified by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 as compliant with SOLAS regulation II-1/3-13.2.5 no later than the date of the first renewal survey on or after [date].

3.3.3 Existing anchor handling winches with valid certificates under another international instrument acceptable to the Administration and issued prior to the entry into force of SOLAS regulation II-1/3-13, should be considered compliant with SOLAS regulation II-1/3-13.2.5.

3.3.4 Demonstration of compliance certified as per paragraphs 3.3.1 and 3.3.2 should be recorded in accordance with paragraph 3.2.4.

3.4 Nameplate

3.4.1 Anchor handling winches should be provided with a permanently affixed name plate which should include at least the following information:

- .1 details of the manufacturer (name, address);
- .2 model name/number;
- .3 serial number;
- .4 date of manufacture and date of installation;
- .5 details of power supply;
- .6 details of wire (e.g. length, diameter);
- .7 maximum brake holding capacity, metric tons;
- .8 maximum line pull, metric tons;
- .9 maximum static bollard pull, metric tons;
- .10 placeholder for the classification society's surveyor's stamp;
- .11 drum size; and
- .12 winch speed.

3.4.2 Detailed specifications of anchor handling winches, such as the following information, can be included in other documentation e.g. anchor handling winches' operation/maintenance manual on board:

- .1 date of manufacture and date of installation;
- .2 details of power supply;
- .3 details of wire (e.g. length, diameter);
- .4 maximum brake holding capacity, metric tons;
- .5 maximum line pull, metric tons;
- .6 maximum static bollard pull, metric tons;
- .7 placeholder for the classification society's surveyor's stamp;
- .8 drum size; and
- .9 winch speed.

It should be ensured that the documentation on board can be unambiguously related to the actual winch, i.e. by referring to the unique serial number.

3.5 Maintenance, inspection and operational testing

3.5.1 General

3.5.1.1 Maintenance, inspection, operational testing and their respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration, considering factors such as the operational profile of the ship and the anchor handling winch.

3.5.1.2 All anchor handling winches and associated equipment should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion, and the inspection and maintenance regime should be implemented accordingly.

3.5.1.3 The inspection and maintenance of anchor handling winches and associated equipment may involve working at height, enclosed space entry and other hazards. These hazards should be considered when developing the relevant procedures for undertaking such tasks, including safe access.

3.5.1.4 Examples of items requiring particular attention may include:

- .1 corrosion and damage of primary structural members, such as winch frames and bedplates, drums, foundations and foundation connections, including welds and bolts;
- .2 wear, corrosion and damage of mechanical components including hydraulic/pneumatic cylinders, pins, winch drums, chain wheels, wire-spooling and guide systems, clutches, bearings, rollers, shafts, gears, bearings and brakes;
- .3 correct setting and functioning of safety, protection and limiting devices;
- .4 condition and correct functioning of the anchor handling winch as a whole and, in particular, the piping/hoses, hydraulic arrangements, spooling devices, motors, and electrical and control systems;
- .5 corrosion and damage to all means of safe access to the anchor handling winch, including attached maintenance platforms and extensions, with particular attention to support brackets and welds; and
- .6 certification and identification of all wires.

3.5.1.5 Damaged, broken, worn or corroded wires, including their terminations connecting loose gear, should be inspected and discarded according to manufacturers' recommendations, relevant industry standards, international standards or requirements of classification societies acceptable to the Administration.

3.5.1.6 If on the completion of an inspection, the responsible person considers the anchor handling winch to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that anchor handling winch should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The anchor handling winch should be clearly marked not to be used and the status should be recorded in accordance with 3.2.4. While out of commission, the relevant actions for inoperative anchor handling winches as outlined under section 5 of these Guidelines should be followed.

3.5.2 *Maintenance manual*

3.5.2.1 A maintenance manual for an anchor handling winch should be provided by the manufacturer. Where maintenance manuals for existing anchor handling winches are not available from the manufacturer, these may be provided by competent third parties.

3.5.2.2 The maintenance manual should, as a minimum, include the following for each anchor handling winch:

- .1 description of the required inspection regime and maintenance schedules specific to the anchor handling winch, checklists and a list of key tools or other items for use when carrying out inspections and maintenance;
- .2 instructions for routine repairs/maintenance;
- .3 technical maintenance information;
- .4 information on recommended lubricants, oil and filter change;
- .5 information on bearing maintenance, if applicable;
- .6 lists of replaceable parts/components, as well as the inspection/maintenance/replacement procedures for these parts/components;
- .7 lists of sources of spare parts;
- .8 model forms for records of inspections and maintenance;
- .9 operational test procedures, as well as the pre/post-operational test inspection procedures;
- .10 list of components requiring particular attention during inspections, as well as the inspection/maintenance procedures for these components;
- .11 recommended intervals for replacement and overhaul of components and equipment;
- .12 information on the preservation of the coating and corrosion protection system; and
- .13 information regarding special inspection and maintenance in cases where the anchor handling winch is not operated for long periods of time.

3.5.3 *Records of maintenance and inspection*

3.5.3.1 Records of the routine inspection and maintenance of anchor handling winches or their components or parts should be maintained and kept on board.

3.5.3.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

3.6 Operations

3.6.1 General

3.6.1.1 Personnel operating anchor handling winches and their associated equipment should be qualified, familiarized with the equipment and be authorized by the master.

3.6.1.2 All personnel involved in an anchor handling winch operation should understand their role during the operation and, in particular, the signals that may be required to commence, coordinate or stop the operation.

3.6.1.3 Personnel involved in anchor handling winch operations should be equipped with appropriate personal protective equipment for the task.

3.6.1.4 Anchor handling winch operations should be planned, supervised and carried out so that any identified risks are minimized.

3.6.1.5 Procedures and instructions should relate to the specific type of anchor handling winch and should be provided in the operations manual.

3.6.1.6 Due consideration should be given to any limiting operational conditions, such as the ship's motion/inclination, environmental conditions including sea state, maximum wind speeds including wind gusts, ice and snow accretion, as well as limitations of the anchor handling winch, such as maximum line pull, maximum brake holding capacity, etc.

3.6.1.7 Effective communication should be established among ship's personnel as well as other ships/offshore units involved in the anchor handling winch operation.

3.6.1.8 Safe means of access to anchor handling winches and the work area should be established. Safe areas for the personnel involved should be available.

3.6.1.9 When developing plans and procedures for anchor handling winch operations, consideration should be given to prevention of accidents or incidents due to the wires striking any person or other structures in close proximity.

3.6.1.10 Procedures and measures for the safe operation of anchor handling winches should take account of applicable international and national instruments and best practices for occupational safety and health.

3.6.1.11 Personnel operating the anchor handling winch should consult the operations manual for any specific instructions related to the anchor handling operations.

3.6.1.12 Periodic drills for emergency release and emergency brake operation should form part of the planned maintenance schedule.

3.6.2 Operations manual

3.6.2.1 An operations manual for the anchor handling winches should be provided by the manufacturer. Where operations manuals for existing anchor handling winches are not available from the manufacturer, these may be provided by competent third parties.

3.6.2.2 The operations manual should, as a minimum, include the following for each anchor handling winch:

- .1 design, operational and environmental limitations;
- .2 compatible loose gear, if any;
- .3 safety instructions; and
- .4 operating procedures, including emergency procedures, if any.

3.6.2.3 For anchor handling winches installed before [date], their operation manuals should be developed with original manufacture, design and build data, and take into account any modifications since installation. Where original data or modification data is not available, the operations manuals should be developed on the current operational procedures and practices.

4 Loose gear

4.1 Design and manufacturing

Loose gear utilized with anchor handling winches to which SOLAS regulations II-1/3-13.2.2 and II-1/3-13.2.5 apply should be designed and manufactured in accordance with requirements acceptable to the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1.

4.2 Proof test and thorough examination

4.2.1 Proof test

All loose gear in use with anchor handling winches and associated equipment to which SOLAS regulation II-1/3-13 applies should have documentary evidence of a proof test and be retested after repairs, modifications or alterations of major character acceptable to the Administration.

4.2.2 Thorough examination

4.2.2.1 Loose gear should be subject to thorough examination to the satisfaction of the Administration:

- .1 after any proof test; and
- .2 annually.

4.2.2.2 If on completion of a thorough examination, the competent person considers the item(s) of loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that loose gear should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded as detailed in subsection 4.7. While out of commission, the relevant actions for inoperative loose gear as outlined under section 5 of these Guidelines should be followed.

4.3 Demonstration of compliance

4.3.1 Before being put into use for the first time, the loose gear utilized with anchor handling winches which comply with SOLAS regulations II-1/3-13.2.2 and 3-13.2.5 should be certified to meet the provisions in section 4.

4.3.2 The existing loose gear utilized with anchor handling winches and associated equipment to which SOLAS regulations II-1/3-13.2.2 and II-1/3-13.2.5 apply, with valid certificates under another international instrument acceptable to the Administration and issued prior to the entry into force of SOLAS regulation II-1/3-13, should be considered compliant with SOLAS regulation II-1/3-13.5.

4.4 Marking

4.4.1 Loose gear should be clearly and permanently marked with its unique identification (serial no.), safe working load (SWL) and any additional marks required for safe use.

4.4.2 If there is insufficient space for the marking on the loose gear other than the SWL, the omitted information should be included in the certificate or be provided by other suitable means.

4.5 Operation

The personnel involved in anchor handling winch operations which utilize loose gear should be qualified, familiarized with the equipment and be authorized by the master.

4.6 Maintenance and inspection

4.6.1 Maintenance and inspections at respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration, considering factors such as the operational profile of the ship, anchor handling winch and the loose gear.

4.6.2 All loose gear should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion, and the inspection and maintenance regime should be implemented accordingly.

4.6.3 Hazards particular to the inspection and maintenance of loose gear should be considered when developing the relevant procedures for undertaking such tasks.

4.6.4 Loose gear should be inspected by a responsible person before each use.

4.6.5 Examples of aspects requiring particular attention may include:

- .1 wear, corrosion, damage and correct functioning of the loose gear;
- .2 damaged, worn or corroded chains, including their terminations;
- .3 certification, identification and marking of loose gear; and
- .4 physical or chemical degradation, including degradation due to the exposure to the environment.

