

RESOLUTION MSC.168(79)
(adopted on 9 December 2004)

**STANDARDS AND CRITERIA FOR SIDE STRUCTURES OF
BULK CARRIERS OF SINGLE-SIDE SKIN CONSTRUCTION**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO SOLAS chapter XII on Additional safety measures for bulk carriers, which the 1997 SOLAS Conference adopted with the aim of enhancing the safety of ships carrying solid bulk cargoes,

RECALLING FURTHER that, having recognized the need to further improve the safety of bulk carriers in all aspects of their design, construction, equipment and operation, it examined the results of various formal safety assessment (FSA) studies on bulk carrier safety,

RECOGNIZING that banning of alternate hold loading of heavy cargoes in full load condition for bulk carriers of single-side skin construction not meeting appropriate side structural strength requirements would contribute to improving the safety of these ships by reduction of shear forces and bending moments,

NOTING resolution MSC.170(79) by which it adopted, *inter alia*, the revised chapter XII of the Convention, in particular regulation XII/14 – Restrictions from sailing with any hold empty, where reference is made to mandatory standards and criteria which a bulk carrier has to comply with in order to avoid the above-mentioned restrictions,

ACKNOWLEDGING that the International Association of Classification Societies (IACS) has issued the following relevant Unified Requirements:

S12 Rev.2.1 - Side structure in Single Side Skin Bulk Carriers; and

S31 - Renewal criteria for side shell frames in single side skin bulk carriers not built in accordance with UR S12 Rev.1 or subsequent revisions,

CONSIDERING that the above IACS Unified Requirements embody respectively the standards and criteria necessary to ascertain whether regulation XII/14 of the Convention should apply to a particular bulk carrier, and, therefore, should form the basis of the said standards and criteria,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment at its forty-seventh session,

1. ADOPTS, for the purposes of the application of regulation XII/14 of the Convention:
 - .1 the Standards for side structures in single-side skin bulk carriers, set out in Annex 1 to the present resolution; and

.2 the Renewal criteria for side shell frames and brackets in single-side skin bulk carriers not built in accordance with the Standards for side structures in single-side skin bulk carriers, set out in Annex 2 to the present resolution;

2. INVITES Contracting Governments to the Convention to note that the annexed Standards and Renewal criteria will take effect on 1 July 2006 upon the entry into force of the revised chapter XII of the Convention;

3. REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards and Renewal criteria to all Contracting Governments to the Convention;

4. FURTHER REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards and Renewal criteria to all Members of the Organization which are not Contracting Governments to the Convention.

ANNEX 1

STANDARDS FOR SIDE STRUCTURES IN SINGLE-SIDE SKIN BULK CARRIERS

1 Application

For the purpose of SOLAS regulation XII/14, these requirements define the minimum required standards for the side structures within the cargo area of single-side skin bulk carriers of 150 m in length and upwards carrying solid bulk cargoes having a density of 1,780 kg/m³ and above, for them not to be subject to restrictions from sailing with any hold empty.

2 Scantlings of side structures

2.1 The thickness of the side shell plating and the section modulus and shear area of side frames shall be determined according to the criteria of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

2.2 The scantlings of side hold frames immediately adjacent to the collision bulkhead shall be increased in order to prevent excessive imposed deformation on the shell plating. As an alternative, supporting structures shall be fitted which maintain the continuity of forepeak stringers within the foremost hold.

3 Minimum thickness of frame webs

The thickness of frame webs within the cargo area shall not be less than $t_{w,min}$, in mm, given by:

$$t_{w,min} = C(7.0 + 0.03L)$$

where:

C = 1.15 for the frame webs in way of the foremost hold;
1.0 for the frame webs in way of other holds.

L = the distance, in metres, on the summer load waterline from the fore side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. L shall not be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline but need not be taken greater than 200 m.

4 Lower and upper brackets

4.1 The thickness of the frame lower brackets shall not be less than the greater of t_w and $t_{w,min} + 2$ mm, where t_w is the fitted thickness of the side frame web. The thickness of the frame upper bracket shall not be less than the greater of t_w and $t_{w,min}$.

4.2 The section modulus SM of the frame and bracket or integral bracket, and associated shell plating, at the locations shown in Figure 1, shall not be less than twice the section modulus SM_F required for the frame midspan area.

4.3 The dimensions of the lower and upper brackets shall not be less than those shown in Figure 2.

4.4 Structural continuity with the upper and lower end connections of side frames shall be ensured within topside and hopper tanks by connecting brackets as shown in Figure 3. The brackets shall be stiffened against buckling according to the criteria of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

4.5 The section moduli of the side longitudinals and sloping bulkhead longitudinals which support the connecting brackets shall be determined with the span taken between transverses according to the requirements of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety. Where other arrangements are adopted at the discretion of the Administration or a recognized classification society, the section moduli of the side longitudinals and sloping bulkhead longitudinals shall be determined according to the applicable criteria for the purpose of effectively supporting the brackets.

5 Side frame sections

5.1 Frames shall be fabricated symmetrical sections with integral upper and lower brackets and shall be arranged with soft toes.

5.2 The side frame flange shall be curved (not knuckled) at the connection with the end brackets. The radius of curvature shall not be less than r , in mm, given by:

$$r = \frac{0.4b_f^2}{t_f}$$

where b_f and t_f are the flange width and thickness of the brackets, respectively, in mm. The end of the flange shall be sniped.

5.3 In ships less than 190 m in length, mild steel frames may be asymmetric and fitted with separate brackets. The face plate or flange of the bracket shall be sniped at both ends. Brackets shall be arranged with soft toes.

5.4 The frame web thickness ratio of frames shall not exceed the following values:

- $60 k^{0.5}$ for symmetrically flanged frames
- $50 k^{0.5}$ for asymmetrically flanged frames

where:

- $k = 1.0$ for ordinary hull structural steel;
- $k = 0.78$ for steel with yield stress of 315 N/mm²; and
- $k = 0.72$ for steel with yield stress of 355 N/mm².

The outstanding flange shall not exceed $10 k^{0.5}$ times the net flange thickness.

6 Tripping brackets

In way of the foremost hold side frames of asymmetrical section shall be fitted with tripping brackets at every two frames, as shown in Figure 4.

7 Weld connections of frames and end brackets

7.1 Double continuous welding shall be adopted for the connections of frames and brackets to side shell and hopper and top-side tank plating and web to face plates.

7.2 For this purpose, the weld throat shall be (see Figure 1):

- 0.44 t in zone “a”
- 0.4 t in zone “b”

where t is the thinner of the two connected members.

7.3 Where the hull form is such to prohibit an effective fillet weld, edge preparation of the web of frame and bracket may be required, in order to ensure the same efficiency as the weld connection stated above.

8 Minimum net thickness of side shell plating

The thickness of side shell plating located between the hopper and top-side tank shall not be less than $t_{p,min}$ in mm, given by:

