Subject

Each flag state's reply/instruction for Unified Interpretation regarding the suction heads of fixed emergency fire pumps

ClassNK
Technical Information

No. TEC-0860
Date 8 August 2011

To whom it may concern

1. General

The Maritime Safety Committee at the eighty-eighth session (MSC88) held in December 2010, approved the unified interpretation of the provision of chapter of the FSS Code Chapter 12.2.2.1.3 regarding the suction heads of fixed emergency fire pumps as IMO MSC.1/Circ. 1388. According to this interpretation, it is stipulated that the suction should be submerged at the waterlines corresponding to the level of 2/3 immersion of the propeller at even keel and the arrival ballast condition without cargo and with 10% stores/fuel etc. And this interpretation is applied to ships constructed on or after 1 January 2012 (reference is made to the Attachment 1).

This interpretation is based on the IACS Unified Interpretation (IACS UI), and in response to the above approval of MSC.1/Circ.1388, IACS adopted IACS UI SC 178(rev.1) in accordance with the prescription MSC.1/Circ.1388 for ships contracted for construction on or after 1 January 2012 (reference is made to the Attachment 2).

IACS decided this contracted base application scheme, mainly because the impact[*note 1)] of this UI is expected to be quite large for ship designing.

ClassNK has been contacting each flag state whether IACS UI SC 178(rev.1) is acceptable, i.e., contracted base application. Please be advised the summary of each flag state's reply/instruction as the following item 2.

*Note 1) This UI stipulates that the emergency fire pump should work on shallower draft condition than one previously considered. It would be difficult to comply with the requirement by increasing pump capacity and require the change of location of the emergency fire pump which leads to the major design change of engine room for many ships.

2. Each flag state's reply/instruction for Unified Interpretation regarding the suction heads of fixed emergency fire pumps

(1) Flag states of accepting the application of IACS UI SC 178(rev.1), i.e., contracted base application

- Cook Islands
- Cyprus
- Greece
- Hong Kong
- Papua New Guinea
- Qatar

(To be continued)

- St. Kitts & Nevis
- St. Vincent and the Grenadines
- Tuvalu
- Vietnam

(2) Flag states with special instructions for the application of Unified Interpretation

- Marshall Islands
  The application scheme of IMO MSC.1/Circ.1388 is exempted and IACS UI application scheme is acceptable for ships which are already designed and of which drawings are already approved, and further, of which keel lay will be on or after 1 January 2012. However, ships contracted from now on should meet the application scheme of IMO MSC.1/Circ.1388

- Bahamas
  It is preferable to apply the agreed IMO MSC.1/Circ.1388 in the first instance. However, it would not be reasonable to apply the interpretation in MSC/Circ.1388, for ships contracted before 10 December 2010 (the issued date of MSC/Circ.1388), where the ship is constructed on or after 1 January 2012. Other exceptions would be considered on a case by case basis.

- Malta
  Ships that have been already contracted for construction and whose keel laying date is on or after 1 January 2012 will be subject to IMO MSC.1/Circ.1388 and possibly in need of modifications of the ship design. Their concern, if any, should be reported through Recognized Organizations by providing relevant current data and anticipated impact.

- Panama
  (i) It is acceptable to apply Unified Interpretation IACS UI SC 178(rev.1) to the ships of which application of construction is already submitted to ClassNK and of which keel lay will be on or after 1 January 2012.
  (ii) It is further acceptable to apply Unified Interpretation IACS UI SC 178(rev.1) to ships other than above (i), as long as the contract for construction is before 1 January 2012 with the condition that the vessel is to be launched to construction before 1 January 2013.
  (iii) For any other case which does not meet condition (i) and (ii), contact to this Administration should be made in order to seek for approval on a case by case basis as through ClassNK.

Upon receiving the reply/instruction from flag states other than the above, please be advised that ClassNK Technical Information would be issued.

