



IMO Ship Systems and Equipment Tenth Session (SSE 10)

Summary Report

Executive Summary

The following are key outcomes from SSE 10:

- SSE considered the compelling need for **ventilation requirements for partially enclosed lifeboats and liferafts**, for inclusion in both the LSA Code and MSC.81(70) *Revised recommendation on the testing of life-saving appliances for the ventilation of totally enclosed lifeboats*. Given that no submissions were made to SSE 10, it was concluded that relevant submissions to demonstrate a compelling need should be sent to SSE 11. If no submissions are received by SSE 11, the topic will be closed.
- SSE agreed **amendments to the 1994 and 2000 HSC Codes**, respectively, to harmonise the lifejacket carriage requirements in the Codes with those requirements in SOLAS chapter III. The amendments proposed at MSC 101 aim to ensure that the safety of infants on high-speed craft in the case of an emergency situation is equal to that of infants on other passenger ships.
- SSE agreed to amend MSC.81(70), part 1, and MSC.1/Circ.1630/Rev.2 with respect to the average mass of a person to be considered while conducting prototype self-righting tests for **totally enclosed lifeboats**.
- SSE agreed to amendments to various **Revised standardized life-saving appliance evaluation and test report forms on retro-reflective materials** (MSC.1/Circ.1628/Rev.1, MSC.1/Circ.1630/Rev.2, MSC.1/Circ.1632).
- SSE considered **provisions to prohibit the use of fire-fighting foams containing fluorinated substances**, in addition to PFOS. SSE noted the revision of MSC.1/Circ.1312 addressing the banning of fluorinated substances in foam concentrates is not necessary at this stage and the matter should be revisited in case the ban is expanded to cover other types of fluor-based foam concentrates.
- SSE agreed to the draft **Revised standards for the design, testing and location of devices to prevent the passage of flame into cargo tanks in tankers** (MSC/Circ.677) and prepared a draft revision of MSC/Circ.677 for approval by MSC 109 with an agreed effective date of 2 years after the approval of the draft revised circular.
- SSE agreed to a draft **unified interpretation of the requirements of SOLAS regulation II-1/26.2** in order to clarify requirements regarding the reliability of single essential propulsion components. The draft MSC circular provides a unified interpretation but only for passenger ships. SSE 10 revised the draft MSC Circular for approval by MSC 109 with an expected entry into force date 1 January 2026.
- SSE agreed various **unified interpretation** of provisions of IMO safety, security and environment-related conventions.

Introduction

SSE 10 took place from 4 - 8 March 2024. This report summarises discussions which are significant to Lloyd's Register's clients.

Lloyd's Register (LR) contributed to discussions in the following working groups:

- Life-saving appliances
- Fire protection

Additional Information
LR's [SSE 9 Summary Report](#)

Life-saving Appliances (LSA)

New requirements for the ventilation of survival craft

MSC 107 adopted amendments to the LSA Code and MSC.81(70) *Revised recommendation on the testing of life-saving appliances for the ventilation of totally enclosed lifeboats*. The requirements ensure that a totally enclosed lifeboat will 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, with the entrances closed. The amendments enter into force 1 January 2026 and apply to all totally enclosed lifeboats installed on or after 1 January 2029.

SSE 10 considered any compelling need for ventilation requirements for partially enclosed lifeboats and liferafts, for inclusion in both the LSA Code and MSC.81(70) *Revised recommendation on the testing of life-saving appliances for the ventilation of totally enclosed lifeboats*.

Given that no submissions were made to SSE 10, it was concluded that relevant submissions to demonstrate a compelling need should be sent to SSE 11. If no submissions are received by SSE 11, the topic will be closed.

Depending on the outcome of future discussions, there may also be consequential amendments to the *Revised standardized test report forms for survival craft* (MSC.1/Circ.1630/Rev.2).

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

SSE 10 considered development of amendments to the LSA Code to include requirements for the design of the arrangements, taking into account the lifeboat's static weight as well as the shock loading that would be experienced in the operational testing of the free-fall lifeboat release system without launching the lifeboat (a simulated launch). Prototype test requirements for "the arrangements" would form the basis for the amendments to resolution MSC.81(70) *Revised recommendation on the testing of life-saving appliances for the ventilation of totally enclosed lifeboats*, as appropriate.

Draft amendments to paragraph 4.7.6.4 of the LSA Code

SSE 10 proposed draft amendments to paragraph 4.7.6.4 of the LSA Code, including the associated draft MSC resolution containing the relevant implementation provisions, with a view to finalisation at SSE 11, along with any consequential amendments to other related instruments, for approval by MSC 110 and subsequent adoption by MSC 111. The amendments are expected to apply to free-fall lifeboats installed on or after 1 January 2032.

