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IMO SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE 10)

Relevant for ship owners, managers, seafarers, maritime training institutes and flag states.

March 2024

The 10th session of the IMO's Sub-Committee on Ship Systems and Equipment (SSE 10) was held from 4 to 8 March 2024. SSE 10 agreed on a road map for considering the adequacy of the fire safety system requirements for ships carrying new energy and electrical vehicles, and initiated the consideration of measures for detecting and controlling fires in cargo holds of container ships. Clarifications of the requirements for the maintenance and testing of life-saving appliances were considered to ensure uniform implementation.

Meeting highlights

- Agreed on draft amendments to the 1994 and 2000 HSC Codes to harmonize the life jacket carriage requirements with those in SOLAS Chapter III
- Initiated consideration of fire safety systems for ships carrying new energy and electrical vehicles
- Initiated consideration of detection and control of fires in the cargo area of container ships

Carriage of new energy and electric vehicles

As an increasing number of electrical vehicles and other new energy vehicles are being carried on board ships, the IMO has initiated the consideration of potential risks involved with the carriage of new energy vehicles, i.e. the adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces.

SSE 10 recalled that in June 2023, MSC 107 approved draft amendments to SOLAS Chapter II-2 and associated instruments to reduce the risk of fire in ro-ro and special category spaces on Ro-Ro passenger ships. The draft amendments are expected to enter into force on 1 January 2026, subject to adoption by MSC 108 in May 2024. The considerations at SSE 10 therefore focused, as a first step, mainly on updates to new cargo ships.

A road map for further work was established, which includes the review of studies and the identification of hazards related to new energy vehicles before the development of goals and functional requirements. SSE 10 agreed that the overall goal of any SOLAS amendments would be to decrease and minimize the risk of fire in vehicle spaces, ro-ro spaces and special category spaces of ships carrying new energy vehicles.

The following topics will be considered in a Correspondence Group until SSE 11 in February 2024:

- Any scientific studies and accident reports relevant for this work
- Possible updates to the fixed fire detection systems and fire confirmation (video monitoring system) within vehicle spaces and ro-ro spaces on cargo ships

SSE 11 is also expected to continue the consideration of fixed fire-extinguishing systems protecting ro-ro spaces, e.g. high-expansion foam systems and CO_2 systems, protection of weather decks and the structural fire protection of the boundaries of ro-ro spaces.

It is anticipated that the work will be long-term and that any amendments to the SOLAS regulation would enter into force with the 2032 update of the SOLAS Convention.

Container ship fire safety

Several serious fires in the cargo area on container ships have exposed technical challenges related to locating, containing and fighting fires in containers.

SSE 10 reviewed the outcome of the EU CARGOSAFE study, which seeks to identify cost-effective measures for reducing the risk and consequences of cargo fires on container ships based on the IMO's Formal Safety Assessment (FSA) methodology (MSC-MEPC.2/Circ.12/ Rev.2).

A Correspondence Group will consider the followings topics until SSE 11 in February 2025:

- Improved means of fire detection in cargo holds (e.g. linear heat detection systems)
- Fire extinguishing systems for containers carried above cargo hatch covers:
  - Review of existing requirements for water mist lances, including possible introduction of extended reach
  - Review of existing requirements for water monitors, including possible introduction of remote control
  - Consideration of fixed water monitors for the on-deck cargo (typically mounted on top of superstructures or funnel casing tower)
- Fire extinguishing systems for containers carried in cargo holds (review of requirements related to the CO_2 fixed fire extinguishing system)

SSE 11 is also expected to consider means of detection of fires in containers carried as deck cargo (e.g. video monitoring detection systems), the protection of hatch covers in the case of fire in the cargo hold, and the possible impact on other safety systems if draft amendments are agreed upon (e.g. water pump capacity, bilge capacity and breathing air capacity, stored air and compressor arrangement for firefighters, type and number of firefighters' outfits).

Possible 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 are expected to enter into force on 1 January 2028, at the earliest.

Revision of the 2010 FTP Code

The 2010 Fire Test Procedures (FTP) Code specifies test procedures to be used by laboratories when testing and evaluating products (e.g. bulkheads, ceilings, doors, surface materials, and penetrations) that are required to comply with the fire safety requirements of the SOLAS Convention.

SSE 10 initiated a revision of the 2010 FTP Code to implement Unified Interpretations, review references to ISO standards and accommodate new fire protection systems and materials, based on experience gained since its entry into force in 2012.

Members states and international organizations were invited to submit proposals to SSE 11 in February 2025.

Simulated launching of free-fall lifeboats

Free-fall lifeboat release systems are typically tested without actually launching the free-fall lifeboat into the water, i.e. a simulated launching.

SSE 10 considered the draft of design and prototype test requirements to the simulation equipment (e.g. wires and turnbuckles) used for testing to address the shock loading that may occur following the sudden stop of a lifeboat on the skid.

The consideration of draft amendments to the LSA Code and Resolution MSC.81(70) will continue in a Correspondence Group until SSE 11 in February 2025.

Revision of SOLAS Chapter III and the LSA Code

SSE 10 developed a draft road map for the revision of SOLAS Chapter III and the LSA Code to remove gaps, inconsistencies and ambiguities and to restructure the requirements to a goal-based format.

A Correspondence Group will start drafting functional requirements and expected performance for SOLAS Chapter III and the LSA Code based on the goals and high-level hazards identified so far, and report to SSE 11 in February 2024.

Life jacket requirements in the High Speed Craft Codes

SSE 10 agreed on draft amendments to Paragraph 8.3.5 of Annex 1 of the 1994 and 2000 High Speed Craft (HSC) Codes to harmonize the life jacket carriage requirements in the Codes with the corresponding requirements in SOLAS Chapter III with respect to number of infant life jackets and accessories to adult life jackets to accommodate large persons.

