NEWS BRIEF

CCC 8

ABS

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The IMO Sub-Committee on Carriage of Cargo and Containers (CCC) held its 8th session from September 14 to 23, 2022. This Brief provides an overview of the more significant issues progressed at this session.

KEY DEVELOPMENTS

- Interim Guidelines for Ships Using LPG as Fuel
- Work Plan for Development of Safety Provisions for Alternative Fuels
- Mandatory Reporting of Containers Lost at Sea
- Grain Code – New Class of Loading Conditions
- Lashing Software as Part of the Container Stowage and Securing Plan

ABS RESOURCES

- ABS Regulatory News (link)
- ABS Sustainability Whitepaper: Hydrogen as Marine Fuel (link)
- ABS Container Certification Services (link)
- ABS C-LASH® Software for Non-Linear Analysis of Container Securing (link)
- ABS Rules and Guides (link)

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SAFETY OF SHIPS USING ALTERNATIVE FUELS

Interim Guidelines for Ships Using LPG as Fuel

The Sub-Committee finalized development of the *Interim Guidelines for the Safety of Ships Using LPG Fuels*, to be released as an MSC circular. These Interim Guidelines will provide an international standard similar to the IGF Code, with each section of these guidelines utilizing a similar organization of specifying goals and functional requirements which form the basis for the design, construction and operation of ships using LPG as fuel. The Interim Guidelines often cross-references the IGF Code, including that the IGF Code parts B-1 (Manufacture, Workmanship and Testing), C-1 (Drills and Emergency Exercises) and D (Training) will apply to ships using LPG as fuel unless expressly stated otherwise.

As with the IGF Code, risk assessments will be the basis for designing ships using LPG as fuel safely. The Interim Guidelines contain requirements for several risk assessments beyond those required by the IGF Code. Ventilation safety requirements unique to LPG fuel were introduced in recognition that LPG gas may accumulate at the bottom of rooms or even open deck due to its density. These Interim Guidelines will apply to ships using LPG as fuel to which Part G (Ships using low-flashpoint fuels) of SOLAS Chapter II-1 is applicable and requires compliance with the IGF Code.

The Sub-Committee also considered a proposal for safety requirements for the use of LPG cargo as fuel. While it was recognized that there is an increasing demand for the use of LPG cargo as fuel in LPG carriers, the Interim Guidelines discussed above have yet to be approved by the MSC, and the development of safety requirements for using LPG cargo as fuel may be more appropriately developed under the IGC Code rather than the IGF Code. For these reasons, this proposal will be addressed by a future session through the IGC Code.

> **Next Steps:** The above noted draft MSC circular will be presented to MSC 107 (June 2023) for further consideration and approval.

Use of Hydrogen as Fuel and Carriage of Liquefied Hydrogen in Bulk

The Sub-Committee continued discussions on development of draft Interim Guidelines for the Safety of Ships Using Hydrogen Fuels. It was agreed to use the existing structure and provisions of the IGF Code for drafting hydrogen-specific recommendations.

Discussions focused on the main concepts and principles of using hydrogen as fuel. The main concepts under consideration included:

1) Preliminary discussion on distinguishing fuel cell space vs. fuel cell compartment.
2) Identified the need to distinguish between systems in which hydrogen cylinders are exchanged vs. systems employing hydrogen bunkering.
3) Identified the need to distinguish requirements for bunkering of liquefied vs. compressed hydrogen.
4) Consideration of “acoustic detection” as a viable means of detecting hydrogen gas leaks (high pressure leaks typically emit an ultrasonic noise whose frequency can be distinguished from other lower frequency sounds)

A Correspondence Group has been established and will develop specific provisions covering these concepts, for submission to CCC 9 (Sept. 2023).

The Sub-Committee also considered proposals to revise the *Interim Recommendations for Carriage of Liquefied Hydrogen in Bulk* (resolution MSC.420(97)). However, due to time constraints and the current workload, it was

agreed that interested Member States could work informally on a submission to CCC 9 (Sept. 2023) containing a draft revised version of resolution MSC.420(97).

