

4 ALBERT EMBANKMENT
LONDON SE1 7SR

Telephone: +44 (0)20 7735 7611

Fax: +44 (0)20 7587 3210

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To: All IMO Members
Contracting Governments to the International Convention for the Safety of
Life at Sea, 1974

Subject: **Amendments to the International Convention for the Safety of Life at Sea
(SOLAS), 1974, as amended**

Amendments to the International Code for Fire Safety Systems (FSS Code)

**Amendments to the International Code for the Construction and Equipment
of Ships Carrying Liquefied Gases in Bulk (IGC Code)**

**Amendments to the International Code on the Enhanced Programme of
Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011
(2011 ESP Code)**

**Amendments to the International Code on Intact Stability, 2008
(2008 IS Code)**

1 The Maritime Safety Committee, at its ninety-sixth session (11 to 20 May 2016)
approved draft amendments to:

- .1 chapters II-1, II-2, III and XI-1 of the International Convention for the Safety
of Life at Sea (SOLAS), 1974, as amended, set out in annex 1;
- .2 the International Code for Fire Safety Systems (FSS Code), set out in
annex 2;
- .3 the International Code for the Construction and Equipment of Ships Carrying
Liquefied Gases in Bulk, 1983 (IGC Code), set out in annex 3;
- .4 the International Code on the Enhanced Programme of Inspections during
Surveys of Bulk Carriers and Oil Tankers, 2011 (2011 ESP Code), set out in
annex 4; and
- .5 the International Code on Intact Stability, 2008 (2008 IS Code), set out in
annex 5,

for circulation with a view to adoption at its ninety-seventh session (21 to 25 November 2016).

2 The Secretary-General has the honour to transmit herewith, in accordance with article VIII(b)(i) of the International Convention for the Safety of Life at Sea, 1974, the text of the aforementioned proposed amendments to the Convention, the FSS Code, the IGC Code, the 2011 ESP Code and the 2008 IS Code, given in annexes 1 to 5, respectively, for consideration with the view to adoption by the Committee at its ninety-seventh session, in accordance with article VIII(b)(iv) of the Convention.

ANNEX 1

DRAFT AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER II-1 CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

PART A GENERAL

Regulation 1 – Application

1 The following new paragraphs 1.1.1 and 1.1.2 are inserted after the existing paragraph 1.1:

"1.1.1 Unless expressly provided otherwise, parts B, B-1, B-2 and B-4 of this chapter shall only apply to ships:

- .1 for which the building contract is placed on or after [date 1]; or
- .2 in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after [date 2]; or
- .3 the delivery of which is on or after [date 3].

1.1.2 Unless expressly provided otherwise, for ships not subject to the provisions of subparagraph 1.1.1 but constructed on or after 1 January 2009, the Administration shall ensure that the requirements for parts B, B-1, B-2 and B-4 which are applicable under chapter II-1 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolutions MSC.216(82), MSC.269(85) and MSC.325(90) are complied with."

2 The existing paragraph 1.3.4 is deleted.

3 The existing paragraph 2 is replaced with the following:

"2 Unless expressly provided otherwise, for ships constructed before 1 January 2009, the Administration shall ensure that the requirements which are applicable under chapter II-1 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolutions MSC.1(XLV), MSC.6(48), MSC.11(55), MSC.12(56), MSC.13(57), MSC.19(58), MSC.26(60), MSC.27(61), Resolution 1 of the 1995 SOLAS Conference, MSC.47(66), MSC.57(67), MSC.65(68), MSC.69(69), MSC.99(73), MSC.134(76), MSC.151(78), MSC.170(79) and MSC.[...](99) are complied with."

Regulation 2 – Definitions

4 The existing paragraph 2 is replaced with the following:

"2 *Amidships* is at the middle of the length (*L*)."

5 The existing paragraphs 9, 10, 13 and 19 are replaced with the following:

"9 *Draught (d)* is the vertical distance from the keel line at:

- .1 amidships, for ships subject to the provisions of regulation II-1/1.1.1.1; and
- .2 the mid-point of the subdivision length (L_s), for ships not subject to the provisions of regulation II-1/1.1.1.1 but constructed on or after 1 January 2009;

to the waterline in question.

10 *Deepest subdivision draught (ds)* is the summer load line draught of the ship."

...

"13 *Trim* is the difference between the draught forward and the draught aft, where the draughts are measured at the forward and aft:

- .1 perpendiculars respectively, as defined in the International Convention on Load Lines in force, for ships subject to the provisions of regulation II-1/1.1.1.1; and
- .2 terminals respectively, for ships not subject to the provisions of regulation II-1/1.1.1.1 but constructed on or after 1 January 2009;

disregarding any rake of keel."

...

"19 *Bulkhead deck* in a passenger ship means the uppermost deck:

- .1 to which the main bulkheads and the ship's shell are carried watertight, for ships subject to the provisions of regulation II-1/1.1.1.1;
- .2 at any point in the subdivision length (L_s) to which the main bulkheads and the ship's shell are carried watertight and the lowermost deck from which passenger and crew evacuation will not be impeded by water in any stage of flooding for damage cases defined in regulation 8 and in part B-2 of this chapter, for ships not subject to the provisions of regulation II-1/1.1.1.1 but constructed on or after 1 January 2009.

The bulkhead deck may be a stepped deck. In a cargo ship not subject to the provisions of regulation II-1/1.1.1.1 but constructed on or after 1 January 2009, the freeboard deck may be taken as the bulkhead deck."

6 The existing paragraph 26 is deleted and remaining paragraphs are renumbered accordingly.

Regulation 3-12 – Protection against noise

7 In existing paragraph 2.1, the words "but before 1 January 2015" is deleted.

PART B
SUBDIVISION AND STABILITY

Regulation 4 – General

- 8 The existing paragraph 1 and the footnote to existing paragraph 1 are deleted.
- 9 The following new paragraphs 1 and 2 are introduced before the existing paragraph 2:
- "1 Unless expressly provided otherwise, the requirements in parts B-1 to B-4 shall apply to passenger ships.
- 2 For cargo ships, the requirements in parts B-1 to B-4 shall apply as follows:
- 2.1 In part B-1:
- 2.1.1 Unless expressly provided otherwise, regulation 5 shall apply to cargo ships and regulation 5-1 shall apply to cargo ships other than tankers, as defined in regulation 1/2(h);
- 2.1.2 Regulation 6 to regulation 7-3 shall apply to cargo ships having a length (*L*) of 80 m and upwards, but may exclude those ships subject to the following instruments and shown to comply with the subdivision and damage stability requirements of that instrument:
- .1 Annex I to MARPOL, except that combination carriers (as defined in SOLAS regulation II-2/3.14) with type B freeboards shall be in compliance with regulation 6 to regulation 7-3*; or
- .2 the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)*; or
- .3 the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)*; or
- .4 the damage stability requirements of regulation 27 of the 1966 Load Lines Convention as applied in compliance with resolutions A.320(IX) and A.514(13), provided that in the case of cargo ships to which regulation 27(9) applies, main transverse watertight bulkheads, to be considered effective, are spaced according to paragraph (12)(f) of resolution A.320(IX), except that ships intended for the carriage of deck cargo shall be in compliance with regulation 6 to regulation 7-3; or

- .5 the damage stability requirements of regulation 27 of the 1988 Load Lines Protocol, except that ships intended for the carriage of deck cargo shall be in compliance with regulation 6 to regulation 7-3; or
- .6 the subdivision and damage stability standards in other instruments** developed by the Organization.

