



**The 9<sup>th</sup> session of Sub-Committee on Carriage of Cargoes and Containers (hereinafter referred to as “CCC”) took place in a hybrid meeting from 20 to 29 September 2023. The primary focus of the meeting was to address items related to the safety of cargo and containers, the development of provisions for alternative fuels and other relevant issues falling within the purview of the Sub-Committee. This news flash brief provides an overview of the key outcomes of CCC 9 regarding major technical issues. Readers need to note that the information presented here only carries legal significance once officially adopted as mandatory instruments by MSC.**

## 1. Development of Guidelines for Alternative Fuels (Agenda 3)

Developing safety guidelines for alternative fuels such as hydrogen and ammonia, crucial components in ongoing decarbonization efforts, has not yet to reach a technical consensus. Consequently, professionals and stakeholders have agreed to proceed with a further discussion on the matter at CCC 10.

### 1.1 Development of Guidelines for the Safety of Ships Using Hydrogen as Fuel

**1.1.1 Key Contents** : The agreement includes discussions and the further development of safety guidelines for ships using hydrogen as fuel during sessions in the Correspondence Group (hereinafter “CG”) and the Intersessional Working Group on Development of Technical Provisions for Safety of Ships Using Alternative Fuels (ISWG-AF), with a specific focus on hydrogen fuel and associated technical issues. The session has reached the following agreements:

- .1 To formulate provisions considering the characteristics of liquefied hydrogen and compressed hydrogen based on the existing IGF code, the main discussion items such as 'ship design and arrangement', 'fuel containment system' and 'material and general piping design for hydrogen' are under discussion.
- .2 To consider additional risk assessment items, weighing the hydrogen leakage, fire, and explosion.
- .3 To emphasize the suitability of metallic materials for hydrogen systems, regarding relevant standards such as NASA DB based on the characteristics of hydrogen.

**1.1.2 Next Steps** : Scheduled to be finalized at the CCC 10 (Sep. 2024)

### 1.2 Development of Guidelines for the Safety of Ships Using Ammonia as Fuel

**1.2.1 Key Contents** : The guidelines apply to ships obligated to comply with SOLAS Chapter II-1 Part G and do not apply to gas carriers. To expedite the finalization of safety guidelines, the Working Group had agreed to prioritize discussions on toxicity. Additionally, in the CG, the topics ready to be addressed are the following items:

- .1 Consideration of two storage options for ammonia, i.e. refrigerated ammonia and semi-refrigerated ammonia for the interim guidelines as a first stage. Pressurized ammonia storage systems will be possible through the alternative design process.

- .2 Exclusion of the ESD machinery space concept from the Guidelines; Administrations seeking ESD approval for ammonia need to go through the alternative design process.
- .3 Provision of a haven/refuge on board ships and guidelines on PPE for personnel safety
- .4 Inclusion of release mitigating measures in guidelines, potentially involving ammonia scrubbers

1.1.2 Next Steps: Scheduled to be finalized at the CCC 11 (Sep. 2025)

## 2. Amendment to IGF Code, Review of IGC Code (Agenda 3, 4)

### 2.1 Amendment to IGF Code

The amendments outlined below have been crafted and will be submitted for approval at the 108th MSC ('24.5)

**2.1.1 (Part A-1 5.3.3.5.1)** For ships with suction wells installed in fuel tanks, the bottom of the suction well may protrude into the vertical extent of the minimum distance specified in 5.3.3.5. This is provided that such wells are as small as practicable and the protrusion below the inner bottom plating at most 25% of the depth of the double bottom or 350 mm, whichever is less.

#### 2.1.2 (Part A-1 7.3.1.3bis and 9.4.1)

New) For ships constructed on or after 1 January 2028, pressure relief valves discharging liquid or gas from the piping system shall discharge into the fuel tanks whenever the tank MARVS pressure is lower than the setting of the pressure relief valves in accordance with the arrangements in 9.4.2. and shall be designed to ensure that the required discharge capacity is met. Alternatively, they may discharge to the vent mast, if means are provided to detect and dispose of any liquid that may flow into the vent system.

### 2.2 Finalizing Safety Provisions for the Safe Use of LPG Cargo as Fuel

These amendments outlined below have been crafted and will be submitted for approval at the 108th MSC ('24.5)

**Key Contents :** Currently, numerous LPG carriers are under construction and operated to use LPG cargo as fuel. However, unified requirements still need to be improved. Consequently, the professionals issue interim guidelines to offer specific and unified guidance for ships using liquefied petroleum gas (LPG) cargo as fuel at the earliest opportunity. It is expected that these guidelines will become incorporated into the IGC Code.