Next Steps: Work on the draft interim guidelines for ships using hydrogen as fuel will continue intersessionally, with the intention to finalize the interim guidelines at CCC 9 (Sept. 2023).

Use of Oil Fuels with Flashpoint Between 52°C and 60°C

The Sub-Committee briefly discussed the ongoing development of interim guidelines detailing the use of oil fuels with a flashpoint between 52°C and 60°C, covering oil-based fossil fuels, synthetic fuels, biofuels and any mixture thereof. It was noted that this work item was initiated at a time when concerns existed that the global supply of low-sulphur fuels would be insufficient to meet demand in the 2020 transition to 0.50% sulphur fuels, and so ships would need to look toward fuels with flashpoints lower than 60°C. While this concern has not materialized, it was agreed that this work should continue in order to provide a path forward for new alternative fuels which may fall below 60°C flashpoint.

Next Steps: Work on this subject will continue intersessionally and be discussed further at CCC 9 (Sept. 2023).

Use of Ammonia as Fuel

The Sub-Committee considered proposals on the development of guidelines for ships using ammonia as fuel., It was agreed that the development of such guidelines should follow the structure of the IGF Code. Recognizing the unique risk profile of ammonia (vapor or liquid), toxicity and corrosivity were identified as important issues which are not addressed by the IGF Code. Environmental effects of ammonia are also concerns which will be addressed in these guidelines.

The Sub-Committee also noted the view that the use of ammonia as fuel conflicts with existing mandatory instruments. MARPOL Annex VI/Regulation 18 and IGC Code Chapter 16 both prohibit the use of toxic or harmful fuels. Despite this, the Sub-Committee determined that this work should be initiated as agreed by MSC. Once these guidelines are finalized, MSC can consider the legal implications of this fuel type.

Next Steps: Work on this subject will continue intersessionally with further discussion during CCC 9 (Sept. 2023).

Work Plan for the Development of Safety Provisions for Alternative Fuels

The Sub-Committee agreed to the following timeline for the development of several standards for alternative fuels through the IGF Code. The scope of remaining work extends to 2025, and includes development of standards for LPG, Low-Flashpoint Oil Fuel, Hydrogen, Ammonia and Methyl/Ethyl Alcohol fuel standards, and may extend to development of a mandatory instrument for use of fuel cells.

Meeting	Objectives	Year
MSC 107	- Approve Guidelines → LPG - Approve / adopt IGF Code amendments → LNG as available	2023
CCC 9	- Prepare amendments to the IGF Code → Natural Gas - further develop safety provisions / guidelines → low flashpoint oil fuels - further develop / finalize guidelines for ships using hydrogen as fuel - further develop / finalize guidelines for ships using ammonia as fuel	2023

	- If time permits, start development of mandatory instruments regarding methyl/ethyl alcohols	
CCC 10	- finalize guidelines for ships using ammonia as fuel - further develop / finalize [safety provisions / guidelines] for low flashpoint oil fuels - Further develop of mandatory instruments regarding methyl/ethyl alcohols - If time permits, start development of mandatory instruments regarding fuel cells	2024
CCC 11	- Finalize mandatory instruments regarding methyl/ethyl alcohols - Further consider the development of mandatory instruments regarding fuel cells	2025

Next Steps: Developments under this Work Plan will continue through at least the next three sessions of the Sub-Committee.

AMENDMENTS TO THE IGF CODE AND IGC CODE

Amendments to the IGF Code

The Sub-Committee finalized development of numerous proposed amendments to the IGF Code .

- Draft amendments to paragraphs 9.6, 9.6.1, 11.6.2, 9.4.7 and 12.5, 13.3 and 6.7.3.1.1 of the IGF Code address venting, pressure relief and ventilation requirements.
- Draft amendments to paragraph 9.3.1 of the IGF Code focus on failure of the fuel supply essential auxiliaries and accepting a partial reduction in propulsion capability.
- Draft amendments to paragraphs 4.2.2 and 8.4.1 to 8.4.3 of the IGF Code focus on the bunkering manifold and use of a dry-disconnect / connect coupling at the bunkering station as well as an Emergency Release Coupler.
- Draft amendments to part A-1, paragraphs 5.12.1, 6.9.1.1, 9.8.1, 9.8.2, 9.8.4 and to part C-1, paragraph 18.4.1.1.1, of the IGF Code address delivery pressure and a vessel's bunkering line design pressure.