2.2 Unless expressly provided otherwise, the requirements in parts B-2 and B-4 shall apply to cargo ships.

* *Guidelines for verification of damage stability requirements for tankers (MSC.1/Circ.1461).*

** .1 For offshore supply vessels of not more than 100 m in length (*L*), the *Guidelines for the design and construction of offshore supply vessels, 2006* (resolution MSC.235(82), as amended by resolution MSC.335(90)); or

.2 For special purpose ships, the *Code of safety for special purpose ships, 2008* (resolution MSC.266(84))."

10 The existing paragraphs 2 to 4 are renumbered accordingly.

PART B-1 STABILITY

Regulation 5 – Intact stability

11 The existing paragraphs 1, 2 and 5 are replaced with the following:

"1 Every passenger ship, regardless of size and every cargo ship having a length (*L*) of 24 m and upwards, shall be inclined upon its. The light ship displacement and the longitudinal, transverse and vertical position of its centre of gravity shall be determined. In addition to any other applicable requirements of the present regulations, ships having a length of 24 m and upwards shall as a minimum comply with the requirements of part A of the 2008 IS Code.

2 The Administration may allow the inclining test of an individual cargo ship to be dispensed with provided basic stability data are available from the inclining test of a sister ship and it is shown to the satisfaction of the Administration that reliable stability information for the exempted ship can be obtained from such basic data, as required by regulation 5-1. A lightweight survey shall be carried out upon completion and the ship shall be inclined whenever in comparison with the data derived from the sister ship, a deviation from the lightship displacement exceeding 1% for ships of 160 m or more in length and 2% for ships of 50 m or less in length and as determined by linear interpolation for intermediate lengths or a deviation from the lightship longitudinal centre of gravity exceeding 0.5% of *L* is found."

...

"5 At periodical intervals not exceeding five years, a lightweight survey shall be carried out on all passenger ships to verify any changes in lightship displacement and longitudinal centre of gravity. The ship shall be re-inclined whenever, in comparison with the approved stability information, a deviation from the lightship displacement exceeding 2% or a deviation of the longitudinal centre of gravity exceeding 1% of *L* is found or anticipated."

Regulation 5-1 – Stability information to be supplied to the master

- 12 The existing footnote to the title of the regulation is replaced with the following:
- "* Refer also to the *Guidelines for the preparation of intact stability information* (MSC/Circ.456) and the *Revised guidance to the master for avoiding dangerous situations in following and quartering seas* (MSC.1/Circ.1228)."
- 13 The existing paragraph 2.1 is replaced with the following:
- ".1 curves or tables of minimum operational metacentric height (*GM*) and maximum permissible trim versus draught which assures compliance with the intact and damage stability requirements where applicable, alternatively corresponding curves or tables of the maximum allowable vertical centre of gravity (*KG*) and maximum permissible trim versus draught, or with the equivalents of either of these curves or tables;"
- 14 The existing paragraphs 3 and 4 are replaced with the following:
- "3 The intact and damage stability information required by regulation 5-1.2 shall be presented as consolidated data and encompass the full operating range of draught and trim. Applied trim values shall coincide in all stability information intended for use on board. Information not required for determination of stability and trim limits should be excluded from this information.
- 4 If the damage stability is calculated in accordance with regulation 6 to regulation 7-3 and, if applicable, with regulations 8 and 9.8, a stability limit curve is to be determined using linear interpolation between the minimum required *GM* assumed for each of the three draughts *ds*, *dp* and *dl*. When additional subdivision indices are calculated for different trims, a single envelope curve based on the minimum values from these calculations shall be presented. When it is intended to develop curves of maximum permissible *KG* it shall be ensured that the resulting maximum *KG* curves correspond with a linear variation of *GM*.
- 5 As an alternative to a single envelope curve, the calculations for additional trims may be carried out with one common *GM* for all of the trims assumed at each subdivision draught. The lowest values of each partial index *A_s*, *A_p* and *A_l* across these trims shall then be used in the summation of the attained subdivision index *A* according to regulation 7.1. This will result in one *GM* limit curve based on the *GM* used at each draught. A trim limit diagram showing the assumed trim range shall be developed."
- 15 The existing paragraph 5 is renumbered and amended to read as follows:
- "6 When curves or tables of minimum operational metacentric height (*GM*) or maximum allowable *KG* versus draught are not provided, the master shall ensure that the operating condition does not deviate from approved loading conditions, or verify by calculation that the stability requirements are satisfied for this loading condition."

Regulation 6 – Required subdivision index R

16 The existing chapeau in paragraph 2 and paragraph 2.2 are replaced with the following:

"2 For ships to which the damage stability requirements of this part apply, the degree of subdivision to be provided shall be determined by the required subdivision index *R*, as follows:"

...

".2 In the case of cargo ships not less than 80 m in length (*L*) and not greater than 100 m in length (*L_s*):

..."

17 The text in the existing paragraph 2.3 is replaced with the following:

"2.3 In the case of passenger ships:

<i>Persons on Board</i>	<i>R</i>
$N \leq 1,000$	$R = 0.000088 * N + 0.7488$
$1,000 < N \leq 6,000$	$R = 0.0369 * \ln(N + 89.048) + 0.579$
$N > 6,000$	$R = 1 - (C1 * 6,200) / (4 * N + 20,000)$ with: $C1 = 0.8 - (0.25 / 10,000) * (10,000 - N)$

Where:

N = total number of persons on board"

18 The existing paragraph 2.4 is deleted.

Regulation 7 – Attained subdivision index A

19 The first sentence of the existing paragraph 1 is replaced with the following:

"1 An attained subdivision index *A* is obtained by the summation of the partial indices *A_s*, *A_p* and *A_l*, weighted as shown and calculated for the draughts *d_s*, *d_p* and *d_l* defined in regulation 2 in accordance with the following formula:"

20 The existing paragraphs 2 and 3 are replaced with the following:

"2 As a minimum, the calculation of *A* shall be carried out at level trim for the deepest subdivision draught *d_s* and the partial subdivision draught *d_p*. The estimated service trim may be used for the light service draught *d_l*. If, in any anticipated service condition within the draught range from *d_s* to *d_l*, the trim variation in comparison with the calculated trims is greater than 0.5% of *L*, one or more additional calculations of *A* are to be performed for the same draughts but including sufficient trims to ensure that, for all intended service conditions, the difference in trim in comparison with the reference trim used for one calculation will be not more than 0.5% of *L*. Each additional calculation of *A* shall comply with regulation 6.1.