The draft text for paragraph 4.7.6.4 is as follows. The text in square brackets will be discussed in the LSA Correspondence Group:

"4 include an arrangement to test the release system under load without launching the lifeboat into the water that shall be designed with a safety factor of at least 6 on the basis of the calculated maximum working load and the ultimate strength of the materials used for its construction considering static and possible dynamic loads; [and have all components constructed from materials that are corrosion resistant in the marine environment without the need for coatings or galvanizing]; and"

Consequential amendments to resolution MSC.81(70) - Revised Recommendation on Testing of Life-Saving Appliances

SSE 10 considered consequential amendments to resolution MSC.81(70) taking into account the draft amendments to paragraph 4.7.6.4 of the LSA Code. The discussion was limited to only Part 1 (Prototype test for life-saving appliances) of the annex to resolution MSC.81(70) and was mainly focused on whether the test should be carried out with a proof load equal to 1.1 times the weight of the lifeboat, as mentioned in paragraph 6.3.1 of the annex to resolution MSC.402(96), or with the total weight of the lifeboat and its assigned crew based on the manufacturer's instructions in line with the provisions of SOLAS regulation III/20.11.2.3. Agreement could not be reached on the draft amendments; therefore, it was agreed that the work would be carried on in the LSA Correspondence Group.

SSE 10 agreed to expand the scope of the output to include resolutions MSC.81(70) and MSC.402(96) and other related instruments, subject to endorsement by MSC 109.

Revision of SOLAS chapter III and the LSA Code

SSE 10 considered the report of the Intersessional Working Group (ISWG) on revision of SOLAS chapter III and the LSA Code. The report includes the completion of hazard identification such as transferring a rescued person (ship to ship or ship to helicopter) and ranking by the ISWG, including considerations on "unregulated ship" conditions.

SSE 10 agreed to the following draft road map to facilitate drafting of related functional requirements and expected performances for SOLAS chapter III and the LSA Code, for consideration by the LSA Correspondence Group:

1. use the specification for functional requirements and expected performances in MSC.1/Circ.1596, as a basis;
2. use the hazards identified by phase as shown in document SSE 10/5, annex 2, noting that the list may not be exhaustive;
3. select one phase at a time for drafting functional requirements and expected performance for that phase before moving on to the next phase;

4. draft the functional requirements and expected performances in a smaller group; and
5. once the functional requirements and expected performances for all phases have been drafted, compare them to the functional requirements in MSC.1/Circ.1212/Rev.1.

Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships

MSC 99 considered a proposal to equip all passenger and cargo ships with automatically self-righting or canopied reversible liferafts (except for liferafts with a capacity of no more than six persons) and, consequentially, to amend regulations 21, 26 and 31 of SOLAS chapter III and paragraphs 4.2 and 4.3 of chapter IV of the LSA Code. SSE 10 considered the following submissions:

- Draft amendments to SOLAS chapter III and chapter IV of the LSA Code.

These introduce carriage and user experience in use of automatically self-righting and canopied reversible liferafts, including safety, cost and arrangement; discusses the technical requirements of liferafts; and proposes draft amendments to SOLAS chapter III and chapter IV of the LSA Code requiring the carriage of automatically self-righting or canopied reversible liferafts on new passenger and cargo ships.

- Scope of application of the amendments to SOLAS chapter III and chapter IV of the LSA Code.

This submission suggests reconsidering the scope of application of the output under this agenda item as follows:

- exclude at least cargo ships from the scope of the amendments; and
- even if the amendments to the requirements of passenger ships are considered, exclude liferafts used with launching appliances and small size liferafts, e.g. for not more than 25 persons.

After consideration of the above, SSE 10 could not reach a consensus on the scope of application and invited interested Member States and international organisations to submit further proposals, providing relevant justification for or against the different scope of application on this matter to SSE 11 for consideration.

Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes

SSE considered development of amendments to the 1994 and 2000 HSC Codes, respectively, to harmonise the lifejacket carriage requirements in the Codes with those requirements in SOLAS chapter III.

The amendments proposed at MSC 101 aim to ensure that the safety of infants on high-speed craft in the case of an emergency situation is equal to that of infants on other passenger ships.