4.6.6 If on completion of an inspection the responsible person considers the loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then the loose gear should not be used until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded. While out of commission, the relevant actions for inoperative loose gear as outlined in section 5 should be followed.

4.7 Records of inspection, maintenance, testing and thorough examination

4.7.1 Records of thorough examination and testing

4.7.1.1 A record of thorough examination and evidence of proof testing of loose gear should be maintained and kept on board.

4.7.1.2 Thorough examination may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a competent person. The minimum information to be included should be used. Alternatively, other formats may be used which are acceptable to the Administration, such as those of a classification society recognized by the Administration.

4.7.2 *Records of inspection and maintenance*

4.7.2.1 Records of the routine inspection and maintenance of loose gear should be maintained and kept on board.

4.7.2.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

5 Inoperative anchor handling winches, associated equipment and loose gear

For the implementation of SOLAS regulation II-1/3-13.4, the following actions should be taken by the master to mitigate risks posed by inoperative anchor handling winches and associated loose gear and wire:

- .1 take the inoperative anchor handling winches, associated equipment and wire into account in planning and executing a safe voyage;
- .2 prevent the operation of inoperative anchor handling winches and associated loose gear and equipment;
- .3 prevent uncontrolled movement of inoperative anchor handling winches or associated loose gear and equipment using appropriate restraining and preventing arrangements, if required;
- .4 store inoperative wires and loose gear separately from in-service wires and loose gear and mark it as being inoperative; and
- .5 record the particulars of anchor handling winches or loose gear, associated equipment and wire that is inoperative as detailed in paragraph 3.2.4 and/or 4.7.1 until necessary repairs have been completed and it has been tested or proof tested, as necessary, and thoroughly examined.

ANNEX 6

DRAFT MSC CIRCULAR

GUIDELINES FOR LIFTING APPLANCES

1 The Maritime Safety Committee, at its [...] session ([...]), having considered the proposal by the Sub-Committee on Ship Systems and Equipment, at its eighth session, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-13 adopted by resolution MSC.[...], which is expected to enter into force on [*date of entry into force*], approved the *Guidelines for lifting appliances*, as set out in the annex.

2 Member States are invited to use the annexed Guidelines when applying SOLAS regulation II-1/3-13 and to bring it to the attention of ship designers, shipyards, shipowners, equipment manufacturers, other organizations and parties concerned.

ANNEX*

GUIDELINES FOR LIFTING APPLIANCES

1 Application

These Guidelines support the application of SOLAS regulation II-1/3-13 for lifting appliances and loose gear used in association with lifting appliances.

2 Definitions

For the purpose of these Guidelines, the following definitions should apply:

- .1 *Competent person* means a person possessing the knowledge and experience required for the performance of duties specified in these Guidelines and acceptable as such to the Administration.
- .2 *Inspection* means an assessment carried out by a responsible person to ascertain if the lifting appliance or loose gear is in good working condition for continued safe use.
- .3 *Responsible person* means a person appointed by the master or company as defined in SOLAS regulation IX/1, as appropriate, possessing the knowledge and experience required for the performance of duties specified in these Guidelines.
- .4 *Thorough examination* means a detailed assessment carried out by a competent person in order to determine whether or not the lifting appliance or loose gear is in compliance with the applicable requirements of the Administration.
- .5 *Certified* means that the lifting appliance or loose gear has been verified and documented as compliant to the satisfaction of the Administration or recognized organization acting on its behalf.
- .6 *Maintenance* means any activity carried out by a responsible person to keep the lifting appliance or loose gear in good working condition for continued safe use.
- .7 *Operational testing* means a test carried out by a responsible person to verify the correct functioning of a component or operation of the lifting appliance and/or associated loose gear.
- .8 *Load test* means a test in excess of the SWL, carried out in the presence of a competent person in order to check the structural integrity of the lifting appliance and its attachment to and adequacy of its supporting structure.
- .9 *Safe working load (SWL)* is the maximum static load at a specified radius which a lifting appliance or item of loose gear is certified to lift for a specified operating condition.

* Tracked changes are created using "strikethrough" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text, to reflect the modifications to annex 5 to document SSE 7/21.

- .10 *Certificate of test and thorough examination* means a certificate issued by a competent person upon satisfactory completion of the test and thorough examination of the lifting appliance and/or loose gear.

3 Lifting appliances

3.1 Design, construction and installation

As required by SOLAS regulation II-1/3-13.2.1.1, lifting appliances installed on or after [date] should be designed, constructed and installed in accordance with the requirements of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety.

3.2 Load testing and thorough examination

3.2.1 Load test

3.2.1.1 Lifting appliances to which SOLAS regulation II-1/3-13.2.1 applies should be load tested to the satisfaction of the Administration after installation and before being taken into use for the first time and after repairs, modifications or alterations of major character.

3.2.1.2 Lifting appliances to which SOLAS regulation 3-13.2.4 applies should be load tested to the satisfaction of the Administration no later than the date of the first renewal survey on or after [date] or after repairs, modifications or alterations of major character.

3.2.1.3 *Repairs, modifications or alterations of major character* are those which:

- .1 change the safe working load of the lifting appliance; or
- .2 affect the strength, stability or service life of the lifting appliance; or
- .3 affect the primary load bearing structure of the lifting appliance; or
- .4 modify the functionality of the lifting appliance or any part thereof which may affect its strength or safety or structural integrity.

3.2.1.4 Lifting appliances to which SOLAS regulations II-1/3-13.2.1 and 3-13.2.4 apply should be retested at least once in every five years.

3.2.1.5 For load testing of lifting appliances intended for use while the ship is in port or sheltered waters, the test load, as set out in table 1 below, should be established using the SWL. For lifting appliances intended for open-sea operations, the test loads should be to the satisfaction of the Administration or a classification society which is recognized by it, taking into account the applicable dynamic loads.

Table 1: Lifting appliances minimum test loads

SWL of the lifting appliance, in tonnes	Test load, in tonnes
SWL ≤ 20 t	1.25 x SWL
20 t < SWL ≤ 50 t	SWL + 5 t
SWL > 50 t	1.10 x SWL

3.2.1.6 Where the safe working load of the lifting appliances is undocumented and design information is not available, e.g. for lifting appliances which are installed on board before [date] and the manufacturer no longer exists, the test load should be calculated using table 1, based on a safe working load nominated by the company, to the satisfaction of the Administration.

3.2.2 *Thorough examination*

3.2.2.1 Lifting appliances should be subject to thorough examination to the satisfaction of the Administration:

- .1 ~~after~~ upon completion of any load test; and
- .2 annually.

3.2.2.2 Where thorough examination does not form part of the renewal survey or annual survey, verification that thorough examination of lifting appliances has been conducted/completed to the satisfaction of the Administration should take place during the renewal survey under SOLAS regulation I/7 or the annual survey under SOLAS regulation I/10, as applicable. ~~Otherwise, the Administration may permit up to 3 months' window of the due date of the thorough examination, to provide flexibility to meet the survey schedule.~~

3.2.2.3 If on completion of a thorough examination, the competent person considers the lifting appliance to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that lifting appliance should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The lifting appliance should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of commission, the relevant actions for inoperative lifting appliances as outlined under section 5 of these Guidelines should be followed.

3.2.3 *Records of thorough examination and testing*

3.2.3.1 A record of thorough examination and load testing should be maintained in a register of lifting appliances and should be available on board.

3.2.3.2 Load testing and thorough examination may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a competent person. The minimum information to be included in the *Certificate of test and thorough examination*, as set out in the appendix 1, should be used. Alternatively, other formats may be used which are acceptable to the Administration, such as those of a classification society recognized by the Administration.

3.3 ***Demonstration of compliance***

3.3.1 Before being put into use for the first time, lifting appliances installed on or after [date] should be certified as compliant with SOLAS regulations II-1/3-13.2.1 and II-1/3-13.2.3 with the recommended scope for demonstration of compliance of lifting appliances comprising the following:

- .1 a plan appraisal of the lifting appliance and foundation connections;
- .2 verification of materials;
- .3 survey, testing and examination during fabrication;
- .4 verification of component certificates including its loose gear; and
- .5 testing and thorough examination when installed on board.

3.3.2 Lifting appliances installed before [date] should be certified as compliant with SOLAS regulation II-1/3-13.2.4 no later than the date of the first renewal survey on or after [date].

3.3.3 Existing lifting appliances with valid certificates of test and thorough examination under another international instrument acceptable to the Administration and issued prior to the entry into force of SOLAS regulation II-1/3-13 should be considered compliant with SOLAS regulation II-1/3-13.2.4.

3.3.4 All certified lifting appliances on board a ship should be recorded in the *Register of Ship's Lifting Appliances and Cargo Handling Gear*, as set out in appendix 3, with the *Certificate of test and thorough examination* attached to it (see paragraph 3.2.3.2).

3.3.5 A rigging plan and block list showing the correct reeving and rigging arrangements for the lifting appliance and the associated loose gear positions is to be kept on board, if applicable.

3.4 Marking

3.4.1 The safe working load (SWL) and other information essential for the safe operation of the lifting appliance (e.g. maximum or minimum slewing radius or boom angle) should be permanently and clearly marked in a conspicuous place on the lifting appliance and should be available to the operator.

3.4.2 In all cases where the lifting appliance has a variable load radius rating, the SWLs corresponding to the minimum and maximum radius should be clearly marked in a conspicuous place on the lifting appliance and, in addition, a diagram of the permissible maximum loads over the entire range of use should be displayed in a position clearly visible to the operator.

3.4.3 If the safe working load is established in accordance with paragraph 3.2.1.6, this safe working load should be used for the purpose of compliance with SOLAS regulation II-1/3-13.2.3.

3.5 Maintenance, inspection and operational testing

3.5.1 General

3.5.1.1 Maintenance, inspection, operational testing and their respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration, considering factors such as the operational profile of the ship and the lifting appliance.

3.5.1.2 All lifting appliances should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion, and the inspection and maintenance regime should be implemented accordingly.

3.5.1.3 The inspection and maintenance of lifting appliances may involve working at height, enclosed space entry and other hazards. These hazards should be considered when developing the relevant procedures for undertaking such tasks, including safe access.

