

## Expert Group on the evaluation of possible improvements of fire protection regulations for containerships

### Work plan

#### Existing SOLAS requirements

The basic international consensus on fire protection in sea-going ships is expressed in SOLAS Regulation II-2/2.1 by five "Fire Safety Objectives":

1. prevent the occurrence of fire and explosion;
2. reduce the risk to life caused by fire;
3. reduce the risk of damage caused by fire to the ship, its cargo and the environment;
4. contain, control and suppress fire and explosion in the compartment of origin; and
5. provide adequate and readily accessible means of escape for passengers and crew.

In particular, the objective under point 4 has been given a specification by additional "Functional Requirements" listed in Regulation II-2/2.2:

1. division of the ship into main vertical and horizontal zones by thermal and structural boundaries;
2. separation of accommodation space from the remainder of the ship by thermal and structural boundaries;
3. restricted use of combustible materials;
4. detection of the fire in the zone of origin;
5. containment and extinction of any fire in the space of origin;
6. protection of means of escape and access for firefighting;
7. ready availability of fire extinguishing appliances; and
8. minimisation of possibility of ignition of flammable vapour.

#### Work programme

MSC 103 agreed a new output "to amend regulations in SOLAS chapter II-2 and the FSS Code to enhance provisions for early fire detection and effective control of fires in containerized cargoes stowed on and under deck of containerships".

The following questions should be understood as a work plan for the Expert Group. The questions follow the objectives as set out in SOLAS chapter II-2. Members of the Expert Group are invited to share their views on any or all of these questions taking into account a goal-based approach, efficiency and technological and economic feasibility:

1. What can be done to improve early the fire detection in a container cargo under deck?
2. What can be done to improve earlythe fire detection in a container cargo aboveon deck?
3. What can be done to enable a more precise and quick fire localisation?
- 4.3. What can be done to compensate the failure to extinguish a fire with deficiencies of CO<sub>2</sub> with regard to smothering a fire in a container stow under deck?
- 5.4. What can be done to improve the confinement of a fire in containers under deck to the particular cargo hold?

**Commented [PE1]:** We suggest to include a paragraph here under explaining how we want to contribute to this new output. Please find here below our proposal

The scope of work, in order to contribute to this output, is focusing risks and identifying risk control options. In order to focus the risks, a screening of the output of the risk analysis (ref. MSC 102/INF.3) should be made, so that the effort is focused on the areas most needing risk control. Referring to MSC 102/INF.3 in principle, the severity of cargo-related fires can be reduced by improvement of the two following key points

- 1.measures to improve an early detection and localisation of the fire, and
- 2.measures to prevent the fire from spreading to adjacent sections (fire compartments).

Furthermore it is important to bear in mind that the formulation of the technical solutions should not be prescriptive but follow the GBS approach.

**Commented [PE2]:** It is proposed to amend the question as shown in track changes. The issue with the CO<sub>2</sub> is not relating to a deficiency of the CO<sub>2</sub> system, but the ineffectiveness of the CO<sub>2</sub>. MSC.102/INF.3 quote: The fire will spread by the high thermal conductivity of the container structure made of steel to other containers, which contain their share of oxygen for supporting the fire in them.

6.5. What can be done to improve the confinement of a fire in containers ~~above~~ on deck to the particular bay or section thereof?

7.6. What can be done to improve active firefighting on deck bearing in mind reduced crew and local conditions?

7. What can be done to protect vital ship ~~structures~~ ~~systems under deck and on deck~~ ~~from excessive heat~~?

8. ~~What can be done to prevent thermal influence of the fire on the structure of the vessel and thus avoid the fire spreading to other fire compartments?~~

9. ~~What can be done to improve the protection of deck house and life-saving appliances?~~

**Commented [PE3]:** It is proposed to replace the word 'structures' with 'system'. The risk associated with ship structure is the thermal influence. The critical issue is the protection of the vital systems as defined in Solas II-2/21.4

**Commented [PE4]:** Taking into account the comment here above it is suggested to address the systems and the structure in separate points.

[These questions focus on part 3 of the FSA methodology, i.e. risk control options. Part 1 \(identification of hazards\) and part 2 \(risk analysis\) have been addressed in documents MSC 102/21/7 and MSC 102/INF.3. Part 4 \(cost-benefit assessment\) has been partially addressed in MSC 102/INF.2.](#)

[Part 4 and Part 5 \(recommendations for decision-making\) were addressed in a previous FSA published in 2009 on "container fire on deck" \(document FP 54/INF.2\). Against the backdrop of changing safety and economic considerations in the shipping industry, these parts need to be revisited. This is however not within the scope of this work plan.](#)

Based on input received to the list of questions, a draft paper will be developed for further discussion within in the Expert Group and with a view to submission to SSE 8.

Work on risk prevention and mitigation enhancement should be pursued simultaneously but is not the focus of this Expert Group. This parallel work stream is to be done in association with the CCC Sub-Committee as and when requested by the SSE Sub-Committee.

## Timeline

MSC 103 agreed to include in the biennial agenda of the SSE Sub-Committee for 2022-2023 and the provisional agenda for SSE 8 an output on "Development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of containerships". SSE 8 is likely to be scheduled in February or March 2022. The deadline for the submission of bulky papers to SSE 8 will therefore likely be in late November.

The submission paper should therefore be aimed to be concluded and ready for submission by mid-November 2021. Against this backdrop, the following timeline for the drafting of the paper is envisioned:

1. Week commencing May 31, 2021:

Expert Group to be requested to submit views on the questions as outlined in this work plan by June ~~18~~<sup>25</sup>.

2. Week commencing July 5, 2021:

IUMI to share initial draft paper with Expert Group. Invite comments from the Expert Group on the first draft by July 30.

3. Week commencing August 16, 2021:

IUMI to share revised draft with input from the Expert Group incorporated. Invite further comments by the Expert Group by September 10.

4. Week commencing Sept 27, 2021:

IUMI to circulate revised draft with a view to finalizing it to seek co-sponsorship.

5. October 2021:

Finalize the paper for submission to SSE 8 in the first half of November 2021.

~~25 May 2021~~ June 2021