3 When determining the positive righting lever (GZ) of the residual stability curve in the intermediate and final equilibrium stages of flooding, the displacement used should be that of the intact loading condition. All calculations should be done with the ship freely trimming."

Regulation 7-1 – Calculation of the factor p_i

21 In the existing paragraph 1, the text of the notation for the mean transverse distance b is replaced with the following:

" b = the mean transverse distance in metres measured at right angles to the centreline at the deepest subdivision draught between the shell and an assumed vertical plane extended between the longitudinal limits used in calculating the factor p_i and which is a tangent to, or common with, all or part of the outermost portion of the longitudinal bulkhead under consideration. This vertical plane shall be so orientated that the mean transverse distance to the shell is a maximum, but not more than twice the least distance between the plane and the shell. If the upper part of a longitudinal bulkhead is below the deepest subdivision draught the vertical plane used for determination of b is assumed to extend upwards to the deepest subdivision waterline. In any case, b is not to be taken greater than $B/2$."

Regulation 7-2 – Calculation of the factor s_i

22 The existing paragraphs 2 to 4.1.2 are replaced with the following:

"2 For passenger ships and cargo ships fitted with cross-flooding devices the factor $s_{intermediate,i}$ is taken as the least of the s -factors obtained from all flooding stages including the stage before equalization, if any, and is to be calculated as follows:

$$s_{intermediate,i} = \left[\frac{GZ_{max}}{0.05} \cdot \frac{Range}{7} \right]^{\frac{1}{4}}$$

where GZ_{max} is not to be taken as more than 0.05 m and $Range$ as not more than 7. $s_{intermediate,i} = 0$, if the intermediate heel angle exceeds 15° for passenger ships and 30° for cargo ships.

For cargo ships not fitted with cross-flooding devices the factor $s_{intermediate,i}$ is taken as unity, except if the Administration considers that the stability in intermediate stages of flooding may be insufficient, it should require further investigation thereof.

For passenger and cargo ships, where cross-flooding devices are fitted, the time for equalization shall not exceed 10 min.

3 The factor $s_{final,i}$ shall be obtained from the formula:

$$s_{final,i} = K \cdot \left[\frac{GZ_{max}}{TGZ_{max}} \cdot \frac{Range}{TRange} \right]^{\frac{1}{4}}$$

where:

GZ_{max} is not to be taken as more than TGZ_{max} ;

TRange is not to be taken as more than *TRange*;

$TGZ_{\max} = 0.20$ m, for ro-ro passenger ships each damage case that involves a ro-ro space,

$TGZ_{\max} = 0.12$ m, otherwise;

$TRange = 20^\circ$, for ro-ro passenger ships each damage case that involves a ro-ro space,

$TRange = 16^\circ$, otherwise;

$K = 1$ if $\theta_e \leq \theta_{\min}$

$K = 0$ if $\theta_e \geq \theta_{\max}$

$$K = \sqrt{\frac{\theta_{\max} - \theta_e}{\theta_{\max} - \theta_{\min}}} \text{ otherwise,}$$

where:

θ_{\min} is 7° for passenger ships and 25° for cargo ships; and

θ_{\max} is 15° for passenger ships and 30° for cargo ships.

4 The factor $s_{\text{mom},i}$ is applicable only to passenger ships (for cargo ships $s_{\text{mom},i}$ shall be taken as unity) and shall be calculated at the final equilibrium from the formula:

$$s_{\text{mom},i} = \frac{(GZ_{\max} - 0.04) \cdot \text{Displacement}}{M_{\text{heel}}}$$

where:

Displacement is the intact displacement at the respective draught (d_s , d_p or d_l).

M_{heel} is the maximum assumed heeling moment as calculated in accordance with subparagraph 4.1; and

$$s_{\text{mom},i} \leq 1$$

4.1 The heeling moment M_{heel} is to be calculated as follows:

$$M_{\text{heel}} = \text{maximum} (M_{\text{passenger}} \text{ or } M_{\text{wind}} \text{ or } M_{\text{survivalcraft}})$$

4.1.1 $M_{\text{passenger}}$ is the maximum assumed heeling moment resulting from movement of passengers, and is to be obtained as follows:

$$M_{\text{passenger}} = (0.075 \cdot N_p) \cdot (0.45 \cdot B) \text{ (tm)}$$

where:

N_p is the maximum number of passengers permitted to be on board in the service condition corresponding to the deepest subdivision draught under consideration; and

B is the breadth of the ship as defined in regulation 2.8.

Alternatively, the heeling moment may be calculated assuming the passengers are distributed with 4 persons per square metre on available deck areas towards one side of the ship on the decks where muster stations are located and in such a way that they produce the most adverse heeling moment. In doing so, a weight of 75 kg per passenger is to be assumed.

4.1.2 M_{wind} is the maximum assumed wind moment acting in a damage situation:

$$M_{wind} = (P \cdot A \cdot Z) / 9,806 \text{ (tm)}$$

where:

$$P = 120 \text{ N/m}^2;$$

A = projected lateral area above waterline;

Z = distance from centre of lateral projected area above waterline to $T/2$; and

T = respective draught, (d_s , d_p or d_l)."

23 The existing paragraph 5, the chapeau of paragraph 5.2, and paragraphs 5.3 and 5.5 are replaced with the following:

"5 Unsymmetrical flooding is to be kept to a minimum consistent with the efficient arrangements. Where it is necessary to correct large angles of heel, the means adopted shall, where practicable, be self-acting, but in any case where controls to equalization devices are provided they shall be operable from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. These fittings together with their controls shall be acceptable to the Administration.* Suitable information concerning the use of equalization devices shall be supplied to the master of the ship.

* Reference is made to the *Revised recommendation on a standard method for evaluating cross-flooding arrangements*, adopted by the Organization by resolution MSC.362(92), as may be amended."

...

"5.2 The factor s_i is to be taken as zero in those cases where the final waterline, taking into account sinkage, heel and trim, immerses:"

...

"5.3 The factor s_i is to be taken as zero if, taking into account sinkage, heel and trim, any of the following occur in any intermediate stage or in the final stage of flooding:

- .1 immersion of any vertical escape hatch in the bulkhead deck of passenger ships and the freeboard deck of cargo ships intended for compliance with chapter II-2;
- .2 any controls intended for the operation of watertight doors, equalization devices, valves on piping or on ventilation ducts intended to maintain the integrity of watertight bulkheads from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships become inaccessible or inoperable; and
- .3 immersion of any part of piping or ventilation ducts located within the assumed extent of damage and carried through a watertight boundary if this can lead to the progressive flooding of compartments not assumed as flooded."

...