$$t_{p,min} = \sqrt{L}$$

Figure 1

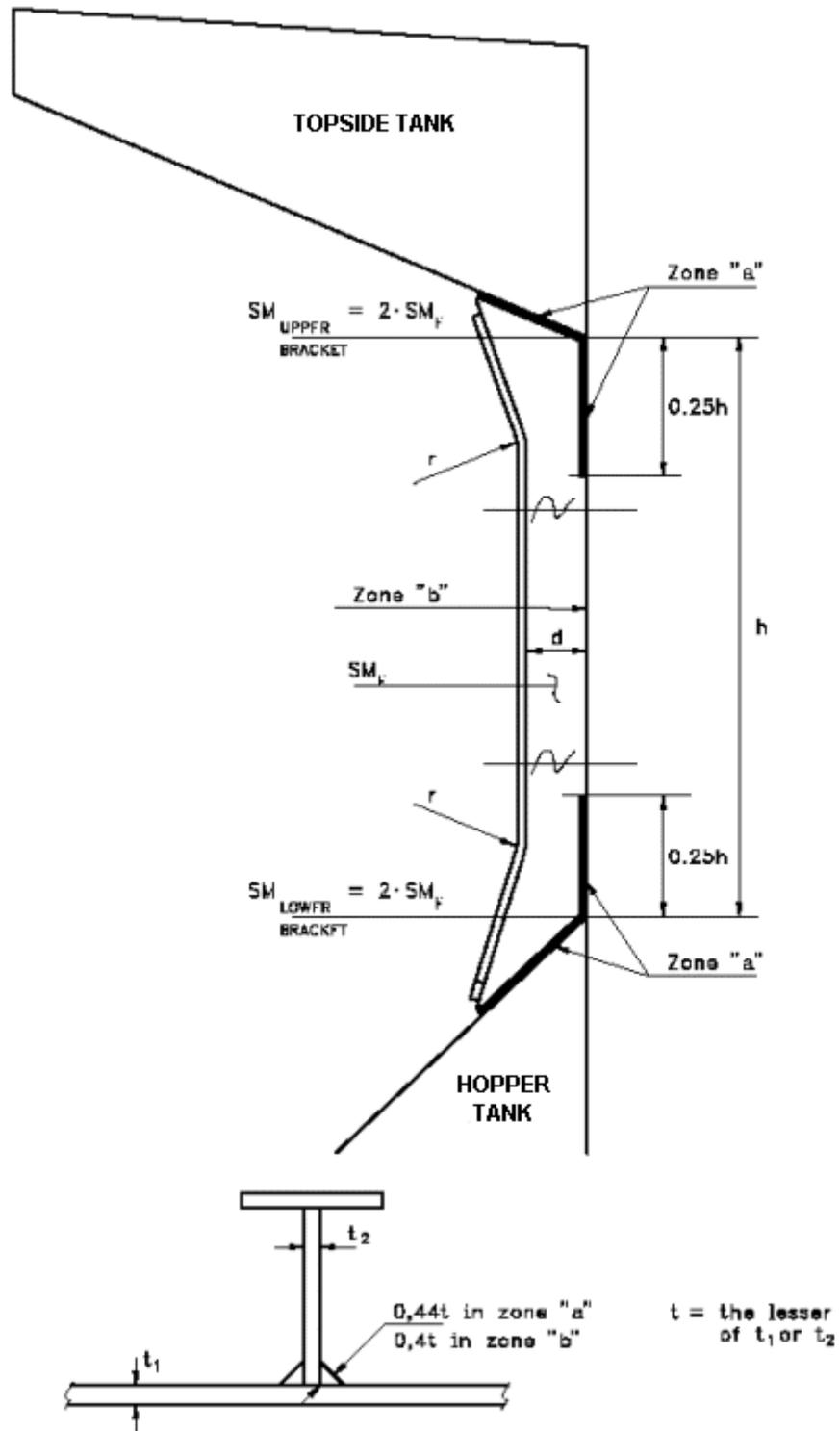


Figure 2

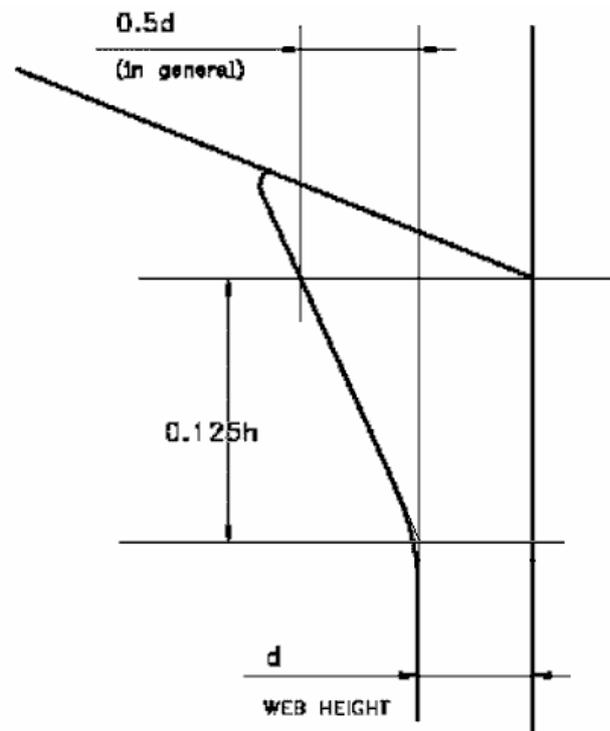


Figure 3

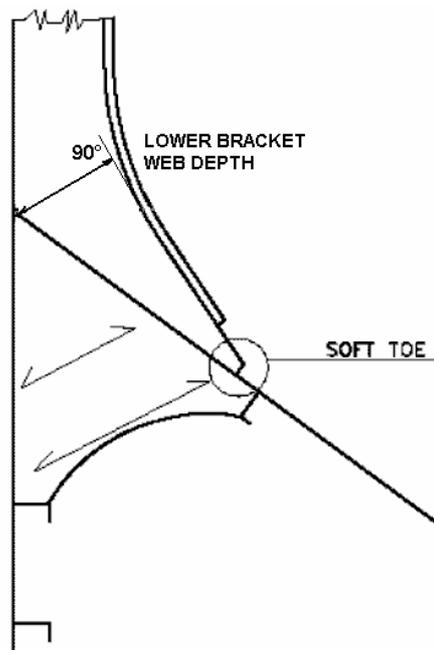
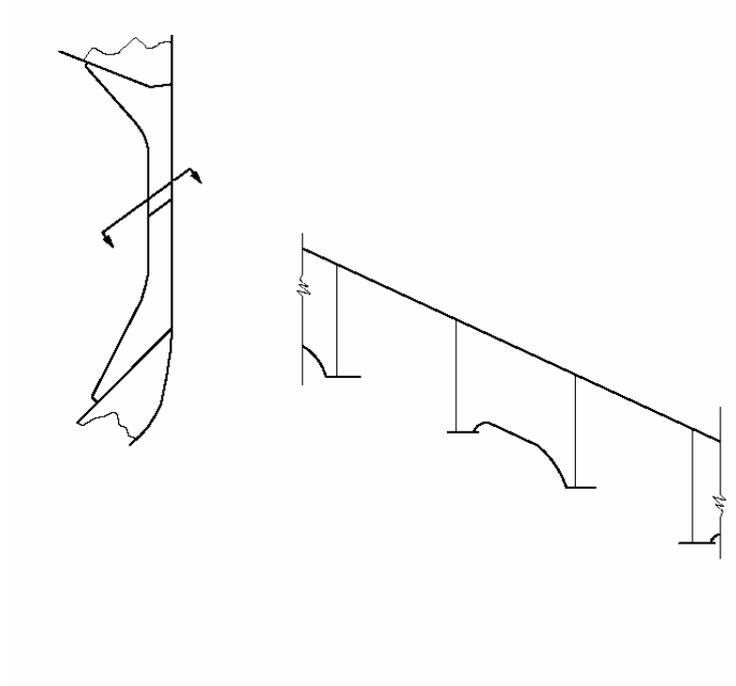


Figure 4 - Tripping brackets to be fitted in way of foremost hold



ANNEX 2

RENEWAL CRITERIA FOR SIDE SHELL FRAMES AND BRACKETS IN SINGLE-SIDE SKIN BULK CARRIERS NOT BUILT IN ACCORDANCE WITH THE “STANDARDS FOR SIDE STRUCTURES IN SINGLE-SIDE SKIN BULK CARRIERS”

1 Application and definitions

For the purpose of SOLAS regulation XII/14, these requirements apply to the side shell frames and brackets of cargo holds in single-side skin bulk carriers, which were not built in accordance with annex 1, but shall achieve an equivalent level of safety for not being subject to restrictions when sailing with any hold empty.

These requirements define steel renewal criteria or other measures to be taken for the webs and flanges of side shell frames and brackets as per paragraph 2.

Reinforcing measures of side frames are also defined as per paragraph 2.3.

Finite element or other numerical analysis or direct calculation procedures cannot be used as an alternative to compliance with the requirements of this annex, except in cases of unusual side structure arrangements or framing to which the requirements of this annex cannot be directly applied.

Assessment of compliance with these requirements is to be carried out by the date on which the ship reaches 10 years of age and at each subsequent intermediate and renewal survey.

1.1 Ice strengthened ships

1.1.1 Where bulk carriers are reinforced to comply with an ice class notation, the intermediate frames shall not be included when considering compliance with this annex.

1.1.2 The renewal thicknesses for the additional structure required to meet the ice strengthening notation shall be based on the classification society's requirements.

1.1.3 If the ice class notation is requested to be withdrawn, the additional ice strengthening structure, with the exception of tripping brackets (see 2.1.2.1.b and 2.3), shall not be considered to contribute to compliance with this annex.

2 Renewal or other measures

2.1 Criteria for renewal or other measures

2.1.1 Symbols used in 2.1

t_M	=	thickness as measured, in mm
t_{REN}	=	thickness at which renewal is required (2.1.2)
$t_{REN,d/t}$	=	thickness criteria based on d/t ratio (2.1.2.1)
$t_{REN,S}$	=	thickness criteria based on strength (2.1.2.2)
t_{COAT}	=	$0.75 t_{S12}$
t_{S12}	=	thickness in mm as required by annex 1 in paragraph 3 for frame webs and in paragraph 4 for upper and lower brackets
t_{AB}	=	thickness as built, in mm
t_C	=	See table 1 below

Table 1 - t_C values, in mm

Ship's length L , in m	Holds other than No.1		Hold No.1	
	Span and upper brackets	Lower brackets	Span and upper brackets	Lower brackets
≤ 100	2	2.5	2	3
150	2	3	3	3.5
≥ 200	2	3	3	4

Note: For intermediate ship lengths, t_C is obtained by linear interpolation between the above values.

2.1.2 Criteria for webs (shear and other checks)

The webs of side shell frames and brackets shall be renewed when the measured thickness (t_M) is equal to or less than the thickness (t_{REN}) as defined below:

t_{REN} is the greatest of:

- .1 $t_{COAT} - t_C$
- .2 $0.75 t_{AB}$
- .3 $t_{REN,d/t}$
- .4 $t_{REN,S}$ (where required by 2.1.2.2)

2.1.2.1 Thickness criteria based on d/t ratio

Subject to b) and c) below, $t_{REN,d/t}$ is given by the following equation:

$$t_{REN,d/t} = (\text{web depth in mm})/R$$

where:

R = for frames

65 $k^{0.5}$ for symmetrically flanged frames

55 $k^{0.5}$ for asymmetrically flanged frames

for lower brackets (see a) below):

87 $k^{0.5}$ for symmetrically flanged frames

73 $k^{0.5}$ for asymmetrically flanged frames

k = 1 for ordinary hull structural steel,

k = 0.78 for steel with yield stress of 315 N/mm² and

k = 0.72 for steel with yield stress of 355 N/mm².

In no instance shall $t_{REN,d/t}$ for lower integral brackets be taken as less than $t_{REN,d/t}$ for the frames they support.

a) Lower brackets

In calculating the web depth of the lower brackets, the following shall apply:

- .1 The web depth of lower bracket may be measured from the intersection of the sloped bulkhead of the hopper tank and the side shell plate, perpendicularly to the face plate of the lower bracket (see Figure 3).
- .2 Where stiffeners are fitted on the lower bracket plate, the web depth may be taken as the distance between the side shell and the stiffener, between the stiffeners or between the outermost stiffener and the face plate of the brackets, whichever is the greatest.

b) Tripping bracket alternative

When t_M is less than $t_{REN,d/t}$ at section b) of the side frames (see Figure 2), tripping brackets in accordance with 2.3 may be fitted as an alternative to the requirements for the web depth to thickness ratio of side frames, in which case $t_{REN,d/t}$ may be disregarded in the determination of t_{REN} in accordance with 2.1.2.

c) Immediately abaft collision bulkhead

For the side frames located immediately abaft the collision bulkhead, whose scantlings are increased in order that their moment of inertia is such as to avoid undesirable flexibility of the side shell, when their web as built thickness t_{AB} is greater than $1.65t_{REN,S}$, the thickness $t_{REN,d/t}$ may be taken as the value $t'_{REN,d/t}$ obtained from the following equation:

$$t'_{REN,d/t} = \sqrt[3]{t_{REN,d/t}^2 t_{REN,S}}$$

where $t_{REN,S}$ is obtained from 3.3.

2.1.2.2 Thickness criteria based on shear strength check

Where t_M in the lower part of side frames, as defined in Figure 1, is equal to or less than t_{COAT} , $t_{REN,S}$ shall be determined in accordance with 3.3.

2.1.2.3 Thickness of renewed webs of frames and lower brackets

Where steel renewal is required, the renewed webs shall be of a thickness not less than t_{AB} , $1.2t_{COAT}$ or $1.2t_{REN}$, whichever is the greatest.

2.1.2.4 Criteria for other measures

When $t_{REN} < t_M \leq t_{COAT}$, measures shall be taken, consisting of all the following:

- .1 sand blasting, or equivalent, and coating (see 2.2),
- .2 fitting tripping brackets (see 2.3), when the above condition occurs for any of the side frame zones A, B, C and D, shown in Figure 1, and
- .3 maintaining the coating in "as new" condition (i.e. without breakdown or rusting) at renewal and intermediate surveys.

The above measures may be waived if the structural members show no thickness diminution with respect to the as built thicknesses and coating is in "as new" condition (i.e. without breakdown or rusting).

2.1.3 Criteria for frames and brackets (bending check)

Where the length or depth of the lower bracket does not meet the requirements in annex 1, a bending strength check in accordance with 3.4 shall be carried out and renewals or reinforcements of frames and/or brackets effected as required therein.

2.2 Thickness measurements, steel renewal, sand blasting and coating

For the purpose of steel renewal, sand blasting and coating, four zones A, B, C and D are defined, as shown in Figure 1.

Representative thickness measurements shall be taken for each zone and shall be assessed against the criteria in 2.1.

In case of integral brackets, when the criteria in 2.1 are not satisfied for zone A or B, steel renewal, sand blasting and coating, as applicable, shall be done for both zones A and B.

In case of separate brackets, when the criteria in 2.1 are not satisfied for zone A or B, steel renewal, sand blasting and coating shall be done for each one of these zones, as applicable.

When steel renewal is required for zone C according to 2.1, it shall be done for both zones B and C. When sand blasting and coating is required for zone C according to 2.1, it shall be done for zones B, C and D.

When steel renewal is required for zone D according to 2.1, it needs only to be done for this zone. When sand blasting and coating is required for zone D according to 2.1, it shall be done for both zones C and D.

Special consideration may be given to zones previously renewed or re-coated, if found in "as new" condition (i.e., without breakdown or rusting) by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1.

When adopted, on the basis of the renewal thickness criteria in 2.1, in general coating shall be applied in compliance with the requirements of the organization, as applicable.

Where, according to the requirements in 2.1, a limited number of side frames and brackets are shown to require coating over part of their length, the following criteria apply.

- .1 The part to be coated includes:
 - the web and the face plate of the side frames and brackets,
 - the hold surface of side shell, hopper tank and topside tank plating, as applicable, over a width not less than 100 mm from the web of the side frame.
- .2 Epoxy coating or equivalent shall be applied.

In all cases, all the surfaces to be coated shall be sand blasted prior to coating application.

2.3 Reinforcing measures

Reinforcing measures are constituted by tripping brackets, located at the lower part and at midspan of side frames (see Figure 4). Tripping brackets may be located at every two frames, but lower and midspan brackets shall be fitted in line between alternate pairs of frames.

The thickness of the tripping brackets shall be not less than the as built thickness of the side frame webs to which they are connected.

Double continuous welding shall be adopted for the connections of tripping brackets to the side shell frames and shell plating.

2.4 Weld throat thickness

In case of steel renewal the welded connections shall comply with paragraph 7 of annex 1.

2.5 Pitting and grooving

If pitting intensity is higher than 15% in area (see Figure 5), thickness measurement shall be taken to check pitting corrosion.

The minimum acceptable remaining thickness in pits or grooves is equal to:

- .1 75% of the as built thickness, for pitting or grooving in the frame and brackets webs and flanges; and
- .2 70% of the as built thickness, for pitting or grooving in the side shell, hopper tank and topside tank plating attached to the side frame, over a width up to 30 mm from each side of it.