Draft amendments to paragraph 8.3.5 of the 1994 HSC Code

SSE agreed to the following draft amendments to paragraph 8.3.5 of the 1994 HSC Code:

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

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

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

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

Draft amendments to paragraph 8.3.5 of the 2000 HSC Code

SSE agreed to the following draft amendments to paragraph 8.3.5 of the 2000 HSC Code:

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

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

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

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

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

As indicated above, the draft amendments are expected to enter in to force from 1 January 2028, subject to approval by MSC 108 and adoption by MSC 109.

Unified interpretation of provisions of IMO safety, security and environment-related conventions

Draft unified interpretation of paragraphs 6.1.1.3 and 6.1.2.2 of the LSA Code - Manual hoisting of a dedicated rescue boat

SSE 9 considered draft unified interpretations on launching arrangements of rescue boats on a cargo ship. Having agreed in principle with the proposals to establish a unified interpretation on the requirement for manual hoisting of a dedicated rescue boat in the LSA Code, and noting that further consideration was necessary intersessionally, the sub-committee instructed the LSA Correspondence Group to consider the documents listed below, with a view to finalisation of a relevant unified interpretation:

- Proposal for interpretation of paragraphs 6.1.1.3 and 6.1.2.6 of the LSA Code
- Clarification of paragraph 6.1.2.2 of the LSA Code
- Comments on the above two submissions

Having considered the relevant submissions, the LSA Correspondence Group proposed a draft unified interpretation of the LSA Code, paragraphs 6.1.1.3 and 6.1.2.2 including an interpretation intended to clarify the meaning of "launching mechanism". The LSA Correspondence Group concluded that a unified

interpretation of paragraph 6.1.2.6 of the LSA Code was unnecessary because paragraph 6.1.2.6 is related to the recovery of rescue boats and survival crafts, not the launching.

SSE discussed the draft unified interpretation provided by the LSA Correspondence Group, however, unanimous agreement to the draft text could not be reached, therefore, this will be forwarded to the LSA Correspondence Group for review and discussion at SSE 11. Additional documents submitted to SSE 10 under this agenda item were also referred to the LSA Correspondence Group for consideration.

Draft unified interpretation providing factual statement for the test and thorough examination of non-certified lifting appliances

SSE discussed a submission proposing a draft unified interpretation of SOLAS regulation II-1/3-13.2.4 to facilitate uniform documentation of load testing and thorough examination for existing non-certified lifting appliances. In general the submission was supported, however, clarification was sought on the draft text, therefore, this document was referred to SSE 11.

Draft unified interpretation of SOLAS regulation III/11.2

SSE discussed a submission proposing a draft unified interpretation of SOLAS regulation III/11.2 regarding "all persons assigned to muster at that station". The submission was not supported.

Draft unified interpretation of SOLAS regulations III/20.8.4 and III/20.11, and resolution MSC.402(96)

SSE discussed a submission proposing the following draft unified interpretation of SOLAS regulations III/20.8.4 and III/20.11, and resolution MSC.402(96) to facilitate uniform implementation of the requirements regarding inflated rescue boats:

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

SSE agreed to the draft unified interpretation and prepared a draft MSC Circular for approval by MSC 109.

Comprehensive review of the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation

MSC 107 agreed to a new output on "Comprehensive review of the requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear (resolution MSC.402(96)) to address challenges with their implementation".

SSE 9 instructed the LSA Correspondence Group to identify the safety issues and barriers to consistent implementation of the requirements contained in resolution MSC.402(96). In addition, the LSA Correspondence Group was asked to consider the applicability of the requirements to:

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

SSE considered the relevant part of the report of the LSA Correspondence Group, together with other relevant documents and re-established the LSA Correspondence Group to continue to develop, validate and prioritise the list of issues for consistent implementation of the requirements contained in resolution MSC.402(96).

Categorisation list of issues for consistent implementation of the requirements contained in resolution MSC.402(96)

SSE considered the issues for consistent implementation of the requirements contained in resolution MSC.402(96), taking into account relevant documents, for validation and prioritisation.

To streamline the validation and prioritisation process, SSE categorised the identified issues as follows, for consideration when developing draft amendments to resolution MSC.402(96):

- Authorisation of service providers, including equipment manufacturers
- Manufacturer's established certification programme
- Clarification of the certification of personnel
- Definitions of various terms
- Timing of annual servicing
- Other issues

With regard to previous concerns raised over maintenance and inspection of suspension parts used with survival craft, there was support to include "suspension parts" in the list of identified issues.

In considering the issues identified, SSE agreed that the highest priority item was the definition of "make" and "type" in the context of resolution MSC.402(96). In addition, SSE agreed that questions over ASP authorisation between one competent authority/RO and another were related to matters under the prerogative of individual Administrations, and items related to manufacturers no longer existing and lack of definitions of equipment were already addressed in paragraphs 7.3 and 2.2.2 of resolution MSC.402(96).

