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**AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF GUIDELINES FOR
ALTERNATIVE FUELS AND RELATED TECHNOLOGIES**

Comments on document CCC 12/3

Submitted by ICS, WSC, INTERCARGO, BIMCO and IPTA

SUMMARY

Executive summary: This document provides comments on document CCC 12/3 containing the report of the Correspondence Group on Development of Technical Provisions for Safety of Ships using Alternative Fuels regarding low-flashpoint oil fuels. The document highlights concerns regarding proposals to include provisions that could lead to increased risk to ships and crew, and proposes that the Sub-Committee agree to base the interim guidelines on the fuel safe machinery space concept.

Strategic direction, 2
if applicable:

Output: 2.3

Action to be taken: Paragraph 18
Paragraph

Related documents: CCC 6/3/2; CCC 6/INF.6; CCC 6/3/7; MSC 98/23; and CCC 12/3

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.7), and provides comments on document CCC 12/3 (Norway).

2 The co-sponsors express their appreciation to the Correspondence Group and its Coordinator for their efforts, and submit this document with a view to facilitating further development of the draft interim guidelines at CCC 12.

Background

3 MSC 98 reiterated the view of MSC 96 that the use of oil fuel with a flashpoint below 60°C was limited to ships that complied with the IGF Code, except as otherwise permitted in SOLAS regulation II-2/4.2.1, and encouraged interested Member States and international organizations to submit proposals to the Sub-Committee on Carriage of Cargoes and Containers (CCC) with a view to developing specific requirements for low-flashpoint oil fuel, within the context of the IGF Code only (MSC 98/23, paragraph 22.33).

4 Document CCC 6/3/2 (Austria et. al) presented an FSA study on safety-related issues for the potential use of low-flashpoint oil fuels as a marine fuel, as well as draft amendments to the IGF Code to regulate the use of such fuels. Document CCC 6/INF.6 contains the full report of this FSA.

5 Document CCC 6/3/7 (ICS, INTERTANKO, CLIA and IPTA) raised various concerns regarding the validity of the proposals contained in document CCC 6/3/2, including the assumptions contained in CCC 6/INF.6 that have been used to derive the technical evaluation of risk associated with the use of low-flashpoint oil fuels.

6 CCC 8 initiated work on the development of interim guidelines for the use of oil fuels with a flashpoint between 52°C and 60°C. Annex 2 of document CCC 12/3 contains the latest version of the draft interim guidelines for ships using low-flashpoint oil fuels.

7 Paragraph 5.4 of the current draft of the interim guidelines presents the following three options for a machinery space suitable for the use of low-flashpoint oil fuels:

- .1 Fuel safe machinery space concept: As per this concept, a single failure cannot lead to release of low-flashpoint oil fuel into the machinery space and requires all machinery spaces related to the use or handling of low-flashpoint oil fuel to be temperature controlled to a maximum of 45°C. In cases where the temperature exceeds 45°C, it is proposed to increase the ventilation rate to 30 air changes per hour.
- .2 Temperature controlled machinery space concept: As per this concept, all machinery spaces related to the use or handling of low-flashpoint oil fuel are to be temperature controlled to a maximum of 45°C. In cases where the temperature exceeds 45°C, it is proposed to increase the ventilation rate to 30 air changes per hour.
- .3 Flexibility to choose either the fuel safe or the temperature controlled machinery space concept.

Discussion

8 The decision on a suitable machinery space concept for ships that will use low-flashpoint oil fuels needs to be finalized before the interim guidelines can be progressed any further. As highlighted in paragraph 55 of document CCC 12/3, the Correspondence Group was very split in this discussion.

9 The co-sponsors express concerns with these discussions progressing without a valid Formal Safety Assessment (FSA). Paragraph 68 of CCC 12/3 notes that an FSA has previously been carried out, the results of which can be found in document CCC 6/INF.6. However, it is also to be noted that document CCC 6/3/7 highlights concerns regarding the assumptions contained in CCC 6/INF.6. Another issue that has been raised in document CCC 6/3/7 is that the FSA and the outcomes derived from it are related to the use of low-flashpoint diesel. However, the proposed draft interim guidelines are now specified for ships using "oil-based fossil fuels, synthetic fuels, biofuels and any mixture thereof". As these concerns have not yet been addressed, the validity of the FSA conducted and its applicability in relation to the interim guidelines under development therefore remain in question.