3.5.1.4 Examples of items requiring particular attention may include:

- .1 corrosion and damage of primary structural members, including crane jibs, crane housings (slewing column), pedestals and foundations/foundation connections, including welds and bolts;
- .2 wear, corrosion and damage of mechanical components including winches, hydraulic cylinders, slew bearings, sheaves and pins;
- .3 correct setting and functioning of safety, protection and limitation devices;
- .4 condition and correct functioning of the lifting appliance as a whole and, in particular, hydraulic or pneumatic arrangements, hydraulic/pneumatic cylinders, motors, hoses, piping, winches, brakes and drums;

- .5 corrosion and damage to all means of safe access to the lifting appliances including attached maintenance platforms and extensions, with particular attention to support brackets and welds; and
- .6 certification and identification of ropes.

3.5.1.5 Damaged, broken, worn or corroded ropes, including their terminations, should be inspected and discarded according to manufacturers' recommendations, relevant industry standards, international standards (e.g. ISO 4309:2017 on Cranes – Wire ropes – Care and maintenance, inspection and discard) or requirements of classification societies acceptable to the Administration.

3.5.1.6 If, on completion of an inspection, the responsible person considers the lifting appliance to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that lifting appliance should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The lifting appliance should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of commission, the relevant actions for inoperative lifting appliances as outlined under section 5 of these Guidelines should be followed.

3.5.2 *Maintenance manual*

3.5.2.1 A maintenance manual for a lifting appliance should be provided by the manufacturer. Where maintenance manuals for existing lifting appliances are not available from the manufacturer, these may be provided by competent third parties.

3.5.2.2 The maintenance manual should, as a minimum, include the following for each lifting appliance:

- .1 description of the required inspection regime and maintenance schedules specific to the lifting appliance, checklists and a list of key tools or other items for use when carrying out inspections and maintenance;
- .2 instructions for routine repairs/maintenance;
- .3 technical maintenance information;
- .4 information on recommended lubricants, oil and filter change;
- .5 information on slewing bearing maintenance, if applicable;
- .6 lists of replaceable parts/components, as well as the inspection/maintenance/replacement procedures for these parts/components;
- .7 lists of sources of spare parts;
- .8 model forms for records of inspections and maintenance;
- .9 operational test procedures, as well as the pre/post-operational test inspection procedures;
- .10 list of components requiring particular attention during inspections, as well as the inspection/maintenance procedures for these components;

- .11 recommended intervals for replacement and overhaul of components and equipment;
- .12 information on the preservation of the coating and corrosion protection system; and
- .13 information regarding special inspection and maintenance in cases where the lifting appliance is not operated for long periods of time.

3.5.3 *Records of inspections and maintenance*

3.5.3.1 Records of the routine inspection and maintenance of lifting appliances or their components or parts should be maintained and kept on board.

3.5.3.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

3.6 Operations

3.6.1 *General*

3.6.1.1 Personnel operating lifting appliances should be qualified, familiarized with the equipment and be authorized by the master.

3.6.1.2 All personnel involved in a lifting operation should understand their role during the operation and, in particular, the signals that may be required to commence, coordinate or stop the operation.

3.6.1.3 Personnel involved in lifting operations should be equipped with appropriate personal protective equipment for the task.

3.6.1.4 Lifting operations should be planned, supervised and carried out so that any identified risks are minimized.

3.6.1.5 Procedures and instructions should relate to the specific type of lifting appliance and should be provided in the operations manual.

3.6.1.6 Due consideration should be given to any limiting conditions such as ship's motion/inclination, wind speeds including wind gusts, environmental conditions such as ice and snow, limitations of the lifting appliance such as SWL and slew radius, etc. of the lifting appliance.

3.6.1.7 Effective communication should be established between ship's personnel and shore-based personnel involved in the lifting operation.

3.6.1.8 Safe means of access to lifting appliances and loads requiring attachment/detachment should be established. Safe areas for the signaller and slinger should be available.

3.6.1.9 When developing plans and procedures for lifting operations, consideration should be given to avoiding any part of the lifting appliances striking any person or other structures in close proximity.

3.6.1.10 Procedures and measures for the safe operation of lifting appliances should take account of applicable international and national instruments and best practices for occupational safety and health.

3.6.1.11 Lifting appliances should be restrained and stowed in order to avoid uncontrolled movement during sea voyages. The stowage and restraining arrangements should be as required by the manufacturer.

3.6.1.12 Personnel operating the lifting appliance should consult the operations manual for any specific instructions related to the lifting operations.

3.6.2 *Operations manual*

3.6.2.1 An operations manual for a lifting appliance should be provided by the manufacturer. Where operations manuals for existing lifting appliances are not available from the manufacturer, these may be provided by competent third parties.

3.6.2.2 An operations manual should, as a minimum, include the following for each lifting appliance:

- .1 design, operational and environmental limitations;
- .2 compatible loose gear;
- .3 safety instructions; and
- .4 operating procedures, including special procedures, if any.

3.6.2.3 For lifting appliances installed before the date of entry into force of SOLAS regulation II-1/3-13 operation manuals should be developed with original manufacture, design and build data and take into account any modifications since installation. Where original data or modification data is not available, operation manuals should be developed on the current operational procedures and practices.

4 Loose gear

4.1 *Design and manufacturing*

Loose gear utilized with lifting appliances to which SOLAS regulations II-1/3-13.2.1 and II-1/3-13.2.4 apply should be designed and manufactured in accordance with requirements acceptable to the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1.

4.2 *Proof test and thorough examination*

4.2.1 *Proof test*

All loose gear in use with lifting appliances to which SOLAS regulation II-1/3-13 applies should have documentary evidence of a proof test and be retested after repairs, modifications or alterations of major character to the satisfaction of the Administration. Where an item of loose gear is tested, minimum test loads should be to the satisfaction of the Administration, based on table 2 below.

Table 2: Loose gear minimum test loads

Item	Test load, in tonnes
Single sheave block	4 x SWL
Multi-sheave blocks and hook blocks (Note 1 and 2): SWL ≤ 25 t 25 t < SWL ≤ 160 t 160 t < SWL	2 x SWL (0.993 x SWL) + 27 1.1 x SWL
Hooks, shackles, chains, rings, swivels, etc.: SWL ≤ 25 t 25 t < SWL	2 x SWL (1.22 x SWL) + 20
Lifting beams, spreaders, frames, grabs: SWL ≤ 10 t 10 t < SWL ≤ 160 t 160 t < SWL	2 x SWL (1.04 x SWL) + 9.6 1.1 x SWL
<p>Note 1. Sheave blocks that are permanently attached to, or are integral with the hook, are called hook blocks. Hook blocks are to be tested with the load for multi-sheave blocks. The hook of the hook block is to be tested with the loads for hooks.</p> <p>Note 2. The SWL for a single sheave block, including single sheave blocks with becketts, is to be taken as one half of the resultant load on the head fitting.</p> <p>Note 3. The SWL of a multi-sheave block is to be taken as the resultant load on the head fitting.</p>	

4.2.2 Thorough examination

4.2.2.1 Loose gear should be subject to thorough examination to the satisfaction of the Administration:

- .1 after upon completion of any proof test; and
- .2 annually.

4.2.2.2 Where thorough examination does not form part of the renewal survey or annual survey, verification that thorough examination of loose gear has been conducted/completed to the satisfaction of the Administration should take place during the renewal survey under SOLAS regulation I/7 or the annual survey under SOLAS regulation I/10, as applicable. ~~Otherwise, the Administration may permit up to 3 months' window of the due date of the thorough examination, to provide flexibility to meet the survey schedule.~~

4.2.2.3 If, on completion of a thorough examination, the competent person considers the item(s) of loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that loose gear should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of commission, the relevant actions for inoperative loose gear as outlined under section 5 of these Guidelines should be followed.

4.3 Demonstration of compliance

4.3.1 Before being put into use for the first time, loose gear utilized with lifting appliances which comply with SOLAS regulations II-1/3-13.2.1 and 3-13.2.4 should be certified to meet the provisions in section 4.

4.3.2 Certificates of test and thorough examination of certified loose gear should be attached to the *Register of Ship's Lifting Appliances and Cargo Handling Gear* (see paragraph 4.7.1.2).

4.4 Marking

4.4.1 Loose gear should be clearly and permanently marked with its unique identification (serial no.), the SWL and any additional marks required for safe use.

4.4.2 In addition, specific types of loose gear should be marked with the following minimum information:

- .1 ramshorn hooks: range of sling angle;
- .2 block and hook blocks;
 - .1 rope diameter;
 - .2 rigging plan identification mark (for blocks) if any;
- .3 lifting beams, spreaders, frames;
 - .1 tare weight;
 - .2 allowable sling angles;
 - .3 details of the safe application of the SWL in case of complex equipment which can be utilized in different ways;
- .4 grabs;
 - .1 tare weight; and
- .5 other equipment as per the requirements of the classification society or industry standards acceptable to the Administration.

4.4.3 If there is insufficient space for the marking on the loose gear other than the SWL, the omitted information should be included in the certificate or be provided by other suitable means.

4.5 Operation

Personnel involved in lifting operations which utilize loose gear should be qualified, familiarized with the equipment and be authorized by the master.

4.6 Maintenance and inspection

4.6.1 Maintenance and inspections at respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration considering factors such as the operational profile of the ship and the loose gear.

4.6.2 All loose gear should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion and the inspection and maintenance regime should be implemented accordingly.

4.6.3 The inspection and maintenance of loose gear may involve working at height, enclosed space entry and other hazards. These hazards should be considered when developing the relevant procedures for undertaking such tasks, including safe access.

4.6.4 Loose gear should be inspected by a responsible person before each use.

4.6.5 Examples of aspects requiring particular attention may include:

- .1 wear, corrosion, damage and correct functioning of the loose gear;
- .2 damaged, worn or corroded chains, including their terminations;
- .3 certification and identification of loose gear; and
- .4 physical or chemical degradation, including degradation due to the exposure to the environment.

4.6.6 If on completion of an inspection the responsible person considers the loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then the loose gear should not be used until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of commission, the relevant actions for inoperative loose gear as outlined in section 5 should be followed.

4.7 *Records of inspection, maintenance, testing and thorough examination*

4.7.1 *Records of thorough examination and testing*

4.7.1.1 A record of thorough examination and evidence of proof testing of loose gear should be maintained in a register of lifting appliances and kept on board.

