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CARRIAGE OF CARGOES AND CONTAINERS

Comments on the draft amendments to the IGC Code

Submitted by IACS

SUMMARY

Executive summary:	This document provides comments on the draft amendments to the IGC Code contained in document CCC 10/WP.7 for approval by MSC 109 and subsequent adoption by MSC 110.
Strategic direction, if applicable:	1
Output:	1.17
Action to be taken:	Paragraph 19
Related document:	CCC 10/WP.7

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5) and provides comments on the draft amendments to the IGC Code contained in annex 1 of document CCC 10/WP.7.

Discussion

2 The CCC Sub-Committee, under the output on "Review of the IGC Code", holistically reviewed the IGC Code (resolution MSC.370(93)), as amended, to incorporate existing unified interpretations and to address new technologies and other issues. CCC 10 finalized the draft amendments to the IGC Code as contained in annex 1 of document CCC 10/WP.7 and submitted them to MSC 109 for approval, with a view to adoption at MSC 110.

3 After CCC 10 (16 to 20 September 2024), IACS identified a few issues relating to the draft amendments of the IGC Code, as elaborated in the ensuing paragraphs.

Draft paragraphs 1.1.1.1 and 2.1.4

4 IACS is of the view that some expressions used in the draft amendments to paragraphs 1.1.1.1 and 2.1.4 of the IGC Code may not be well understood. IACS proposes the following editorial improvements:*

> "1.1.1.1 Ships subject to this Code may use products listed in chapter 19 as fuel, subject to the requirements of chapter 16. If the product is not carried as cargo and only used as fuel, the ship shall ~~correspond with the cargo or fuel having~~ comply with the most stringent requirements for the cargo or fuel, as appropriate."

> "2.1.4 If a ship is intended to carry more than one of the products listed in chapter 19, the standard of damage shall correspond to the product having the most stringent ship type requirements. If a product listed in chapter 19 is only used as fuel, not carried as a cargo, and bunkered in dedicated deck tanks, the standard of damage shall correspond to the ~~ship's cargos~~ ship type requirements of the ship's cargo. The requirements for the location of individual cargo and gas fuel tanks, however, are those for ship types related to the respective products intended to be carried."

The inconsistent expressions used throughout draft paragraphs 5.4.4.2 and 5.11.4.2

5 The requirements for the design pressure of the outer pipe or duct of gas fuel systems in draft paragraphs 5.4.4.2 and 5.11.4.2 of the IGC Code correspond to those in paragraphs 9.8.1 and 9.8.2 of the IGF Code.

6 In this regard, draft paragraph 5.4.4.2 states:

> "5.4.4 The design pressure of the outer pipe or duct of gas fuel systems shall not be less than the maximum built-up pressure arising in the annular space considering the local instantaneous peak pressure in way of any rupture and a suitable pressure relief system shall be considered in the design:
>
> .2 for ships constructed on or after 1 January 2028, for gas fuel systems with inner pipe **working pressure greater than or equal to 1 MPa**, the "maximum built-up pressure arising in the annular space", after the inner pipe rupture, which is to be calculated in accordance with paragraph 5.11.4.2."

7 However, draft paragraph 5.11.4.2 mentioned in draft paragraph 5.4.4.2 contains the detailed requirements for the outer piping or ducting for inner piping with a working pressure greater than 1 MPa, as follows:

> "5.11.4.2 For ships constructed on or after 1 January 2028, for piping with a **working pressure greater than 1 MPa**, **of the ducting** shall be taken as the higher of the following: …"

8 In the opinion of IACS, the expressions "working pressure **greater than or equal to** 1 MPa" in draft paragraph 5.4.4.2 and "working pressure **greater than** 1 MPa" in draft paragraph 5.11.4.2 should be consistently used as "working pressure **greater than** 1 MPa", considering that draft paragraph 5.4.4.1 of the IGC Code uses the expression "not greater than". It should be noted that the opposite of the expression "not greater than" is "greater than", not "greater than or equal to". Such an alignment would be consistent with the corresponding requirements in the IGF Code.

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* Tracked changes are indicated using "grey shading" to highlight new insertions and “strikethrough” to highlight deletion of the text.