Next Steps: These draft amendments will be presented to MSC 107 (June 2023) for consideration and approval. Approved amendments will be presented for adoption at MSC 108 (Spring 2024).

Amendments to the IGC Code

Due to the large number of existing and proposed amendments to the current edition of the IGC Code, the Sub-Committee decided that a new consolidated edition of the IGC Code would be prepared for consideration at CCC 9 with a view to adoption at MSC 109 and entry into force July 1, 2028. Consequently, draft amendments proposed in this session, unless urgent, would not be finalized at CCC 8 but held in abeyance pending the preparation of the new consolidated text. Draft amendments tentatively agreed include:

- Closing devices for air intakes to engine-room casings, cargo machinery spaces, electric motor rooms and steering gear compartments
- Minimum clear opening for inspection of hold and void spaces, cargo tanks and spaces classified as hazardous areas
- Pump vents leading to machinery spaces
- Heating systems used to ensure the minimum allowable temperature of structural material grades
- Welding details of the shells of type A, B and C independent tanks
- Connections for taking cargo liquid samples
- Means to indicate filter blockage
- Thermal insulation arrangements for surfaces of cargo piping systems
- Flow and capacity certified ratings of PRVs

- Design details of pressure relief system serving interbarrier spaces
- Water-spray systems above FO tanks
- Maximum capacity of emergency fire pumps
- Water-spray protection of remote survival crafts facing cargo area
- Capacity of water-spray pumps and emergency fire pumps
- Testing arrangements of fire-extinguishing systems using dry chemical powder
- Pressure relief systems for air inlet manifolds, scavenge spaces and exhaust system

Next Steps: The Sub-Committee agreed to hold proposed amendments to the IGC Code in abeyance until CCC 9 (Sept. 2023) for incorporation into a new consolidated edition of the IGC Code.

Suitability of High Manganese Austenitic Steel for Cryogenic Service

The Sub-Committee considered the report of a Correspondence Group (CG) on Suitability of High Manganese Austenitic Steel for Cryogenic Service. This CG had been assigned to develop testing requirements to qualify high manganese austenitic steel for ammonia service. Although there were reported difficulties in conducting the agreed test procedure, the Sub-Committee determined the proposed testing procedure to be suitable for the qualification of ammonia service, and the results of a completed test would be reviewed at a future session.

Next Steps: Results of a completed test of high manganese austenitic steel for ammonia service are expected to be submitted to CCC 9 (Sept. 2023), for further discussion and assessment.

Unified Interpretations in Relation to the IGF Code and IGC Code

The Sub-Committee supported four new Unified Interpretations (UI) related to the IGF Code and IGC Code:

1) *IGF Code, Paragraph 9.2.2 – Specific Requirements for Ships Using Natural Gas as Fuel / Fuel Supply to Consumers*
   This UI clarifies fuel transfer system piping requirements, specifying that use of flange connections should be kept to a minimum. This interpretation was agreed, and will be presented for approval by MSC 107 (June 2023) and subsequent publication as an MSC circular.

2) *IGF Code, Section 5.8 – Design of Fuel Preparation Rooms Not Located on Open Deck*
   a) IGF Code, Paragraph 5.11.3 and 12.5.3.2 – Access Arrangements and Associated Hazardous Areas
   This UI proposes clarifications to certain tank connection space requirements for the design of fuel preparation rooms not located on the open deck. This interpretation was agreed, and will be presented for approval by MSC 107 (June 2023) and subsequent publication as an MSC circular.

   b) IGF Code, Paragraph 15.3.2 – Bilge Well Requirements
   This UI clarifies that the bilge well requirements of this section only apply to a fuel preparation room located below deck if that fuel preparation room handles fuel in its liquid phase. This interpretation was agreed, and will be presented for approval by MSC 107 (June 2023) and subsequent publication as an MSC circular.