3 Strength check criteria

In general, loads shall be calculated and strength checks shall be carried out for the aft, middle and forward frames of each hold. The scantlings required for frames in intermediate positions shall be obtained by linear interpolation between the results obtained for the above frames.

When scantlings of side frames vary within a hold, the required scantlings shall also be calculated for the mid frame of each group of frames having the same scantlings. The scantlings required for frames in intermediate positions shall be obtained by linear interpolation between the results obtained for the calculated frames.

3.1 Load model

3.1.1 Forces

The forces $P_{fr,a}$ and $P_{fr,b}$, in kN, to be considered for the strength checks at sections a) and b) of side frames (specified in Figure 2; in the case of separate lower brackets, section b) is at the top of the lower bracket), are given by:

$$P_{fr,a} = P_S + \max(P_1, P_2)$$

$$P_{fr,b} = P_{fr,a} \frac{h - 2h_B}{h}$$

where:

- P_s = still water pressure force, in kN
 $= s h \left(\frac{p_{s,U} + p_{s,L}}{2} \right)$ when the upper end of the side frame span h (see Figure 1)
is below the load water line
 $= s h' \left(\frac{p_{s,L}}{2} \right)$ when the upper end of the side frame span h (see Figure 1)
is at or above the load water line
- P_1 = wave pressure force, in kN, in head seas
 $= s h \left(\frac{p_{1,U} + p_{1,L}}{2} \right)$
- P_2 = wave pressure force, in kN, in beam seas
 $= s h \left(\frac{p_{2,U} + p_{2,L}}{2} \right)$
- h, h_B = side frame span and lower bracket length, in m, defined in Figures 1 and 2, respectively
- h' = distance, in m, between the lower end of side frame span h (see Figure 1) and the load waterline
- s = frame spacing, in m
- $p_{s,U}, p_{s,L}$ = still water pressure, in kN/m^2 , at the upper and lower end of the side frame span h (see Figure 1), respectively
- $p_{1,U}, p_{1,L}$ = wave pressure, in kN/m^2 , as defined in 3.1.2.1, below for the upper and lower end of the side frame span h , respectively
- $p_{2,U}, p_{2,L}$ = wave pressure, in kN/m^2 , as defined in 3.1.2.2, below for the upper and lower end of the side frame span h , respectively

3.1.2 Wave pressure

3.1.2.1 Wave pressure p_1

- .1 The wave pressure p_1 , in kN/m^2 , at and below the waterline is given by:

$$p_1 = 1.50 \left[p_{11} + 135 \frac{B}{2(B + 75)} - 1.2(T - z) \right]$$

$$p_{11} = 3k_s C + k_f$$

- .2 The wave pressure p_1 , in kN/m^2 , above the water line is given by:

$$p_1 = p_{1wl} - 7.50 (z - T)$$

3.1.2.2 Wave pressure p_2

- .1 The wave pressure p_2 , in kN/m^2 , at and below the waterline is given by:

$$p_2 = 13.0 \left[0.5B \frac{50C_r}{2(B + 75)} + C_B \frac{0.5B + k_f}{14} \left(0.7 + 2 \frac{z}{T} \right) \right]$$

- .2 The wave pressure p_2 , in kN/m^2 , above the water line is given by:

$$p_2 = p_{2wl} - 5.0 (z - T)$$

where:

p_{1wl} = p_1 wave sea pressure at the waterline

p_{2wl} = p_2 wave sea pressure at the waterline

L = the distance, in metres, on the summer load waterline from the fore side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. L shall not be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline.

B = greatest moulded breadth, in m

C_B = moulded block coefficient at draught d corresponding to summer load waterline, based on length L and moulded breadth B , but not to be taken less than 0.6:

$$C_B = \frac{\text{moulded displacement [m}^3\text{] at draught } d}{LBd}$$

T = maximum design draught, in m

C = coefficient

$$= 10.75 - \left(\frac{300 - L}{100} \right)^{1.5} \quad \text{for } 90 \leq L \leq 300 \text{ m}$$

$$= 10.75 \quad \text{for } 300 < L$$

$$C_r = \left(1.25 - 0.025 \frac{2k_r}{\sqrt{GM}} \right) k$$

k = 1.2 for ships without bilge keel

= 1 for ships with bilge keel

k_r = roll radius of gyration. If the actual value of k_r is not available

= 0.39 B for ships with even distribution of mass in transverse section (e.g. alternate heavy cargo loading or homogeneous light cargo loading)

= 0.25 B for ships with uneven distribution of mass in transverse section (e.g. homogenous heavy cargo distribution)

GM = 0.12 B if the actual value of GM is not available

z = vertical distance, in m, from the baseline to the load point

$$k_s = C_B + \frac{0.83}{\sqrt{C_B}} \quad \text{at aft end of } L$$

= C_B between 0.2 L and 0.6 L from aft end of L

$$= C_B + \frac{1.33}{C_B} \quad \text{at forward end of } L$$

Between the above specified points, k_s shall be varied linearly

k_f = 0.8 C

3.2 Allowable stresses

The allowable normal and shear stresses σ_a and τ_a , in N/mm^2 , in the side shell frames are given by:

$$\sigma_a = 0.90 \sigma_F$$

$$\tau_a = 0.40 \sigma_F$$

where σ_F is the minimum upper yield stress, in N/mm^2 , of the material.

3.3 Shear strength check

Where t_M in the lower part of side frames, as defined in figure 1, is equal to or less than t_{COAT} , shear strength check shall be carried out in accordance with the following.

The thickness $t_{REN,S}$, in mm, is the maximum between the thicknesses $t_{REN,Sa}$ and $t_{REN,Sb}$ obtained from the shear strength check at sections a) and b) (see Figure 2 and 3.1) given by the following, but need not be taken in excess of $0.75t_{S12}$.

$$.1 \quad \text{at section a):} \quad t_{REN,Sa} = \frac{1,000 k_S P_{fr,a}}{d_a \sin \phi \tau_a}$$

$$.2 \quad \text{at section b):} \quad t_{REN,Sb} = \frac{1,000 k_S P_{fr,b}}{d_b \sin \phi \tau_a}$$

where:

- k_S = shear force distribution factor, to be taken equal to 0.6
- $P_{fr,a}, P_{fr,b}$ = pressure forces defined in 3.1.1
- d_a, d_b = bracket and frame web depth, in mm, at sections a) and b), respectively (see Figure 2); in case of separate (non integral) brackets, d_b shall be taken as the minimum web depth deducting possible scallops
- ϕ = angle between frame web and shell plate
- τ_a = allowable shear stress, in N/mm^2 , defined in 3.2.

3.4 Bending strength check

When the lower bracket length or depth do not comply with requirements in annex 1, the actual section modulus, in cm³, of the brackets and side frames at sections a) and b) shall be not less than:

.1 at section a):

$$Z_a = \frac{1,000 P_{fr,a} h}{m_a \sigma_a}$$

.2 at section b):

$$Z_b = \frac{1,000 P_{fr,a} h}{m_b \sigma_a}$$

where:

$P_{fr,a}$ = pressure force defined in 3.1.1

h = side frame span, in m, defined in figure 1

σ_a = allowable normal stress, in N/mm², defined in 3.2

m_a, m_b = bending moment coefficients defined in table 2

The actual section modulus of the brackets and side frames shall be calculated about an axis parallel to the attached plate, based on the measured thicknesses. For pre-calculations, alternative thickness values may be used, provided they are not less than:

.1 t_{REN} , for the web thickness;

.2 the minimum thicknesses allowed by the renewal criteria for flange and attached plating of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or by applicable national standards of the Administration which provide an equivalent level of safety.

The attached plate breadth is equal to the frame spacing, measured along the shell at midspan h .

If the actual section moduli at sections a) and b) are less than the values Z_a and Z_b , the frames and brackets shall be renewed or reinforced in order to obtain actual section moduli not less than 1.2 Z_a and 1.2 Z_b , respectively.

In such a case, renewal or reinforcements of the flange shall be extended over the lower part of side frames, as defined in Figure 1.

Table 2 – Bending moment coefficients m_a and m_b

	m_a	m_b		
		$h_B = 0.08 h$	$h_B = 0.1 h$	$h_B = 0.125 h$
Empty holds of ships approved to operate in non homogeneous loading conditions	10	17	19	22
Other cases	12	20	22	26

Note 1: Non homogeneous loading condition means a loading condition in which the ratio between the highest and the lowest filling ratio, evaluated for each hold, exceeds 1.20 corrected for different cargo densities.

Note 2: For intermediate values of the bracket length h_B , the coefficient m_b is obtained by linear interpolation between the table values.

Figure 1 – Lower part of side frames

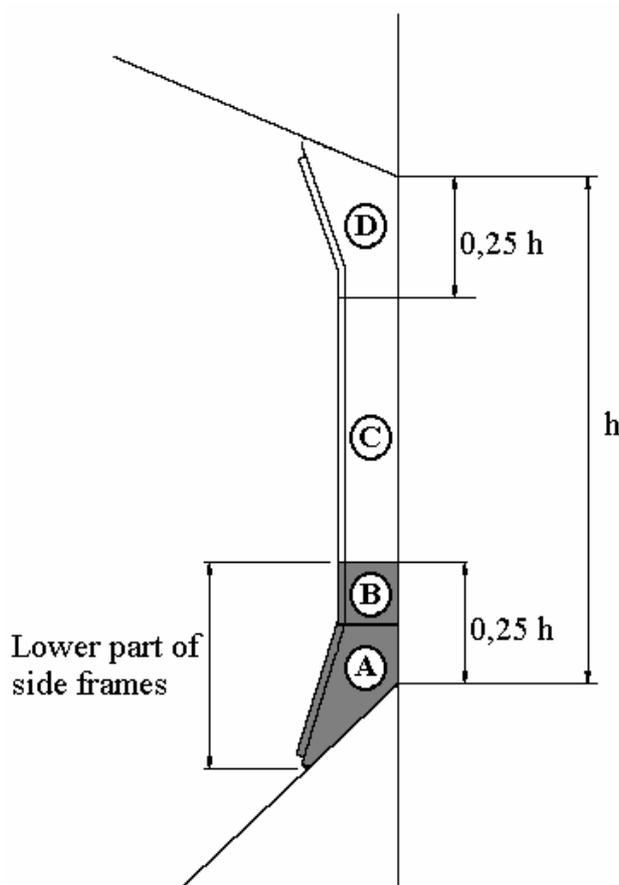


Figure 2 – Sections a) and b)