Draft amendments to resolution MSC.402(96)

Due to time constraints, SSE 10 did not finalise the draft amendments to resolution MSC.402(96), as such, this was referred to the LSA Correspondence Group reporting to SSE 11.

Justification for a new output for amendments to 1994/2000 HSC Codes and 1979/1989/2009 MODU Codes, and to ensure the consistent application of resolution MSC.402(96)

SSE concluded that resolution MSC.402(96) should apply to high-speed craft and mobile offshore drilling units and prepared a draft justification for amending the 1994 and 2000 HSC Codes and the 1979, 1989 and 2009 MODU Codes for approval by MSC 109.

Amendments to the LSA Code for thermal performance of immersion suits

IMO first considered this work in 2008 but agreed to defer the development of any amendments pending the outcome of practical work that was considered necessary, including the determination of suitable thermal resistance criteria, and the finalisation and validation of testing methodology.

SSE 9 agreed draft amendments to resolution MSC.81(70) regarding the test methodology that were subsequently adopted by MSC 107, in addition to approval of MSC.1/Circ.1628/Rev.1 on *Revised standardized life-saving appliance evaluation and test report forms (personal life-saving appliances)*.

SSE 9 also agreed that the use of thermal manikins in lieu of human subjects for testing is already allowed in MSC.81(70) but considered it was premature to include reference to mechanical water stirring systems. Noting that further discussion would be required on thermal performance of immersion suits, SSE 9 agreed to keep this item on the provisional agenda of SSE 10.

SSE 10 considered the following submissions related to thermal performance of immersion suits:

- Thermal manikin testing procedures and the development of a GISIS module for thermal manikin testing laboratories.
This document provides the status of research conducted by the National Research Council of Canada and ISO/TC 188/SC 1 on thermal testing of immersion suits using instrumented manikins and proposes creating a GISIS module for listing thermal manikin testing laboratories.
- Correlation of two thermal manikins over a range of immersed insulation values.
- Comments on document SSE 10/15.

Following discussion on the above documents, SSE 10 concluded that:

- The outcome of the research conducted by the National Research Council of Canada and ISO/TC 188/SC 1 on thermal testing of immersion suits using instrumented manikins is in general supported.
- A GISIS module of international thermal manikin testing laboratories should be created.
- This item should be kept on the agenda for SSE 11.
- Member States are encouraged to participate in the work on ISO/TC 188/SC 1.

Any Other Business (LSA)

Under this agenda item, SSE 10 considered the following:

Proposal to amend MSC.81(70), part 1, and MSC.1/Circ.1630/Rev.2 with respect to the average mass of a person to be considered while conducting prototype self-righting tests for totally enclosed lifeboats

A proposal to consider the average mass of a person as 75 kg (for lifeboats intended for passenger ships) or 82.5 kg (for lifeboats intended for cargo ships) in the case of prototype self-righting test for totally enclosed lifeboats, with a view to amending resolution MSC. 81(70), part 1 and MSC.1/Circ.1630/Rev.2, as a minor correction, was supported.

SSE prepared a draft MSC Resolution containing amendments to resolution MSC.81(70) for agreement at MSC 108 and adoption by MSC 109, and a draft MSC Circular containing amendments to MSC.1/Circ.1630/Rev.2 for approval by MSC 109 and dissemination as Rev.3.

Amendments to various Revised standardized life-saving appliance evaluation and test report forms on retro-reflective materials

A proposal was made to replace the reference to resolution A.658(16) with resolution MSC.481(102) regarding retro-reflective materials in various *Revised standardized life-saving appliance evaluation and test report forms* (MSC.1/Circ.1628/Rev.1, MSC.1/Circ.1630/Rev.2, MSC.1/Circ.1632). In addition, it proposed to add further details in evaluation and test report forms intended for personal life-saving appliances, survival craft and rescue boats, as a minor correction.

The proposal was supported. SSE prepared draft MSC Circulars containing amendments to MSC.1/Circ.1628/Rev.1, MSC.1/Circ.1630/Rev.2, MSC.1/Circ.1631, MSC.1/Circ.1632) for approval by MSC 109

and dissemination as MSC.1/Circ.1628/Rev.2, MSC.1/Circ.1630/Rev.3, MSC.1/Circ.1631/Rev.1, MSC.1/Circ.1632/Rev.1 with an effective date of 15 August 2025.

