INTERNATIONAL MARITIME ORGANIZATION

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

Draft unified interpretation of SOLAS regulation II-1/12.6.2

Submitted by IACS

SUMMARY

Executive summary:	This document proposes a draft unified interpretation of SOLAS regulation II-1/12.6.2 to clarify the term "remotely operated valve", with a view to building uniform and universal implementation.
Strategic direction, if applicable:	7
Output:	7.1
Action to be taken:	Paragraph 17
Related documents:	None

Introduction

1 SOLAS chapter II-1 was amended by resolution MSC.474(102) to introduce consistency of its parts B-2 to B-4 with the probabilistic damage stability concept appearing in parts B and B-1 of SOLAS chapter II-1 and to remove ambiguities. In doing so, the Maritime Safety Committee introduced SOLAS regulation II-1/12.6.2 relating to piping piercing a ship's collision bulkhead, and the requirement for a remotely operated valve, applicable to new ships.

Discussion

Related requirements in SOLAS and the Revised explanatory notes

2 For ships contracted on or after 1 January 2020 (or in the absence of the building contract, for ships constructed on or after 1 July 2020) and constructed before 1 January 2024, SOLAS regulation II-1/12.6.1, as amended by resolution MSC.474(102), states the following:

> "…Alternatively, for cargo ships, the pipe may be fitted with a butterfly valve suitably supported by a seat or flanges and capable of being operated from above the freeboard deck."

3 In this regard, in accordance with the *Revised explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations* (resolution MSC.429(98)/Rev.2), a remotely operated butterfly valve shall be capable of being manually operated, if the valve's actuator loses its power, as follows:

> "As butterfly valves must be capable of being remotely operated, the following shall apply:
>
> .1 the actuator shall be of a double-acting type;
>
> .2 when subject to loss of power, the actuator shall remain in its current position; and
>
> .3 when subject to loss of power, the valve shall be able to be manually operated."

4 For ships constructed on or after 1 January 2024, however, SOLAS regulation II-1/12.6.2, as amended by resolution MSC.474(102), dissimilarly specifies, as follows:

> "6.2 For ships constructed on or after 1 January 2024, except as provided in paragraph 6.3, the collision bulkhead may be pierced below the bulkhead deck of passenger ships and the freeboard deck of cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe is fitted with a remotely controlled valve capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be normally closed. If the remote control system fails during the operation of the valve, the valve shall close automatically or be capable of being closed manually from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be located at the collision bulkhead on either the forward or aft side, provided the space on the aft side is not a cargo space. The valve shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable."

Ambiguity existing in SOLAS regulation II-1/12.6.2, as amended by resolution MSC.474(102)

5 While resolution MSC.429(98)/Rev.2 is silent on SOLAS regulation II-1/12.6.2, the control of the collision bulkhead valves, as required in SOLAS regulation II-1/12.6.2, should have the following characteristics:

.1 remotely controlled;

.2 capable of being operated from above the bulkhead deck or the freeboard deck; and

.3 capable of automatic close or manual close from above the bulkhead deck or the freeboard deck, where the valve's remote control system fails during operation.

6 In SOLAS regulation II-1/12.6.2, the term "remotely controlled" is used in conjunction with the expression "capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships". However, it may not be sufficiently clear if the two expressions merely supplement each other or if they should be distinguished in terms of

required functionalities. If the former interpretation is supported, the remote control may be done either manually or mechanically. If the latter case is agreed, the term "remotely controlled valve" may be perceived as a mechanical one using hydraulic, pneumatic and/or electric sources of power.

7 This ambiguity is exacerbated by the expression "remote control system" in SOLAS regulation II-1/12.6.2, which refers to the remotely controlled valve and implies that the remotely controlled valve may not be a simple unit or equipment but composed of a system.

8 IACS members have been frequently asked by shipyards to provide a clear understanding of SOLAS regulation II-1/12.6.2. Therefore, IACS would appreciate the view of the Sub-Committee.

Discussions in the SDC Sub-Committee meetings during the development of SOLAS regulation II-1/12.6.2, as amended by resolution MSC.474(102)

9 IACS recalls the discussions which took place during the development of SOLAS regulation II-1/12.6.2. The amendments to SOLAS regulation II-1/12.6.1, as amended by resolution MSC.421(98), were initially proposed by document SDC 5/5 (Norway). In that document, the valve was simply mentioned as a remote-controlled valve.

10 In this regard, during the subsequent discussions, two options were proposed, namely the "remotely controlled valve" or the "valve with a positive means of closing it from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships" (SDC 6/4 (United States), paragraph 8).

11 The Working Group on Subdivision and Damage Stability established at SDC 6 was instructed to consider the proposed amendments to SOLAS regulations II-1/12.6.1 in relation to the location and operation of the collision bulkhead valve (SDC 6/WP.5, paragraph 3.2). After extensive discussion in the Group, it was agreed to retain both expressions (the "remotely controlled valve" and the "valve with a positive means of closing it from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships"), as currently found in SOLAS regulation II-1/12.6.2. It is noted that the latter expression was to clarify the control location of the remotely controlled valve (SDC 6/4, paragraph 12).