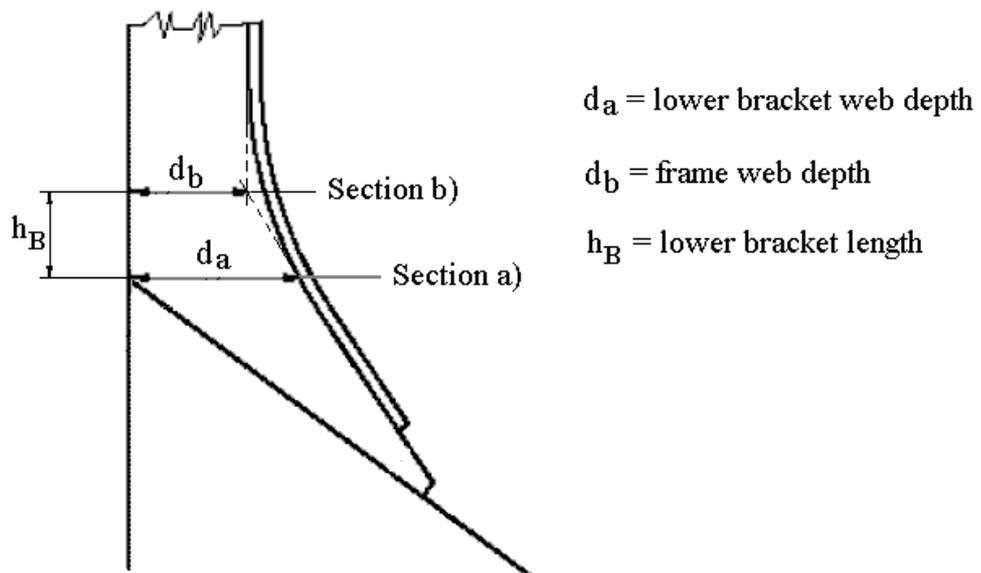


Figure 3 – Definition of the lower bracket web depth

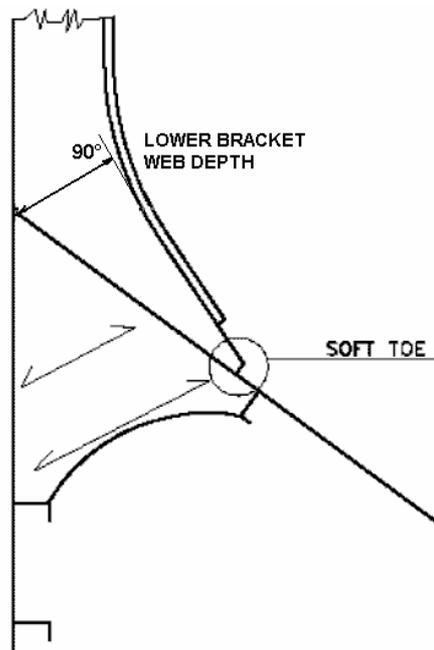


Figure 4 – Tripping brackets

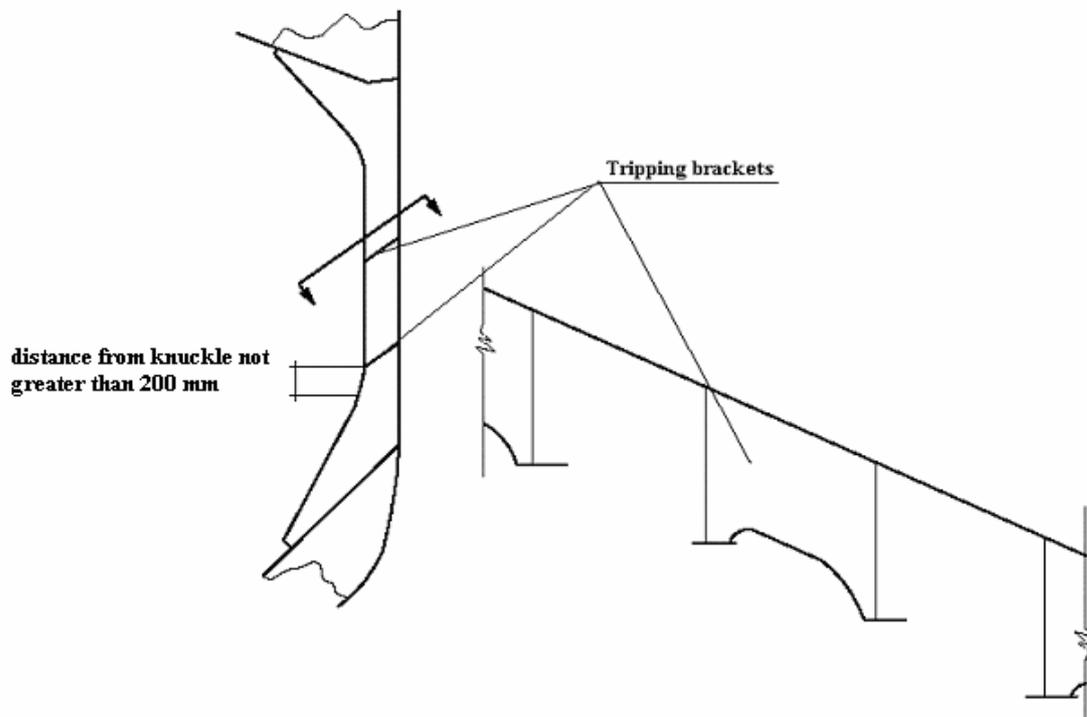
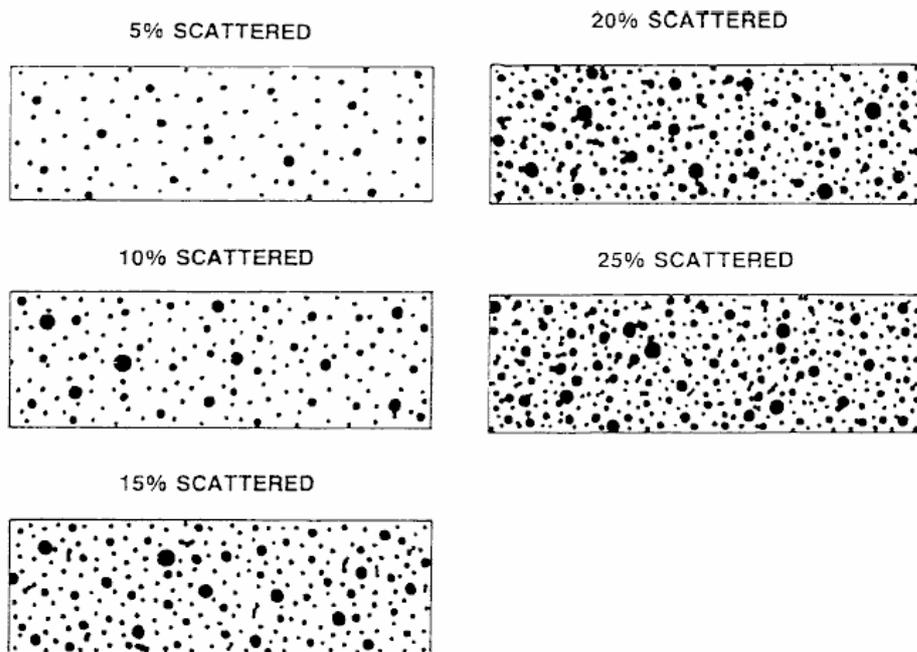


Figure 5 - Pitting intensity diagrams (from 5% to 25% intensity)



RESOLUTION MSC.169(79)
(adopted on 9 December 2004)

**STANDARDS FOR OWNERS' INSPECTION AND MAINTENANCE OF
BULK CARRIER HATCH COVERS**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO SOLAS chapter XII on Additional safety measures for bulk carriers, which the 1997 SOLAS Conference adopted with the aim of enhancing the safety of ships carrying solid bulk cargoes,

RECALLING FURTHER that, having recognized the need to further improve the safety of bulk carriers in all aspects of their design, construction, equipment and operation, it examined the results of various formal safety assessment (FSA) studies on bulk carrier safety,

RECOGNIZING that, on the basis of the outcome of the aforementioned FSA studies, replacing hatch covers in existing bulk carriers would not be cost-effective and that, instead, more attention should be paid to hatch cover securing mechanisms and the issue of horizontal loads, especially with regard to maintenance and frequency of inspection,

RECALLING that, at its seventy-seventh session, in approving MSC/Circ.1071 – Guidelines for bulk carrier hatch cover surveys and owners' inspections and maintenance, it invited Member Governments to ensure that companies, as defined in the ISM Code, that operate bulk carriers flying their flag are made aware of the need to implement regular maintenance and inspection procedures for hatch cover closing mechanisms in existing bulk carriers in order to ensure proper operation and efficiency at all times,

NOTING resolution MSC.170(79) by which it adopted, *inter alia*, amendments to regulation XII/7 of the Convention – Survey and maintenance of bulk carriers, where reference is made to mandatory Standards for owners' inspection and maintenance of bulk carrier hatch covers,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment at its forty-seventh session,

1. ADOPTS, for the purposes of the application of regulation XII/7 of the Convention, the Standards for owners' inspection and maintenance of bulk carrier hatch covers, set out in the Annex to the present resolution;
2. INVITES Contracting Governments to the Convention to note that the annexed Standards will take effect on 1 July 2006 upon the entry into force of the revised chapter XII of the Convention;
3. REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards to all Contracting Governments to the Convention;

4. FURTHER REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards to all Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

STANDARDS FOR OWNERS' INSPECTION AND MAINTENANCE OF BULK CARRIER HATCH COVERS

1 Application

These Standards define requirements for the owners' inspection and maintenance of cargo hatch covers on board bulk carriers.

2 Maintenance of hatch covers and hatch opening, closing, securing and sealing systems

2.1 Lack of weather tightness may be attributed to:

- .1 normal wear and tear of the hatch cover system: deformation of the hatch coaming or cover due to impact; wear of the friction pads where fitted; wear and tear of the cleating arrangement; or
- .2 lack of maintenance: corrosion of plating and stiffeners due to breakdown of coatings; lack of lubrication of moving parts; cleats, joint gaskets and rubber pads in need of replacement, or replaced with incorrect specification parts.

2.2 Insecure hatch covers may be particularly attributed to damage or wear of securing devices, or incorrect adjustment, and incorrect pre-tension and load sharing, of cleating systems.

2.3 Ship owners and operators shall therefore institute a programme of maintenance. This maintenance shall be directed to:

- .1 protecting exposed surfaces of plating and stiffeners of hatch covers and coamings in order to preserve overall structural strength;
- .2 preserving the surface of trackways of rolling covers, and of compression bars and other steel work bearing on seals or friction pads, noting that surface smoothness and correct profile are important for reducing wear rates on these components;
- .3 maintaining hydraulic or mechanically powered opening, closing, securing or cleating systems in accordance with manufacturer's recommendations;
- .4 maintaining manual cleats in adjustment, with replacement when significant wastage, wear or loss of adjustment capability is identified;
- .5 replacing seals and other wear components in accordance with manufacturers' recommendations, noting the need to carry on board or obtain such spares of correct specification, and that seals are designed for a particular degree of compression, hardness, chemical and wear resistance; and

- .6 keeping all hatch cover drains and their non-return valves, where fitted, in working order, noting that any drains fitted to the inboard side of seal lines will have non-return valves for prevention of water ingress to holds in the event of boarding seas.

2.4 The equalization of securing loads shall be maintained following the renewal of components such as seals, rubber washers, peripheral and cross joint cleats.

2.5 Ship owners and operators shall keep a Maintenance Plan and a record of maintenance and component replacement carried out, in order to facilitate maintenance planning and statutory surveys by the Administration. Hatch cover maintenance plans shall form part of a ship's safety management system as referred to in the ISM Code.

2.6 Where the range of cargoes carried requires different gasket materials, a selection of gasket materials of the correct specifications shall be carried on board, in addition to other spares.

2.7 At each operation of a hatch cover, the cover, and in particular bearing surfaces and drainage channels, shall be free of debris and as clean as practicable.

2.8 Attention is drawn to the dangers of proceeding to sea without fully secured hatch covers. Securing of all covers shall always be completed before the commencement of a sea passage. During voyages, especially on loaded passages, cover securing devices and tightness of cleating and securing arrangements shall be checked, especially in anticipation of, and following periods of, severe weather. Hatch covers may only be opened on passage, when necessary, during favourable sea and weather conditions; imminent weather forecasts shall also be considered.

2.9 Operators shall consult the Cargo Securing Manual when planning the loading of containers or other cargo on hatch covers and confirm that they are designed and approved for such loads. Lashings shall not be secured to the covers or coamings unless these are suitable to withstand the lashing forces.

3 Inspection of hatch covers and hatch opening, closing, securing and sealing systems

3.1 Statutory surveys of hatch covers and their coamings are carried out by the Administration as part of the annual survey required by article 14 of the International Convention on Load Lines, 1966, as modified by the 1988 Protocol relating thereto and in accordance with the requirements for Enhanced Surveys contained in resolution A.744(18), as amended. However the continued safe operation is dependent on the shipowner or operator instituting a regular programme of inspections to confirm the state of the hatch covers in between surveys.

3.2 Routines shall be established to perform checks during the voyage, and inspections when the hatch covers are opened.

3.3 Voyage checks shall consist of an external examination of the closed hatch covers and securing arrangements in anticipation of, and after, heavy weather but in any event at least once a week, weather permitting. Particular attention shall be paid to the condition of hatch covers in the forward 25% of the ship's length, where sea loads are normally greatest.