3) *IGC Code,– Cargo Containment / Verification Process*
   This UI addresses the verifications and examinations required by the IGC Code during new building gas trials and first full loading and unloading of the cargo. It proposes which items may be completed during the new building gas trials and which items are only feasible during the first full cargo loading/unloading operations. This interpretation was agreed and will be presented for approval by MSC 107 (June 2023) and subsequent publication as an MSC circular.

4) *IGC Code, Paragraph 11.3.1, 11.4.1, 11.4.3 and 18.10.3.2 – Bunkering Manifold Arrangements Fitted on LNG Bunkering Ships*
This UI addresses the requirements of the IGC Code that detail the fire safety equipment required for cargo manifolds. The interpretation proposes that any additional cargo transfer equipment connected to the traditional cargo manifold extensions such as transfer loading arms, bunkering booms, transfer hoses, reducers, spool pieces and transfer hose reels should be considered part of the cargo manifold. As such, they should comply with the requirements of paragraphs 11.3.1.4, 11.3.1.5, 11.4.1, 11.4.3 and 18.10.3.2 of the IGC Code for fire detection and fire protection of the cargo area, including hull protection from low temperatures. This interpretation was agreed and will be presented for approval by MSC 107 (June 2023) and subsequent publication as an MSC circular.

Next Steps: The above noted Unified Interpretations will be progressed as detailed above.

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AMENDMENTS TO THE IMDG CODE AND IMSBC CODE

Amendments to the IMDG Code

The Sub-Committee continued the work of maintaining the Code by receiving submittals for the 42-24 Amendments to the IMDG Code. The 38th meeting of its Editorial and Technical Group (E&T 38) will take place in the spring of 2023, and this group will consider many of the documents submitted to CCC 8.

Some revisions expected for the 42-24 Amendments are:

1) Updates to several cargo special provisions
2) Clarification of the application of paragraph 2.10.2.7 limiting the exemption from the Code's marking and labeling provisions.
3) Clarification of paragraph 7.3.3.14 to note that the CTU Code is only a recommended instrument.

Next Steps: E&T 38 has been tasked by the Sub-Committee to develop the 42-24 Amendments to the IMDG Code, and will submit a report on this to CCC 9 (Sept. 2023).

Amendments to the IMSBC Code

The Sub-Committee received the report of the 36th meeting of its Editorial and Technical Group (E&T 36) which met in March 2022. This report provided draft Amendment 07-23 of the IMSBC Code which includes amendments for new or revised schedules for 11 cargoes, as well as amendments to the Code on subjects such as:

1) Inclusion of definitions for "dynamic separation" and "Cargoes which may undergo dynamic separation" (the formation of a liquid slurry (water and fine solids) above the solid material, resulting in a free surface effect which may significantly affect the ship's stability) into the forms specifying the characteristics of the cargo and the required conditions for carriage and handling of that cargo
2) Clarifying in the Code the shippers' obligation to declare technical aspects of cargoes
3) Clarifying carriage requirements of spare charges for SCBAs

Implementation of a new Substance Identification Number (SIDN) for solid bulk cargoes was proposed. This SIDN would supplement the current system of identifying cargoes under the IMSBC Code by Bulk Cargo Shipping Name (BCSN). However, concerns were raised regarding the logistics of implementing a new system of identifying and documenting bulk cargoes, such as the updating of shipping databases worldwide to consistently identify such cargoes. There were no objections to the utility of such an identification system, and it was agreed that the rules of the numbering system and the timeline for a global transition to its use would need to be developed.

Next Steps: The meeting of E&T 37 will take place in late September 2022 and is expected to finalize draft Amendment 07-23 to the IMSBC Code. It is to be presented MSC 107 (June 2023) for subsequent adoption as a new consolidated text of the IMSBC Code.

Discussions regarding the implementation of a SIDN system for solid bulk cargoes will continue at E&T 38 and a report made to CCC 9 (Sept. 2023), and the proposal will not be introduced into Amendment 07-23 of the Code.