Acceptable arrangements

12 In table 22.1 of the Protocol of 1988 relating to the International Convention on Load Lines, 1966, the two different types of valves are identified in terms of valve's control location, i.e. "remote-controlled" and "controlled locally". In the same table, remote-controlled valves are illustrated as the valves located beneath the seawater level and controlled from above the ship's freeboard deck. Therefore, under the International Convention on Load Lines, 1966, the expression "remote-controlled" may not be related to the method of actuating valves, i.e. manual or mechanical operations.

13 Based on paragraphs 8 to 11 above, IACS is of the view that the expressions used in SOLAS regulation II-1/12.6.2, i.e. "remotely controlled valve" and "capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships", merely supplement each other and do not restrict the use of a manual deck standing valve, provided that other requirements in SOLAS regulation II-1/12.6.2 are complied with.

14 In this regard, the annex illustrates allowable and not-allowable arrangements.

Proposal

15 Based on the above, it is proposed that a unified interpretation be established to clarify the term "remotely controlled valve" used in SOLAS regulation II-1/12.6.2, as follows:

.1 for compliance with SOLAS regulation II-1/12.6.2, as amended by resolution MSC.474(102), the valve fitted on the pipe piercing a ship's collision bulkhead below the bulkhead deck of passenger ships and the freeboard deck of cargo ships may be either a deck standing manual type or a mechanically powered type with a fail-close arrangement; and

.2 for the purpose of the fail-close arrangement, the valve should be of an automatic fail-close type or should have an additional manual-closing function activated from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships.

16 Finally, IACS considers that the proposed unified interpretation of SOLAS regulation II-1/12.6.2, in paragraph 15 above, does not breach the three safeguards agreed by MSC 108 (MSC 108/20, paragraph 19.6.3).

Action requested of the Sub-Committee

17 The Sub-Committee is invited to consider the foregoing, the proposal in paragraph 15 in light of the illustrations set out in the annex, and to take action, as appropriate.

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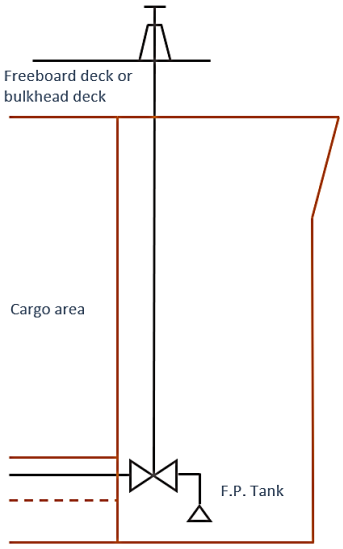
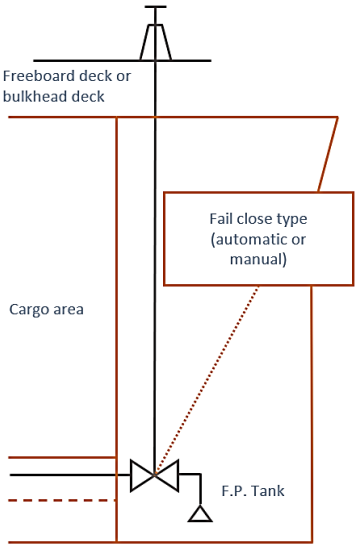
ANNEX*

ILLUSTRATION OF ALLOWABLE AND NOT ALLOWABLE ARRANGEMENTS



Case 1 (Not allowable)

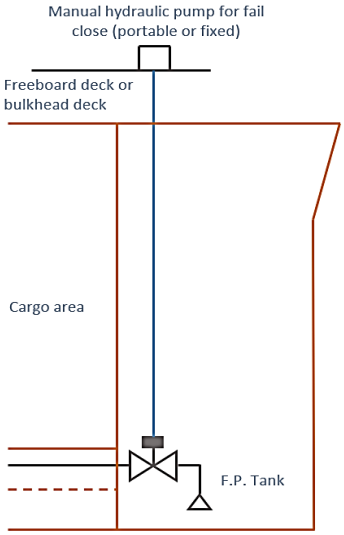
- Manual deck stand controlled from the freeboard deck or bulkhead deck
- When fail, the valve remains at its current position



Case 2 (Allowable)

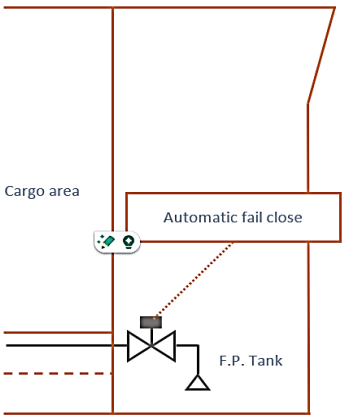
- Manual deck stand controlled from the freeboard deck or bulkhead deck
- Fail-close type valve (automatic close, or manual close from the freeboard deck or bulkhead deck)

* The annex is provided in the English language only.



Case 3 (Allowable)

- Actuated mechanically and controlled remotely from cargo control room, etc.
- Manual fail-close from above the freeboard deck or bulkhead deck



Case 4 (Allowable)

- Actuated mechanically and controlled remotely from cargo control room, etc.
- Automatic fail-close