3.4 The following items, where provided, shall be inspected for each hatch cover set when the hatch covers are opened or are otherwise accessible on each voyage cycle, but need not be inspected more frequently than once per month:

- .1 hatch cover panels, including side plates, and stiffener attachments of opened covers for visible corrosion, cracks or deformation;
- .2 sealing arrangements of perimeter and cross joints (gaskets, flexible seals on combination carriers, gasket lips, compression bars, drainage channels and non-return valves) for condition and permanent deformation;
- .3 clamping devices, retaining bars and cleating for wastage, adjustment, and condition of rubber components;
- .4 closed cover locating devices for distortion and attachment;
- .5 chain or wire rope pulleys;
- .6 guides;
- .7 guide rails and track wheels;
- .8 stoppers;
- .9 wires, chains, tensioners and gypsies;
- .10 hydraulic system, electrical safety devices and interlocks; and
- .11 end and inter-panel hinges, pins and stools where fitted.

As part of this inspection, the coamings with their plating, stiffeners and brackets shall be checked at each hatchway for visible corrosion, cracks and deformation, especially of the coaming tops and corners, adjacent deck plating and brackets.

RESOLUTION MSC.170(79)
(adopted on 9 December 2004)

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

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than the provisions of chapter I thereof,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;
3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX 1

**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**

Regulation 2

Definitions

1 Following new paragraph 14 is added after existing paragraph 13:

“**14** *Bulk carrier* means a bulk carrier as defined in regulation XII/1.1.”

**Regulation 18 – Construction and initial tests of watertight doors, sidescuttles, etc., in
passenger ships and cargo ships**

2 Paragraph 2 of the regulation is replaced by the following:

“2 In passenger ships and cargo ships watertight doors shall be tested by water pressure to a head up to the bulkhead deck or freeboard deck respectively. Where testing of individual doors is not carried out because of possible damage to insulation or outfitting items, testing of individual doors may be replaced by a prototype pressure test of each type and size of door with a test pressure corresponding at least to the head required for the intended location. The prototype test shall be carried out before the door is fitted. The installation method and procedure for fitting the door on board shall correspond to that of the prototype test. When fitted on board, each door shall be checked for proper seating between the bulkhead, the frame and the door.”

Regulation 45 - Precautions against shock, fire and other hazards of electrical origin

3 After the heading the following words are added:

“(Paragraphs 10 and 11 apply to ships constructed on or after 1 January 2007)”.

4 Existing paragraph 10 is replaced by the following:

“10 No electrical equipment shall be installed in any space where flammable mixtures are liable to collect, e.g. in compartments assigned principally to accumulator batteries, in paint lockers, acetylene stores or similar spaces, unless the Administration is satisfied that such equipment is:

- .1 essential for operational purposes;
- .2 of a type which will not ignite the mixture concerned;

- .3 appropriate to the space concerned; and
 - .4 appropriately certified for safe usage in the dusts, vapours or gases likely to be encountered.”
- 5 The following new paragraph 11 is added after paragraph 10, as amended:
- “11 In tankers, electrical equipment, cables and wiring shall not be installed in hazardous locations unless it conforms with standards not inferior to those acceptable to the Organization.* However, for locations not covered by such standards, electrical equipment, cables and wiring which do not conform to the standards may be installed in hazardous locations based on a risk assessment to the satisfaction of the Administration, to ensure that an equivalent level of safety is assured.”
- 6 Existing paragraph 11 is renumbered as paragraph 12.

CHAPTER III

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 31 - Survival craft and rescue boats

- 7 The following new paragraph 1.8 is added after existing paragraph 1.7:
- “1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after 1 July 2006 shall comply with the requirements of paragraph 1.2.”

CHAPTER V

SAFETY OF NAVIGATION

Regulation 19 – Carriage requirements for shipborne navigational systems and equipment

- 8 In paragraph 2.5, the existing text of subparagraph .1 is replaced by the following:
- “.1 a gyro compass, or other means, to determine and display their heading by shipborne non-magnetic means, being clearly readable by the helmsman at the main steering position. These means shall also transmit heading information for input to the equipment referred in paragraphs 2.3.2, 2.4 and 2.5.5;”

* Refer to the standards published by the International Electrotechnical Commission, IEC 60092-502:1999 ‘Electrical installations in ships – Tankers’.

Regulation 20 – Voyage data recorders

9 The following new paragraph 2 is added after existing paragraph 1:

“2 To assist in casualty investigations, cargo ships, when engaged on international voyages, shall be fitted with a VDR which may be a simplified voyage data recorder (S-VDR)** as follows:

- .1 in the case of cargo ships of 20,000 gross tonnage and upwards constructed before 1 July 2002, at the first scheduled dry-docking after 1 July 2006 but not later than 1 July 2009;
- .2 in the case of cargo ships of 3,000 gross tonnage and upwards but less than 20,000 gross tonnage constructed before 1 July 2002, at the first scheduled dry-docking after 1 July 2007 but not later than 1 July 2010; and
- .3 Administrations may exempt cargo ships from the application of the requirements of subparagraphs .1 and .2 when such ships will be taken permanently out of service within two years after the implementation date specified in subparagraphs .1 and .2 above.”

10 Existing paragraph 2 is renumbered as paragraph 3.

CHAPTER VII

CARRIAGE OF DANGEROUS GOODS

Regulation 10 – Requirements for chemical tankers

11 The following sentence is deleted from paragraph 1 of the regulation:

“For the purpose of this regulation, the requirements of the Code shall be treated as mandatory.”

CHAPTER XII

ADDITIONAL SAFETY MEASURES FOR BULK CARRIERS

15 The existing text of chapter XII is replaced by the following:

“Regulation 1

Definitions

For the purpose of this chapter:

** Refer to resolution MSC.163(78) – Performance standards for shipborne simplified voyage data recorders (S-VDRs).

1 *Bulk carrier* means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers and combination carriers*.

2 *Bulk carrier of single-side skin construction* means a bulk carrier as defined in paragraph 1, in which:

- .1 any part of a cargo hold is bounded by the side shell; or
- .2 where one or more cargo holds are bounded by a double-side skin, the width of which is less than 760 mm in bulk carriers constructed before 1 January 2000 and less than 1,000 mm in bulk carriers constructed on or after 1 January 2000 but before 1 July 2006, the distance being measured perpendicular to the side shell.

Such ships include combination carriers in which any part of a cargo hold is bounded by the side shell.

3 *Bulk carrier of double-side skin construction* means a bulk carrier as defined in paragraph 1, in which all cargo holds are bounded by a double-side skin, other than as defined in paragraph 2.2.

4 *Double-side skin* means a configuration where each ship side is constructed by the side shell and a longitudinal bulkhead connecting the double bottom and the deck. Hopper side tanks and top-side tanks may, where fitted, be integral parts of the double-side skin configuration.

5 *Length* of a bulk carrier means the length as defined in the International Convention on Load Lines in force.

6 *Solid bulk cargo* means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any intermediate form of containment.

7 *Bulk carrier bulkhead and double bottom strength standards* means “Standards for the evaluation of scantlings of the transverse water-tight vertically corrugated bulkhead between the two foremost cargo holds and for the evaluation of allowable hold loading of the foremost cargo hold” adopted by resolution 4 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974 on 27 November 1997, as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the

* Reference is made to:

- .1 For ships constructed before 1 July 2006, resolution 6, Interpretation of the definition of “bulk carrier”, as given in chapter IX of SOLAS 1974, as amended in 1994, adopted by the 1997 SOLAS Conference.
- .2 The Interpretation of the provisions of SOLAS chapter XII on Additional safety measures for bulk carriers, adopted by the Maritime Safety Committee of the Organization by resolution MSC.79(70).
- .3 The application provisions of Annex 1 to the Interpretation of the provisions of SOLAS chapter XII on Additional safety measures for bulk carriers, adopted by the Maritime Safety Committee of the Organization by resolution MSC.89(71).
- .4 The Guidance for the identification of a ship as a bulk carrier to be developed by the Organization.

provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

8 *Bulk carriers constructed* means bulk carriers the keels of which are laid or which are at a similar stage of construction.

9 *A similar stage of construction* means the stage at which:

- .1 construction identifiable with a specific ship begins; and
- .2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

10 *Breadth (B)* of a bulk carrier means the breadth as defined in the International Convention on Load Lines in force.

Regulation 2

Application

Bulk carriers shall comply with the requirements of this chapter in addition to the applicable requirements of other chapters.

Regulation 3

Implementation schedule

Bulk carriers constructed before 1 July 1999 to which regulations 4 or 6 apply shall comply with the provisions of such regulations according to the following schedule, with reference to the enhanced programme of inspections required by regulation XI-1/2:

- .1 bulk carriers, which are 20 years of age and over on 1 July 1999, by the date of the first intermediate survey or the first periodical survey after 1 July 1999, whichever comes first;
- .2 bulk carriers, which are 15 years of age and over but less than 20 years of age on 1 July 1999, by the date of the first periodical survey after 1 July 1999, but not later than 1 July 2002; and
- .3 bulk carriers, which are less than 15 years of age on 1 July 1999, by the date of the first periodical survey after the date on which the ship reaches 15 years of age, but not later than the date on which the ship reaches 17 years of age.

Regulation 4

Damage stability requirements applicable to bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m³ and above, constructed on or after 1 July 1999 shall, when loaded to the summer load line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4.

2 Bulk carriers of 150 m in length and upwards of double-side skin construction in which any part of longitudinal bulkhead is located within B/5 or 11.5 m, whichever is less, inboard from the ship's side at right angle to the centreline at the assigned summer load line, designed to carry solid bulk cargoes having a density of 1,000 kg/m³ and above, constructed on or after 1 July 2006 shall, when loaded to the summer load line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4.

3 Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying solid bulk cargoes having a density of 1,780 kg/m³ and above, constructed before 1 July 1999 shall, when loaded to the summer load line, be able to withstand flooding of the foremost cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4. This requirement shall be complied with in accordance with the implementation schedule specified in regulation 3.

4 Subject to the provisions of paragraph 7, the condition of equilibrium after flooding shall satisfy the condition of equilibrium laid down in the annex to resolution A.320(IX) - Regulation equivalent to regulation 27 of the International Convention on Load Lines, 1966, as amended by resolution A.514(13). The assumed flooding need only take into account flooding of the cargo hold space to the water level outside the ship in that flooded condition. The permeability of a loaded hold shall be assumed as 0.9 and the permeability of an empty hold shall be assumed as 0.95, unless a permeability relevant to a particular cargo is assumed for the volume of a flooded hold occupied by cargo and a permeability of 0.95 is assumed for the remaining empty volume of the hold.

5 Bulk carriers constructed before 1 July 1999, which have been assigned a reduced freeboard in compliance with regulation 27(7) of the International Convention on Load Lines, 1966, as adopted on 5 April 1966, may be considered as complying with paragraph 3 of this regulation.

6 Bulk carriers which have been assigned a reduced freeboard in compliance with the provisions of paragraph (8) of the regulation equivalent to regulation 27 of the International Convention on Load Lines, 1966, adopted by resolution A.320(IX), as amended by resolution A.514(13), may be considered as complying with paragraphs 1 or 2, as appropriate.

7 On bulk carriers which have been assigned reduced freeboard in compliance with the provisions of regulation 27(8) of Annex B of the Protocol of 1988 relating to the International Convention on Load Lines, 1966, the condition of equilibrium after flooding shall satisfy the relevant provisions of that Protocol.

Regulation 5

Structural strength of bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m³ and above constructed on or after 1 July 1999, shall have sufficient strength to withstand flooding of any one cargo hold to the water level outside the ship in that flooded condition in all loading and ballast conditions, taking also into account dynamic effects resulting from the presence of water in the hold, and taking into account the recommendations adopted by the Organization.*

2 Bulk carriers of 150 m in length and upwards of double-side skin construction, in which any part of longitudinal bulkhead is located within B/5 or 11.5 m, whichever is less, inboard from the ship's side at right angle to the centreline at the assigned summer load line, designed to carry bulk cargoes having a density of 1,000 kg/m³ and above constructed on or after 1 July 2006, shall comply with the structural strength provisions of paragraph 1.