DETECTION AND REPORTING OF CONTAINERS LOST AT SEA

Amendments to SOLAS and MARPOL on Mandatory Reporting of Lost or Observed Freight Containers

The Sub-Committee finalized development of draft amendments to SOLAS Chapter V which will require the reporting of freight containers lost at sea or observed adrift at sea. These amendments have been developed to address the navigation hazard represented by freight containers lost at sea, and to enhance the position tracking and recovery of such containers.

Revisions to Regulation 31 of this chapter require the master of every ship involved in the loss of freight containers to communicate details of the incident to other ships in the vicinity, to the nearest coastal State and also to the flag State. In the event that the ship is abandoned or otherwise unable to complete this reporting, the ISM management company of the vessel must assume responsibility for this reporting to the fullest extent possible. For vessels not involved in a loss incident but observing a freight container drifting at sea, the master of the ship is obligated to report such observations to other ships in the vicinity and to the nearest coastal State. Associated revisions to Regulation 32 of the same chapter provide a list of information to be collected when reporting the loss of freight containers from a ship or the observation of freight containers drifting at sea.

In conjunction with these SOLAS amendments, the Sub-Committee also finalized development of a draft amendment to Article V (Reporting Procedures) of Protocol I (Reports on Incidents Involving Harmful Substances) of the MARPOL Convention. This amendment inserts a cross-reference to the revised Regulations 31 and 32 of SOLAS Chapter V and establishes the reporting of lost freight containers as an obligation under the MARPOL Convention as well.

Next Steps: The above noted draft amendments to SOLAS Chapter V will be presented to MSC 107 (June 2023) for further consideration and approval, and subsequent adoption at MSC 108 (Spring 2024). The currently anticipated date of entry into force for these amendments is 1 January 2026.

The above noted draft amendment to MARPOL will be forwarded to the MEPC for adoption at a future session, pending concurrent adoption of the SOLAS Chapter V amendments by the MSC.

Development of New GISIS Module for Reporting Containers Lost or Observed Adrift at Sea

To better facilitate the reporting and assessment of freight container losses, the IMO Secretariat has been asked to develop a new module in the IMO GISIS platform which will provide an online portal for reporting these incidents. Reporting in this new GISIS module will allow reports to be updated, as it has been recognized that some container loss incidents require time for investigation, and further details may be established before a final report is made.

Next Steps: The IMO Secretariat will prepare to develop the new GISIS module for reporting of freight containers lost at sea. This is subject to the adoption of the above-mentioned SOLAS and MARPOL amendments by the MSC and MEPC, respectively.

Measures for Detection of Lost Freight Containers

The Sub-Committee noted several ongoing studies reported by Member States outlining the technical possibilities for the detection of the loss of containers at sea. It was noted that the technology for freight container trackers had been developing rapidly while costs were reducing, and several major shipping companies had already taken steps to implement such tracking systems. It was also noted that other practical measures, such as limiting the stack height, could mitigate the loss of containers and provide an alternative to the implementation of container tracking systems, but that further assessment and cost/benefit analysis would need to be developed.

Next Steps: The Sub-Committee acknowledged that the expected outcomes of ongoing research would give a clearer basis for identification of root causes for container losses and provide more effective recommendations to increase container safety. Relevant information on this is expected to be received by MSC 106 (Nov. 2022), and further steps determined afterward.

OTHER DEVELOPMENTS

Special Provisions for the Transport of Vehicles

The Sub-Committee received a proposal to replace special provisions (SP) 961 and 962 of the IMDG Code with a new special provision 9XX in response to recent fire incidents occurring on vehicle carriers. SP961 provides exceptions from dangerous goods regulations for vehicles when certain conditions are met. SP962 outlines the requirements for vehicles not meeting the conditions of SP961 and emphasizes that the marking, labelling, placarding and marine pollutant provisions of the Code are not applicable to vehicles transported under SP962. Recent fire incidents on board roll-on/roll-off vessels raised concerns over the wide applicability of the SPs to all vehicles and to the exceptions provided in the special provisions.

