

SUB-COMMITTEE ON CARRIAGE OF
CARGOES AND CONTAINERS
10th session
Agenda item 10

CCC 10/10/3
11 July 2024
Original: ENGLISH
Pre-session public release:

**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY,
AND ENVIRONMENT-RELATED CONVENTIONS**

**Draft unified interpretation of SOLAS regulation II-1/2.29
concerning low-flashpoint fuel**

Submitted by IACS

SUMMARY

Executive summary: This document proposes a draft unified interpretation of SOLAS regulation II-1/2.29 to clarify the applicability of SOLAS regulations II-1/56 and II-1/57 to facilitate the universal and uniform implementation of the IGF Code to ships using gas as fuel.

*Strategic direction,
if applicable:* 7

Output: 7.1

Action to be taken: Paragraph 21

Related documents: BLG 14/6/2, BLG 14/17; MSC 87/26; CCC 1/WP.3; MSC 108/5, MSC 108/WP.8 and MSC 108/20

Background

1 MSC 107 established a Correspondence Group on Development of a Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships Using New Technologies and Alternative Fuels, under the coordination of the United States.

2 At MSC 108, having considered document MSC 108/5 (United States) containing the report of that Correspondence Group, the Committee established the Working Group on Development of a Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships Using New Technologies and Alternative Fuels.

3 In its report, the Working Group informed the Committee that confirmation was required on whether or not the IGF Code applies to ships using gas as fuel irrespective of flashpoint. The Group concurred that clarification on this matter was necessary since this might affect several of the alternative fuels listed in the annexes 1 and 2 to document MSC 108/WP.8 (MSC 108/WP.8, paragraph 23).

4 The Committee noted the need to clarify whether or not the IGF Code applies to ships using gas as fuel irrespective of flashpoint and agreed to the proposal by the Chair of the CCC Sub-Committee to refer this issue as an urgent matter to CCC 10, for consideration and advice to MSC 109 accordingly (MSC 108/20, paragraphs 5.32 and 5.33).

Introduction

5 SOLAS regulation II-2/4.2.1.1 requires not to use on board oil fuel with a flashpoint of less than 60°C, except as otherwise permitted by SOLAS regulation II-2/4.2.1.

6 SOLAS regulation II-2/4.2.1.5 allows the use of oil fuel having a lower flashpoint than otherwise specified in SOLAS regulation II-2/4.2.1.1 in ships to which part G of SOLAS chapter II-1 is applicable.

7 SOLAS regulation II-1/56 indicates that part G of SOLAS chapter II-1 is applicable to some ships using low-flashpoint fuels, depending on the building contract or keel-laying date.

8 SOLAS regulation II-1/57 requires ships using low-flashpoint fuels to comply with the requirements of the IGF Code.

9 SOLAS regulation II-1/2.29 gives the definition of low-flashpoint fuel as follows:

"29 *Low-flashpoint fuel* means gaseous or liquid fuel having a flashpoint lower than otherwise permitted under regulation II-2/4.2.1.1."

10 IACS would like to highlight that SOLAS only refers to low-flashpoint fuels but not to gases, while the IGF Code refers to gases or other low-flashpoint fuels; therefore, there is the need to clarify whether or not the IGF Code applies to ships using gas as fuel irrespective of flashpoint.

The scope of "low-flashpoint fuel" in the development of the IGF Code

11 In this context, IACS recalls the discussion during the development of the IGF Code. In particular, document BLG 14/6/2 (Sweden) proposed to expand the scope and framework of the work on developing the IGF Code by also considering liquid fuels with low flashpoint, which have properties similar to liquefied natural gas (e.g. evaporation, flammability, low flashpoint). This was agreed to by the BLG Sub-Committee (BLG 14/17, paragraph 6.1) and subsequently approved by MSC 87 (MSC 87/26, paragraph 13.5).

12 The IGF Code was finalized by CCC 1 and submitted to MSC 94 where it was approved (and subsequently adopted at MSC 95). With respect to the discussion on the low-flashpoint fuel at CCC 1, it is important to recall the discussion in the Working Group on Development of the IGF Code (CCC 1/WP.3). Paragraph 5 of document CCC 1/WP.3 clarifies the agreement of the Working Group that the definition of the "low-flashpoint fuel" for inclusion in SOLAS chapter II-1 would be generic for capturing possible future fuels.

Discussion

13 The flashpoint of a material is the lowest liquid temperature at which, under certain standardized conditions, a liquid gives off vapours in a quantity such as to be capable of forming an ignitable vapour/air mixture (ISO 79010-1).

14 The flashpoint is an empirical measurement rather than a fundamental physical parameter. The measured value will vary with equipment and test protocol being used. Different standards are available, such as ISO 1516, ISO 1523, ISO 2592, ISO 2719, ISO 3679, ISO 3680, and ISO 13736, whose applicability vary.

15 All those mentioned standards are intended to be used for materials that are liquid at ambient temperature and pressure, and no standard is suitable for determining the minimum temperature at which a liquified gas generates enough vapour to ignite.

16 The flashpoint of many gases is published in the material safety data sheet (MSDS), but normally without a reference to the applicable standard. Actually, for materials that are gaseous at the ambient temperature, it is not possible to formally define whether the flashpoint is "lower than otherwise permitted under regulation II-2/4.2.1.1" according to the presently available international standards. Especially for ammonia (probably also due to its poor ignitability), the flashpoint is published with different values (+11°C, +132°C), i.e. either above or below 60°C.

17 IACS deems that the intention behind SOLAS regulations II-1/56 and II-1/57 was to make the IGF Code applicable to ships using gases as fuel; however, due to the definition given in SOLAS regulation II-1/2.29 and technicalities with determination of the flashpoint for gases, it is doubtful whether ships using gases as fuel actually fall under the applicability criteria given in SOLAS regulations II-1/56 and II-1/57, and, as a consequence, whether such ships are required to comply with the IGF Code.

18 Also, as regards clarifying the applicability of SOLAS regulations II-1/56 and II-1/57, IACS has no clear view whether it is possible to interpret the definition of "low-flashpoint fuel" given in SOLAS regulation II-1/2.29, or it is necessary to amend SOLAS.

19 From the history of development of the IGF Code, as outlined in paragraphs 11 and 12 above, it is evident that the CCC Sub-Committee had anticipated the use of alternative gas fuels in the future, and the underlying intention of the IGF Code and part G of SOLAS chapter II-1 was to consider onboard use of gas(es) as fuel. Therefore, one could conclude that it was never the intention of part G of SOLAS chapter II-1 and the IGF Code to exclude application to materials such as hydrogen or ammonia (which are gaseous at ambient temperature and pressure) as fuel. However, the associated technicalities as described in paragraphs 13 to 18 above have inadvertently resulted in such an exclusion.

Proposal

20 To assist the Sub-Committee in consideration of the urgent matter from MSC 108 (paragraph 4 above) and to clarify that gases used as fuel are to be considered low-flashpoint fuels, IACS proposes to interpret the definition given in SOLAS regulation II-1/2.29 as follows:

"The definition of *Low-flashpoint fuel* in SOLAS II-1/2.29 should mean:

- .1 gaseous fuel, i.e. any material having a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C, that is used as fuel; and
- .2 liquid fuel having a flashpoint lower than otherwise permitted under SOLAS regulation II-2/4.2.1.1."

Action requested of the Sub-Committee

21 The Sub-Committee is invited to consider the foregoing, evaluate the feasibility of interpreting SOLAS regulation II-1/2.29 to include gaseous fuels among low-flashpoint fuels, irrespective of flashpoint, consider the proposal in paragraph 20, and take action, as appropriate.