Regulation 6

Structural and other requirements for bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying solid bulk cargoes having a density of 1,780 kg/m³ and above, constructed before 1 July 1999, shall comply with the following requirements in accordance with the implementation schedule specified in regulation 3:

- .1 The transverse watertight bulkhead between the two foremost cargo holds and the double bottom of the foremost cargo hold shall have sufficient strength to withstand flooding of the foremost cargo hold, taking also into account dynamic effects resulting from the presence of water in the hold, in compliance with the Bulk carrier bulkhead and double bottom strength standards. For the purpose of this regulation, the Bulk carrier bulkhead and double bottom strength standards shall be treated as mandatory.
- .2 In considering the need for, and the extent of, strengthening of the transverse watertight bulkhead or double bottom to meet the requirements of 1.1, the following restrictions may be taken into account:
 - .1 restrictions on the distribution of the total cargo weight between the cargo holds; and
 - .2 restrictions on the maximum deadweight.
- .3 For bulk carriers using either of, or both, the restrictions given in 1.2.1 and 1.2.2 above for the purpose of fulfilling the requirements of 1.1, these

* Refer to resolution 3, Recommendation on compliance with SOLAS regulation XII/5, adopted by the 1997 SOLAS Conference.

restrictions shall be complied with whenever solid bulk cargoes having a density of 1,780 kg/m³ and above are carried.

2 Bulk carriers of 150 m in length and upwards constructed on or after 1 July 2006, in all areas with double-side skin construction shall comply with the following requirements:

- .1 Primary stiffening structures of the double-side skin shall not be placed inside the cargo hold space.
- .2 Subject to the provisions below, the distance between the outer shell and the inner shell at any transverse section shall not be less than 1,000 mm measured perpendicular to the side shell. The double-side skin construction shall be such as to allow access for inspection as provided in regulation II-1/3-6 and the Technical Provisions referring thereto.
 - .1 The clearances below need not be maintained in way of cross ties, upper and lower end brackets of transverse framing or end brackets of longitudinal framing.
 - .2 The minimum width of the clear passage through the double-side skin space in way of obstructions such as piping or vertical ladders shall not be less than 600 mm.
 - .3 Where the inner and/or outer skins are transversely framed, the minimum clearance between the inner surfaces of the frames shall not be less than 600 mm.
 - .4 Where the inner and outer skins are longitudinally framed, the minimum clearance between the inner surfaces of the frames shall not be less than 800 mm. Outside the parallel part of the cargo hold length, this clearance may be reduced where necessitated by the structural configuration but in no case shall be less than 600 mm.
 - .5 The minimum clearance referred to above shall be the shortest distance measured between assumed lines connecting the inner surfaces of the frames on the inner and outer skins.

3 Double-side skin spaces and dedicated seawater ballast tanks arranged in bulk carriers of 150 m in length and upwards constructed on or after 1 July 2006 shall be coated in accordance with the requirements of regulation II-1/3-2 based on the Performance standards for coatings* to be adopted by the Organization.

4 The double-side skin spaces, with the exception of top-side wing tanks, if fitted, shall not be used for the carriage of cargo.

* Refer to the standards acceptable to the Administration until such time that Performance Standards for coating to be adopted by the Organization will be made mandatory by suitably modifying the above requirements.

5 In bulk carriers of 150 m in length and upwards carrying solid bulk cargoes having a density of 1,000 kg/m³ and above constructed on or after 1 July 2006:

- .1 the structure of cargo holds shall be such that all contemplated cargoes can be loaded and discharged by standard loading/discharge equipment and procedures without damage which may compromise the safety of the structure;
- .2 effective continuity between the side shell structure and the rest of the hull structure shall be assured; and
- .3 the structure of cargo areas shall be such that single failure of one stiffening structural member will not lead to immediate consequential failure of other structural items potentially leading to the collapse of the entire stiffened panels.

Regulation 7

Survey and maintenance of bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, constructed before 1 July 1999, of 10 years of age and over, shall not carry solid bulk cargoes having a density of 1,780 kg/m³ and above unless they have satisfactorily undergone either:

- .1 a periodical survey, in accordance with the enhanced programme of inspections during surveys required by regulation XI/2, or
- .2 a survey of all cargo holds to the same extent as required for periodical surveys in the enhanced programme of inspections during surveys required by regulation XI/2.

2 Bulk carriers shall comply with the maintenance requirements provided in regulation II-1/3-1 and the Standards for owners' inspections and maintenance of bulk carrier hatch covers adopted by the Organization by resolution MSC.169(79), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

Regulation 8

Information on compliance with requirements for bulk carriers

1 The booklet required by regulation VI/7.2 shall be endorsed by the Administration or on its behalf, to indicate that regulations 4, 5, 6 and 7, as appropriate, are complied with.

2 Any restrictions imposed on the carriage of solid bulk cargoes having a density of 1,780 kg/m³ and above in accordance with the requirements of regulations 6 and 14 shall be identified and recorded in the booklet referred to in paragraph 1.

3 A bulk carrier to which paragraph 2 applies shall be permanently marked on the side shell at midships, port and starboard, with a solid equilateral triangle having sides of 500 mm and its apex 300 mm below the deck line, and painted a contrasting colour to that of the hull.

Regulation 9

Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds

For bulk carriers constructed before 1 July 1999 being within the application limits of regulation 4.3, which have been constructed with an insufficient number of transverse watertight bulkheads to satisfy that regulation, the Administration may allow relaxation from the application of regulations 4.3 and 6 on condition that they shall comply with the following requirements:

- .1 for the foremost cargo hold, the inspections prescribed for the annual survey in the enhanced programme of inspections during surveys required by regulation XI/2 shall be replaced by the inspections prescribed therein for the intermediate survey of cargo holds;
- .2 are provided with bilge well high water level alarms in all cargo holds, or in cargo conveyor tunnels, as appropriate, giving an audible and visual alarm on the navigation bridge, as approved by the Administration or an organization recognized by it in accordance with the provisions of regulation XI/1; and
- .3 are provided with detailed information on specific cargo hold flooding scenarios. This information shall be accompanied by detailed instructions on evacuation preparedness under the provisions of Section 8 of the International Safety Management (ISM) Code and be used as the basis for crew training and drills.

Regulation 10

Solid bulk cargo density declaration

1 Prior to loading bulk cargo on bulk carriers of 150 m in length and upwards, the shipper shall declare the density of the cargo, in addition to providing the cargo information required by regulation VI/2.

2 For bulk carriers to which regulation 6 applies, unless such bulk carriers comply with all relevant requirements of this chapter applicable to the carriage of solid bulk cargoes having a density of 1,780 kg/m³ and above, any cargo declared to have a density within the range 1,250 kg/m³ to 1,780 kg/m³ shall have its density verified by an accredited testing organization.*

* In verifying the density of solid bulk cargoes, reference should be made to MSC/Circ.908, Uniform method of measurement of the density of bulk cargoes.

Regulation 11

Loading instrument

(Unless provided otherwise, this regulation applies to bulk carriers regardless of their date of construction)

- 1 Bulk carriers of 150 m in length and upwards shall be fitted with a loading instrument capable of providing information on hull girder shear forces and bending moments, taking into account the recommendation adopted by the Organization.**
- 2 Bulk carriers of 150 m in length and upwards constructed before 1 July 1999 shall comply with the requirements of paragraph 1 not later than the date of the first intermediate or periodical survey of the ship to be carried out after 1 July 1999.
- 3 Bulk carriers of less than 150 m in length constructed on or after 1 July 2006 shall be fitted with a loading instrument capable of providing information on the ship's stability in the intact condition. The computer software shall be approved for stability calculations by the Administration and shall be provided with standard conditions for testing purposes relating to the approved stability information.***

Regulation 12

Hold, ballast and dry space water ingress alarms

(This regulation applies to bulk carriers regardless of their date of construction)

- 1 Bulk carriers shall be fitted with water level detectors:
 - .1 in each cargo hold, giving audible and visual alarms, one when the water level above the inner bottom in any hold reaches a height of 0.5 m and another at a height not less than 15% of the depth of the cargo hold but not more than 2 m. On bulk carriers to which regulation 9.2 applies, detectors with only the latter alarm need be installed. The water level detectors shall be fitted in the aft end of the cargo holds. For cargo holds which are used for water ballast, an alarm overriding device may be installed. The visual alarms shall clearly discriminate between the two different water levels detected in each hold;
 - .2 in any ballast tank forward of the collision bulkhead required by regulation II-1/11, giving an audible and visual alarm when the liquid in the tank reaches a level not exceeding 10% of the tank capacity. An alarm overriding device may be installed to be activated when the tank is in use; and

** Refer to the Recommendation on loading instruments, adopted by resolution 5 of the 1997 SOLAS Conference.

*** Refer to the relevant parts of the appendix to the Guidelines for the on-board use and application of computers (MSC/Circ.891).

- .3 in any dry or void space other than a chain cable locker, any part of which extends forward of the foremost cargo hold, giving an audible and visual alarm at a water level of 0.1 m above the deck. Such alarms need not be provided in enclosed spaces the volume of which does not exceed 0.1% of the ship's maximum displacement volume.
- 2 The audible and visual alarms specified in paragraph 1 shall be located on the navigation bridge.
- 3 Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the annual, intermediate or renewal survey of the ship to be carried out after 1 July 2004, whichever comes first.

Regulation 13

Availability of pumping systems*

(This regulation applies to bulk carriers regardless of their date of construction)

- 1 On bulk carriers, the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold shall be capable of being brought into operation from a readily accessible enclosed space, the location of which is accessible from the navigation bridge or propulsion machinery control position without traversing exposed freeboard or superstructure decks. Where pipes serving such tanks or bilges pierce the collision bulkhead, valve operation by means of remotely operated actuators may be accepted, as an alternative to the valve control specified in regulation II-1/11.4, provided that the location of such valve controls complies with this regulation.
- 2 Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the first intermediate or renewal survey of the ship to be carried out after 1 July 2004, but in no case later than 1 July 2007.

* Refer to Interpretation of SOLAS regulation XII/13 (MSC/Circ.1069).

Regulation 14

Restrictions from sailing with any hold empty

Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying cargoes having a density of 1,780 kg/m³ and above, if not meeting the requirements for withstanding flooding of any one cargo hold as specified in regulation 5.1 and the Standards and criteria for side structures of bulk carriers of single-side skin construction adopted by the Organization by resolution MSC.168(79), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I, shall not sail with any hold loaded to less than 10% of the hold's maximum allowable cargo weight when in the full load condition, after reaching 10 years of age. The applicable full load condition for this regulation is a load equal to or greater than 90% of the ship's deadweight at the relevant assigned freeboard.”

APPENDIX
CERTIFICATES

Form of Safety Certificate for Passenger Ships

16 The following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

Form of Safety Construction Certificate for Cargo Ships

17 The following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

Form of Safety Equipment Certificate for Cargo Ships

18 The following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E)

19 Existing section 3 is replaced by the following:

“3 Details of navigational systems and equipment

Item	Actual provision
1.1 Standard magnetic compass*
1.2 Spare magnetic compass*
1.3 Gyro compass*
1.4 Gyro compass heading repeater*
1.5 Gyro compass bearing repeater*
1.6 Heading or track control system*
1.7 Pelorus or compass bearing device*
1.8 Means of correcting heading and bearings
1.9 Transmitting heading device (THD)*

Item	Actual provision
2.1 Nautical charts/Electronic chart display and information system (ECDIS)**
2.2 Back up arrangements for ECDIS
2.3 Nautical publications
2.4 Back up arrangements for electronic nautical publications
3.1 Receiver for a global navigation satellite system/ terrestrial radionavigation system* **
3.2 9 GHz radar*
3.3 Second radar (3 GHz/ 9 GHZ**)*
3.4 Automatic radar plotting aid (ARPA)*
3.5 Automatic tracking aid*
3.6 Second automatic tracking aid*
3.7 Electronic plotting aid*
4 Automatic identification system (AIS)
5.1 Voyage data recorder (VDR)**
5.2 Simplified voyage data recorder (S-VDR)**
6.1 Speed and distance measuring device (through the water)*
6.2 Speed and distance measuring device (over the ground in the forward and athwartship direction)*
6.3 Echo sounding device*
7.1 Rudder, propeller, thrust, pitch and operational mode indicator*
7.2 Rate of turn indicator*
8 Sound reception system*
9 Telephone to emergency steering position*
10 Daylight signalling lamp*
11 Radar reflector*
12 International Code of Signals
13 IAMSAR Manual, Volume III

* Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means they shall be specified.