Proposal for amendments to the test procedure and acceptance criteria for lifejacket buoyancy test

Amendments to resolution MSC.81(70) and MSC.1/Circ.1628/Rev.1, with a view to improving the test procedure for lifejacket buoyancy test and make acceptance criteria consistent with the LSA Code, as a minor correction.

In general, this document was supported, however, there were several suggestions for alternative text, therefore, the submission was referred to the LSA Correspondence Group for further consideration.

Proposal to amend MSC.1/Circ.1533 on Revised guidelines on evacuation analysis for new and existing passenger ships

This proposal adds scenarios of evacuation from safe areas in MSC.1/Circ.1533, taking into account the increasing need of evacuation analysis and calculation of safe return to port for large passenger ships and provides editorial revisions based on the implementation of the evacuation analysis of passenger ships in recent years.

The proposed amendments were not supported.

Proposal to amend the unfavourable trim and list requirements in SOLAS chapter III and the LSA Code

This proposal reconsiders the revision of unfavourable trim and list requirements and provides a possible solution, based on the difficulties and safety concerns experienced during the implementation of the unfavourable 10°trim/20°list requirements, with regard to the stowed positions of life-saving appliances, the specifications of launching and embarkation appliances, as well as the certification height of free-fall lifeboats, in particular in the context of ever increasing size of ships.

The proposed amendments were not supported.

Report of the Correspondence Group on Analysis of Marine Safety Investigation Reports

SSE considered the report of the Correspondence Group on Analysis of Marine Safety Investigation Reports from III Sub-Committee. The report includes analysis of man overboard from fishing vessels, based on GISIS data as well as data from several Member States during the period 2010-2020. The analysis contains the following conclusions:

- the attitude within the fishing industry concerning personal floatation devices (PFDs) needs to be changed in order to increase the use of PFDs, since the use of such equipment is essential for surviving; and
- modern technology allows better means to relocate a person falling overboard from fishing vessels. Introduction of such technology for increasing the ability of survival could be considered.

Following discussion of the Correspondence Group report, SSE agreed to:

- note the analysis of man overboard from fishing vessels contained in Annex 3 of the report;
- encourage relevant state holders to ensure fishing vessel personnel wear PFDs when on the upper decks of all fishing vessels while at sea; and
- invite interested Member States to consider becoming a party to the Cape Town agreement of 2012 as it regulates lifejacket requirements of fishing vessel of 24m in length and above.

Fire Protection (FP), Detection and Extinguishing

Revision of the 2010 FTP Code to allow for new fire protection systems and materials

SSE reviewed a submission document identifying ambiguities within the FTP Code and proposing new materials and new construction techniques to be addressed in development of the revision to the FTP Code, while coordinating any changes with updates to SOLAS regulation II-2/9. The submission proposes the following matters for consideration when developing the revision of the FTP Code:

- Evaluate the thermodynamic implications of the air gap between rated bulkheads in modular construction and the appropriateness of single-sided testing of these divisions;
- Identify appropriate test methods to allow new materials to be adequately evaluated under the current FTP Code, considering their unique physical properties and fire risk; and
- Identify the factors which should be noted on the approvals to limit the scope of an approval or determine worst-case configurations for testing.

Following discussion, SSE concluded that, in general, there was support for the proposals stated above and may be further considered with the SOLAS II-2/9 revision at SSE 11. SSE 10 invited proposals to SSE 11 for amending the 2010 FTP Code to allow for new fire protection systems and materials.

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

MSC 106 agreed to establish a Formal Safety Assessment (FSA) Experts Group to review the outcome of any relevant FSA studies concerning detection and control of fires in cargo holds and on the cargo deck of containerships. Following review by the FSA Experts Group, the subsequent report was submitted directly to the SSE Sub-Committee for consideration, with a view to developing relevant SOLAS amendments.

The FSA Experts Group met from 23 to 26 October 2023 at IMO Headquarters to review the report of the CARGOSAFE FSA study and submit a report to SSE 10, so that it could be considered together with the documents deferred from SSE 8 and SSE 9, for a holistic approach. The following conclusions on the CARGOSAFE Study were presented in the report of the FSA Experts Group:

- the adequacy of scope of the FSA, definition of the problem; the validity of the input data; the adequacy of expertise of participants in the FSA; and the adequacy of accident scenarios, risk models and calculated risks, identified Risk Control Measures (RCMs) and Risk Control Options (RCOs) were sufficient;
- methodologies used and relevance of methods and tools for decision in the group(s) in the FSA; HAZID; calculation of risk; Cost-Benefit Analysis (CBA); and sensitivity analysis were appropriate;
- no deficiencies affecting the outcome had been identified;
- the study was adequately conducted in accordance with the Revised FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.2); and
- the conclusions and the recommendations were credible, and SSE 10 was invited to consider the recommendations for further action.