"5.5 Except as provided in paragraph 5.3.1, openings closed by means of watertight manhole covers and flush scuttles, remotely operated sliding watertight doors, sidescuttles of the non-opening type as well as watertight access doors and watertight hatch covers required to be kept closed at sea need not be considered."

Regulation 8 – Special requirements concerning passenger ship stability

24 The existing paragraphs 1 and 2, the chapeau of paragraph 3, and paragraphs 3.2 and 3.4 are replaced with the following:

"1 A passenger ship intended to carry 400 or more persons shall have watertight subdivision abaft the collision bulkhead so that $s_i = 1$ for a damage involving all the compartments within $0.08L$ measured from the forward perpendicular for the three loading conditions used to calculate the attained subdivision index A . If the attained subdivision index A is calculated for different trims, this requirement must also be satisfied for those loading conditions.

2 A passenger ship intended to carry 36 or more persons is to be capable of withstanding damage along the side shell to an extent specified in paragraph 3. Compliance with this regulation is to be achieved by demonstrating that s_i , as defined in regulation 7-2, is not less than 0.9 for the three loading conditions used to calculate the attained subdivision index A . If the attained subdivision index A is calculated for different trims, this requirement must also be satisfied for those loading conditions.

3 The damage extent to be assumed when demonstrating compliance with paragraph 2, is to be dependent on the total number of persons carried, and L , such that:"

...

".2 where 400 or more persons are to be carried, a damage length of $0.03L$, but not less than 3 m is to be assumed at any position along the side shell, in conjunction with a penetration inboard of $0.1B$ but not less than 0.75 m measured inboard from the ship side, at right angles to the centreline at the level of the deepest subdivision draught;"

...

".4 where 36 persons are carried, a damage length of $0.015L$ but not less than 3 m is to be assumed, in conjunction with a penetration inboard of $0.05B$ but not less the 0.75 m; and"

Regulation 8-1 – System capabilities and operational information after a flooding casualty on passenger ships

2 Availability of essential systems in case of flooding damage

25 The text of the existing paragraph is replaced with the following:

"A passenger ship shall be designed so that the systems specified in regulation II-2/21.4 remain operational when the ship is subject to flooding of any single watertight compartment."

3 Operational information after a flooding casualty

26 The text of the existing chapeau is replaced with the following:

"For the purpose of providing operational information to the Master for safe return to port after a flooding casualty, passenger ships shall have:"

PART B-2 SUBDIVISION, WATERTIGHT AND WEATHERTIGHT INTEGRITY

Regulation 9 – Double bottoms in passenger ships and cargo ships other than tankers

27 The existing paragraph 3 is replaced with the following:

"3.1 Small wells constructed in the double bottom in connection with drainage arrangements shall not extend downward more than necessary. The vertical distance from the bottom of such a well to a plane coinciding with the keel line shall not be less than $h/2$ or 500 mm, whichever is greater, or compliance with paragraph 8 of this regulation shall be shown for that part of the ship.

3.2 Other wells (e.g. for lubricating oil under main engines) may be permitted by the Administration if satisfied that the arrangements give protection equivalent to that afforded by a double bottom complying with this regulation.

3.2.1 For a cargo ship of 80 m in length and upwards or for a passenger ship, proof of equivalent protection is to be shown by demonstrating that the ship is capable of withstanding bottom damages as specified in paragraph 8. Alternatively, wells for lubricating oil below main engines may protrude into the double bottom below the boundary line defined by the distance h provided that the vertical distance between the well bottom and a plane coinciding with the keel line is not less than $h/2$ or 500 mm, whichever is greater.

3.2.2 For cargo ships of less than 80 m in length the arrangements shall provide a level of safety satisfactory to the Administration."

28 The existing paragraphs 6 to 8 are replaced with the following:

"6 Any part of a cargo ship of 80 m in length and upwards or of a passenger ship that is not fitted with a double bottom in accordance with paragraphs 1, 4 or 5, as specified in paragraph 2, shall be capable of withstanding bottom damages, as specified in paragraph 8, in that part of the ship. For cargo ships of less than 80 m in length the alternative arrangements shall provide a level of safety satisfactory to the Administration.

7 In the case of unusual bottom arrangements in a cargo ship of 80 m in length and upwards or a passenger ship, it shall be demonstrated that the ship is capable of withstanding bottom damages as specified in paragraph 8. For cargo ships of less than 80 m in length the alternative arrangements shall provide a level of safety satisfactory to the Administration.

8 Compliance with paragraphs 3.1, 3.2.1, 6 or 7 is to be achieved by demonstrating that s_x , when calculated in accordance with regulation 7-2, is not less than 1 for all service conditions when subject to bottom damage with an extent specified in subparagraph .2 below for any position in the affected part of the ship:

.1 Flooding of such spaces shall not render emergency power and lighting, internal communication, signals or other emergency devices inoperable in other parts of the ship.

.2 Assumed extent of damage shall be as follows:

	For 0.3 L from the forward perpendicular of the ship	Any other part of the ship
Longitudinal extent	$1/3 L^{2/3}$ or 14.5 m, whichever is less	$1/3 L^{2/3}$ or 14.5 m, whichever is less
Transverse extent	$B/6$ or 10 m, whichever is less	$B/6$ or 5 m, whichever is less
Vertical extent, measured from the keel line	$B/20$, to be taken not less than 0.76 m and not more than 2 m	$B/20$, to be taken not less than 0.76 m and not more than 2 m

- .3 If any damage of a lesser extent than the maximum damage specified in .2 would result in a more severe condition, such damage should be considered."

Regulation 10 – Construction of watertight bulkheads

29 The existing paragraph 1 is replaced with the following:

"1 Each watertight subdivision bulkhead, whether transverse or longitudinal, shall be constructed having scantlings as specified in regulation 2.17. In all cases, watertight subdivision bulkheads shall be capable of supporting at least the pressure due to a head of water up to the bulkhead deck in passenger ships and freeboard deck in cargo ships."

Regulation 12 – Peak and machinery space bulkheads, shaft tunnels, etc.

30 The existing paragraph 1 is replaced with the following:

"1 A collision bulkhead shall be fitted which shall be watertight up to the bulkhead deck in passenger ships and freeboard deck in cargo ships. This bulkhead shall be located at a distance from the forward perpendicular of not less than $0.05L$ or 10 m, whichever is the less, and, except as may be permitted by the Administration, not more than $0.08L$ or $0.05L + 3$ m, whichever is the greater.

2 The ship shall be so designed that s_i calculated in accordance with regulation 7-2 will not be less than 1 at the deepest subdivision draught loading condition, level trim or any forward trim loading conditions, if any part of the ship forward of the collision bulkhead is flooded without vertical limits."