4.7.1.2 Thorough examination may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a competent person. The minimum information to be included in the *Certificate of test and thorough examination of loose gear*, as set out in appendix 2, should be used. Alternatively, other formats may be used which are acceptable to the Administration, such as those of a classification society recognized by the Administration.

4.7.2 *Records of inspection and maintenance*

4.7.2.1 Records of the routine inspection and maintenance of loose gear should be maintained and kept on board.

4.7.2.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

5 Inoperative lifting appliances and loose gear

For the implementation of SOLAS regulation II-1/3-13.4, the following actions should be taken by the master to mitigate risks posed by inoperative lifting appliances:

- .1 take the inoperative lifting appliance into account in planning and executing a safe voyage;
- .2 prevent operation of inoperative lifting appliances;
- .3 prevent uncontrolled movement of inoperative lifting appliances or their components using appropriate restraining and preventing arrangements, if required;
- .4 store inoperative loose gear separately from in-service loose gear and mark it as being inoperative; and
- .5 record a particular lifting appliance or loose gear that is inoperative in the register of ship's lifting appliances until necessary repairs have been completed and it has been load tested or proof tested, as necessary, and thoroughly examined.

APPENDIX 1

**SAMPLE CERTIFICATE
OF TEST AND THOROUGH EXAMINATION OF LIFTING APPLIANCES**

(Official seal)

Certificate No. _____

Name of Ship:

IMO Number:

Call Sign:

Port of Registry:

Name of Owner:

This is to certify that the lifting appliances listed below have been tested and thoroughly examined as required by SOLAS regulation II-1/3-13.

Situation and description of lifting appliance (with distinguishing number or mark, if any) which has been tested and thoroughly examined	Angle to the horizontal or radius at which test load is applied		Test load (tonnes)	Safe working load at angle or radius shown (tonnes)
	Angle (degrees)	Radius (metres)		

This certificate is valid until *(dd/mm/yyyy)*

Completion date of the testing and thorough examination on which this certificate is based:

Issued at *(place of issue of the certificate)*

Date of issue *(dd/mm/yyyy)*

Signature of competent person issuing the certificate

(Seal or stamp of the issuing authority)

APPENDIX 2

**SAMPLE CERTIFICATE
OF TEST AND THOROUGH EXAMINATION OF LOOSE GEAR**

(Official seal)

Certificate No. _____

Name of Ship:

IMO Number:

Call Sign:

Port of Registry:

Name of Owner:

This is to certify that the loose gear listed below have been tested and thoroughly examined as required by SOLAS regulation II-1/3-13.

Distinguishing number or mark	Description of loose gear	Number tested	Date of test	Test load applied (tonnes)	Safe working load (tonnes)

Name and address of makers or suppliers:

Name and address of the company of competent person who witnessed testing and carried out thorough examination:

Name of the competent person and position in public service, association, company:

~~This certificate is valid until~~ (dd/mm/yyyy)

Completion date of the testing and thorough examination on which this certificate is based:

Issued at (place of issue of the certificate)

Date of issue (dd/mm/yyyy)

Signature of competent person issuing the certificate

(Seal or stamp of the issuing authority)

APPENDIX 3

**SAMPLE FORM
OF REGISTER OF LIFTING APPLIANCES AND CARGO HANDLING GEAR**

Name of Ship

Official Number

Call Sign

Port of Registry

Name of Owner

Thorough examination of lifting appliances and loose gear

(1) Situation and description of lifting appliances and loose gear (with distinguishing numbers or marks, if any) which have been thoroughly examined (see Note 1).	(2) Certificate nos.	(3) I certify that on the date to which I have appended by signature, the gear shown in column (1) was thoroughly examined and no defects affecting its safe working condition were found other than those shown in column (4) date and signature (see Note 2).	(4) Remarks

Note 1:

If all the lifting appliances are thoroughly examined on the same date it will be sufficient to enter in column (1) 'All lifting appliances and loose gear'. If not, the parts which have been thoroughly examined on the dates stated must be clearly indicated.

Note 2:

The thorough examinations to be indicated in column (3) include:

- (a) Initial
- (b) 12-monthly
- (c) Five-yearly
- (d) Repair/damage
- (e) Other thorough examinations including those associated with heat treatment

ANNEX 7

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

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

PART A GENERAL

Regulation 1 – Application

2 Applicable requirements to existing ships

1 The following new paragraph 2.10 is added after existing paragraph 2.9, with the associated footnote:

"2.10 Ships constructed before [1 January 2026] shall comply with regulation II-2/10.11[, as adopted by resolution MSC...(…),] not later than the date of the first survey* after 1 January 2026.

* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations (MSC.1/Circ.1290).*"

Regulation 10 – Fire fighting

2 The following new section 11 is added after existing section 10:

"11 Fire-extinguishing media restrictions

The purpose of this regulation is to protect persons on board against exposure to dangerous substances used in firefighting, as well as to minimize the impact of fire-extinguishing media that are deemed detrimental to the environment.

11.1 Application

This regulation applies to ships constructed on or after [1 January 2026].

11.2 General

11.2.1 The prohibited substances in this regulation shall be delivered to appropriate shore-based reception facilities when removed from the ship.

11.2.2 Use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) shall be prohibited."

APPENDIX 1

CHECK/MONITORING SHEET FOR THE PROCESS OF AMENDING THE (SOLAS) CONVENTION AND RELATED MANDATORY INSTRUMENTS*

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).	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

* This appendix is reproduced in English only and covers the draft amendments in annexes 7, 8 and 9.

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

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-2/1.2 (Applicable requirements to existing ships) and II-2/11 (Fire-extinguishing media restrictions); paragraph 7.9.4 of the 1994 HSC Code (Fire-extinguishing media restrictions); and paragraph 7.9.4 of the 2000 HSC Code (Fire-extinguishing media restrictions)
2	Origin of the requirement (original proposal document)
	MSC 101/21/17 and MSC 101/INF.7 (Norway); and SSE 7/18/1 (Canada et al.)
3	Main reason for the development (extract from the proposal document)
	It is important that international shipping also takes measures and contributes to limit the negative impact that the use of fire-extinguishing foams containing PFOS have on the environment and human health by mirroring the prohibition already contained in the Stockholm Convention. This will also send a positive signal to the global community that the shipping industry is taking steps to minimize its impact on the environment and human health.
4	Related output
	Development of provisions to prohibit the use of fire-fighting foams containing perfluorooctane sulfonic acid (PFOS) for fire fighting on board ships (6.47)
5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	<p>MSC 101 agreed to include in the post-biennial agenda of the Committee an output on "Development of provisions to prohibit the use of PFOS for fire fighting on board ships", with one session needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ (MSC 101/24, paragraph 21.27).</p> <p>SSE 7, having considered document SSE 7/18/1 (Canada et al.), agreed to (SSE 7/21, paragraph 20.24):</p> <p>.1 include the new output on the "Development of provisions to prohibit the use of fire-fighting foams containing perfluorooctane sulfonic acid (PFOS) for fire fighting on board ships" in the provisional agenda of SSE 8;</p> <p>.2 invite MSC 102 to expand the scope of the output to include other regulations of SOLAS chapter II-2 and other instruments to be amended, in addition to SOLAS regulation II-2/10.4.1.3; and</p> <p>.3 the points made on the instruments to be amended contained in document SSE 7/18/1, which should be taken into account when drafting the amendments at this session.</p> <p>SSE 8 finalized the draft amendments to SOLAS chapter II-2, and the 1994 and 2000 HSC Codes for approval by MSC 106 and adoption by MSC 107.</p>
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 reduce the negative impact that PFOS has on the marine environment and human health and will align IMO legislation with existing international regulations, such as the Stockholm Convention, for the ships to which SOLAS chapter II-2 applies.
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>
	Use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) is provided for ships constructed on or after 1 January 2026.
7.5	<i>Points of discussions (controversial points and conclusion)</i>
	Not applicable

ANNEX 8

DRAFT AMENDMENTS TO THE 1994 HSC CODE

**CHAPTER 7
FIRE SAFETY**

**Part A
General**

7.9 Miscellaneous

1 The following new paragraph 7.9.4 is added after existing paragraph 7.9.3.4 with the associated footnote:

"7.9.4 Fire-extinguishing media restrictions

7.9.4.1 The following restrictions should apply for the use, storage or disposal of perfluorooctane sulfonic acid (PFOS):

- .1 on craft constructed on or after [1 January 2026], use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) should be prohibited;
- .2 craft constructed before [1 January 2026] should comply with .1 above no later than the date of the first survey* after [1 January 2026]; and
- .3 the prohibited substances in this regulation should be delivered to appropriate shore-based reception facilities when removed from the craft.

* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations (MSC.1/Circ.1290).*"

Annex 1

Form of Safety Certificate for High-Speed Craft

Record of Equipment for High-Speed Craft Safety Certificate

2 In the table for "Details of life-saving appliances", entries 9 to 10.2 are modified, as follows:

9	Number of immersion suits	.....
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets"	.....

10	Number of anti-exposure suits	.....
10.1	Total number	.....
10.2	Number of suits complying with the requirements for lifejackets	.....

ANNEX 9

DRAFT AMENDMENTS TO THE 2000 HSC CODE

**CHAPTER 7
FIRE SAFETY**

**Part A
General**

7.9 Miscellaneous

1 The following new paragraph 7.9.4 is added after existing paragraph 7.9.3.5 with the associated footnote:

"7.9.4 Fire-extinguishing media restrictions

7.9.4.1 The following restrictions shall apply for the use, storage or disposal of perfluorooctane sulfonic acid (PFOS):

- .1 on craft constructed on or after [1 January 2026], use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) shall be prohibited;
- .2 craft constructed before [1 January 2026] shall comply with .1 above no later than the date of the first survey* after [1 January 2026]; and
- .3 the prohibited substances in this regulation shall be delivered to appropriate shore-based reception facilities when removed from the craft.

* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations (MSC.1/Circ.1290).*"

Annex 1

Form of High-Speed Craft and Record of Equipment

Record of Equipment for the High-Speed Craft Safety Certificate

2 In the table for "Details of life-saving appliances", entries 9 to 10.2 are modified, as follows:

9	Number of immersion suits	.....
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets"	.....
10	Number of anti-exposure suits	.....