(To be continued)

For any questions about the above, please contact:

[For questions on each flag state's reply/instruction]
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Tel.: +81-3-5226-2038
Fax: +81-3-5226-2024
E-mail: xad@classnk.or.jp

[For questions on the application for each ship]
Material and Equipment Department, Administration Center, Head Office
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Attachment:

1. MSC.1/Circ.1388
2. IACS UI SC 178(rev.1)

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Ref. T4/4.01

MSC.1/Circ.1388
10 December 2010

UNIFIED INTERPRETATION OF CHAPTER 12 OF THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS

1 The Maritime Safety Committee, at its eighty-eighth session (24 November to 3 December 2010), with a view to providing more specific guidance for application of the relevant requirements of the International Code for Fire Safety Systems (FSS Code), approved the unified interpretation of chapter 12 of the FSS Code, as set out in the annex, prepared by the Sub-Committee on Fire Protection, at its fifty-fourth session.

2 Member Governments are invited to use the annexed unified interpretation as guidance when applying relevant provisions of chapter 12 of the FSS Code for ships constructed on or after 1 January 2012 and to bring the unified interpretation to the attention of all parties concerned.

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ANNEX

UNIFIED INTERPRETATION OF CHAPTER 12 OF THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

Chapter 12, paragraph 2.2.1.3 – Emergency fire pumps in cargo ships

1 It should be documented that chapter 12, paragraph 2.2.1.3, of the Code is satisfied and the suction inlet is fully submerged under all conditions given in this unified interpretation.

1.1 Operational seagoing condition for which roll, pitch and heave should be taken into account.

The lightest seagoing condition should be considered, which is defined as the ballast condition which gives shallowest draught at the position of the sea chest and emergency fire pump as given in the approved stability booklet (or preliminary stability calculation for new building). The following table should be applied for the calculation of roll, pitch and heave. The heave combined pitch and heave combined roll are taken into account separately.

1.1.1 Heave combined pitch[1] in head sea

L, m	75 and below	100	125	150	175	200	225	250	300	350 and above
φ, deg	4.5	4	3.2	2.7	2.3	2.1	1.8	1.7	1.6	1.5
H, m	0.73	0.8	0.87	0.93	0.98	1.03	1.07	1.11	1.19	1.25

Note: Values at the intermediate length of ships are to be obtained by linear interpolation.

where:

L: length of the ship, in metres, as defined in the International Convention on Load Lines in force, or length between perpendiculars at the ballast draught, whichever is greater

φ: pitch angle[2] as defined in figure 1

H: heave amplitude as defined in figure 1.

1.1.2 Heave combined roll in beam sea

Heave combined roll angle[2] should be taken as:

.1 ships with bilge keels: 11^{o}; and

.2 ships without bilge keels: 13^{o}.

[1] The heave combined pitch is taken into account as in figure 1.

[2] Angle is to be measured from still waterline and downwards.

