

I. IMO Maritime Safety Committee (MSC), 111th session (MSC 111) Meeting Highlights

The Maritime Safety Committee (MSC) is one of the five important committees of the International Maritime Organization (IMO), and is primarily responsible for matters related to maritime safety and security within the IMO's remit, including passenger ships and all kinds of cargo ships. Updating the regulations, such as *the International Convention for the Safety of Life at Sea (SOLAS)* and related codes, like those covering dangerous goods, life-saving appliances, and fire safety systems. MSC is also responsible for human element issues; therefore, amendments to *the International Convention for the Safety of Life at Sea (STCW Convention)* on training and certification of seafarers.

MSC's current agenda includes a wide range of issues, including goal-based standards, autonomous vessels (MASS), piracy and armed robbery against ships, cyber-security, e-navigation, and Global Maritime Distress Safety System (GMDSS).

The 111th session of the Maritime Safety Committee (MSC 111) was held from 13th to 22nd May 2026 at the IMO Headquarters in London. The highlights of the meetings are as follows:

1. Adopted the new non-mandatory *International Code of Safety for Maritime Autonomous Surface Ships (MASS Code)*.

MSC 111 has finalized and adopted the non-mandatory International Code of Safety for Maritime Autonomous Surface Ships (MASS Code) to support the safe integration of merchant ships equipped with artificial intelligence capabilities and remote operation into the global maritime transportation system.

The MASS Code is designed to address the functional requirements necessary for Maritime Autonomous Surface Ships (MASS) to operate safely, securely, and in an environmentally sound manner. Its scope covers matters that are not adequately or comprehensively addressed by other applicable IMO instruments, while ensuring that an equivalent level of safety is maintained when remote control or autonomous operation is introduced for safety-critical functions. The MASS Code is intended to serve as a supplementary instrument to existing IMO conventions and codes, including the International Convention for the Safety of Life at Sea (SOLAS), and to provide a regulatory framework for remotely controlled and autonomous ship operations.

The draft MASS Code ([MSC 111/5/3](#)) comprises provisions covering: surveys and certification; approval procedures; risk assessment; operational scenarios; system design; software principles; safe operational management; alarm management; manning, training and watchkeeping; safety of navigation; connectivity; remote operations; structure, subdivision, stability and watertight integrity; fire protection, fire detection and fire extinction; special measures to enhance maritime security; search and rescue; cargo carriage; anchoring, towing and mooring; and machinery and electrical installations.

The Code applies to cargo ships covered by Chapter I (General Provisions) of the SOLAS Convention and is scheduled to take effect on 1 July 2026. As a non-mandatory instrument, it will enable Member States to gain practical experience in its implementation while

providing a basis for the future development of a mandatory MASS Code by incorporating it into the SOLAS Convention.

The subsequent work schedule for the MASS Code is as follows:

- (1) At MSC 112 (December 2026), a MASS Working Group will be re-established to develop a framework for the Experience-Building Phase (EBP) of the non-mandatory MASS Code.
- (2) Based on the outcomes of the non-mandatory Experience-Building Phase (EBP), together with the findings of the relevant IMO Sub-Committees, work will commence on the development of a mandatory MASS Code by 2028. At the same time, amendments to the SOLAS Convention, including the possible introduction of a new chapter, will be considered to provide the legal basis for adopting the mandatory Code.
- (3) The mandatory IMO MASS Code is expected to be adopted by 1st July 2030 and to enter into force on 1st January 2032.

2. Approved the revised Explanatory Notes on the concept of Safe Return to Port (SRtP).

The concept of Safe Return to Port (SRtP) was introduced into the SOLAS Convention in 2010 to enhance the robustness and survivability of passenger ships. In the event of flooding or fire, a ship should be capable of returning to port under its own propulsion while providing a safe area for all persons on board.

At MSC 111, the Committee approved the revised Explanatory Notes to the Assessment of the Safety of Passenger Ships after a Fire or Flooding Casualty (Including Safe Return to Port and Orderly Evacuation), which will update the existing MSC.1/Circ.1369.

The revised Explanatory Notes were finalized by the Sub-Committee on Ship Design and Construction, 12th session (SDC 12). They reflect the latest technological developments, the increasing use of alternative fuels, including gases and other low-flashpoint fuels, as well as the operational experience gained by the industry since the relevant requirements entered into force. The revisions also address and harmonize differing interpretations that have emerged during implementation.