10.1	Total number	.....
10.2	Number of suits complying with the requirements for lifejackets	.....

ANNEX 10

TERMS OF REFERENCE FOR THE REVISION OF MODEL COURSE 3.03 ON SURVEY OF MACHINERY INSTALLATIONS

TERMS OF REFERENCE FOR THE COURSE DEVELOPER(S) AND THE REVIEW GROUP

Introduction

1 The survey of machinery installations is one of the essential parts of the harmonized system of survey and certification of ships when carrying out various surveys in accordance with the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2019* (resolution A.1140(31)). Machinery installations are subject to the requirements of many IMO instruments, including SOLAS, MARPOL and the Load Lines Conventions. Ship's machinery installations and systems have been modernized with the advance of new emerging technologies. Therefore, model course 3.03 on Survey of Machinery Installations needs to be revised so that it contains updated guidance and lessons learned since it was validated over 17 years ago as its several reference materials have been revised and updated since its validation.

Objectives

2 The revision of model course 3.03 on Survey of Machinery Installations should aim to bring up to date the existing content for the benefit of surveyors of Administrations and classification societies, by addressing most recent developments in survey methods, machinery installations, including machinery, propulsion, steering gear systems, as well as reflecting latest revisions to IMO instruments and industry standards.

Activities

3 The course developer will revise IMO model course 3.03 on Survey of Machinery Installations, taking into account latest versions of relevant performance standards, guidelines and guidance developed by the Organization, and the model course development guidance for course developers in MSC-MEPC.2/Circ.15/Rev.1, appendix 3. The references and bibliography should make citations using the Harvard Style of Referencing while the common abbreviations for IMO model courses in part C – Detailed Outline should be retained, e.g. R1 for the 1974 SOLAS Convention.

4 The course developer will submit the initial draft to the Head, Marine Technology and GBS, who is the designated representative of IMO for the revision of the model course. The course developer will then prepare a revised draft taking into account any suggested changes by the IMO designated representative and forward it again to the IMO Secretariat.

5 The IMO Secretariat will forward the draft model course to its review group, who will then provide any comments and guidance to the course developer for inclusion as appropriate in the third draft, which will then be returned by the course developer to the review group for final evaluation and comments if any. The course developer will finalize the draft model course and submit it to the Head, Marine Technology and GBS, for submission to SSE 9 for consideration and validation.

Reporting

6 The model course should be drafted in English, and IMO should be provided with an electronic version compatible with Microsoft Word, to be submitted to the Head, Marine Technology and GBS, with the deadlines for submission for the first, second and final draft as outlined in the time frame below. All parties to the revision and review process are encouraged to exchange comments and information and seek feedback at any appropriate time. The suggested dates should not serve as limitation for exchange of information.

Draft time frame for model courses to be submitted to SSE 9 for validation	
Deadline	Action to be taken
1 August 2022	The course developer(s) prepares an initial draft to be forwarded to the designated representative of the IMO Secretariat.
1 September 2022	The IMO Secretariat may conduct a review of the first draft of the course for adequacy and consistency with instructions, and suggests changes, where appropriate.
16 September 2022	The course developer(s) will then prepare a draft with revisions from the IMO Secretariat. The IMO Secretariat receives the second draft and forwards the draft model course to the review group.
17 October 2022	The model course review group returns any additional comments and guidance to model course developer(s) for additional edits and development, as appropriate.
7 November 2022	Model course developer(s) submits the final revised draft of the model course to the IMO Secretariat for forwarding to the review group for final comments.
22 November 2022	Review group coordinator submits report to the IMO Secretariat including the evaluation questionnaire, as contained in annex 4 of MSC-MEPC.2/Circ.15/Rev.1.

7 All materials shall be prepared in accordance with intellectual property rights and the copyright remains within IMO.

**COURSE DEVELOPER(S)
SPECIFIC INSTRUCTIONS/TERMS OF REFERENCE**

Course developer(s) specific instructions/terms of reference MODEL COURSE 3.03 ON SURVEY OF MACHINERY INSTALLATIONS	
1) The overall goal of the revision of this model course is to bring up to date the existing content for the benefit of surveyors of Administrations and classification societies, by addressing most recent developments in survey methods, machinery installations, including machinery, propulsion, steering gear systems, as well as reflecting latest revisions to IMO instruments and industry standards. IMO model courses are intended for a global audience and must be adaptable to a wide variety of candidates and teaching resources.	
2) This model course will be validated by the Sub-Committee on Ship Systems and Equipment (SSE) at its ninth session (SSE 9) . The final revised draft of the model course should be submitted to the Head, Marine Technology and GBS (sse@imo.org) no later than 7 November 2022 with the following subject line: REVISED IMO MODEL COURSE 3.03 ON SURVEY OF MACHINERY INSTALLATIONS FOR SUBMISSION TO SSE 9	
3) The following Member States, organizations and subject matter experts (SME) have indicated their availability to work with you on this project. Their contact information is listed below. You are also encouraged to use other resources as may also be available to you.	
Nation, Organization, SME	Contact information
To be confirmed after SSE 8.	
4) This model course has some common and equal education and training requirements as are found in the listed model courses. The education and training requirements must use similar vernacular and be based upon the same information. However, alterations to reflect individual shipboard departmental requirements are expected.	
Model Course	Education and training requirement
3.04 Survey of Electrical Installations 3.05 Survey of Fire Appliances and Provisions 3.06 Survey of Life-saving Appliances and Arrangements 3.07 Hull and Structural Surveys	
5) This model course has some common, but lower level education and training requirements than that found in the listed model courses. These education and training requirements must use simpler taxonomy or topics to reflect their prerequisite nature.	
Model Course	Education and training requirement
N/A	

6) This model course has some common, but higher-level education and training requirements than that found in the listed model courses. The education and training requirements must use a more advanced taxonomy or topics to reflect the advanced nature of the material presented.	
Model Course	Education and training requirement
N/A	
7) This model course is to be included within these other model courses.	
Model Course	Education and training requirement
N/A	
8) This model course is to include these other model courses.	
Model Course	Education and training requirement
n/a	
9) This model course is to include education and training requirements from other IMO Instruments.	
Conventions and codes	<i>Education and training requirement</i>
SOLAS, MARPOL and the Load Lines Conventions ISM Code Resolution A.1140(31)	
<i>These Specific Instructions are to provide the course developer(s) with guidelines to use during the revision of the model course. They are as inclusive as possible. However, the course developer(s) may, at their discretion and in consultation with and with the agreement of the IMO Secretariat, adapt these instructions to meet the intent and goals of the Sub-Committee.</i>	

ANNEX 11

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

1 The Maritime Safety Committee, at its [106th session (2 to 11 November 2022)], with a view to providing more specific guidance on SOLAS regulation II-2/9, approved unified interpretations of SOLAS chapter II-2, prepared by the Sub-Committee on Ship Systems and Equipment, at its eighth session (28 February to 4 March 2022), as set out in the annex.

2 Member States are invited to use the annexed unified interpretations as guidance when applying SOLAS regulation II-2/9, and to bring the unified interpretations to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2

CHAPTER II-2

CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation II-2/9.7.3.1.2 – Containment of fire, details of fire dampers and duct penetrations

The fire insulation required by regulation SOLAS II-2/9.7.3.1.2 should be provided only to the part of the duct and/or sleeve that is on the same side of the division being fire insulated, and be extended for a minimum of 450 mm along the duct and/or sleeve.

Regulation II-2/9.7.3.2 – Containment of fire, details of fire dampers and duct penetrations

When a duct passing through a division is to be in accordance with SOLAS regulations II-2/9.3.2 and II-2/9.7.3.2, no clearance should be allowed between the duct and the division.

ANNEX 12

BIENNIAL STATUS REPORT AND OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA
THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE¹

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	Status of output for 1 Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	Continuous	MSC	HTW/PPR/SDC/SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2; PPR 6/20, paragraph 3.39; MSC 102/24, paragraph 21.4
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	2022	MSC	SSE	SDC	No work requested		MSC 82/24, paragraph 3.92; MSC 98/23, annex 38; MSC 102/24, paragraph 19.16. SSE 6/18, section 3; SSE 7, section 10

¹ Amended text shown in tracked changes using "strikethrough" for deleted text and "grey shading" to highlight new insertions.

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	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2	2022	MSC	III/HTW/SDC	SSE	Ongoing		MSC 98/23, paragraph 20.36; HTW 8/16, section 15; SSE 8/20, section 18;
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	No work requested		MSC 104/18, paragraph 15.19. SSE 6/18, paragraph 17.8
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		SSE 8/20, 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		MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21; MSC 100/20, paragraph 17.28

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
6. Address the human element	6.2	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing		MSC 100/20, paragraphs 10.3 to 10.6 and 17.28; SSE 8/20, section 13
7. Ensure regulatory effectiveness	7.1	Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions	Continuous	MSC/MEPC/FAL/LEG	III/PPR/CCC/SDC/SSE/NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; SSE 8/20, section 15
Notes:	A 28 expanded the output to include all proposed unified interpretations of provisions of IMO safety, security, and environment-related conventions.								
7. Ensure regulatory effectiveness	7.15	Development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of container ships	2025	MSC	CCC	SSE	Ongoing		MSC 103/21, paragraph 18.8; SSE 8/20, 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		Ongoing		MSC 99/22, paragraph 20.26; SSE 8/20, section 14

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	7.32	Requirements for onboard lifting appliances and anchor handling winches	2022	MSC	HTW	SSE	Completed		MSC 89/25, paragraph 22.26; MSC 98/23, annex 38; SSE 8/20, section 9
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	Ongoing		MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42; SSE 8/20, section 6
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, paragraph 20.37; SSE 8/20, section 7
7. Ensure regulatory effectiveness	7.36	New requirements for ventilation of survival craft	2023	MSC	SSE		Ongoing		MSC 97/22, paragraph 19.22; SSE 8/20, section 3

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, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25; MSC 101/24, paragraphs 7.9 and 11.18, and annex 31; MSC.1/Circ.1612; MSC 102/24, paragraph 19.3; 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))	2022	MSC	SSE	SDC	No work requested		MSC 102/24, paragraph 17.23; SDC 8/18, section 13

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	7.39	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets	2023	MSC	SSE		Ongoing		MSC 101/24, paragraph 21.6; MSC 102/24, paragraph 21.19 SSE 8/20, section 8
Notes: MSC 102 approved the inclusion of this item in the provisional agenda of SSE 8.									
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		Ongoing		MSC 101/24, paragraph 21.3; MSC 102/24, paragraph 21.19; SSE 8/20, section 11
Notes: MSC 102 approved the inclusion of this item in the provisional agenda of SSE 8.									
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	2022	MSC	SSE		Completed		MSC 101/24, paragraph 21.27; MSC 102/24, paragraphs 19.31 and 21.19; SSE 8/20, section 12
Notes: MSC 102 included in the provisional agenda of SSE 8 and agreed that other regulations would need to be amended or a new regulation could be necessary instead; and there could be a need for consequential amendments to other instruments e.g. the HSC Code.									

OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

SHIP SYSTEMS AND EQUIPMENT (SSE)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Associated organ(s)	Coordinating organ	Timescale (sessions)	Reference
Number	Biennium	Reference to Strategic Direction, if applicable	Description					
156	2018-2019	6	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships	MSC	SSE		2	MSC 99/22, paragraph 20.15
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 ²	MSC	SSE		2	MSC 99/22, paragraphs 20.22 and 20.23
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	MSC	SSE		3	MSC 103/21, paragraph 18.28

² This item will be considered under agenda item 5 (Revision of SOLAS chapter III and the LSA Code). See the relevant discussion in paragraphs 16.10 and 16.11.

SHIP SYSTEMS AND EQUIPMENT (SSE)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Associated organ(s)	Coordinating organ	Timescale (sessions)	Reference
Number	Biennium	Reference to Strategic Direction, if applicable	Description					
			new fire protection systems and materials					
9	2012-2013	OW	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	SSE		4	MSC 86/26, paragraph 23.39
168	2018-2019	OW	Development of amendments to paragraph 8.3.5 and annex 1 to the 1994 and 2000 HSC Codes	MSC	SSE		1	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, paragraph 22.25
90	2014-2015	OW	Amendments to the LSA Code for thermal performance of immersion suits	MSC	SSE		2	MSC 92/26, paragraph 13.34

ANNEX 13

PROPOSED PROVISIONAL AGENDA FOR SSE 9

- 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 amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships
 - 5 Revision of SOLAS chapter III and the LSA Code (2.16)
 - 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 (7.33)
 - 7 Development of amendments to the LSA Code for thermal performance of immersion suits
 - 8 Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets (7.39)
 - 9 Revision of the provisions for helicopter facilities in SOLAS and the MODU Code
 - 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 Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships (7.40)
 - 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)) (7.19)
 - 13 Validated model training courses (6.2)
 - 14 Unified interpretation of provisions of IMO safety, security and environment-related conventions (7.1)
 - 15 Biennial status report and provisional agenda for SSE 10
 - 16 Election of Chair and Vice-Chair for 2024
 - 17 Any other business
 - 18 Report to the Maritime Safety Committee

ANNEX 14*
DRAFT MSC CIRCULAR

**AMENDMENTS TO THE REVISED STANDARDIZED LIFE-SAVING APPLIANCE
EVALUATION AND TEST REPORT FORMS (SURVIVAL CRAFT) (MSC.1/CIRC.1630)**

1 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved the *Revised standardized life-saving appliance evaluation and test report forms*.

2 The original forms, as set forth in the *Standardized life-saving appliance evaluation and test report forms* (MSC/Circ.980) and its addenda, were developed on the basis of the requirements of the International Life-Saving Appliance (LSA) Code and the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)) by the Maritime Safety Committee, at its seventy-third session in 2001, with a view to providing guidance on how to conduct tests, record test data and verify tests. The Committee has since adopted ~~seven~~ 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, due 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 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, with a view to 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.

4 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).

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.1630.

* Track changes are shown in grey shading. For reasons of economy, the full text of the revised circular will be prepared following the expected approval of the Committee, with a view to circulation as MSC.1/Circ.1630/Rev.1. Currently, the annex contains only draft amendments.

ANNEX

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

4.3 COMPONENTS FOR SURVIVAL CRAFT

4.3.1 HYDROSTATIC RELEASE UNITS

4.3.1.9 Technical tests on the membrane – 2

Test Procedure

1 Under the box "Test Procedure", replace "ASTM Oil No.1" and "ASTM Oil No.5" with "IRM 901" and "IRM 905", respectively.

4.3.4 INFLATABLE LIFERAFT MATERIALS

4.3.4.9 Porosity

Test Procedure

2 Under the box of "Test Procedure", replace "ISO TR 6065" with "ISO 15372:2000"

Acceptance Criteria

3 Under the box of "Acceptance Criteria", under paragraph .1, replace "ISO TR 6065 paragraph A.2.10.2" with "ISO 15372:2000/Amd 1:2021, paragraph 6.2.9.2".

4.3.4.10 Oil resistance

Test Procedure

4 Under the box of "Test Procedure", replace "ISO TR 6065" with "ISO 15372:2000".

Acceptance Criteria

5 Under the box of "Acceptance Criteria":

.1 in paragraph .1, replace "ASTM No.1" with "IRM 901"; and

.2 in paragraph .3, replace "ISO TR 6065, paragraph A.2.5" with "ISO 15372:2000/Amd 1:2021, paragraph 6.2.5".

ANNEX 15
DRAFT AMENDMENTS TO THE APPENDIX (CERTIFICATES)
TO THE SOLAS CONVENTION

APPENDIX
CERTIFICATES

RECORD OF EQUIPMENT FOR PASSENGER SHIP SAFETY
(FORM P)

1 In the table for "Details of life-saving appliances", entries 10 to 10.2 are modified, as follows:

10	Number of immersion suits
10.1	Total number
10.2	Number of suits complying with the requirements for lifejackets

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM E)

2 In the table for "Details of life-saving appliances", entries 8 to 8.2 are modified, as follows:

9	Number of immersion suits
9.1	Total number
9.2	Number of suits complying with the requirements for lifejackets

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM C)

3 In the table for "Details of life-saving appliances", entries 9 to 9.2 are modified, as follows:

9	Number of immersion suits
9.1	Total number
9.2	Number of suits complying with the requirements for lifejackets

ANNEX 16
DRAFT AMENDMENTS TO THE CODE OF SAFETY
FOR SPECIAL PURPOSE SHIPS (SPS CODE)

APPENDIX

RECORD OF EQUIPMENT FOR THE SPECIAL PURPOSE SHIP SAFETY CERTIFICATE (FORM SPS)

1 In the table for "Details of life-saving appliances", entries 8 to 8.2 are modified, as follows:

8	Number of immersion suits	.....
8.1	Total number	.....
8.2	Number of suits complying with the requirements for lifejackets	.....

ANNEX 17*

DRAFT MEPC RESOLUTION

**AMENDMENTS TO THE 2014 STANDARD SPECIFICATION FOR
SHIPBOARD INCINERATORS (RESOLUTION MEPC.244(66))**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the function of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that, at its fortieth session, the Committee adopted, by resolution MEPC.76(40), the *Standard specification for shipboard incinerators*, in respect of regulation 16.6.1 and appendix IV to MARPOL Annex VI,

NOTING that, at its forty-fifth session, the Committee adopted, by resolution MEPC.93(45), *Amendments to the standard specification for shipboard incinerators*,

NOTING ALSO that, at its sixty-fourth session, the Committee decided that incinerators with a capacity greater than 1,500 kW and up to 4,000 kW can be type-approved under the existing standard specification for shipboard incinerators,

NOTING FURTHER that, at its sixty-sixth session, the Committee adopted, by resolution MEPC.244(66), the *2014 Standard specification for shipboard incinerators*, which superseded the *Standard specification for shipboard incinerators* adopted by resolution MEPC.76(40), as amended by resolution MEPC.93(45),

RECOGNIZING the need to remove the discrepancies between resolution MEPC.244(66) and SOLAS chapter II-2 on fire protection requirements for incinerators and waste stowage spaces,

1. ADOPTS the *Amendments to the 2014 Standard specification for shipboard incinerators (resolution MEPC.244(66))*, as set out in the annex to the present resolution;
2. INVITES the Parties to MARPOL Annex VI and other Member Governments to bring the above amendments to the attention of all Parties concerned.

* Modifications are shown in grey shading.

ANNEX

**AMENDMENTS TO THE 2014 STANDARD SPECIFICATION FOR
SHIPBOARD INCINERATORS (RESOLUTION MEPC.244(66))**

TABLE OF CONTENTS

1 Table of contents is modified, as follows:

" **2014 STANDARD SPECIFICATION FOR SHIPBOARD INCINERATORS**

...

Annex 1 Emission standard for shipboard incinerators with capacities of up to 4,000 kW

~~Annex 2 Fire protection requirements for incinerators and waste stowage spaces~~

Annex ~~23~~ Incinerators integrated with heat recovery units

Annex ~~34~~ Flue gas temperature

Annex ~~45~~ Form of IMO type approval certificate for shipboard incinerators with capacities of up to 4,000 kW"

1 SCOPE

2 Paragraph 1.5 is modified, as follows:

"1.5 This Specification provides emission requirements in annex 1, ~~and fire protection requirements in annex 2~~. Provisions for incinerators integrated with heat recovery units and provisions for flue gas temperature are given in annex ~~23~~ and annex ~~34~~, respectively."

ANNEX 2

3 Annex 2 is deleted in its entirety and the titles of annexes 3 to 5 are renumbered as annexes 2 to 4 accordingly, as follows:

"ANNEX ~~23~~

INCINERATORS INTEGRATED WITH HEAT RECOVERY UNITS

...

ANNEX ~~34~~

FLUE GAS TEMPERATURE

...

ANNEX ~~45~~

**FORM OF IMO TYPE APPROVAL CERTIFICATE FOR SHIPBOARD INCINERATORS
WITH CAPACITIES OF UP TO 4,000 KW**

..."

ANNEX 18*

STATEMENTS BY DELEGATIONS AND OBSERVERS

OPENING

Statement by the delegation of Australia

"Australia condemns in the strongest possible terms Russia's unprovoked and unjustified attack on its neighbour. Australia stands in staunch support of Ukraine and its people. We call on Russia to withdraw its forces from Ukrainian territory. The Australian Government is deeply concerned by the humanitarian cost which will be borne by the Ukrainian people as a result of this conflict.