** Delete as appropriate.”

Form of Safety Radio Certificate for Cargo Ships

20 The following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

Form of Safety Certificate for Cargo Ships

21 In the form of Safety Certificate for Cargo Ships for both 1974 SOLAS, as amended and 1988 SOLAS Protocol,

- .1 Following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”

“Completion date of the survey on which this certificate is based:.....”

(dd/mm/yyyy)

- .2 In the Record of equipment for the Cargo Ship Safety Certificate (FORM C) section 5:

“5 Voyage data recorder (VDR)” is replaced by:

5.1 Voyage data recorder (VDR);

5.2 Simplified Voyage data recorder (S-VDR)”

After existing “13 International Code of Signals”, new entry of

“14 IAMSAR Manual, Volume III” is inserted.

ANNEX 2

FORM OF SAFETY CERTIFICATE FOR NUCLEAR PASSENGER SHIPS

NUCLEAR PASSENGER SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment (Form PNUC)

(Official seal)

(State)

for an¹ international voyage
a short

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974 as modified by the Protocol of 1988 relating thereto

under the authority of the Government of

(name of the State)

by

(person or organization authorized)

¹ Delete as appropriate

Particulars of ship²

Name of ship

Distinctive number or letters

Port of registry

Gross tonnage

Sea areas in which ship is certified to operate (regulation IV/2)

IMO Number

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation VIII/9 of the Convention.

2 That the ship, being a nuclear ship, complied with all the requirements of chapter VIII of the Convention and conformed to the Safety Assessment approved for the ship; and that:

2.1 the ship complied with the requirements of the Convention as regards:

- .1 the structure, main and auxiliary machinery, boilers and other pressure vessels, including the nuclear propulsion plant and the collision protective structure;
- .2 the watertight subdivision arrangements and details;
- .3 the following subdivision load lines:

Subdivision load lines assigned and marked on the ship's side amidships (regulation II-1/13)	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
C.1
C.2
C.3

2.2 the ship complied with the requirements of the Convention as regards structural fire protection, fire safety systems and appliances and fire control plans;

² Alternatively, the particulars of the ship may be placed horizontally in boxes.

- 2.3 the ship complied with the requirements of the Convention as regards radiation protection systems and equipment;
- 2.4 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;
- 2.5 the ship was provided with a line-throwing appliance and radio installations used in life-saving appliances in accordance with the requirements of the Convention;
- 2.6 the ship complied with the requirements of the Convention as regards radio installations;
- 2.7 the functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;
- 2.8 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;
- 2.9 the ship was provided with lights, shapes, means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;
- 2.10 in all other respects the ship complied with the relevant requirements of the Convention.

This certificate is valid until

Completion date of the survey on which this Certificate is based
dd/mm/yyyy

Issued at
(Place of issue of certificate)

.....
(Date of issue)

.....
(Signature of authorized official issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

ANNEX 3

Record of Equipment for the Nuclear Passenger Ship Safety Certificate (Form PNUC)

This Record shall be permanently attached to the
Nuclear Passenger Ship Safety Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH
THE INTERNATIONAL CONVENTION FOR THE SAFETY
OF LIFE AT SEA, 1974, AS MODIFIED BY THE PROTOCOL
OF 1988 RELATING THERETO

1 Particulars of ship

Name of ship

Distinctive number or letters

Number of passengers for which certified

Minimum number of persons with required qualifications
to operate the radio installations

2 Details of life-saving appliances

1	Total number of persons for which life-saving appliances are provided		
2	Total number of lifeboats	Port side	Starboard Side
2.1	Total number of persons accommodated by them	.....	.....
2.2	Number of partially enclosed lifeboats (regulation III/21 and LSA Code, section 4.5)	.....	.....
2.3	Number of totally enclosed lifeboats (regulation III/21 and LSA Code, section 4.6)	.....	.....
2.4	Other lifeboats		
2.5.1	Number	.....	.....
2.5.2	Type	.....	.....

3	Number of motor lifeboats included in the total lifeboats shown above	.....
3.1	Number of lifeboats fitted with searchlights	.....
4	Number of rescue boats	.....
4.1	Number of boats which are included in the total lifeboats shown above	.....
5	Liferafts	
5.1	Those for which approved launching appliances are required	
5.1.1	Number of liferafts	.....
5.1.2	Number of persons accommodated by them	.....
5.2	Those for which approved launching appliances are not required	
5.2.1	Number of liferafts	.....
5.2.2	Number of persons accommodated by them	.....
6	Buoyant apparatus	
6.1	Number of apparatus	.....
6.2	Number of persons capable of being supported	.....
7	Number of lifebuoys	.....
8	Number of lifejackets	
9	Immersion suits	.....
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets	.....
10	Number of thermal protective aids ¹	.....
11	Radio installations used in life-saving appliances	.....
11.1	Number of radar transponders	.....
11.2	Number of two-way VHF radiotelephone apparatus	.....

¹ Excluding those required by the LSA Code, paragraphs 4.1.5.1.24, 4.4.8.31 and 5.1.2.213

3 *Details of radio facilities*

Item	Actual provision
1 Primary systems	
1.1 VHF radio installation	
1.1.1 DSC encoder
1.1.2 DSC watch receiver
1.1.3 Radiotelephony
1.2 MF radio installation	
1.2.1 DSC encoder
1.2.2 DSC watch receiver
1.2.3 Radiotelephony
1.3 MF/HF radio installation	
1.3.1 DSC encoder
1.3.2 DSC watch receiver
1.3.3 Radiotelephony
1.3.4 Direct-printing radiotelegraphy
1.4 INMARSAT ship earth station
2 Secondary means of alerting
3 Facilities for reception of marine safety information	
3.1 NAVTEX receiver
3.2 EGC receiver
3.3 HF direct-printing radiotelegraph receiver
4 Satellite EPIRB	
4.1 COSPAS-SARSAT
4.2 INMARSAT
5 VHF EPIRB
6 Ship's radar transponder

4 *Methods used to ensure availability of radio facilities* (regulations IV/15.6 and 15.7)

- 4.1 Duplication of equipment
- 4.2 Shore-based maintenance
- 4.3 At-sea maintenance capability

5 Details of navigation systems and equipment

	Actual provision
1.1 Standard magnetic compass ²
1.2 Spare magnetic compass ²
1.3 Gyro compass ²
1.4 Gyro compass heading repeater ²
1.5 Gyro compass bearing repeater ²
1.6 Heading or track control system ²
1.7 Pelorus or compass bearing device ²
1.8 Means of correcting heading and bearings
1.9 Transmitting heading device (THD) ²
2.1 Nautical charts/Electronic chart display and information system (ECDIS) ³
2.2 Back up arrangements for ECDIS
2.3 Nautical publications
2.4 Back up arrangements for electronic nautical publications
3.1 Receiver for a global navigation satellite system/terrestrial radio navigation system ^{2, 3}
3.2 9 GHz radar ²
3.3 Second radar (3 GHz/9 GHz ³) ²
3.4 Automatic radar plotting aid (ARPA) ²
3.5 Automatic tracking aid ²
3.6 Second automatic tracking aid ²
3.7 Electronic plotting aid ²
4 Automatic identification system (AIS)
5 Voyage data recorder (VDR)
6.1 Speed and distance measuring device (through the water) ²
6.2 Speed and distance measuring device (over the ground in the forward and athwartship direction) ²
7 Echo sounding device ²
8.1 Rudder, propeller, thrust, pitch and operational mode indicator ²
8.2 Rate of turn indicator ²
9 Sound reception system ²
10 Telephone to emergency steering position ²
11 Daylight signalling lamp ²
12 Radar reflector ²
13 International Code of Signals
14 IAMSAR Manual, Volume III

² Delete as appropriate

³ Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means they shall be specified.

ANNEX 4

FORM OF SAFETY CERTIFICATE FOR NUCLEAR CARGO SHIPS

NUCLEAR CARGO SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment (Form CNUC)

(Official seal)

(State)

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974 as modified by the Protocol of 1988 relating thereto

under the authority of the Government of

(name of the State)

by

(person or organization authorized)

Particulars of ship¹

Name of ship

Distinctive number or letters

Port of registry

Gross tonnage

¹ Alternatively the particulars of the ship may be placed horizontally in boxes.

Deadweight of ship (metric tons)²

Length of ship (regulation III/3.12)

Sea areas in which ship is certified to operate (regulation IV/2)

IMO Number.....

Type of ship³

Bulk carrier

Oil tanker

Chemical tanker

Gas carrier

Cargo ship other than any of the above

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for an alteration or modification of a major character was commenced

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation VIII/9 of the Convention.

2 That the ship, being a nuclear ship, complied with all the requirements of chapter VIII of the Convention and conformed to the Safety Assessment approved for the ship; and that:

2.1 the condition of the structure, machinery and equipment as defined in regulation I/10 (as applicable to comply with regulation VIII/9), including the nuclear propulsion plant and the collision protective structure, was satisfactory and the ship complied with the relevant requirements of chapter II-1 and chapter II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans);

2.2 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire control plans;

2.3 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.4 the ship was provided with a line-throwing appliance and radio installations used in life-saving appliances in accordance with the requirements of the Convention;

2.5 the ship complied with the requirements of the Convention as regards radio installations;

2.6 the functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.7 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

² For oil tankers, chemical tankers and gas carriers only

³ Delete as appropriate

2.8 the ship was provided with lights, shapes, means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.9 in all other respects the ship complied with the relevant requirements of the regulations, so far as these requirements apply thereto.

This certificate is valid until

Completion date of the survey on which this certificate is based
dd/mm/yyyy

Issued at
(Place of issue of certificate)

.....
(Date of issue)

.....
(Signature of authorized official issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

ANNEX 5

Record of Equipment for the Nuclear Cargo Ship Safety Certificate (Form CNUC)

This Record shall be permanently attached to the
Nuclear Cargo Ship Safety Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH
THE INTERNATIONAL CONVENTION FOR THE SAFETY
OF LIFE AT SEA, 1974, AS MODIFIED BY THE PROTOCOL
OF 1988 RELATING THERETO

1 Particulars of ship

Name of ship

Distinctive number or letters

Minimum number of persons with required qualifications
to operate the radio installations

2 Details of life-saving appliances

1 Total number of persons for which life-saving appliances are provided		.....
		Port side	Starboard side
2	Total number of lifeboats	.....	.....
2.1	Total number of persons accommodated by them	.....	.....
2.2	Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.6)	.....	.....
2.3	Number of self-righting partially enclosed lifeboats (regulation III/31 and LSA Code, section 4.8)	.....	.....
2.4	Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	.....	.....
2.5	Other lifeboats		
2.5.1	Number	.....	.....
2.5.2	Type	.....	.....
2.6	Number of free-fall life-boats	.....	.....
2.6.1	Totally enclosed (regulation III/31 and LSA Code, section 4.7)	.....	.....
2.6.2	Self-contained (regulation III/31 and LSA Code, section 4.8)	.....	.....
2.6.3	Fire-protected (regulation III/31 and LSA Code, section 4.9)	.....	.....