The proposed new SP9XX would apply to vehicles powered by fuels classified as dangerous goods via internal combustion systems, batteries or fuel cells. Among the conditions of this proposed new special provision are:

1) Required inspection of vehicles before being loaded on a ship, to check for signs of leakage from the battery, engine, fuel cell, compressed gas cylinder or accumulator, or fuel tank where applicable, and to ensure there are no identifiable faults in the electrical system that could result in short circuit or other unintended electrical source of ignition. A vehicle showing any signs of leakage or electrical fault shall not be transported.
2) Limitations on the quantity of fuel permitted in the vehicles' tanks.
3) Conditions for the lithium batteries in transport of vehicles powered solely by lithium batteries and hybrid vehicles, including limits on the state of charge in the batteries.
4) Restrictions on the transport of damaged vehicles.

Discussion during this session of the Sub-Committee was limited. An intersessional Correspondence Group was established to continue developing these new transport provisions.

Next Steps: Work on this subject will be progressed intersessionally and discussed further at CCC 9 (Sept. 2023).

Amendments to the International Grain Code

The Sub-Committee finalized development of draft amendments to the International Code for the Safe Carriage of Grain in Bulk (Grain Code) which introduce a new class of loading conditions for special compartments which are defined as "specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed".

This definition refers to a compartment which is not filled to the maximum extent possible in way of the hatch opening but is filled to a level equal with or above the bottom edge of the hatch end beams and has not been trimmed outside the periphery of the hatch opening by the provisions of regulation A /10.4 of the Grain Code. In such compartments, the bulk grain shall be filled to a level equal with or above the bottom edge of the hatch end beams but may be at its natural angle of repose outside the periphery of the hatch opening. After loading, only the free grain surface in way of the hatch opening shall be level. A compartment may qualify for this classification if it is "specially suitable" as defined in regulation A/2.7 of the Grain Code, in which case dispensation may be granted from trimming the ends of that compartment.

Additional amendments in Part B of the Grain Code addressing calculation assumptions have also been made to provide guidance on the assumed slope of the cargo when partly filled in way of the hatch opening with ends untrimmed, for the purpose of determining the assumed volumetric heeling moment.

> **Next Steps:** The above noted draft amendments will be presented to MSC 107 (June 2023) for further consideration and approval, and subsequent adoption at MSC 108 (April 2024). The currently anticipated date of entry into force for these amendments is 1 January 2026. The amendments will be applicable to new and existing ships, and the stability booklet should include relevant information before the first time a ship is loaded in accordance with the newly specified loading conditions on or after the date of entry into force.

Recommendations for Entering Enclosed Spaces Aboard Ships

After postponement from the previous session, the Sub-Committee considered several submissions related to revision of the *Revised Recommendations for Entering Enclosed Spaces Aboard Ships* (resolution A.1050(27)). Initial discussion on this subject focused on a proposal to delete the term “cargo compressor room” from the list of examples of enclosed spaces, noting that risks associated with the cargo compressor room are well understood and mitigated through application of the IGC Code. After much discussion, there was insufficient support to remove “cargo compressor room” from definition of “enclosed spaces” at this stage. However, noting that a proposal was being made to MSC 106 for a full review of A.1050(27), it was agreed to hold this proposal until the results from MSC 106 are known. CCC 8 will report to MSC 107.

> **Next Steps:** The Sub-Committee will await the outcome of MSC 106 (Nov. 2022) to see if the MSC approves a new output for a more comprehensive revision of resolution A.1050(27), and may consider this discussion on “enclosed spaces” at a future session.

Lashing Software as a Supplement to Container Stowage and Securing Plan

The Sub-Committee considered a proposed Unified Interpretation intended to clarify that under SOLAS Chapter VI, lashing software may be used by the crew as a supplement to the stowage and securing plans included in the approved Cargo Securing Manual, in order to evaluate actual loading conditions.

It was recognized that lashing software is widely used, and Member States supported the proposed use of lashing software as a supplement to the Container Stowage and Securing Plan. However, it was agreed that this proposal exceeded the scope of a UI. Further proposals are needed to harmonize the use of the method, including

agreement on approval standards for lashing software. Member States also recognized the need for harmonized performance standards of lashing software.

Next Steps: Sub-Committee did not support this proposed Unified Interpretation, but invited interested parties to submit proposals for new output to address approval and recognition of lashing software as part of the Container Stowage and Securing Plan.

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