INTERNATIONAL MARITIME ORGANIZATION

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UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, ENVIRONMENT, FACILITATION, LIABILITY AND COMPENSATION-RELATED CONVENTIONS

Draft unified interpretations of SOLAS regulation II-1/25-1

Submitted by IACS

SUMMARY

Executive summary:	This document proposes unified interpretations of SOLAS regulation II-1/25-1 to clarify its applicability on multiple cargo hold ships with a single cargo hold below the freeboard deck, as well as the installation and location of water level detectors in a cargo hold consisted of multiple non-watertight decks, with a view towards universal and uniform implementation.
Strategic direction, if applicable:	7
Output:	7.1
Action to be taken:	Paragraph 24
Related documents:	SDC 7/16 and MSC 108/20

Introduction

1 MSC 103 adopted the new SOLAS regulation II-1/25-1 effective from 1 January 2024 (resolution MSC.482(103)).

2 Triggered by the **El Faro** accident, those amendments aim to establish requirements for early flooding detection by mandating the installation of water level detectors at the bottom of cargo holds for multiple cargo hold ships, excluding bulk carriers and tankers.

Discussion

3 Vehicle carriers typically feature vertically arranged cargo holds above and below the ship's freeboard deck. Figure 1 represents one of the typical arrangements of vehicle carriers, i.e. multiple cargo holds segregated by a watertight boundary; only a single cargo hold exists below the ship's freeboard deck; and each cargo hold is consisted of multiple non-watertight decks.

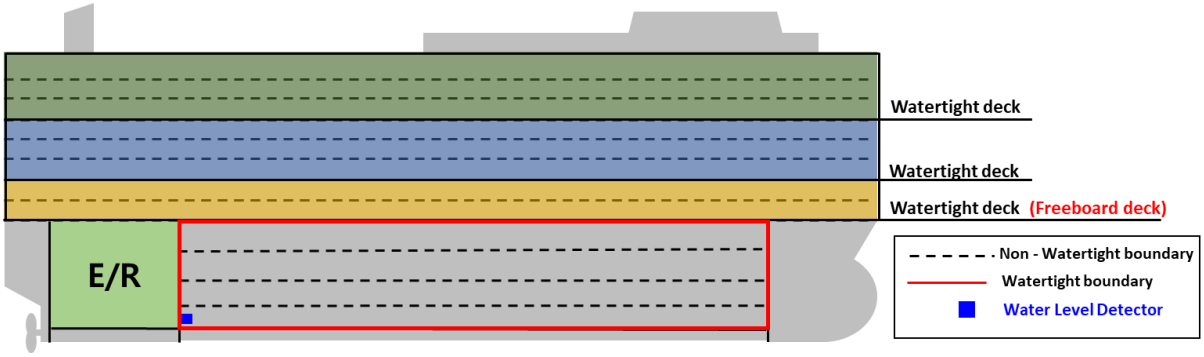

Figure 1: Illustration of a vehicle carrier with multiple cargo holds

4 However, IACS identified that different understandings exist among stakeholders regarding the implementation of SOLAS regulation II-1/25-1, particularly concerning the applicability and location of water level detectors on such ships.

Applicability of SOLAS regulation II-1/25-1 on multiple cargo hold ships with a single cargo hold below the freeboard deck

5 SOLAS regulation II-1/25, as amended by resolution MSC.216(82), mandates water level detectors on single hold cargo ships other than bulk carriers, as follows:

> "**Regulation 25 Water level detectors on single hold cargo ships other than bulk carriers**
>
> (…)
>
> 1 Single hold cargo ships other than bulk carriers constructed before 1 January 2007 shall comply with the requirements of this regulation not later than 31 December 2009.
>
> 2 Ships having a length (L) of less than 80 m, or 100 m if constructed before 1 July 1998, and a single cargo hold below the freeboard deck or cargo holds below the freeboard deck which are not separated by at least one bulkhead made watertight up to that deck, shall be fitted in such space or spaces with water level detectors..."

6 To extend similar requirements to multiple cargo hold ships other than bulk carriers and tankers, SOLAS regulation II-1/25-1 was introduced (resolution MSC.482(103)), which reads as follows:

> "**Regulation 25-1 Water level detectors on multiple hold cargo ships other than bulk carriers and tankers**
>
> (…)
>
> 1 Multiple hold cargo ships other than bulk carriers and tankers constructed on or after 1 January 2024 shall be fitted with water level detectors in each cargo hold intended for dry cargoes. Water level detectors are not required for cargo holds located entirely above the freeboard deck…."