The principal revisions and enhancements introduced by the updated Explanatory Notes are summarized as follows:

(1) Clarification of Technical System Requirements

Where lithium-ion batteries, gaseous fuels, or other low-flashpoint fuel installations are fitted on board, the systems supporting their safe operation shall be included in the SRtP assessment. For gaseous and other low-flashpoint fuels, specific provisions

have also been introduced to ensure the safety of fuel storage, supply, and distribution systems during the return voyage to port.

The revised Explanatory Notes further clarify that ballast water systems are not required to be included in the SRtP assessment unless they are necessary to support bilge pumping functions. In addition, oily water separating equipment is not required to remain operational following a casualty, as MARPOL Annex I permits direct discharge under emergency conditions.

(2) Enhanced Documentation, Verification, and Testing

The revised Explanatory Notes require a documented assessment of each SRtP and orderly evacuation system, including all supporting systems and their interdependencies. A testing strategy, including sea trials under worst-case propulsion conditions, is required to be established at an early stage of the project.

Compliance with the SRtP requirements, together with the associated documentation and procedures, will be verified during the initial International Safety Management (ISM) Code audit and the survey for the issuance of the Passenger Ship Safety Certificate (PSSC).

(3) Applicability and Entry into Effect

The SRtP requirements primarily apply to passenger ships of 120 meters or more in length, or having three or more main vertical zones.

The revised Explanatory Notes are expected to apply to passenger ships that satisfy any of the following conditions:

- ①. the building contract is placed on or after 1 January 2028; or
- ②. in the absence of a building contract, the keel is laid, or the ship is at a similar stage of construction, on or after 1 July 2028; or
- ③. the ship is delivered on or after 1 January 2032.

Although with the above entry-into-force dates standing, the IMO encourages each country's maritime authority, Recognized Organizations (ROs), shipowners, ship designers, and shipyards to apply these updated guidelines at an early stage to avoid potentially high costs associated with later design modifications and construction delays.

3. Approved the *Interim Guidelines for the Safety of Ships Using Hydrogen as Fuel* and the *Interim Guidelines for Fuel Cell Power Installations on Ships Using Hydrogen as Fuel*.

MSC 111 has approved the “*Interim Guidelines for the Safety of Ships Using Hydrogen as Fuel*” and the “*Interim Guidelines for the Safety of Ships Using Ammonia as Fuel*”. The Committee has also approved two new sets of interim guidelines on seafarer

training for ships using alternative fuels and technologies, reflecting the need to develop new competencies for crew members and to address the specific risks associated with different fuel types.

The relevant guidelines include the "*Interim guidelines on training for seafarers on ships using methyl/ethyl alcohol as fuel*" and the "*Interim guidelines on training for seafarers on ships using ammonia as fuel*".

Furthermore, the Committee clarified how the "one ship, one code" principle applies to gas carriers using alternative fuels, including whether the *International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code)* or the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)* should be applied, in order to provide consistency and clarity in the regulatory framework.

4. Approved draft amendments to the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)* to incorporate a large number of unified interpretations.

The primary objective of this revision is to formally incorporate a substantial number of Unified Interpretations (UIs) accumulated into the regulatory text, since the previous edition of the Code entered into force in 2016, thereby eliminating ambiguities in past regulatory implementation and promoting a globally consistent standard of enforcement.

The current draft amendments to the IGC Code comprehensively cover chapters 1 to 5, 8 to 13, and 15 to 19, with the key revision details outlined below:

(1) Integration of Numerous Unified Interpretations and Revocation of Obsolete Circulars

Incorporation into Regulatory Text: Multiple unified interpretations issued over the past few years have been directly incorporated into the IGC Code.

Revocation of Related Circulars: Upon the entry into force of the new amendments, several MSC circulars containing the former unified interpretations (e.g., MSC.1/Circ.1543, 1559, 1590, 1606, 1617, 1625, 1651, 1669, and 1679) will be concurrently suspended or revoked.

Secondary Barrier Testing: The unified interpretations regarding secondary barrier testing and effectiveness assessments (including how to evaluate inspection and test results) under Chapter 4 of the IGC Code have also been revised and confirmed.

(2) Clarification of Safety Standards for Alternative Fuels and Specific Cargoes

- **LPG and Ethane as Fuel:**

Safety design and equipment standards for the use of cargoes such as Liquefied Petroleum Gas (LPG) and ethane as shipboard fuel have been formally incorporated into the Code. This aligns with the new requirements for dedicated fields in the Certificate of Fitness, which will explicitly state suitability for carriage and use as fuel.