9 Furthermore, it is found that the expressions "ducting" and "piping" in draft paragraph 5.11.4.2 are not in line with the expression "outer pipe or duct" in draft paragraph 5.4.4. Such an inconsistency may lead to a non-uniform implementation of the amendments.

10 Given also that draft paragraphs 5.4.4.2 and 5.11.4.2 may not be well understood by readers due to their incompleteness, IACS is of the view that draft paragraphs 5.4.4.2 and 5.11.4.2 should be modified as follows:

> "5.4.4 The design pressure of the outer pipe or duct of gas fuel systems shall not be less than the maximum built-up pressure arising in the annular space considering the local instantaneous peak pressure in way of any rupture and a suitable pressure relief system shall be considered in the design:
>
> .2 for ships constructed on or after 1 January 2028, for gas fuel systems with inner pipe having a working pressure greater than ~~or equal to~~ 1 MPa, the "maximum built-up pressure arising in the annular space", after the inner pipe rupture, which is to be calculated in accordance with paragraph 5.11.4.2."

> "5.11.4.2 For ships constructed on or after 1 January 2028, for inner pipes having ~~piping with~~ a working pressure greater than 1 MPa, the design pressure of the outer pipe or duct~~ing~~ shall be taken as the higher of the following: …"

Application of recognized standards to bellows expansion joints in draft paragraph 5.11.6.1

11 According to paragraph 26 of document CCC 10/WP.7, the Working Group was of the view that the draft amendments to paragraph 5.11.6.1, as quoted below, should no longer allow the use of bellows expansion joints having a lower design pressure in vapour service, and that this new requirement resulted in a sufficient increase in safety to justify its application to both new and existing ships.

> "5.11.6.1 Flanges, valves, bellows expansion joints and other fittings shall comply with recognized standards, taking into account the material selected and the design pressure defined in 5.4."

12 At the same time, the same Working Group concluded that amendments requiring changes in design or construction shall be applicable to new ships only (paragraph 6.1 of document CCC 10/WP.7).

13 However, if the draft amendments to paragraph 5.11.6.1 should apply to both new and existing ships, the application of recognized standards to the bellow expansion joints which were already installed on existing ships may require substantial follow-up action, e.g. verification of all bellows expansion joints, replacement, drawing approval, surveys, etc.

14 Given that there is no clear evidence that bellows expansion joints on existing ships have negatively impacted the safety of gas carriers by rupture or gas leakage, IACS is of the view that the application of modified paragraph 5.11.6.1 should be limited to new ships. For that purpose, the following sentence is proposed to be added to the end of draft paragraph 5.11.6.1. Otherwise, if this proposal is not accepted, a period of grace should be put in place for existing ships.

"For ships constructed before 1 January 2028, bellows expansion joints used in vapour service, a lower minimum design pressure may be accepted except for any new installation or replacement."

The independence of vent and bleed lines from cargo and venting piping system in draft paragraph 16.3.4

15 The draft amendments to paragraph 16.3.4 require that all vents and bleed lines of gas fuel pipes shall be separated from cargo and vent piping systems, as follows:

"16.3.4 All vents and bleed lines that may contain or be contaminated by gas fuel shall be routed to safe locations external to the machinery space and be fitted with flame screens. These vent and bleed lines shall be independent from cargo and vent piping systems."

16 It is the experience of IACS members that the vent and bleed lines on some existing ships and from some shipyards may not be independent from cargo and vent piping systems. If draft paragraph 16.3.4 is applicable to existing gas carriers, it is highly likely that existing piping arrangements will need to go through re-designing and modifications.

17 Given the consequence for the designs and arrangements on existing ships, as well as the conclusion referenced in paragraph 12 above, it is considered that draft paragraph 6.3.4 should be applicable to new ships only. Otherwise, a period of grace should be put in place for existing ships.

18 Consequently, IACS suggests that draft paragraph 16.3.4 should be modified as follows:

"16.3.4 All vents and bleed lines that may contain or be contaminated by gas fuel shall be routed to safe locations external to the machinery space and be fitted with flame screens. For ships constructed on or after 1 January 2028, t~~T~~hese vent and bleed lines shall be independent from cargo and cargo vent piping systems."

Action requested of the Committee

19 The Committee is invited to consider the information provided and, in particular, the proposals in paragraphs 4, 10, 14 and 18 above, and to take action, as appropriate.