31 The existing paragraphs 2 to 10 are replaced with the following:

"3 Where any part of the ship below the waterline extends forward of the forward perpendicular, e.g. a bulbous bow, the distances stipulated in paragraph 1 shall be measured from a point either:

- .1 at the mid-length of such extension;
- .2 at a distance $0.015L$ forward of the forward perpendicular; or
- .3 at a distance 3 m forward of the forward perpendicular,

whichever gives the smallest measurement.

4 The bulkhead may have steps or recesses provided they are within the limits prescribed in paragraph 1 or 3.

5 No doors, manholes, access openings, ventilation ducts or any other openings shall be fitted in the collision bulkhead below the bulkhead deck in passenger ships and freeboard deck in cargo ships.

6.1 Except as provided in paragraph 6.2, the collision bulkhead may be pierced below the bulkhead deck in passenger ships and freeboard deck in cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe

is fitted with a screw-down valve capable of being operated from above the bulkhead deck in passenger ships and freeboard deck in cargo ships, the valve being located inside the forepeak at the collision bulkhead. The Administration may, however, authorize the fitting of this valve on the after side of the collision bulkhead provided that the valve is readily accessible under all service conditions and the space in which it is located is not a cargo space. 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. All valves shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable.

6.2 If the forepeak is divided to hold two different kinds of liquids the Administration may allow the collision bulkhead to be pierced below the bulkhead deck in passenger ships and freeboard deck in cargo ships by two pipes, each of which is fitted as required by paragraph 6.1, provided the Administration is satisfied that there is no practical alternative to the fitting of such a second pipe and that, having regard to the additional subdivision provided in the forepeak, the safety of the ship is maintained.

7 Where a long forward superstructure is fitted, the collision bulkhead shall be extended weathertight to the deck next above the bulkhead deck in passenger ships and freeboard deck in cargo ships. The extension need not be fitted directly above the bulkhead below provided that all parts of the extension, including any part of the ramp attached to it are located within the limits prescribed in paragraph 1 or 3, with the exception permitted by paragraph 8 and that the part of the deck which forms the step is made effectively weathertight. The extension shall be so arranged as to preclude the possibility of the bow door or ramp, where fitted, causing damage to it in the case of damage to, or detachment of, a bow door or any part of the ramp.

8 Where bow doors are fitted and a sloping loading ramp forms part of the extension of the collision bulkhead above the bulkhead deck in passenger ships and freeboard deck in cargo ships the ramp shall be weathertight over its complete length. In cargo ships the part of the ramp which is more than 2.3 m above the freeboard deck may extend forward of the limit specified in paragraph 1 or 3. Ramps not meeting the above requirements shall be disregarded as an extension of the collision bulkhead.

9 The number of openings in the extension of the collision bulkhead above the freeboard deck shall be restricted to the minimum compatible with the design and normal operation of the ship. All such openings shall be capable of being closed weathertight.

10 Bulkheads shall be fitted separating the machinery space from cargo and accommodation spaces forward and aft and made watertight up to the bulkhead deck in passenger ships and freeboard deck in cargo ships. An afterpeak bulkhead shall also be fitted and made watertight up to the bulkhead deck or the freeboard deck. The afterpeak bulkhead may, however, be stepped below the bulkhead deck or the freeboard deck, provided the degree of safety of the ship as regards subdivision is not thereby diminished.

11 In all cases stern tubes shall be enclosed in watertight spaces of moderate volume. In passenger ships the stern gland shall be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such volume that, if flooded by leakage through the stern gland, the bulkhead deck will not be immersed. In cargo ships other measures to minimize the danger of water penetrating into the ship in case of damage to stern tube arrangements may be taken at the discretion of the Administration."

Regulation 13 – Openings in watertight bulkheads below the bulkhead deck in passenger ships

32 The existing paragraph 11.1 is replaced with the following:

"11.1 Where trunkways or tunnels for access from crew accommodation to the machinery spaces, for piping, or for any other purpose are carried through watertight bulkheads, they shall be watertight and in accordance with the requirements of regulation 16-1. The access to at least one end of each such tunnel or trunkway, if used as a passage at sea, shall be through a trunk extending watertight to a height sufficient to permit access above the bulkhead deck. The access to the other end of the trunkway or tunnel may be through a watertight door of the type required by its location in the ship. Such trunkways or tunnels shall not extend through the first subdivision bulkhead abaft the collision bulkhead."

Regulation 15 – Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships

33 The existing paragraphs 4, 5.1, 8.2.1 and 8.4 are replaced with the following:

"4 Efficient hinged inside deadlights so arranged that they can be easily and effectively closed and secured watertight, shall be fitted to all sidescuttles except that abaft one eighth of the ship's length from the forward perpendicular and above a line drawn parallel to the bulkhead deck at side and having its lowest point at a height of 3.7 m plus 2.5% of the breadth of the ship above the deepest subdivision draught, the deadlights may be portable in passenger accommodation, unless the deadlights are required by the International Convention on Load Lines in force to be permanently attached in their proper positions. Such portable deadlights shall be stowed adjacent to the sidescuttles they serve.

5.1 No sidescuttles shall be fitted in any spaces which are appropriated exclusively to the carriage of cargo."

...

"8.2.1 Subject to the requirements of the International Convention on Load Lines in force, and except as provided in paragraph 8.3, each separate discharge led through the shell plating from spaces below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be provided with either one automatic non-return valve fitted with a positive means of closing it from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships or with two automatic non-return valves without positive means of closing, provided that the inboard valve is situated above the deepest subdivision draught and is always accessible for examination under service conditions. Where a valve with positive means of closing is fitted, the operating position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall always be readily accessible and means shall be provided for indicating whether the valve is open or closed."

...

"8.4 Moving parts penetrating the shell plating below the deepest subdivision draught shall be fitted with a watertight sealing arrangement acceptable to the Administration. The inboard gland shall be located within a watertight space of such volume that, if flooded, the bulkhead deck in passenger ships and freeboard deck

in cargo ships will not be submerged. The Administration may require that if such compartment is flooded, essential or emergency power and lighting, internal communication, signals or other emergency devices must remain available in other parts of the ship."

Regulation 16 – Construction and initial tests of watertight closures

34 The existing paragraphs 1 and 2 are replaced with the following:

"1.1 The design, materials and construction of all watertight closures such as doors, hatches, sidescuttles, gangway and cargo ports, valves, pipes, ash-chutes and rubbish-chutes referred to in these regulations shall be to the satisfaction of the Administration;

1.2 Such valves, doors, hatches, and mechanisms shall be suitably marked to ensure that they may be properly used to provide maximum safety; and

1.3 The frames of vertical watertight doors shall have no groove at the bottom in which dirt might lodge and prevent the door closing properly.