10 The co-sponsors agree with the concerns highlighted in paragraphs 57 and 58 of document CCC 12/3 related to implementing just the temperature controlled concept. These concerns reinforce those raised in document CCC 6/3/7 in relation to the FSA submitted.

11 In further evaluating the temperature controlled concept, the co-sponsors highlight the analysis provided in paragraph 12 of document CCC 6/3/7 in relation to evaporation rates as an example. Even if we assume an ambient temperature of 45°C, the volume of explosive gases produced by the fuel with a flashpoint of 52°C could be about five times more than that produced by the fuel with 60°C flashpoint. The proponents of the temperature controlled machinery space concept do not provide any evidence of how these dangerous situations could be mitigated by increased ventilation alone.

12 Furthermore, as already presented in paragraphs 16 and 17 of document CCC 6/3/7, the co-sponsors reiterate the reference to SOLAS regulation II-2/4.5, which requires oil tankers to inert their cargo tanks when having on board oil cargoes with a flashpoint temperature of 60°C and below, and highlight the need for consistency when assessing risks for possible auto-ignition of hydrocarbons, whether the product is stored as a cargo or it is stored and used as fuel oil in a compartment with temperatures potentially higher than in the cargo tanks.

13 The co-sponsors also reiterate that if the Sub-Committee wants to proceed with the development of requirements for use of low-flashpoint oil fuels, especially without a valid FSA, this work should be based on the clear understanding that leakages of low-flashpoint oil fuels into conventional engine rooms will result in potentially dangerous increased concentrations of ignitable fuel vapour. The following safety measures are to be implemented as minimum to achieve the intended level of safety:

- .1 in the event of a leakage resulting from a single failure, fuel oil having a flashpoint below 60°C should not be exposed to ambient conditions within Category A machinery spaces. This may be achieved through double-walled fuel piping (or equivalent secondary containment arrangements), inerting where applicable, leakage detection and associated Emergency Shutdown (ESD) functions; and
- .2 ventilation, temperature monitoring, and associated safety systems, should be designed to prevent the accumulation of ignitable fuel vapours under all foreseeable operating and environmental conditions. Exceedance of defined design limits should initiate alarms and appropriate safety actions, including ESD where necessary.

14 It is considered that only the "fuel safe machinery space concept" complies with the overarching functional requirement that "the safety, reliability and dependability of the systems using low-flashpoint oil fuels should be equivalent to that achieved with new and comparable conventional oil-fuelled main and auxiliary machinery", the functional requirement that "a single failure should not lead to an unsafe or unreliable situation", and the safety approach suggested in paragraph 13 above.

15 Furthermore, the co-sponsors are of the opinion that, similar to the other interim guidelines developed through this workstream, only the more stringent requirements should be included with the understanding that Administrations are allowed to consider other approaches as part of the alternative approval process. Convenience of implementation, cost or complexity of a machinery space concept, should not be prioritized over the critical need to avoid unsafe or unreliable situations that could prove catastrophic for the safety of the ship and the crew.

16 In this regard, the co-sponsors also express their concern in choosing option 3 as provided in paragraph 7 above, i.e. the option to choose either of the machinery space concepts. This option would serve as an indirect means of imposing the temperature controlled machinery space concept, as it is considered the most convenient in terms of implementation, cost, and complexity, though it lacks proven efficacy in ensuring a reliable safety standard as explained in the previous paragraphs.

Proposal

17 Based on the considerations presented above, the co-sponsors call upon the Sub-Committee to agree to proceed with the fuel safe machinery space concept as the only standard to be included in the draft interim guidelines for ships using low-flashpoint oil fuels with the understanding that Administrations are allowed to consider other approaches as part of the alternative approval process.

Action requested of the Sub-Committee

18 The Sub-Committee is invited to note the discussion in paragraph 8 to 16, consider the proposal in paragraph 17, and take action as appropriate