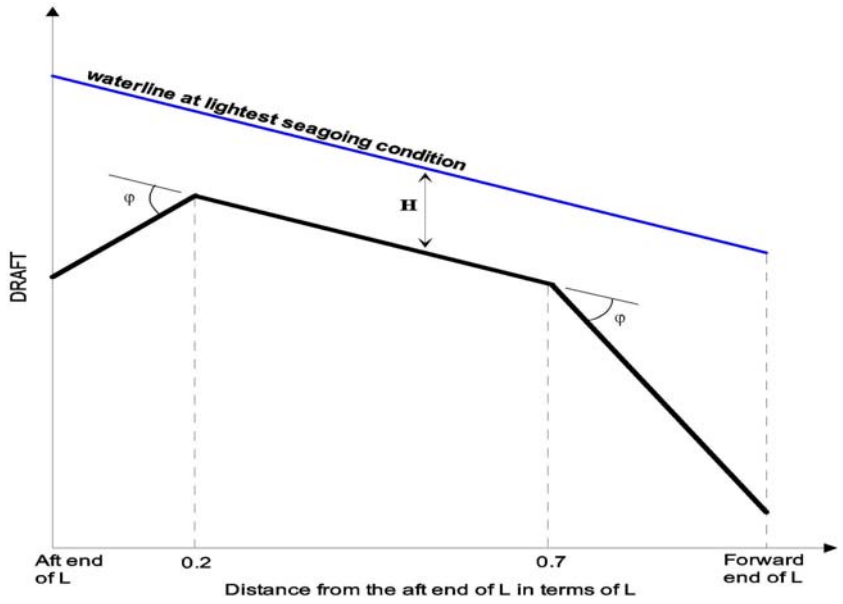

Figure 1 – Waterline for which heave combined pitch is taken into account

1.2 The emergency fire pump suction should be submerged at the waterlines corresponding to the two following conditions:

.1 a static waterline drawn through the level of 2/3 immersion of the propeller at even keel (for pod or thruster driven ship, special consideration should be given); and

.2 the ship in the arrival ballast condition, as per the approved trim and stability booklet, without cargo and with 10% stores and fuel remaining.

For either condition, roll, pitch and heave need not be applied.

1.3 A ship operating solely in sheltered water issued with SOLAS Certificates should be subject to compliance with the still water submergence requirements set out in paragraph 1.2.1 above.

2 In all cases the net positive suction head (NPSH) available for the pump should be greater than the NPSH required.

3 Upon completion of the emergency fire pump installation, a performance test confirming the pump's capacity required in the FSS Code, chapter 12, paragraph 2.2.1.1, should be carried out and, if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system provided to protect the space where the main fire pumps are located, the pump should have the capacity for this system. As far as practicable, the test should be carried out at the draught corresponding to the lightest seagoing condition.

SC 178 Emergency Fire Pumps in Cargo Ships (FSS Code, Ch. 12, 2.2.1.3)

(July 2003) (Withdrawn Apr 2005) (Rev.1 Apr 2011)

~~It should be demonstrated by calculation that this paragraph is satisfied at:~~

- ~~the lightest seagoing condition, with account being taken of 22.5° roll and 10° **pitch**[1]; and~~

  ~~[1] *Where the length of the ship exceeds 100m, the **pitch** may be taken as 500/L degrees where L = length of the ship, in metres, as defined in UR S2.*~~

- ~~a loading condition without cargo or ballast water, with 10% stores and fuel remaining, roll and pitch not being taken into account.~~

~~Upon completion of the emergency fire pump installation, a performance test confirming the capacity required in the FSS Code, Ch. 12, 2.2.1.1 and UI SC163 should be carried out. As far as practicable, the test should be carried out at lightest seagoing draught at the suction position.~~

FSS Code, Chapter 12, paragraph 2.2.1.3 Suction heads

The total suction head and the net positive suction head of the pump shall be determined having due regard to the requirements of the Convention and this chapter on the pump capacity and on the hydrant pressure under all conditions of list, trim, roll and pitch likely to be encountered in service. The ballast condition of a ship on entering or leaving a dry dock need not be considered a service condition.

Interpretation

1. It shall be documented that the suction inlet is fully submerged under "*all conditions of list, trim, roll and pitch likely to be encountered in service*" as given below.

1.1 Operational seagoing condition for which roll, pitch and heave shall be applied is as follows:

The lightest seagoing condition shall be considered, which is defined as the ballast condition which gives the shallowest draught at the position of the sea chest and emergency fire pump as given in the approved stability booklet (or preliminary stability calculation for new building). The following table shall be applied for the calculation of roll, pitch and heave. The heave combined pitch and heave combined roll are taken into account separately.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.
2. Rev.1 to the interpretation is applicable to members for ships contracted for construction on or after 1 January 2012.
3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No.29.