2 Watertight doors and hatches shall be tested by water pressure to the maximum head of water they might sustain in a final or intermediate stage of flooding. For cargo ships not covered by damage stability requirements, watertight doors and hatches shall be tested by water pressure to a head of water measured from the lower edge of the opening to one metre above the freeboard deck. Where testing of individual doors and hatches is not carried out because of possible damage to insulation or outfitting items, testing of individual doors and hatches may be replaced by a prototype pressure test of each type and size of door or hatch with a test pressure corresponding at least to the head required for the individual location. The prototype test shall be carried out before the door or hatch is fitted. The installation method and procedure for fitting the door or hatch on board shall correspond to that of the prototype test. When fitted on board, each door or hatch shall be checked for proper seating between the bulkhead, the frame and the door or between deck, the coaming and the hatch."

Regulation 16-1 – Construction and initial tests of watertight decks, trunks, etc.

35 The existing paragraphs 2 and 3 are replaced with the following:

"2 In passenger ships, where a ventilation trunk passing through a structure penetrates a watertight area of the bulkhead deck, the trunk shall be capable of withstanding the water pressure that may be present within the trunk, after having taken into account the maximum heel angle during flooding, in accordance with regulation 7-2.

3 In ro-ro passenger ships, where all or part of the penetration of the bulkhead deck is on the main ro-ro deck, the trunk shall be capable of withstanding impact pressure due to internal water motions (sloshing) of water trapped on the ro-ro deck."

Regulation 17 – Internal watertight integrity of passenger ships above the bulkhead deck

36 The existing paragraph 3 is replaced with the following:

"3 Air pipes terminating within a superstructure which are not fitted with watertight means of closure shall be considered as unprotected openings when applying regulation 7-2.6.1.1."

PART B-4 STABILITY MANAGEMENT

Regulation 19 – Damage control information

37 The existing paragraph 2 is deleted and remaining paragraphs are renumbered accordingly.

38 The following new regulation 19-1 is introduced after the existing regulation 19:

"Regulation 19-1 – Damage control drills for passenger ships

1 This regulation applies to passenger ships constructed before, on or after 1 January 2020.

2 A damage control drill shall take place at least every 3 months. The entire crew need not participate in every drill, but only those crew members with damage control responsibilities.

3 The damage control drill scenarios shall vary each drill so that emergency conditions are simulated for different damage conditions and shall, as far as practicable, be conducted as if there were an actual emergency.

4 Each damage control drill shall include:

- .1 for crew members with damage control responsibilities, reporting to stations and preparing for the duties described in the muster list required by regulation III/8;
- .2 use of the damage control information and the on-board damage stability computer, if fitted, to conduct stability assessments for the simulated damage conditions;
- .3 establishment of the communications link between the ship and shore-based support, if provided;
- .4 operation of watertight doors and other watertight closures;
- .5 demonstrating proficiency in the use of the flooding detection system, if fitted, in accordance with muster list duties;
- .6 demonstrating proficiency in the use of cross-flooding and equalization systems, if fitted, in accordance with muster list duties;

- .7 operation of bilge pumps and checking of bilge alarms and automatic bilge pump starting systems; and
- .8 instruction in damage survey and use of the ship's damage control systems.

5 At least one damage control drill each year shall include activation of the shore-based support, if provided in compliance with regulation II-1/8-1.3, to conduct stability assessments for the simulated damage conditions.

6 Every crew member with assigned damage control responsibilities shall be familiarized with their duties and about the damage control information before the voyage begins.

7 A record of each damage control drill shall be maintained in the same manner as prescribed for the other drills in regulation III/19.5."

39 The existing title and paragraph 1 of regulation 20 are replaced with the following:

"Regulation 20 – Loading of ships

1 On completion of loading of the ship and prior to its departure, the master shall determine the ship's trim and stability and also ascertain and record that the ship is upright and in compliance with stability criteria in relevant regulations. The determination of the ship's stability shall always be made by calculation or by ensuring that the ship is loaded according to one of the pre-calculated loading conditions within the approved stability information. The Administration may accept the use of an electronic loading and stability computer or equivalent means for this purpose."

Regulation 21 – Periodical operation and inspection of watertight doors, etc. in passenger ships

40 The existing paragraph 1 is replaced with the following:

"1 Operational tests of watertight doors, sidescuttles, valves and closing mechanisms of scuppers, ash-chutes and rubbish-chutes shall take place weekly. In ships in which the voyage exceeds one week in duration a complete set of operational tests shall be held before the voyage commences, and others thereafter at least once a week during the voyage."

41 The existing paragraph 4 is replaced with the following:

"4 A record of all operational tests and inspections required by this regulation shall be entered in the logbook with an explicit record of any defects which may be disclosed."

Regulation 22 – Prevention and control of water ingress, etc.

42 In the existing paragraph 1, at the end of the first sentence, the words "paragraphs 3 and 4" are replaced with "paragraph 3".

43 The existing paragraph 2 is replaced with the following:

"2 Watertight doors located below the bulkhead deck in passenger ships and freeboard deck in cargo ships having a maximum clear opening width of more than 1.2 m shall be kept closed when the ship is at sea, except for limited periods when absolutely necessary as determined by the Administration."

44 The following footnote is added to the end of existing paragraph 3:

"* Refer to the *Guidance for watertight doors on passenger ships which may be opened during navigation* (MSC.1/Circ.[...])."

45 The existing paragraphs 4 to 7 are replaced with the following:

"4 Portable plates on bulkheads shall always be in place before the voyage commences, and shall not be removed during navigation except in case of urgent necessity at the discretion of the master. The necessary precautions shall be taken in replacing them to ensure that the joints are watertight. Power-operated sliding watertight doors permitted in machinery spaces in accordance with regulation 13.10 shall be closed before the voyage commences and shall remain closed during navigation except in case of urgent necessity at the discretion of the master.

5 Watertight doors fitted in watertight bulkheads dividing cargo between deck spaces in accordance with regulation 13.9.1 shall be closed before the voyage commences and shall be kept closed during navigation. The time such doors are opened or closed shall be entered in the log-book.

6 Gangway, cargo and fuelling ports fitted below the bulkhead deck in passenger ships and freeboard deck in cargo ships shall be effectively closed and secured watertight before the ship leaves port, and shall be kept closed during navigation."

46 The existing paragraph 8 is renumbered as 7, and the chapeau of renumbered paragraph 7 is replaced with the following:

"7 The following doors, located above the bulkhead deck in passenger ships and freeboard deck in cargo ships, shall be closed and locked before the ship proceeds on any voyage and shall remain closed and locked until the ship is at its next berth:"

47 The existing paragraphs 9 to 13 are renumbered as 8 to 12.

48 The existing paragraph 14 is replaced with the following, and the existing paragraph 15 to 17 are renumbered as paragraphs 14 to 16:

"13 Where in a between-deck, the sills of any of the sidescuttles referred to in regulation 15.3.2 are below a line drawn parallel to the bulkhead deck at side in passenger ships and freeboard deck at side in cargo ships, and having its lowest point 1.4 m plus 2.5% of the breadth of the ship above the water when the ship departs from any port, all the sidescuttles in that between-deck shall be closed watertight and locked before the ship leaves port, and they shall not be opened before the ship arrives at the next port. In the application of this paragraph the appropriate allowance for fresh water may be made when applicable.