### 2.3 Ammonia service suitability for high manganese austenite steel

These amendments outlined below have been crafted and will be submitted for approval to the 108th MSC ('24.5)

**Key Contents :** The document containing test Results indicates that high manganese austenitic steel is suitable

for ammonia service. As a result, the following circulars will be amended:

- MSC.1/Circ.1599/Rev.2 (Revised guidelines on the application of high manganese austenitic steel for cryogenic service)
- MSC.1/Circ.1622 (Guidelines for the acceptance of alternative metallic materials for cryogenic service in ships carrying liquefied gases in bulk and ships using gases or other low-flashpoint fuels)

## 2.4 Review of the IGC Code

These amendments outlined below have been crafted and will be submitted for approval to the 109th MSC ('24.12)

### 2.4.1 (9.4.2)

New) For ships constructed on or after 1 January 2028, fuel tank inlets from safety relief valve discharge lines, protecting the piping system according to 7.3.1.4, shall be provided with non-return valves in lieu of valves that are automatically operated when the safety system required in 15.2.2 is activated. Safe means for tank isolation during maintenance shall be available according to 18.3 without affecting proper operation of safety relief valves.

### 2.4.2 (12.2.2)

Replaced) For permanent installations, the capacity of 8 air changes per hour shall be provided and for portable systems, the capacity of 16 air changes per hour shall be provided.  
Notwithstanding that, hold spaces and cofferdams accessed shall be provided with ventilation not less than the capacity of 2 air changes per hour, subject to meeting the requirements of 18.8.

2.4.3 (16.9.2) If acceptable to the Administration, the use of cargoes identified as toxic products in column "f" which are required to be carried in type 2G/2PG ships in column "c" in the table of chapter 19, may be used as fuel, providing that the same level of safety as natural gas (methane) is ensured in accordance with the relevant provisions of the Code.

## 3. Amendments to the IMSBC Code and Supplements (Agenda 5)

This session deliberated on new requirements for existing or new materials, leading to the preparation of the 08-25 Amendment. Comprehensive discussions are scheduled to occur during the 40th E&T (Amendment 07-23 (MSC.539 (107) is enforced from 1 January 2025)

3.1 CCC 9 has concurred to elaborate discussions into amending various individual schedules, special provisions, and loading conditions proposed for bulk cargo's primary export and import at the 40th E&T.

## 4. Amendments to the IMDG Code and Supplements (Agenda 6)

Regularly reviewing the IMDG Code involves considering new requirements for existing substances or incorporating additions for new substances. The meeting has delegated technical matters to the 39th E&T ('23.10) after the CCC 9 approval to craft the final 42-24 amendment. Upon approval by the 108th MSC

('24.4), the 42-24 amendment will come into effect '26.1.

4.1 The meeting conducted the discussions over the review of transport provisions for vehicles and requirements for charcoal transportation. Member States agreed to delegate technical issues to the E&T 39th ('23.10) or the UN TDG (Dangerous Goods Transportation Expert Subcommittee) in this session.

## 5. Any Other Issues (Agenda 13)

### 5.1 REVISION OF RESOLUTION A.1050(27) TO ENSURE THE SAFETY OF PERSONNEL ENTERING ENCLOSED SPACES ON BOARD SHIPS

A correspondence group will be established to further develop the Revision of Resolution A.1050(27), with a primary focus on the following.

- .1 To provide a suggestion for a register of enclosed spaces.
- .2 To highlight the need and availability of gas measuring instruments suitable for the marine environment to measure carbon dioxide.
- .3 To compile a list of oxygen-depleting solid bulk cargoes.
- .4 To ensure the implementation of the ISM Code.

### 5.2 REVISION OF THE INTERIM RECOMMENDATIONS FOR CARRIAGE OF LIQUEFIED HYDROGEN IN BULK (Resolution MSC.420(97))

Considering a novel design concept for the liquefied hydrogen cargo containment system proposed by Japan, the meeting has amended the following requirements. These amendments will be submitted to the 108th MSC ('24.5).

- .1 Using materials to prevent structural deterioration due to weakening structural strength and fatigue characteristics from contact with hydrogen.
- .2 Strengthen alert requirements in abandoned areas.
- .3 Introducing pressure monitoring regulations for inner insulation space.

If you have inquiries, please contact P.I.C. Thank you.

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