SC 178 (cont)

1.1.1 Heave combined pitch[1)] in head sea

L (m)	75 and below	100	125	150	175	200	225	250	300	350 and above
Φ (deg)	4.5	4	3.2	2.7	2.3	2.1	1.8	1.7	1.6	1.5
H (m)	0.73	0.8	0.87	0.93	0.98	1.03	1.07	1.11	1.19	1.25

Note: Values at the intermediate length of ships are to be obtained by linear interpolation.

Where:

L: length of the ship, in meters, as defined in the International Convention on Load Lines in force, or length between perpendiculars at the ballast draught, whichever is greater

φ: pitch angle[2)] as defined in figure 1

H: heave amplitude as defined in figure 1

1.1.2 Heave combined roll in beam sea

Heave combined roll angle[2)] shall be taken as:

.1 ships with bilge keels: 11°; and

.2 ships without bilge keels: 13°

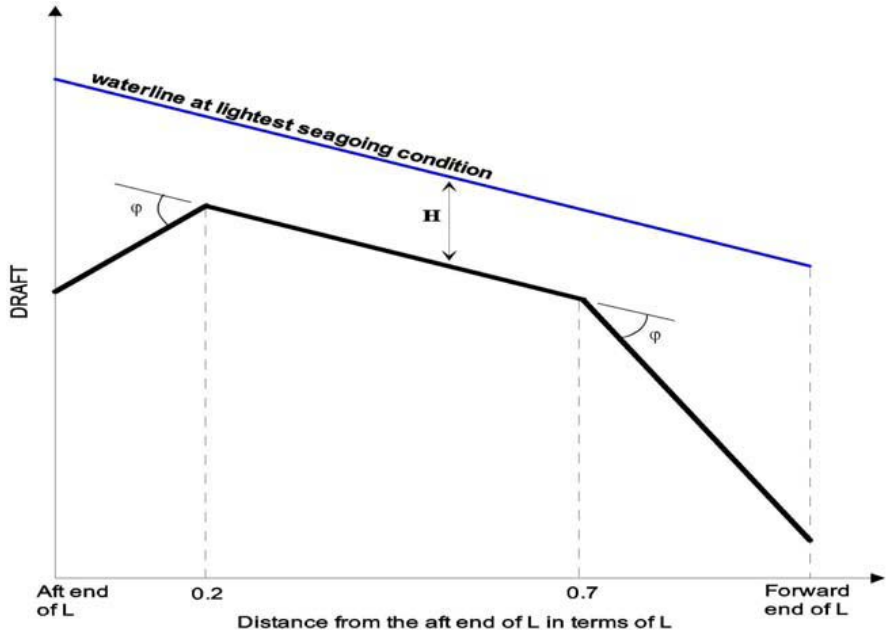

Figure 1 – Waterline for which heave combined pitch is taken into account

[1)] The heave combined pitch is taken into account as in figure 1.

SC 178 (cont)

[2)] Angle is to be measured from still waterline and downwards.

1.2 The emergency fire pump suction shall be submerged at the waterlines corresponding to the two following conditions:

.1 a static waterline drawn through the level of 2/3 immersion of the propeller at even keel (for pod or thruster driven ship, special consideration should be given); and

.2 the ship in the arrival ballast condition, as per the approved trim and stability booklet, without cargo and with 10% stores and fuel remaining.

For either condition, roll, pitch and heave need not be applied.

1.3 A ship operating solely in sheltered water issued with SOLAS Certificates shall be subject to compliance with the still water submergence requirements set out in paragraph 1.2.1 above.

2. In all cases the net positive suction head (NPSH) available for the pump shall be greater than the NPSH required.

3. Upon completion of the emergency fire pump installation, a performance test confirming the pump's capacity required in the FSS Code, chapter 12, paragraph 2.2.1.1, shall be carried out and, if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system provided to protect the spaces where the main fire pumps are located, the pump shall have the capacity for this system. As far as practicable, the test shall be carried out at the draught corresponding to the lightest seagoing condition.

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