7 Considering the above, from 1 January 2024, the applicability of water level detectors for cargo ships other than tankers and bulk carriers is categorized, as follows:

Ship types	Applicable requirements	Ships having a length (L) of less than 80 m	Ships having a length (L) of 80 m or above
Single hold cargo ships	Regulation 25	Required	**Not required**
Multiple hold cargo ships	Regulation 25-1	Required	Required

8 In this regard, SDC 7 acknowledged the potential necessity for a future review of SOLAS regulation II-1/25 to deliberate on the establishment of water level detector requirements for ships compliant with damage stability requirements, i.e. single hold cargo ships having the length of 80 m or more (SDC 7/16, paragraph 7.13)

9 However, it was argued by some stakeholders, including flag Administrations and classification societies, that SOLAS regulation II-1/25.2 does not expressly rule out the circumstance where any other cargo holds may exist above the ship's freeboard deck, in addition to a single cargo hold below ship’s freeboard deck; and that the expression "single hold cargo ship" under SOLAS regulation II-1/25 should be deemed to mean any cargo ships (other than bulk carriers) having a single cargo hold below the freeboard deck, regardless of whether other cargo holds exist above the freeboard deck. Consequently, ambiguity arises concerning whether multiple cargo hold ships with a single cargo hold below the freeboard deck should fall under SOLAS regulation II-1/25 or regulation II-1/25-1.

10 Where certain flag Administrations or their recognized organizations, opt to apply SOLAS regulation II-1/25 to such cases, a significant regulatory gap may emerge such that multiple cargo hold ships with a single cargo hold below the freeboard deck but with the length of 80 m or more, as illustrated in paragraph 3 above, fall outside the purview of both SOLAS regulations II-1/25 and II-1/25-1. IACS is concerned that such divergent interpretation and implementation may not only disrupt a level playing field among stakeholders, such as shipyards, owners and classification societies but also have significant implications in case of flag changes, class transfers, PSC inspections, etc. Except for paragraph 8 above, such an unregulated scenario may have not been foreseen by the Sub-Committee during the development of SOLAS regulation II-1/25-1.

11 In IACS understanding it is evident that SOLAS regulation II-1/25 applies to single hold cargo ships of less than 80 m in length and SOLAS regulation II-1/25-1 applies to multiple cargo hold ships except bulk carriers and tankers. Consequently, IACS is of the view that a multiple cargo hold ship with a single cargo hold below the freeboard deck should be subject to SOLAS regulation II-1/25-1.

12 In this regard, IACS considers that the clarification in paragraph 11 is not only consistent with the intent of SOLAS regulation II-1/25-1, but also necessary to prevent inconsistent interpretation and implementation by flag Administrations and their recognized organizations. It is, therefore, emphasized that the view of IACS in paragraph 11 is in line with the three safeguards agreed by MSC 108 (MSC 108/20, paragraph 19.6.3).

Installation and location of water level detectors in a cargo hold consisting of multiple non-watertight decks below the freeboard deck

13 In accordance with SOLAS regulation II-1/25.3, additional water level detectors may be necessary for single hold cargo ships, if webs or partial watertight bulkheads obstruct the flow of flooding to water level detectors located at the after-end of cargo hold(s), as follows:

> "3 The water level detectors required by paragraph 2 shall be fitted at the aft end of the hold, or above its lowest part where the inner bottom is not parallel to the designed waterline. Where webs or partial watertight bulkheads are fitted above the inner bottom, Administrations may require the fitting of additional detectors."

14 However, SOLAS regulation II-1/25-1 does not explicitly address the situation where ship structures within a cargo hold may hinder the early detection of flooding, despite the possibility of existence of a similar risk in multiple cargo hold ships.

15 Paragraph 3.1.2 of, and paragraph 2.2.1 of the appendix to the annex of the *Revised performance standards for water level detectors on ships subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12*, as amended by resolution MSC.188(79)/Rev.2, provide guidance on the location of water level detectors, as shown below:

> "3.1.2 The sensors should be capable of being located in the aft part of the hold or above its lowest point in such ships having an inner bottom not parallel to the designed waterline, or, in the case of bulk carriers complying with SOLAS regulation XII/12, in the aft part of each cargo hold or in the lowest part of the spaces other than cargo holds to which that regulation applies."; and
>
> "2.2.1 The sensors should be located in a protected position that is in communication with the specified part of the cargo hold (usually the aft part) such that the position of the sensor detects the level that is representative of the levels in the actual hold space. These sensors should be located:
>
> .1 either as close to the centreline as practicable, or
>
> .2 at both the port and starboard sides of the cargo hold."