We hope that a diplomatic solution to the crisis can be found. Australia is extremely concerned about reports that commercial ships flagged with Panama, Moldova and Turkey have been struck by missiles in the Black Sea."

Statement by the delegation of Canada

"Thank you Chair.

Canada condemns in the strongest possible terms Russia's egregious attack on Ukraine, which has resulted in massive damages and inexcusable deaths and suffering. These unprovoked actions are a clear and further violation of Ukraine's sovereignty and territorial integrity.

They also severely threaten the safety of and security of merchant shipping, the lives of seafarers and the integrity of global supply lines. Like other delegations, Canada calls on Russia to immediately cease all hostile and provocative actions against Ukraine. Ukraine's sovereignty and territorial integrity must be respected and the Ukrainian people must be free to determine their own future. We continue to stand with Ukraine and its people. "

Statement by the delegation of France

""La France, au nom de l'Union européenne, tient à exprimer ses vives préoccupations face aux développements actuels en Ukraine, qui est membre de l'OMI depuis 1994.

Nous condamnons avec la plus grande fermeté la violation flagrante par la fédération de Russie de la souveraineté et de l'intégrité territoriale de l'Ukraine, y compris la violation de sa zone maritime souveraine, ce qui constitue une violation flagrante du droit international et de la Charte des Nations unies. Nous appelons la fédération de Russie à stopper sans délai cette action illégale. Nous exigeons que la fédération de Russie fasse immédiatement cesser tous les risques qu'elle fait peser sur la sécurité et la sûreté du transport maritime dans l'ensemble de la région, en particulier la mer Noire et la mer d'Azov.

Nous demandons également que la fédération de Russie respecte ses obligations en vertu du droit maritime international applicable, en premier lieu en faisant immédiatement cesser les atteintes au territoire et au domaine maritime de l'Ukraine .

* 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).

Nous rappelons que l'Ukraine doit retrouver sans délai toutes ses prérogatives en matière de mise en oeuvre des instruments adoptés dans le cadre de cette Organisation en tant qu'Etat du pavillon, qu'Etat du port et Etat côtier. Nous sommes aux côtés de l'Ukraine et de son peuple, et réitérons notre engagement inébranlable en faveur de l'intégrité territoriale et de la souveraineté de l'Ukraine à l'intérieur de ses frontières internationalement reconnues."

Statement by the delegation of Ireland

"Ireland wishes to be associated with the statement made by France."

Statement by the delegation of New Zealand

"New Zealand condemns in the strongest possible terms Russia's invasion of Ukraine. It is a clear act of aggression, a blatant breach of Ukraine's sovereignty and territorial integrity, and a violation of international law.

Russia's conduct puts the safety and security of all maritime transport in the region at risk, especially in the Black Sea and Sea of Azov. Russia's unlawful seizure and detention of rescue vessels and Ukrainian-flagged merchant ships further endangers the lives of seafarers and is completely unjustified. New Zealand stands with the people of Ukraine impacted by Russia's invasion and joins the international community in calling on Russia to immediately cease military operations in Ukraine and to return to diplomatic negotiations to de-escalate the conflict."

Statement by the delegation of Panama

"Muchas gracias Sr. Presidente,

Buenos días Buenas tardes y noches distinguidos delegados.

Nuestra delegación pide autorización señor presidente para realizar una declaración con relación a un tema de índole internacional y de seguridad y protección de la flota comercial, en donde se han visto afectadas tres embarcaciones de bandera panameña, una de ellas fue impactada por un misil causándole graves daños en la popa incluyendo la hélice y la pala del timón en el Puerto de Pivdenny (Yuzhny), en Odessa en el suroeste de Ucrania, provocando un incendio a bordo. Cabe señalar, que esta declaración nos permite hacer un llamado a la paz mundial y a la defensa del derecho internacional. Panamá como Estado miembro de la Convención de las Naciones Unidas sobre el Derecho del Mar de 1982, espera que lo preceptuado en este marco legal sea implementado y cumplido por las naciones beligerantes, y que se respeten las normas relativas al derecho y comercio internacional sobre la neutralidad de los buques mercantes.

El hecho tuvo lugar el 25 de febrero a bordo de un buque de carga a granel de 47,167 TRB, en el cual se encontraban a bordo 21 tripulantes de nacionalidad filipina, los cuales se encuentran sanos y a salvo debido a la acción inmediata de los bomberos de la instalación portuaria quienes controlaron el incendio y evitaron afectaciones al medio ambiente. Nuestra Administración, desea aprovechar esta oportunidad para compartir una acción en la búsqueda de minimizar estos riesgos a buques comerciales de nuestra bandera y por tal razón, publicó el pasado 24 de febrero de 2022, el Aviso de Marina Mercante MMN 03/2022, en donde alentamos a todos los buques con pabellón panameño a evitar el tránsito y en el peor de los casos a que mantengan la máxima vigilancia y aumentar las condiciones de seguridad a bordo, con ciertas recomendaciones de seguridad, protección y comunicación, para proteger a la gente de mar a bordo y al buque, cuando se encuentren navegando en aguas de Ucrania y Rusia, en el Mar Negro y el Mar de Azov.

Para finalizar distinguidos delegados, nuestra administración se encuentra en el proceso de recolección de información para esclarecer la situación y poder brindar toda la asistencia a nuestro usuario.

Muchas gracias, Sr. Presidente."

Statement by the delegation of the Philippines

"Good morning, afternoon and evening excellencies and distinguished participants. First we convey the Philippines' Congratulations to the Chair and Vice Chair for your election.

On the issue at hand, similar to the statement of the IMO Secretary General and Panama, we are likewise concerned about the spill over effects of the military action in Ukraine to global shipping, and more importantly its impact to innocent ships, seafarers, and port workers. We therefore echo the call of the Secretary General and urge all parties to keep our merchant ships, seafarers and port workers safe and secure.

The Philippines reaffirms its commitment to peaceful settlement of disputes and in the same vein, we exhort the international community to exert every effort to stick to diplomatic and peaceful means and for the immediate cessation of hostilities in order to avert this unfolding humanitarian crisis. May we request the Secretariat to append this statement to the records of this meeting.

Thank you."

Statement by the delegation of Poland

"Poland would like to associate with the statement made by France on the invasion of Ukraine by the Russian Federation."

Statement by the delegation of Spain

"Muchas gracias por concedernos la palabra señor presidente. Seremos breves.

España desea condenar la violación a la soberanía e integridad territorial de Ucrania dentro de sus fronteras internacionalmente reconocidas y en este sentido apoya las intervenciones de otras delegaciones a este respecto. Especialmente esta delegación desea alinearse con las declaraciones realizadas por Francia y la Comisión Europea y que así conste en el informe de este Subcomité. En estos momentos tan tristes, lamentamos la pérdida de todas las vidas humanas que está causando este conflicto y especialmente enviamos nuestro apoyo y solidaridad a Ucrania y con el pueblo ucraniano. Al igual que ha solicitado Grecia, esta delegación desearía hacer una breve declaración sobre el hundimiento del pesquero español Villa de Pitanzo si los considera procedente el presidente.

Gracias Presidente, España quisiera informar brevemente al Subcomité, del trágico hundimiento del buque pesquero de bandera española VILLA DE PITANXO acontecido el pasado 15 de febrero mientras se encontraba faenando a unas 243 millas al este sureste de Terranova (Canada). Desde el Centro Nacional de Coordinación de Salvamento de Madrid, desde donde se presta asistencia a los barcos españoles que navegan en aguas internacionales, se recibieron dos alertas que se correspondían con el pesquero Villa de Pitanzo de 50 metros de eslora, con 24 personas a bordo (16 españoles, 5 peruanos y 3 ghaneses) y puerto base en Marín (Galicia).

Tras intentar contactar sin éxito con el pesquero Villa de Pitanzo, el Centro de Nacional de Coordinación de Salvamento de Madrid movilizó vía satélite a dos pesqueros que se hallaban

próximos al lugar de la emergencia. El pesquero español Playa Menduiña Dos y el pesquero portugués Novo Vírgen da Barca. Por parte del Joint Rescue Coordination Center (JRCC) Halifax, centro responsable de las operaciones SAR en la zona, se movilizaron medios aéreos y marítimos de búsqueda y salvamento.

El balance final de la operación de salvamento fue de tres tripulantes rescatados con vida por el pesquero español Playa de Menduiña y 9 tripulantes cuyos cuerpos sin vida también pudieron ser recuperados. Los 12 tripulantes restantes permanecen desaparecidos. España agradece la ayuda y cooperación prestada por el gobierno de Canada, así como por los tripulantes de los buques pesqueros que fueron movilizados. Quisiéramos transmitir nuestras más sinceras condolencias y solidaridad a los familiares y amigos de las víctimas de este trágico accidente.

Solicitamos por último que la presente declaración figure en el informe final del Subcomité. Muchas gracias Presidente."

Statement by the delegation of Ukraine

"Mr. Chair,

On 24 February 2022 Russia has launched a full-scale invasion of Ukraine, which represents an act of war, a gross violation of Ukraine's sovereignty and territorial integrity, the UN Charter and the fundamental norms and principles of international law.

Russian troops have entered into the territory of Ukraine from Belarus and the occupied Crimea, and are attacking Ukrainian cities, conducting an ongoing indiscriminate and disproportionate airstrikes, cruise missiles' and MLRS' shellings of critical infrastructure, including maritime ports zones in the Black Sea and the Sea of Azov, airport facilities throughout the country, as well as of civilian objects, taking the death toll on Ukrainian population. The most frequently heard warning in Ukraine today is "Attention. Air raids. Please proceed to shelters." Starting from the invasion Russia has launched 180 cruise and tactical missiles at Ukrainian cities. Russia has deployed 46 warships in the Black Sea and the Sea of Azov. Also in the Mediterranean Sea it stationed a large number of forces - 17 warships from all four Russian fleets, including two missile cruisers and seven more missile ships of various types, including two missile submarines.