The draft amendments to the 1994 and 2000 HSC Codes are expected to enter into force on 1 January 2028, with retroactive application.

The draft amendments to the 1994 Code should, and the draft amendments to the 2000 Code shall, be complied with no later than the first renewal survey on or after 1 January 2028.

The draft amendments will be submitted to MSC 109 (November 2024) for approval.

Maintenance and testing of life-saving appliances

Resolution MSC.402(96) was adopted in 2016 to provide a uniform, safe and documented standard for the maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear. Challenges have however been experienced with the implementation of the resolution, inter alia due to different interpretations of terminology.

SSE 10 progressed draft amendments to Resolution MSC.402(96) by prioritizing implementation issues to be addressed, including the need for the development of definitions, inter alia of the "make" and "type" of equipment to be serviced. The work will continue in a Correspondence Group until SSE 11 in February 2024.

Thermal performance of immersion suits

Research and development related to performance testing of immersion suits based on the use of thermal manikins was noted, recognizing that the use of humans in such testing has become increasingly challenging.

SSE 10 agreed that a module should be developed in the IMO's online database GISIS to list laboratories, recognized by administrations, which are able to conduct tests with a thermal manikin in lieu of humans in accordance with the test method in ISO 15027-3.

Validated model training courses

IMO model courses are intended to assist instructors in developing training programmes for seafarers as per the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978.

The model courses are subject to regular review to ensure that they are consistent with the current IMO instruments and reflect best practices and modern technologies.

SSE 10 validated the revised model course 3.04 "Survey of Electrical Installations".

Unified Interpretations

The following draft Unified Interpretations (UIs) was agreed and will be submitted to MSC 109 for approval:

Maintenance of inflated rescue boats

SSE 10 agreed on a draft UI of SOLAS Regulations III/20.8.4 and III/20.11, and of Resolution MSC:402(96), to clarify that the requirements for the maintenance, thorough examination, operational testing, overhaul and repair of rescue boats apply to all rescue boats, whether inflated or rigid.

Crowns and casings of machinery spaces of category A

SSE 10 agreed on a draft UI of SOLAS Regulation II-2/11.4.1 to clarify the term "crown".

Secondary means of venting cargo tanks of tankers

SSE 10 agreed on a draft UI of SOLAS Regulations II-2/4.5.3.2.2 and II-2/11.6.3.2 to clarify the pressure alarm settings for ships that apply pressure sensors in each tank as an alternative to having a secondary means of venting.

Arrangement of gas-freeing piping/ducts on tankers

SSE 10 agreed on a draft uniform interpretation SOLAS regulation II-2/4.5.6.1 and paragraphs 3.1.2, 3.1.4 and 3.5.3 of the IBC Code to facilitate consistent implementation of the requirements to prevent release of inflammable vapours into non-hazardous closed spaces.

Reliability of essential propulsion components

SSE 10 agreed on a draft UI of SOLAS Regulation II-1/26.2 to clarify its application to dual winding electric propulsion motors for passenger ships. The draft UI addresses the risk of a non-repairable, single failure in an electric propulsion motor.

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

SSE 10 agreed to replace the reference to SOLAS regulation II-2/9.7.5 with a reference to SOLAS regulation II-2/9.7.5.1 to clarify that the unified interpretation related to exhaust ducts from galley ranges was intended for passenger ships carrying more than 36 passengers.

New agenda items for SSE 11

SSE 11 (February 2025) will initiate consideration of the following agreed agenda items:

- Review and update of SOLAS Regulation II-2/9 on the 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 a nitrogen generator system

Any other business

Correction of references to structural fire protection tables

SSE 10 agreed to update two references in SOLAS Regulation II-2/11 to refer to the correct fire integrity tables in SOLAS Regulation II-2/9. The minor corrections will be submitted to MSC 109 (December 2024) for approval.

Average mass of a person during lifeboat testing

SSE 10 agreed on a revision of Part 1 of Resolution MSC.81(70) and MSC.1/Circ.1630/Rev.2 to reflect that the average mass of a person should be 75 kg for lifeboats intended for passenger ships and 82.5 kg for lifeboats intended for cargo ships. The minor corrections will be submitted to MSC 109 (December 2024) for approval.

Retro-reflective materials on life-saving appliances

SSE 10 agreed on draft consequential amendments to the "Revised Standardized Life-Saving Appliance and Test Report Forms" (MSC.1/Circ.1628/Rev.1) to replace the reference to Resolution A658(16) with a reference to Resolution MSC.481(102) to reflect the most recent recommendation on the use and fitting of retro-reflective materials on life-saving appliances. The draft amendments will be submitted to MSC 109 (December 2024) for approval.

Pressure-vacuum valves on cargo tanks in tankers

SSE 10 agreed to reference the 2021 edition of ISO standard 15364 in 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), introducing a maximum leakage rate from pressure-vacuum valves.

The draft MSC/Circ.677/Rev.1 will be submitted to MSC 109 (December 2024) for approval and is expected to take effect two years after approval of the revised circular.

Recommendations

As SSE is a Sub-Committee, all decisions concerning rules, regulations and dates are subject to further consideration and approval by the Maritime Safety Committee (MSC). DNV recommends that our customers monitor the outcome of MSC 109 in December 2024.

Our customers may further take note that MSC 108 in May 2024 will be the last session that adopts amendments to the 2026 update of SOLAS and related mandatory codes.

Amendments to SOLAS and related mandatory codes follows a four-year cycle of entry into force (2024, 2028, etc.), with the 2026-update being an ad-hoc mid-term amendments cycle to accommodate delays due to the COVID-19 pandemic.

Contact

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