16 The aforementioned provisions do not address the location of water level detectors where multiple non-watertight decks are vertically arranged within a cargo hold, as illustrated in Figure 1 above. However, the position of sensor should be such that the sensor should be able to detect the water level representing the actual flooding situation in accordance with paragraph 2.2.1 of the appendix to the annex of resolution MSC.188(79)/Rev.2.

17 Therefore, SOLAS regulation II-1/25-1 and relevant provisions in resolution MSC.188(79)/Rev.2 leave room for interpretation of the installation and location of water level detectors where multiple non-watertight decks are vertically arranged within a cargo hold. This scenario also applies to cargo ships with spaces, such as cargo holds consisting ro-ro spaces, vehicle spaces and twin-decks, amongst others.

18 In such instances, horizontal openings (e.g. fixed cargo ramps, large air holes, lashing holes, etc.) or drainage system between non-watertight decks enable prompt drainage of flooding from the deck located at an upper part to the lowest one within a cargo hold.

19 In this context, IACS is of the view that, for the application of SOLAS regulation II-1/25-1, water level detectors are required on each non-watertight deck in a cargo hold, as illustrated in Figure 2 below, unless adequate drainage from the upper decks to the lowest one (e.g. fixed cargo ramps, large air holes, lashing holes or dedicated drainage piping system) are available. Notwithstanding the absence of relevant requirements under SOLAS regulation II-1/25-1 and resolution MSC.188(79)/Rev.2 addressing such installations and locations, IACS believes that this interpretation aligns with the intent of SOLAS regulation II-1/25-1 and resolution MSC.188(79)/Rev.2.

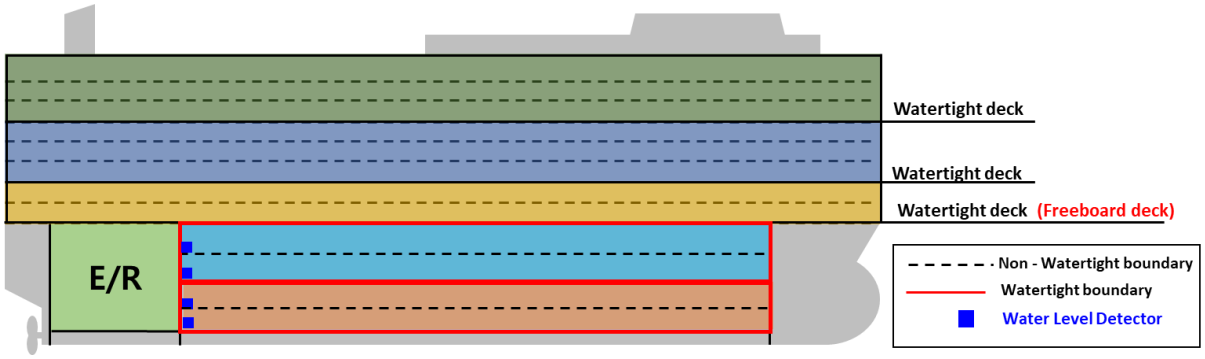

Figure 2: Illustration of a vehicle carrier with multiple cargo holds and arrangement of water level detectors

20 Finally, IACS considers that the views expressed in paragraph 18 interpret SOLAS regulation II-1/25-1 without breaching the three safeguards agreed by MSC 108. Otherwise, the cargo hold consisting of multiple non-watertight decks below the ship's freeboard deck may be left unregulated with only a single set of water level detectors installed at the lowermost deck. IACS does not believe that it was the intent of SOLAS regulation II-1/25-1.

Implementation

21 IACS proposes to specify the application of this unified interpretation on the cover page of the MSC circular, as follows:

"This unified interpretation applies to ships constructed on or after [1 January 2026]."

Proposal

22 In light of paragraphs 5 to 12, it is proposed that a unified interpretation be established to clarify the applicability of SOLAS regulation II-1/25-1, as contained in the annex (i.e. interpretation 1).

23 Further, based on paragraphs 13 to 19, it is proposed that a unified interpretation be developed to clarify the installation and location of water level detectors, where multiple non-watertight decks are vertically arranged within a cargo hold, as contained in the annex (i.e. interpretation 2).