- **Updated Regulations for CO₂ Carriage:**

- ①. **Personal Protective Equipment (PPE):** Considering that CO₂ is recognized as a cargo with toxicity risks, the new regulations mandate that appropriate PPE must be readily available onboard.
- ②. **Triple Point ([Note 1](#)) Physics Controls:** Addressing the physical characteristics of CO₂, including its susceptibility to solidification at the "triple point," specific standards govern the settings of low-pressure alarms and automatic shut-off systems.

(3) Upgraded Requirements for general service in multiple compartments

The new amendments concerning multiple compartments introduce updated specifications for various ship hardware and piping designs, including:

- Structural calculations for cargo holds and high-pressure piping ruptures.
- Pressure Relief Valves (PRVs) and alarm systems.
- Corrosion prevention and thermal insulation protection for piping.
- Capacity and location of emergency fire pumps and locations of water-spraying isolation valves.
- Gas-tight ventilation dampers and size limitations for manhole openings.
- Engine overpressure explosion protection and related design standards.

The aforementioned requirements apply only to ships constructed "on or after the effective date of the amendments" ([Note 2](#)).

5. Clarified the approach for applying the alternative fuel provisions of the IGC Code to ships subject to the IGC Code, and confirmed the circumstances under which the *International Code of Safety for Ships Using Gases or Other Low-flashpoint Fuels (IGF Code)* does not apply to gas carriers.

Regarding the safety regulations for gas carriers utilizing alternative fuels, the IMO

established the "One ship, one code" principle during the MSC 111 session. This principle aims to apply a single, consistent safety philosophy, thereby avoiding regulatory duplication and unintended consequences that can arise from the simultaneous application of different codes.

The specific application methods and exclusions are outlined below:

(1) Circumstances where the IGF Code Does Not Apply to Gas Carriers

- **Explicit Exclusion:** MSC 111 approved draft amendments to Regulation II-1/56 of the International Convention for the Safety of Life at Sea (SOLAS) and the IGF Code, explicitly clarifying and stipulating that the IGF Code does not apply to gas carriers.
- **Regulatory Framework:** This means that whether gas carriers utilize gas fuels or other low-flashpoint fuels in the future, they are completely excluded from the application of the IGF Code and will fully revert to the regulatory framework of the IGC Code.

(2) Methods of Applying Alternative Fuel Regulations to Ships under the IGC Code

- **Using Cargoes Listed in Chapter 19 of the IGC Code as Fuel:** Gas carriers may directly use the cargoes they transport that are listed in Chapter 19 of the IGC Code (e.g., LPG, ethane) as alternative fuels for ship propulsion, and this scenario will continue to be governed by the IGC Code. To complement this provision, a dedicated field will be added to the ship's Certificate of Fitness, explicitly stating the names and relevant conditions of the cargoes "suitable for carriage and use as fuel."
- **Using Gases or Low-Flashpoint Fuels Not Listed in Chapter 19 of the IGC Code (e.g., Methanol):** If a gas carrier uses an alternative fuel not listed in Chapter 19, the vessel only needs to comply with the future revised IGC Code and the relevant guidelines subsequently developed by the IMO for such cases, without the need for redundant compliance with the IGF Code.

The comprehensive draft amendments to SOLAS, the IGF Code, and the IGC Code regarding the subsequent implementation timeline are expected to be formally adopted at the MSC 112 session in December 2026, with a unified tentative effective date of July 1st, 2028.

Note 1: The "triple point" refers to the specific temperature and pressure at which three phases (gas, liquid, and solid) of a substance can coexist. However, the mere coexistence of three phases does not necessarily define a triple point. More strictly defined, it is the unique temperature and pressure within a closed system where the three phases of a substance can achieve mutual thermodynamic equilibrium.

Note 2: To supplement the definition of "on or after the effective date of the amendments": in order to address past issues where relying solely on the "keel laid" date resulted in sister ships within the same series being subject to different standards, or shipyards laying keels prematurely to evade new regulations, these amendments introduce a

strict "three-date application provision." This mechanism determines the applicable standards based on three key milestones—the building contract date, the keel laying date, and the delivery date—thereby ensuring fairness and consistency in regulatory implementation.

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