Detection and control of fires in cargo holds and on the cargo deck of containerships

SSE 10 considered the RCOs identified in table 91 of the CARGOSAFE study together with relevant documents, and focused on the following viable RCOs for detection and control of fires in cargo holds and on the cargo deck of containerships, as follows:

1. fixed fire detection within the cargo hold;
2. fixed fire detection for containers carried on deck;
3. portable IR cameras (thermal imagers);
4. measures for fire-fighting including:
 - a. water mist lances and option of using devices with extended reach;
 - b. review of present regulations applicable to mobile water monitors and option of introducing mobile water monitors with remote control; and
 - c. systems using fixed water monitors with remote control;
5. fixed CO₂ fire extinguishing systems; and
6. protection of hatch covers.

List of items for the other sub-committees

SSE 10 identified a number of issues to be addressed by the CCC sub-committee including improved training of shoreside personnel throughout the supply chain, measures to ensure the quality and reliability of shipper's declarations, container scanning process in port, etc. Furthermore, SSE 10 identified a number of issues to be addressed by the HTW sub-committee including training of seafarers.

Due to time constraints, SSE 10 was not able to prepare a comprehensive list of risk-prevention-related areas and referred the identified risk-prevention-related areas to the CCC and HTW sub-committees, for their consideration, as appropriate.

Further work

SSE 10 agreed to re-establish the FP Correspondence Group to continue this work and encouraged interested Member States and international organisations to submit further proposals for addition to the list of risk-prevention-related areas to SSE 11.

Unified interpretation of provisions of IMO safety, security and environment-related conventions

SSE 9 submissions on Fire Protection (FP)

SSE 9 referred the following submissions on fire protection to the FP Correspondence Group:

- Proposed interpretation of SOLAS regulations II-2/19.3.4.1 and II-2/19.3.5.4, pertaining to required air changes for the carriage of dangerous goods.
- Proposal on a unified interpretation of paragraph 2.1.2.6 of chapter 5 of the FSS Code.
- Clarification of SOLAS regulation II-2/13.4.2 relating to the means of escape from the steering gear space on cargo ships.
- Proposed interpretation of paragraph 2.2.3.1.2 of chapter 15 of the FSS Code relating to inert gas systems on tankers.
- Proposed unified interpretation of the testing requirements for the floor covering materials.

In their report to SSE 10, the FP Correspondence Group concluded that the above unified interpretations

should be considered as new outputs requiring amendments to the associated instruments, which was agreed by SSE 10.

SSE 9 referred the following submission on fire protection to the FP Correspondence Group:

- Draft unified interpretation of SOLAS regulation II-2/4.5.6.1 and paragraphs 3.1.2, 3.1.4 and 3.5.3 of the IBC Code.

SSE agreed to the draft interpretation, with some minor changes, which provides more specific guidance for the application of the relevant requirements of chapter II-2 of the SOLAS Convention and the IBC Code regarding cargo/vapour piping and related gas-freeing piping/ducts on tankers. SSE prepared a draft MSC Circular for approval by MSC 109 and confirmed an entry into force date of 1 January 2026.

SSE 10 submissions on Fire Protection (FP)

SSE 10 discussed the following draft unified interpretations:

Proposed interpretation of SOLAS regulation II-2/11.4.1

SSE agreed to the draft interpretation, with some minor changes, and prepared a draft MSC Circular for approval by MSC 109.

Proposal for a unified interpretation relating to level gauges with self-closing valves for oil tanks in passenger ships under the SOLAS Convention

SSE agreed a new output is needed to amend the associated instrument.

Draft unified interpretation regarding the fitting of a small-diameter self-closing control cock on sounding pipes of tanks for flammable oils other than oil fuel and lubricating oil

More discussion is necessary, therefore, the FP Correspondence Group should review the paper and advise how best to proceed, i.e. can this be addressed by a unified interpretation or is a new output required to amend the associated instrument.

Draft unified interpretation on the secondary means of venting cargo tanks

This proposed a unified interpretation on the secondary means of venting cargo tanks required by SOLAS regulation II-2/4.5.3.2.2, as amended by resolution MSC.392(95), and SOLAS regulation II-2/11.6.3.2 to achieve a unified understanding and implementation on board.