Action requested of the Sub-Committee

24 The Sub-Committee is invited to consider the foregoing proposals in paragraphs 22 and 23 above and to take action, as appropriate.

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ANNEX

DRAFT UNIFIED INTERPRETATION OF SOLAS REGULATION II-1/25-1

SOLAS regulation II-1/25-1.1 reads:

"Multiple hold cargo ships other than bulk carriers and tankers constructed on or after 1 January 2024 shall be fitted with water level detectors in each cargo hold intended for dry cargoes. Water level detectors are not required for cargo holds located entirely above the freeboard deck."

Interpretations

1 A multiple cargo hold ship with a single cargo hold below the freeboard deck should be subject to SOLAS regulation II-1/25-1. The example may be as illustrated below.

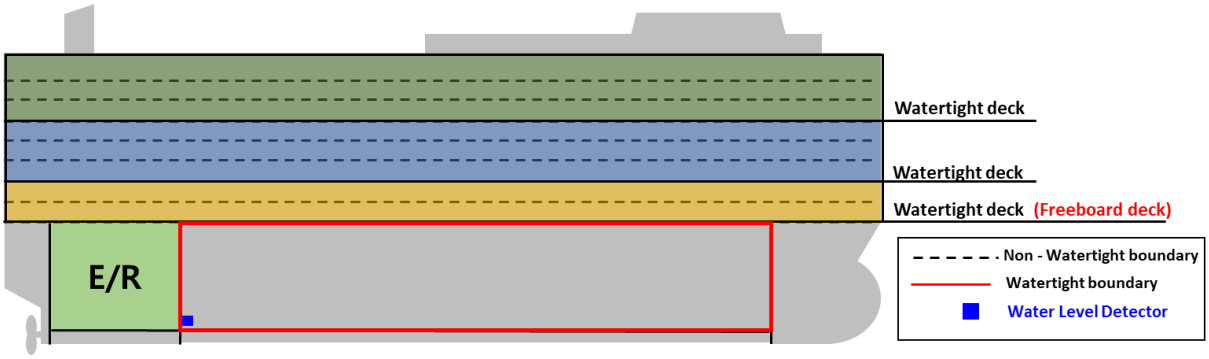

Figure 1: A multiple cargo hold ship with a single cargo hold below freeboard deck

2 To ensure early detection of flooding where multiple non-watertight decks are installed in a cargo hold, water level detectors should be provided on each non-watertight deck in a cargo hold, unless prompt drainage from the upper decks to the lowest one (e.g. fixed cargo ramps, large air holes, lashing holes or dedicated drainage piping system) are available. The example may be as illustrated below.

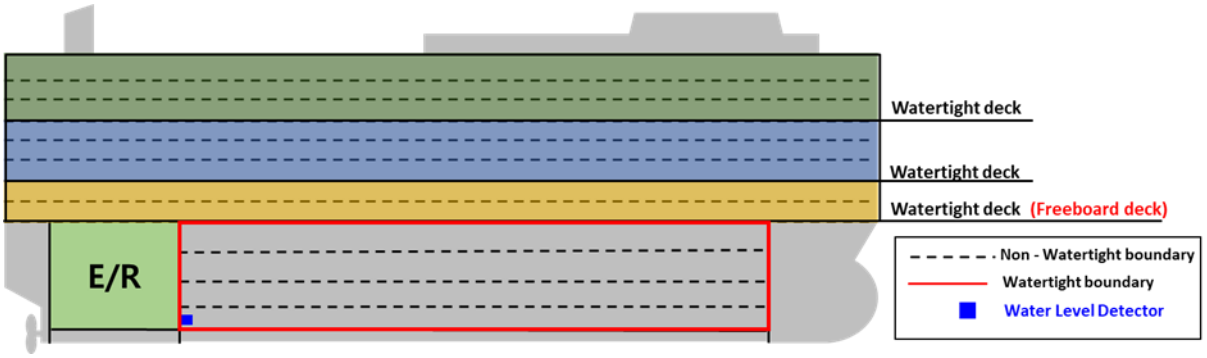

Figure 2: A multiple cargo hold ship with a single cargo hold below the freeboard deck with adequate drainage provided in the non-watertight decks

