

MARITIME SAFETY COMMITTEE
101st session
Agenda item 8

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**DEVELOPMENT OF FURTHER MEASURES TO ENHANCE THE SAFETY OF SHIPS
RELATING TO THE USE OF FUEL OIL**

**Method of work for evaluating the need for further measures to enhance the safety of
ships relating to the use of fuel oil**

Submitted by IACS

SUMMARY

Executive summary: This document proposes a method of work and items to be taken into account when developing measures to enhance the safety of ships relating to the use of fuel oil

*Strategic direction,
if applicable:* 1

Output: 1.29

Action to be taken: Paragraph 13

Related documents: MEPC 73/5, MEPC 73/5/17; MSC 100/8/2 and MSC 100/20

Background

- 1 The Committee, at its one hundredth session (MSC 100) (MSC 100/20, section 8):
 - .1 recognized that maritime safety is its primary responsibility and that includes fuel safety issues;
 - .2 acknowledged that urgent actions are required to address the safety implications associated with the use of low-sulphur fuel oil, but also long-term solutions to enhance the safety of ships relating to the use of fuel oil;

- .3 agreed to include in its biennial agenda an output on "Development of further measures to enhance the safety of ships relating to the use of fuel oil", with a target completion year of 2021 and an associated scope of work as follows:
- "Based on the review of existing safety provisions for fuel oil and information concerning the safety implications associated with the use of fuel oil, develop further measures to enhance the safety of ships relating to the use of fuel oil."*
- .4 agreed that a working group could be established at MSC 101, with a view to further progress the development of measures to enhance the safety of ships relating to the use of fuel oil, and document MSC 100/8/2 (Bahamas et al.) could be considered in that working group; and
- .5 invited interested Member States and international organizations to submit concrete proposals to the next session under the new output.

Discussion

2 IACS shares the views expressed in document MSC 100/8/2 and considers the paper highlights the key 'quality' concerns that need to be taken into account when considering further measures to enhance the safety of ships relating to the use of fuel oil.

3 IACS notes that presently most residual fuel oils supplied to ships are blended products and nowadays the incidents related to fuel oil quality problems occur only occasionally. However, considering the severity of incidents when they do occur and that more blended products are expected to enter the fuel market in the next future, IACS considers it important to increase awareness among all involved parties about the identified potential risks and relevant mitigation measures, including alerting the fuel oil supply network on the consequences of the failure to supply a product that is not to specification.

4 IACS understands that some of the problems related to the quality of fuel oil may be addressed by operational measures involving fuel storage, fuel transfer systems, fuel cleaning, combustion equipment, fuel changeover, documentation and training. However, operational measures may not address all problems that are related to the chemistry of the fuel.

5 Among the fuel properties that may cause problems, but which may be addressed by operational measures are:

- .1 COLD FLOW; CAT FINES; LOW VISCOSITY (and its variability between one bunker and the next for 0.50% m/m fuels); and POUR POINT (including the potential issue on stratification of fuels when they are stored over the longer term). These issues may be managed by appropriate handling of the fuel on board, ensuring suitable equipment is available in proper working order and ensuring a correct set-up for the fuel being handled at the time; and
- .2 INCOMPATIBILITY. In the first instance, this is best addressed by having a strategy to segregate different batches of fuel. This will require a combination of ensuring a sufficient number of additional fuel storage tanks of sufficient capacity are available; and bunker purchase planning that supports this strategy. Where the ship may not be able to avoid commingling, then a procedure, incorporating a series of steps to mitigate any risk of the consequences of destabilizing a fuel, should be prepared, to which the charterer would also need to agree. Expert advice on the particular steps to be taken is recommended to meet ship-specific requirements.

6 Issues which are related to the chemistry of the fuel are: STABILITY; ACID NUMBER; FLASHPOINT; IGNITION and COMBUSTION PROPERTIES; and UNUSUAL COMPONENTS. IACS understands that none of these issues can be solved by onboard equipment. Rather they need to be addressed in the fuel oil supply chain.

Proposals

7 To facilitate this work, and to provide an evidence-based foundation for any further measures that are developed, IACS would urge relevant involved parties to provide information on problems encountered with fuel oils used onboard ships.

8 IACS shares the view that operational measures should be identified as a result of undertaking the "risk assessment and mitigation plan on the impact of new fuels", which MEPC.1/Circ.878 recommends should be addressed as part of the "Ship implementation plan for the consistent implementation of 0.50% sulphur limit under MARPOL Annex VI". However, IACS is of the view that consideration should be given to more concrete action being taken e.g. the application of operational precautions intended to identify and, when possible, mitigate fuel-related risks should be made mandatory by Administrations.

9 For the issues that cannot be addressed by operational measures, IACS is of the view that some additional measures should be adopted to minimize the risks associated with the use of fuels onboard ships, especially in relation to fuel oil blends. These might be in the form of requiring statements or, better, certificates of analysis according to recognized standards to be kept on board, similar to the Bunker Delivery Notes required by regulations 18.5 and 18.6 of MARPOL Annex VI.

10 Notwithstanding the comments in paragraphs 8 and 9 above, IACS is of the view that to ensure that all the safety concerns are addressed, both individually and in combination, a structured approach should be adopted in order to justify the need to take regulatory action. In particular, IACS suggests the following steps should be taken:

- .1 identifying the current safety provisions related to fuel oil;
- .2 identifying all the safety implications associated with the use of fuel oil, by means of a risk analysis or similar structured approach;
- .3 identifying the safety implications that are not satisfactorily addressed by the current regulatory provisions; and
- .4 commencing regulatory action by identifying the appropriate instrument (e.g. SOLAS) and developing relevant amendments.

11 IACS proposes that consideration should also be given to the following issues:

- .1 procedures for the proper specification (list of properties to be considered) in relation to the purchase of fuel oil suitable for an individual ship and comparison with present international/national standards (e.g. ISO 8217); including, for both new and existing ships, the identification of fuel oil characteristics that the fuel oil system of each ship can handle, in particular taking into account the heating arrangements that are available on board;
- .2 procedures for identification of actual safety concerns with individual fuel batches, i.e. procedures for spotting non compliances and other risks;

- .3 equipment or procedures allowing mitigation of the identified risks; and
- .4 procedures for cases when an actual risk is identified and cannot be satisfactorily mitigated.

12 In carrying out the activities as proposed in the paragraphs above, account should be taken of the commitment from ISO and CIMAC to provide standards for fuel oil and guidance in managing the issues raised; and the initiative of industry organizations to develop guidance to address potential safety and operational issues related to the supply and use of low-sulphur fuels (MEPC 73/5/17).

Action requested of the Committee

- 13 The Committee is invited to consider the foregoing and take action as appropriate.
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