SSE agreed to the draft interpretation, with some minor changes, and prepared a draft MSC Circular for approval by MSC 109.

Draft amendments to the unified interpretation of paragraph 2.2.1.7 of chapter 5 of the FSS Code on carbon dioxide system discharge control for container and cargo spaces

SSE agreed a new output is needed to amend the associated instrument.

Minor corrections to the Revised unified interpretations of SOLAS chapter II-2 (MSC.1/Circ.1276/Rev.1)

SSE agreed to the minor corrections and issued a draft MSC Circular for approval at MSC 109 for dissemination as MSC.1/Circ.1276/Rev.2.

Development of provisions to consider prohibiting the use of fire-fighting foams containing fluorinated substances, in addition to PFOS, for fire-fighting on board ships

SSE 9 instructed the FP Correspondence Group to further consider draft amendments to the *Revised guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems* (MSC.1/Circ.1312).

SSE 10 considered the above, together with other relevant documents submitted to this session and noted the conclusion of the FP Correspondence Group on the revision of MSC.1/Circ.1312 addressing banning of fluorinated substances in foam concentrates that such revision is not necessary at this stage and the matter should be re-visited in case the ban is expanded to cover other types of fluor-based foam concentrates. SSE 10 advised that interested parties should make submissions to future meetings, as appropriate.

Evaluation of adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles

SSE discussed the following items for fire protection, detection and extinction arrangements to reduce the fire risk of ships carrying new energy vehicles, including Battery Electric Vehicles (BEVs), noting that the conditions were different for ro-ro passenger ships, ro-ro cargo ships and vehicle carriers:

Road map

SSE agreed to the following road map for future work on this agenda item:

1. Review of scientific reports and studies, new technologies, casualty reports and other available credible resources;
2. Identification of hazards related to new energy vehicles, including BEVs, compared to conventional Internal Combustion Engine Vehicles (ICEVs);
3. Consideration of a goal-based approach;
4. Identification of gaps in existing regulations and consideration of the way forward to mitigate the gaps; and
5. Identification of placeholders for possible future amendments (i.e. SOLAS regulation II-2/20 for all ro-ro ships or regulation II-2/20-2 for a given segment).

Goal-based approach

SSE also agreed a goal-based approach on this agenda item including:

1. Goal: Decrease and minimise the risk of fire in vehicle spaces, ro-ro spaces, and special category spaces of ships in terms of carrying new energy vehicles, including BEVs;
2. Hazard identification: Identification of hazard and risk of fire of new energy vehicles, including BEVs;
3. Rule scoping: Examination of existing regulations of SOLAS chapter II-2 whether the regulations cover the identified hazards; and
4. Possible functional requirements, such as fire detection, control containment and suppression.

Hazards - new energy vehicles, including BEVs

SSE noted the main concerns related to the new energy vehicles, including BEVs, were the different characteristics of fire when compared to ICEVs, including thermal runaway for BEVs. In addition, concerns

were noted that due to emerging risks not included by the existing research projects, further consideration of hazards and risks was required.

Identification of gaps in existing regulations and consideration of way forward to mitigate the gaps

In accordance with the agreed road map, SSE focused on the following key fire safety systems and measures, together with relevant documents, which were found to be important for enhancing fire safety within ro-ro spaces carrying new energy vehicles, including BEVs:

- fire detection;
- fire confirmation (video monitoring system);
- structural fire protection;
- fixed fire extinguishing systems; and
- other measures, including protection of weather decks.

SOLAS amendments – placeholder

SSE agreed that SOLAS regulation II-2/20 or 20-2 would be suitable places for future amendments on this item and agreed that this could be decided at a later stage when the discussion was further developed.

Any Other Business (Fire Protection)

Under this agenda item, SSE considered the following:

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

This document proposes minor corrections to SOLAS regulations II-2/11.2 and II-2/11.4.1 with a view to ensuring consistent implementation of this provision for passenger ships and cargo ships.

SSE agreed to the draft amendments to SOLAS as a minor correction for approval by MSC 109 and adoption by MSC 110.

Issues with the implementation of SOLAS regulation II-2/4.5.10 concerning the arrangement of detectors of the fixed hydrocarbon gas detection system and the bilge high-level alarm in the cargo pump-rooms of oil tankers

This document discusses lessons learned from accidents which may have been avoided by having more clarity on the arrangement of detectors of the fixed hydrocarbon gas detection system and the bilge high-level alarm in the cargo pump-rooms of oil tankers.

The proposed amendments were not supported.