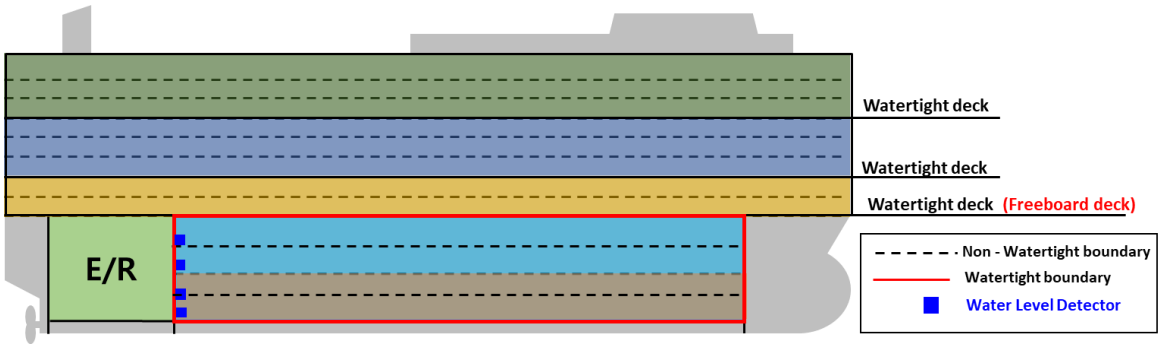

Figure 3: A multiple cargo hold ship with a single hold below the freeboard deck without adequate drainage provided in the non-watertight decks

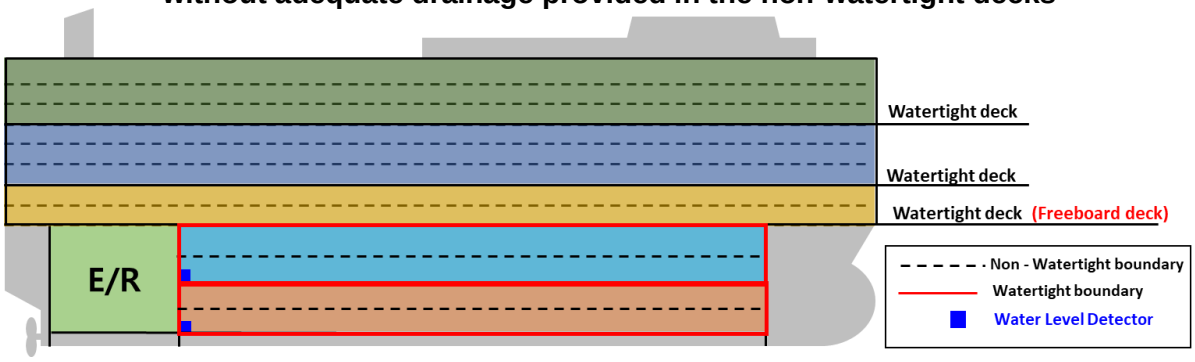

Figure 4: A multiple cargo hold ship with multiple holds below the freeboard deck with adequate drainage provided in the non-watertight decks

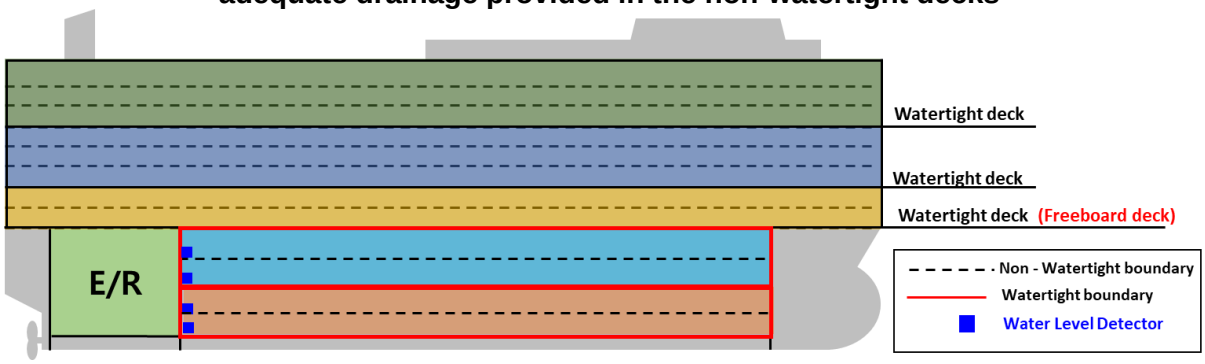

Figure 5: A multiple cargo hold ship with multiple holds below the freeboard deck without adequate drainage provided in the non-watertight decks.