To cover-up its actions the Russian Federation completely closed maritime areas for shipping under the guise of so-called "counterterrorist operations", as, by its usual practice, was aired retrospectively by coastal warnings from Novorossiysk and Taganrog NAVTEX stations. Russia is also seeking ways to justify its recent deliberate attacks on commercial vessels in the Black Sea by retrospectively promulgating coastal warnings, which regard the presence of any vessels in the maritime areas, blocked by Russian military, as the terrorist threat (the new NAVAREA communication was aired 2 days after the first incident).

The actions of the Russian Federation pose a direct threat to maritime safety and security and disrupts international commercial shipping in the Black Sea – Sea of Azov region. Ukraine is responding to the Russian threat by exercising its right to self-defence in accordance with Article 51 of the UN Charter. Russian losses as of today are: 29 warplanes, 29 helicopters, 191 tanks, 816 Armoured personnel carrier, 74 Artillery weapons, 22 MLRS and 291 armoured vehicles.

Mr. Chair,

In connection with the military aggression of the Russian Federation against Ukraine and being guided by the requirements of the International Ship and Port Facility Security (ISPS) Code,

the Cabinet of Ministers of Ukraine has adopted an Order dated February 25, 2022 №183-r "On establishing the level of maritime security in sea and river ports of Ukraine, port facilities, vessels entitled to sail under the State flag of Ukraine".

According to the aforementioned Order the MARSEC Level 3 Exceptional (Attack Imminent) was established starting from February 25, 2022 for the duration of martial law in Ukraine. In this regard, the ports of Ukraine are closed for entry and exit. This critical situation affects international shipping and seafarers worldwide, either on board and ashore and their families. Maritime Administration of Ukraine are preparing algorithms for the repatriation of those foreign seafarers who became locked in our ports. And Ukraine asks all IMO Member States and other actors to provide Ukrainian seafarers wide scale support.

Mr. Chair,

Russian naval vessels are launching airstrikes or mortar fire that can hit not only civilian port facilities in Odessa and Mariupol, but also attack commercial vessels anchored off the coast of Ukraine or approaching our ports. Recent confirmed cases are:

- the shellings of m/v MILLENNIAL SPIRIT (IMO: 7392610, MMSI 214182773), which is a Chemical Tanker built in 1974 (48 years old) under the flag of Moldova, as well as of Namura Queen (IMO 9841299, MMSI 355706000), bulk carrier under flag of Panama. Ukrainian rescue teams provided emergency assistance to the crews, who sustained injuries, and the ships in order to avoid further casualties and the destruction of vessels, which could cause damage to marine environment;

- capture of UA SAR vessel "Sapphire" on February 2022 during the humanitarian mission in the area of Zmiiny Island in line with SOLAS;

- Ukrainian cargo vessels Athena and Princess Nicole located in the territorial sea of Romania (22 miles from the Zmiiny Island) was captured after receiving a command to approach the Russian warship for inspection, which was transmitted on an open channel of communication. Almost as soon as both civilian ships approached the Russian warships, the AIS was turned off, they stopped communicating. Next day, the AIS showed that they were dragged to the positions at 18 miles from the occupied Crimea.

Meanwhile, the Russian Federation's propaganda machinery attempts to disperse disinformation about the marine casualties in these areas, most recently they circulated the message about UA forces hitting commercial vessels in the Sea of Azov, namely SGV Flot and Seraphim Sarovskiy.

Mr. Chair,

In view of the above Ukraine has requested the summoning of the extraordinary session of the IMO Council to address severe consequences to the maritime safety and security in the Black Sea and the Azov Sea region appertaining to the new wave of Russian military aggression against Ukraine, as well as impact it has on global shipping, and logistics and supply chains.

We expect other Member States to support our call! The world is now becoming united in support of Ukraine's sovereignty, territorial integrity and freedom.

Recent days have shown us who are our real friends and who are foes and their henchmen. This delegation thanks IMO Secretary-General for following the lead of UN GS Gutiérrez and issuing a statement on the crisis caused by the Russian aggression. We also welcome the establishment of the Emergency Task Force to address this issue. We are extremely grateful to those members of the international community society will stay side by side with us and support us by all means.

We urge on all international actors to cut ties with Russian companies, vessels, and personal engaged in maritime shipping, among other things, to prevent them from bringing income to the budget of the Aggressor State. Only together we can stop Russian invasion of Ukraine and save millions of lives, bring peace to the world and hold Russia accountable for committed war crimes!

I thank you."

Statement by the observer from ITF

"ITF follows with great concern the war developments and Russian military aggression in Ukraine and the Black Sea.

ITF condemns any type of invasion and its creators. We are aware of the anxiety and anger of our Ukrainian seafarers on sea or on shore and in their motherland. We are also very much concerned about the security situation in the Black Sea. We denounce any shape of aggression on ships and seafarers, innocent civilians in this unprovoked and unnecessary war which has to stop and has to stop NOW. ITF thanks IMO secretary general on his words of concerns and support to seafarers.

We are of the opinion that IMO members should send a strong message to Russia and their leaders or anyone else that any kind of invasion on sea or on land will not be tolerated. "

Statement by the delegation of the United Kingdom

"Thank you, Chair

The United Kingdom, along with our international partners, stand united in condemning the Russian government. Russia's assault on Ukraine is an unprovoked, premeditated attack against a sovereign democratic state which constitutes a flagrant violation of international law and the international rules-based order. The UK remains fully committed to upholding the sovereignty and territorial integrity of Ukraine within its internationally recognised borders.

The UK remains deeply concerned by the Russian Federation's illegal annexation of Crimea in addition to its recognition of the so-called "Donetsk and Luhansk People's Republics". Russia's actions pose a real threat to the safety and security of navigation, protection of the marine environment, and the safety of seafarers in the northern part of the Black Sea, the Sea of Azov and the Kerch Strait, including the maritime areas adjacent to Crimea. The UK condemns these actions and we call for the Russian Federation to cease its military actions in the Ukraine and immediately de-escalate the situation. The UK is steadfast in standing with the people of Ukraine in this moment of agony. Our heart goes out to them in the face of Russia's abhorrent acts. We are joined in our outrage by friends and allies around the world. We will work with them – for however long it takes – to ensure that the sovereignty and independence of Ukraine is restored. Please could this statement be attached to the report.

Thank you, Chair."

Statement by the delegation of the United States

"The United States expresses grave concern regarding Russia's unprovoked and massive invasion of Ukraine and its ongoing aggressive actions in and around occupied Crimea, including the maritime areas adjacent to Crimea.

Russia's occupation of Ukraine's Crimean peninsula, in addition to its purported recognition of the so-called "Donetsk and Luhansk People's Republics," and its recent premeditated, unprovoked, and further unlawful invasion of Ukraine, threaten European and Transatlantic security in an unprecedented manner. Russia's actions have severe negative implications for the safety and security of navigation, protection of the marine environment, and the safety of seafarers in the sea areas in and around Crimea, as evidenced by the recent unprovoked attacks on commercial ships in these areas. We again condemn Russia's unlawful efforts to impede access to the Kerch Strait and Sea of Azov and demand that Russia respect Ukraine's sovereignty and territorial integrity within its internationally recognized borders, extending to its territorial waters. Specifically, the United States condemns the suspension of innocent passage in territorial sea areas in the Black Sea.

The United States joins the international community in reaffirming that Crimea is part of Ukraine. We call on Russia to halt its military operations in Ukraine and cease all further aggression against Ukraine. The United States does not – and will not ever – recognize Russia's purported annexation of Crimea or the so-called "Donetsk and Luhansk People's Republics." We remain committed to upholding the sovereignty and territorial integrity of Ukraine within its internationally recognized borders, extending to its territorial waters."

AGENDA ITEM 6

Statement by the delegation of Panama (as translated)

"On the 16th of February, a car carrier of 200 m in length flying the flag of Panama caught fire while it was some 90 nautical miles northwest of the Azores in the Atlantic Ocean. It was carrying around 4000 vehicles, including, electric ones. Fortunately, 22 crew members were rescued and safely evacuated with no injuries, thanks to joint efforts of MRCC Ponta Delgada and the Portuguese navy. We would like to extend our most heartfelt thanks to them for the rescue services and support provided. However, unfortunately, the ship sank yesterday (1 March 2022), 200 nautical miles off the coast of Azores. We would like to emphasize the importance of adopting regulations to reduce the frequency and consequences of fires in ro-ro spaces to a minimum and that includes ro-ro passenger ships. Our Administration is currently collecting information pursuant to the provisions of Casualty Investigation Code and we will be putting together a report indicating possible root causes of the fire and making necessary recommendations in order to avoid similar accidents in future. Therefore, we are closely cooperating with all parties involved in this investigation. There is a compelling need for us to adopt provisions to minimize the risk of fires onboard this sort of ship, taking into account the cargo being carried, particularly electric vehicles and identifying detection and extinguishing systems required in order to extinguish fires onboard in the cargo spaces."

AGENDA ITEM 7

Statement by the delegation of the Republic of Korea

"Thank you, Chair.

This delegation agrees with your proposal to delete additional paragraph we suggested in the paragraph 2.2 of the document SSE 8/7/1 submitted by the Republic of Korea.

However, in order to remove potential hazards to crew members, it would be necessary to discuss the safety requirement in the near future.

This delegation asks you, Chair, to include our statement for further discussion on the safety requirement into the final report of the Sub-Committee. Thank you, Chair."

AGENDA ITEM 10

Statement by the observer from IACS

"Based on the recommendations in the paper SSE 8/9/3 (Japan), the WG agreed to relocate the text on repairs, modifications or alterations to sub-paragraph 3.2.1.2 of the Guidelines for Anchor Handling Winches. IACS considers that this relocation would carry with it technical concerns which need to be addressed.

If eventually approved as suggested by the Working Group, the testing specified under sub-paragraph 3.2.1.1.2 of the Guidelines for Anchor Handling Winches would only require overload testing of the attachment of the Anchor Handling Winch to the vessel. There would be no requirement for post-repair overload testing of the Anchor Handling Winch itself. In IACS' opinion, post-repair overload testing of the Anchor Handling Winch itself is a safety critical requirement that should not be overlooked.

Further, overload testing of the attachment of the Anchor Handling Winch to the vessel does not necessarily mean that the Anchor Handling Winch itself will be overload tested. Based on the application of the load, it is possible to conduct overload testing of the attachment, without fully overload testing the Anchor Handling Winch."