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

This document proposes to amend MSC/Circ.1165 and MSC.1/Circ.1387 by specifying the performance requirements of foam concentrates added as additives in the water-based fire-extinguishing medium for fixed-pressure water-spraying fire-extinguishing systems for engine-rooms and cargo pump-rooms and local water-based fire-extinguishing systems so as to enhance the fire-extinguishing effectiveness and efficiency.

The proposed amendments were not supported.

SSE 9 Submissions on fire protection referred to the FP Correspondence Group

SSE also considered the following SSE 9 submissions on fire protection referred to the FP Correspondence Group:

Outcome of MSC 106 on revision of resolution MSC.402(96) and MSC/Circ.677 and Revised standards for the design, testing and location of devices to prevent the passage of flame into cargo tanks in tankers (MSC/Circ.677)

MSC 106 considered a submission informing of the 2021 revision of the Standard for ship pressure-vacuum relief valve and devices to prevent the passage of flame into cargo tanks, and the resulting need to update the *Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in tankers* (MSC/Circ.677) accordingly.

SSE agreed to the draft *Revised standards for the design, testing and location of devices to prevent the passage of flame into cargo tanks in tankers* (MSC/Circ.677) and prepared a draft revision of MSC/Circ.677 for approval by MSC 109 with an agreed effective date of 2 years after the approval of the draft revised circular.

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

This document seeks clarification on the applicable equipment standards for fire-fighters' outfits, as required by SOLAS regulation II-2/10 and the FSS Code, in an effort to ensure safe and effective fire-fighting by ship's crew in case of shipboard fire and to facilitate global and uniform implementation.

SSE agreed a new output is needed to amend the associated instruments.

Any Other Business (not covered under LSA or FP)

Revision of the provisions for helicopter facilities in SOLAS and the MODU Code

Following deferral from SSE 9, SSE 10 considered aligning the requirements on helicopter facilities in SOLAS and the MODU Code with the most recent requirements of the ICAO (International Civil Aviation Organisation) Convention. Given that no papers were submitted to SSE 10, in accordance with IMO procedures, the item was marked as completed.

Unified interpretation of provisions of IMO safety, security and environment-related conventions

Draft MSC circular on unified interpretation of the requirements of SOLAS regulation II-1/26.2

SSE 9 agreed to a draft unified interpretation of the requirements of SOLAS regulation II-1/26.2 in order to clarify requirements regarding the reliability of single essential propulsion components.

Acknowledging that a failure in the electrical system may have an impact, which is impossible to rectify on board the ship, the SOLAS regulations for the main power generation and distribution require them to be designed with redundancy (SOLAS regulations II-1/26.3 and II-1/41.1). SSE 9 agreed to a unified interpretation to clarify that this redundancy philosophy shall also be applied to all electrical machines used for propulsion, i.e. to require two independent electrical machines.

The draft MSC circular was referred to MSC 107 for approval, however, due to comments from Member States, MSC 107 did not approve the circular and returned it to SSE 10 for further work.

SSE 10 discussed the comments from MSC 107, in addition to documents submitted to SSE 10 and concluded that the draft unified interpretation could be supported but only for passenger ships. SSE 10 revised the draft MSC Circular for approval by MSC 109, subject to agreement by MSC 108, with an effective date of 1 January 2026.

Unified Interpretation of regulation 3.5.1 of the IBC Code

SSE considered a unified interpretation of regulation 3.5.1 of the IBC Code, in order to allow discharge arrangements for permanent ballast tanks sited immediately adjacent to cargo tanks to be placed inside machinery spaces for ships engaged in transportation of cargoes which are non-toxic and non-flammable or with a flash point exceeding 60°C, as such cargoes are neither harmful to the crew nor present a risk of fire or explosion.

It was noted that the unified interpretation was discussed at PPR 11 and was not supported, therefore, no further action was taken by SSE 10.

Biennial Status Report and Provisional Agenda for SSE 11

SSE agreed to include the following proposals to include as outputs on the provisional agenda of SSE 11:

- Review and update SOLAS regulation II-2/9 on containment of fire to incorporate existing guidance and clarify requirements.
- Development of amendments to chapter 6 of the 2009 MODU Code regarding electrical equipment capable of operation after shutdown.
- Development of amendments to chapter 15 of the FSS Code on enclosed spaces containing a nitrogen receiver or a buffer tank of nitrogen generator system.
- Review and update of the Code of practice for atmospheric oil mist detectors (MSC.1/Circ.1086).

In addition, SSE agreed to a proposal to transfer the output "Review of the 2009 Code on Alerts and Indicators" to the provisional agenda of SDC 11.

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