- .1 The time of opening such sidescuttles in port and of closing and locking them before the ship leaves port shall be entered in such log-book as may be prescribed by the Administration.
- .2 For any ship that has one or more sidescuttles so placed that the requirements of paragraph 14 would apply when it was floating at its deepest subdivision draught, the Administration may indicate the limiting mean draught at which these sidescuttles will have their sills above the line drawn parallel to the bulkhead deck at side in passenger ships and freeboard deck at side in cargo ships, and having its lowest point 1.4 m plus 2.5% of the breadth of the ship above the waterline corresponding to the limiting mean draught, and at which it will therefore be permissible to depart from port without previously closing and locking them and to open them at sea on the responsibility of the master during the voyage to the next port. In tropical zones as defined in the International Convention on Load Lines in force, this limiting draught may be increased by 0.3 m."

Regulation 22-1 – Flooding detection systems for passenger ships carrying 36 or more persons constructed on or after 1 July 2010

49 In regulation 22-1, the words "constructed on or after 1 July 2010" are removed from the end of the existing title.

50 In regulation 24, the existing title and paragraph 3 are replaced with the following:

"Regulation 24 – Additional requirements for prevention and control of water ingress, etc. in cargo ships"

...

"3 Watertight doors or ramps fitted to internally subdivide large cargo spaces shall be closed before the voyage commences and shall be kept closed during navigation. The time such doors are opened or closed shall be entered in the log-book."

**PART C
MACHINERY INSTALLATIONS**

Regulation 35-1 – Bilge pumping arrangements

51 The following new sentence is added at the end of the existing paragraph 2.6:

"For ships subject to the provisions of regulation II-1/1.1.1.1, for the special hazards associated with loss of stability when fitted with fixed pressure water-spraying fire-extinguishing systems see II-2/20.6.1.4."

52 In paragraph 3.2, the existing text of the whole volume of the passenger and crew spaces below the bulkhead deck *P* is replaced with the following:

"*P* = the whole volume of the passenger and crew spaces below the bulkhead deck (cubic metres), which are provided for the accommodation and use of passengers and crew, excluding baggage, store and provision rooms;"

- 53 In paragraph 3.4, the existing chapeau is replaced with the following:
- "3.4 On a ship of 91.5 m in length L and upwards or having a bilge pump numeral, calculated in accordance with paragraph 3.2, of 30 or more, the arrangements shall be such that at least one power bilge pump shall be available for use in all flooding conditions which the ship is required to withstand, and, for ships subject to the provisions of regulation II-1/1.1.1.1, in all flooding conditions derived from consideration of minor damages as specified in regulation 8 as follows:"
- 54 The following new sentence is added at the end of the existing paragraph 3.10:
- "For ships subject to the provisions of regulation II-1/1.1.1.1, the deepest subdivision load line shall be taken as the deepest subdivision draught."

**CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION
AND FIRE EXTINCTION**

**PART A
GENERAL**

Regulation 1 – Application

55 The following new paragraph is added after existing paragraph 2.8:

"2.9 Regulation 10.5.1.2.2, as amended by resolution MSC.[...(97)], applies to ships constructed before [*date of entry into force*], including those constructed before 1 July 2012."

**PART C
SUPPRESSION OF FIRE**

Regulation 10 – Firefighting

56 In paragraph 5.1.2.2, the last sentence is replaced with the following:

"In the case of domestic boilers of less than 175 kW, or boilers protected by fixed water-based local application fire-extinguishing systems as required by paragraph 5.6, an approved foam-type extinguisher of at least 135 l capacity is not required."

**CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS**

**PART A
GENERAL**

Regulation 1 – Application

57 The existing paragraph 4 is replaced with the following:

- "4 For ships constructed before 1 July 1998, the Administration shall:
- .1 ensure that, subject to the provisions of paragraph 4.2, the requirements which are applicable under chapter III of the International Convention for the Safety of Life at Sea, 1974, in force prior to 1 July 1998 to new or existing ships as prescribed by that chapter are complied with;
 - .2 ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing life-saving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft other than an inflatable liferaft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced; and
 - .3 ensure that the requirements of regulations 30.3 and 37.3.9 are complied with."

**PART B
REQUIREMENTS FOR SHIPS AND LIFE-SAVING APPLIANCES**

Regulation 30 – Drills

58 The following new paragraph 3 is added after the existing paragraph 2:

- "3 Damage control drills shall be conducted as required in regulation II-1/19-1."

Regulation 37 – Muster list and emergency instructions

59 In paragraph 3, the existing subparagraphs .7 and .8 are replaced with the following:

- " .7 manning of fire parties assigned to deal with fires;
- .8 special duties assigned in respect to the use of fire-fighting equipment and installations; and
- .9 for passenger ships only, damage control for flooding emergencies."

**CHAPTER XI-1
SPECIAL MEASURES TO ENHANCE MARITIME SAFETY**

60 The following new regulation 2-1 is inserted after existing regulation 2:

"Regulation 2-1 – Harmonization of survey periods of cargo ships not subject to the ESP Code

For cargo ships not subject to enhanced surveys under regulation XI-1/2, notwithstanding any other provisions, the intermediate and renewal surveys included in regulation I/10 may be carried out and completed over the corresponding periods as specified in the 2011 ESP Code, as may be amended and the guidelines developed by the Organization*, as appropriate.

* Refer to Survey Guidelines under the harmonized system of survey and certification (HSSC), [...], as adopted by the Assembly of the Organization by resolution A...[]."

ANNEX 2

**DRAFT AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS
(FSS CODE)**

**CHAPTER 13
ARRANGEMENT OF MEANS OF ESCAPE**

In paragraph 2.1.2.2.2.1, under case 2, the words "members of the crew in public spaces occupied to one third of the maximum capacity" are replaced with the words "one third of the crew distributed in public spaces"

ANNEX 3

**DRAFT AMENDMENTS TO
THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS
CARRYING LIQUEFIED GASES IN BULK (IGC CODE),
AS AMENDED BY RESOLUTION MSC.370(93)**

**CHAPTER 3
SHIP ARRANGMENTS**

3.2 Accommodation, service and machinery spaces and control stations

In paragraph 3.2.5, the words "Wheelhouse windows shall be constructed to not less than "A-0" class (for external fire load)." are deleted.

ANNEX 4

**DRAFT AMENDMENTS TO
THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS
DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)**

ANNEX A

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF
BULK CARRIERS**

Part A

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF
BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION**

- 1 Paragraph 1.5 is replaced with the following:

"1.5 In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements, when required by annex 2, of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys."

- 2 Paragraph 2.4.4 is replaced with the following:

"2.4.4 Close up survey and thickness measurement³ of the hatch cover and coaming plating and stiffeners should be carried out as given in annexes 1 and 2.

³ Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey/thickness measurement shall be done of accessible parts of hatch covers structures."

ANNEX 1

REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEYS

- 3 Note (D) is replaced with the following:

"(D) Cargo hold hatch covers and coamings. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey/thickness measurement shall be done of accessible parts of hatch covers structures."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

- 4 Paragraph 1.5 is replaced with the following:

"1.5 In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements, when required by annex 2, of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys."

- 5 Paragraph 2.4.4 is replaced with the following:

"2.4.4 Close up survey and thickness measurement³ of the hatch cover and coaming plating and stiffeners should be carried out as given in annexes 1 and 2.

³ Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey/thickness measurement shall be done of accessible parts of hatch covers structures."

ANNEX 1

REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEYS

Appendix 1 – Minimum requirements for close-up survey at renewal survey of double-side skin bulk carriers excluding ore carriers

5 < Age ≤ 10 years – Renewal Survey No.2

- 6 The third paragraph in the column is replaced with the following:

"25% of ordinary transverse frames for transverse framing system or 25% of longitudinals for longitudinal framing system on side shell and inner side plating at forward, middle and aft parts in the foremost double-side tanks. (B)"

10 < Age ≤ 15 years – Renewal Survey No.3

- 7 The third paragraph in the column is replaced with the following:

"25% of ordinary transverse frames for transverse framing system or 25% of longitudinals for longitudinal framing system on side shell and inner side plating at forward, middle and aft parts in all double-side tanks. (B)"

Age > 15 years – Renewal Survey No.4 and Subsequent

8 The third paragraph in the column is replaced with the following:

"All ordinary transverse frames for transverse framing system or all of longitudinals for longitudinal framing system on side shell and inner side plating at forward, middle and aft parts in all double-side tanks. (B)"

9 Note (D) is replaced with the following:

"(D) Cargo hold hatch covers and coamings. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey/thickness measurement shall be done of accessible parts of hatch covers structures."

Appendix 2 – Minimum requirements for close-up survey at renewal survey for ore carriers

10 Note (D) is replaced with the following:

"(D) Cargo hold hatch covers and coamings. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey/thickness measurement shall be done of accessible parts of hatch covers structures."

ANNEX 2

REQUIREMENTS FOR THICKNESS MEASUREMENTS AT RENEWAL SURVEYS

5 < Age ≤ 10 years – Renewal Survey No.2

11 Paragraph 3 is replaced with the following:

"3 Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1/appendix 1 or annex 1/ appendix 2 as applicable."

10 < Age ≤ 15 years – Renewal Survey No.3

12 Paragraph 3 is replaced with the following:

"3 Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1/appendix 1 or annex 1/appendix 2 as applicable."

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

13 Paragraph 1.5 is replaced with the following:

"1.5 In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements, when required by annex 2, of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys."

14 Paragraph 2.5.6 is replaced with the following:

"2.5.6 In cases where two or three sections are to be measured, at least one should include a ballast tank within 0.5L amidships. In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force) and more than 10 years of age, for the evaluation of the ship's longitudinal strength as required in 8.1.2, the sampling method of thickness measurements is given in annex 12."

15 Paragraph 2.6.1.1 is replaced with the following:

".1 tank testing procedure, specifying fill heights, tanks being filled and bulkheads being tested, has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;"

ANNEX 1

MINIMUM REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEY OF DOUBLE-HULL OIL TANKERS

16 Note (7) is replaced with the following:

"(7) Web frame in a cargo oil tank means deck transverse, longitudinal bulkhead structural elements and cross ties, where fitted, including adjacent structural members."

Part B

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS
DURING SURVEYS OF OIL TANKERS OTHER THAN
DOUBLE-HULL OIL TANKERS**

17 Paragraph 1.5 is replaced with the following:

"1.5 In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements, when required by annex 2, of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys."

18 Paragraph 2.6.1.1 is replaced with the following:

".1 tank testing procedure, specifying fill heights, tanks being filled and bulkheads being tested, has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;"

ANNEX 5

DRAFT AMENDMENTS¹ TO THE INTERNATIONAL CODE ON INTACT STABILITY, 2008 (2008 IS Code)

INTRODUCTION

1 Purpose

1 The chapeau of paragraph 1.2 is replaced with the following:

"1.2 Unless otherwise stated, this Code contains intact stability criteria applicable to ships and other marine vehicles of 24 m in length and above, as listed below. The Code also provides intact stability criteria applicable to the same ships and marine vehicles when engaged in certain operations:"

2 In paragraph 1.2, new subparagraphs .7, .8 and .9 are inserted as follows:

".7 ships engaged in anchor handling operations;

.8 ships engaged in harbour, coastal or ocean-going towing operations and escort operations;

.9 ships engaged in lifting operations;"

and the remaining subparagraphs are renumbered accordingly.

2 Definitions

3 New paragraphs 2.27 to 2.31 are inserted as follows:

"2.27 *Ship engaged in anchor handling operations* means a ship engaged in operations with deployment, recovering and repositioning of anchors and the associated mooring lines of rigs or other vessels. Forces associated with anchor handling are generally associated with the winch line pull and may include vertical, transverse, and longitudinal forces applied at the towing point and over the stern roller.

2.28 *Ship engaged in harbour towing* means a ship engaged in an operation intended for assisting ships or other floating structures within sheltered waters, normally while entering or leaving port and during berthing or unberthing operations.

2.29 *Ship engaged in coastal or ocean-going towing* means a ship engaged in an operation intended for assisting ships or other floating structures outside sheltered waters in which the forces associated with towing are often a function of the ship's bollard pull.*

* Refer to the *Guidelines for safe ocean towing* (MSC/Circ.884).

¹ Taking into account the decision of MSC 96 (paragraph 3.46 of MSC 96/25), it should be noted that the draft amendments to the Code regarding anchor handling operations have been previously circulated under Circular Letter No.3555, dated 21 August 2015, but reproduced as a consolidated text.

2.30 *Ship engaged in lifting operation* means a ship engaged in an operation involving the raising or lowering of objects using vertical force by means of winches, cranes, a-frames or other lifting devices.**

2.31 *Ship engaged in escort operation* means a ship specifically engaged in steering, braking and otherwise controlling of the assisted ship during ordinary or emergency maneuvering, whereby the steering and braking forces are generated by the hydrodynamic forces acting on the hull and appendages and the thrust forces exerted by the propulsion units (see also figure 1).

** Fishing vessels should not be included in the definition of lifting operations. Reference is made to part B, paragraphs 2.1.2.2 and 2.1.2.8. For anchor handling operations reference is made to section 2.7."

PART A MANDATORY CRITERIA

4 At the beginning of chapter 2, a footnote is added as follows:

"Chapter 2 – General criteria"

* Paragraphs 3.4.1.8, 3.4.1.9, 3.6.4 and 3.6.5 in part B should only be considered as recommendations."