2 Details of life-saving appliances (continued)

3	Number of motor lifeboats included in the total lifeboats shown above	.....
3.1	Number of lifeboats fitted with searchlights	.....
4	Number of rescue boats	.....
4.1	Number of boats which are included in the total lifeboats shown above	.....
5	Liferafts	
5.1	Those for which approved launching appliances are required	
5.1.1	Number of liferafts	.....
5.1.2	Number of persons accommodated by them	.....
5.2	Those for which approved launching appliances are not required	
5.2.1	Number of liferafts	.....
5.2.2	Number of persons accommodated by them	.....
5.3	Number of liferafts required by regulation III/31.1.4	.....
6	Number of lifebuoys	.....
7	Number of lifejackets	
8	Immersion suits	.....
8.1	Total number	.....
8.2	Number of suits complying with the requirements for lifejackets	.....
9	Number of thermal protective aids ¹	.....
10	Radio installations used in life-saving appliances	.....
10.1	Number of radar transponders	.....
10.2	Number of two-way VHF radiotelephone apparatus	.....

¹ Excluding those required by the LSA Code, paragraphs 4.1.5.1.24, 4.1.8.31 and 5.1.2.2.13

3 *Details of radio facilities*

Item	Actual provision
1 Primary systems	
1.1 VHF radio installation	
1.1.1 DSC encoder
1.1.2 DSC watch receiver
1.1.3 Radiotelephony
1.2 MF radio installation	
1.2.1 DSC encoder
1.2.2 DSC watch receiver
1.2.3 Radiotelephony
1.3 MF/HF radio installation	
1.3.1 DSC encoder
1.3.2 DSC watch receiver
1.3.3 Radiotelephony
1.3.4 Direct-printing radiotelegraphy
1.4 INMARSAT ship earth station
2 Secondary means of alerting
3 Facilities for reception of marine safety information	
3.1 NAVTEX receiver
3.2 EGC receiver
3.3 HF direct-printing radiotelegraph receiver
4 Satellite EPIRB	
4.1 COSPAS-SARSAT
4.2 INMARSAT
5 VHF EPIRB
6 Ship's radar transponder

4 *Methods used to ensure availability of radio facilities* (regulations IV/15.6 and 15.7)

- 4.1 Duplication of equipment
- 4.2 Shore-based maintenance
- 4.3 At-sea maintenance capability

5 Details of navigation systems and equipment

	Actual provision
1.10 Standard magnetic compass ⁷
1.11 Spare magnetic compass ²
1.12 Gyro compass ²
1.13 Gyro compass heading repeater ²
1.14 Gyro compass bearing repeater ²
1.15 Heading or track control system ²
1.16 Pelorus or compass bearing device ²
1.17 Means of correcting heading and bearings
1.18 Transmitting heading device (THD) ²
2.5 Nautical charts/Electronic chart display and information system (ECDIS) ³
2.6 Back up arrangements for ECDIS
2.7 Nautical publications
2.8 Back up arrangements for electronic nautical publications
5.1 Receiver for a global navigation satellite system/terrestrial radio navigation system ^{2,3}
5.2 9 GHz radar ²
5.3 Second radar (3 GHz/9 GHz ³) ²
5.4 Automatic radar plotting aid (ARPA) ²
5.5 Automatic tracking aid ²
3.6 Second automatic tracking aid ²
3.7 Electronic plotting aid ²
6 Automatic identification system (AIS)
5.1 Voyage data recorder (VDR)
5.2 Simplified voyage data recorder (S-VDR)
6.1 Speed and distance measuring device (through the water) ²
6.2 Speed and distance measuring device (over the ground in the forward and athwartship direction) ²
8 Echo sounding device ²
8.1 Rudder, propeller, thrust, pitch and operational mode indicator ²
8.2 Rate of turn indicator ²
9 Sound reception system ²
10 Telephone to emergency steering position ²
11 Daylight signalling lamp ²
12 Radar reflector ²
13 International Code of Signals
14 IAMSAR Manual, Volume III

2 Delete as appropriate

3 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means they shall be specified

**RESOLUTION MSC.173(79)
(adopted on 10 December 2004)**

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE FOR
APPLICATION OF FIRE TEST PROCEDURES (FTP CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.61(67), by which it adopted the International Code for Application of Fire Test Procedures (hereinafter referred to as “the FTP Code”), which has become mandatory under chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation II-2/3.23 of the Convention concerning the procedure for amending the FTP Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the FTP Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the FTP Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE FOR APPLICATION OF FIRE
TEST PROCEDURES (FTP CODE)**

ANNEX 1 – FIRE TEST PROCEDURES

Part 2 – Smoke and toxicity test

2.6 Classification criteria

2.6.2 Toxicity

In the table of limits, the following text is added after the entry “SO₂ 120 ppm”:

“(200 ppm for floor coverings)”

**RESOLUTION MSC.174(79)
(adopted on 10 December 2004)**

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR
HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.36(63), by which it adopted the International Code of Safety for High-Speed Craft, 1994 (hereinafter referred to as “the 1994 HSC Code”), which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation X/1.1 of the Convention concerning the procedure for amending the 1994 HSC Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the 1994 HSC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 1994 HSC Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR
HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)**

Annex 1

Form of Safety Certificate for High-Speed Craft

In the form of the High-Speed Craft Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(*dd/mm/yyyy*)

**RESOLUTION MSC.175(79)
(adopted on 10 December 2004)**

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR
HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.97(73), by which it adopted the International Code of Safety for High-Speed Craft, 2000 (hereinafter referred to as “the 2000 HSC Code”), which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea (SOLAS), 1974, (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation X/1.2 of the Convention concerning the procedure for amending the 2000 HSC Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the 2000 HSC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 2000 HSC Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR
HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)**

Chapter 2 – Buoyancy, stability and subdivision

- 1 The title of section 2.2.1 “Intact buoyancy”, is replaced with the title “Buoyant spaces”.
- 2 In paragraph 2.2.1.1, the following new sentence is added at the end of the existing sentence starting with “In considering ...” and ending with “... stability requirements.”:

“Where a buoyant space may be subjected to increased fluid pressure in the equilibrium position after damage, the boundaries and associated openings and penetrations of that space shall be designed and constructed to prevent the passage of fluid under that pressure.”
- 3 In the leading text of paragraph 2.2.3.2, the word “shall” is replaced with the word “may”.

Annex 1

Form of High-Speed Craft Safety Certificate and Record of Equipment

- 4 In the form of the High-Speed Craft Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(dd/mm/yyyy)

RESOLUTION MSC.176(79)
(adopted on 10 December 2004)

**2004 AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION
AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK
(IBC CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.4(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (hereinafter referred to as “the IBC Code”), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation VII/8.1 of the Convention concerning the procedure for amending the IBC Code,

BEING DESIROUS of keeping the IBC Code up to date,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the IBC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

CONSIDERING that it is highly desirable for the provisions of the IBC Code, which are mandatory under both the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) and the 1974 SOLAS Convention, to remain identical,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IBC Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2007 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**LIST OF MODIFICATIONS TO THE TEXT OF THE
IBC CODE ADOPTED BY MEPC 52 (MEPC 52/WP.11/Add.1)**

Preamble

Replace table in paragraph 10 with the following:

	Resolution	Adoption	Deemed acceptance	Entry into force
1	MSC.10(54)	29 April 1987	29 April 1988	30 October 1988
2	MSC.14(57) MEPC.32(27)	11 April 1989 17 March 1989	12 April 1990 12 April 1990	13 October 1990 13 October 1990
3	MSC.28(61) MEPC.55(33)	^{11 December 1992} 30 October 1992	1 January 1994 1 January 1994	1 July 1994 1 July 1994
4	MSC.50(66) MEPC.69(38)	4 June 1996 10 July 1996	1 January 1998 1 January 1998	1 July 1998 1 July 1998
5	MSC.58(67) MEPC.73(39)	5 December 1996 10 March 1997	1 January 1998 10 January 1998	1 July 1998 10 July 1998
6	MSC.102(73)	5 December 2000	1 January 2002	1 July 2002
7	MSC ....(79) MEPC.119(52)	9 December 2004 15 October 2004	1 July 2006 1 July 2006	1 January 2007 1 January 2007

Chapter 1

Paragraph 1.5.4.4

Delete paragraph 1.5.4.4

Chapter 2

Paragraph 2.5.1

Replace table with the following:

.1	Side damage:		
.1.1	Longitudinal extent:	$1/3L^{2/3}$ or 14.5 m, whichever is less	
.1.2	Transverse extent	B/5 or 11.5 m, whichever is less (measured inboard from the ship's side at right angles to the centreline at the level of the summer load line)	

.1.3	Vertical extent:	upwards without limit (measured from the moulded line of the bottom shell plating at centreline)	
.2	Bottom damage:	For 0.3L from the forward perpendicular of the ship	Any other part of the ship
.2.1	Longitudinal extent:	$1/3L^{2/3}$ or 14.5 m, whichever is less	$1/3L^{2/3}$ or 5 m, whichever is less
.2.2	Transverse extent:	B/6 or 10 m, whichever is less	B/6 or 5 m, whichever is less
.2.3	Vertical extent:	B/15 or 6 m, whichever is less (measured from the moulded line of the bottom shell plating at centreline (see 2.6.2))	B/15 or 6 m, whichever is less (measured from the moulded line of the bottom shell plating at centreline (see 2.6.2))

Chapter 3

Paragraph 3.2.3

Replace the existing text of the last sentence starting “Windows and sidescuttles facing the cargo area” by the following:

“Windows and sidescuttles facing the cargo area and on the sides of the superstructures and deck-houses within the limits specified above shall be of the fixed (non-opening) type. Such sidescuttles in the first tier on the main deck shall be fitted with inside covers of steel or equivalent material.”

Chapter 5

Paragraph 5.1.1

Replace formula for theoretical thickness by the following:

$$t_0 = PD/(2Ke+P) \text{ (mm)}$$

Formulae should not be italicized.

Chapter 6

Paragraph 6.1

In first sentence, 2nd line replace “should” by “shall.”

Chapter 8

Paragraphs 8.5.1.2 and 8.5.1.3

Replace “efflux” with “exit”.

Chapter 10

Paragraph 10.1.4

In first sentence, 1st line replace “should” by “shall”.

Chapter 11

Paragraph 11.2.3

Replace existing text by the following:

“If cargoes are to be carried which are not suited to extinguishment by carbon dioxide or equivalent media, the cargo pump-room shall be protected by a fire extinguishing system consisting of either a fixed pressure water spray or high expansion foam system.”

Paragraph 11.3.5.3

Replace in 4th line “4000 gross tonnage” by “4000 tonnes deadweight”.

Paragraph 11.3.7

Replace in 5th line “4000 gross tonnage” by “4000 tonnes deadweight”.

Paragraph 11.3.15

Replace existing text by the following:

“Where flammable cargoes are to be carried, all sources of ignition shall be excluded from hazardous locations unless such sources conform with 10.1.4.”

Chapter 14

Paragraph 14.3.1.2

Delete “normally”.

Chapter 15

Paragraph 15.3.10

Delete “describe in 10.2.3”.

Paragraph 15.5.3.1

Delete in 4th line of first sentence “of the IBC Code”.

Paragraph 15.8.26.2

Replace “P_R” with “ρ_R” and “P_L” with “ρ_L”

Paragraph 15.12.3.3

Replace “nontoxic” by “non-toxic”.

Delete “(see also 3.7.2)”.

Paragraph 15.14.7.1

Delete “(R)”.

Paragraph 15.14.7.2

Replace existing text by the following:

“5.14.7.2 The maximum volume (V_L) of cargo to be loaded in a tank shall be:

$$V_L = 0.98V \frac{\rho_R}{\rho_L}$$

Where V = volume of the tank

ρ_R = density of cargo at the reference temperature

ρ_L = density of cargo at the loading temperature”.

Paragraph 15.20.2.2

Replace in 3rd line “1.5°C/h” by “1.5°C per hour”.

Chapter 17

Replace the existing text for explanatory notes for “Ship type (column e)” by the following:

- “ 1: ship type 1 (2.1.2.1)
- 2: ship type 2 (2.1.2.2)
- 3: ship type 3 (2.1.2.3)”

Delete “I: indirect gauging (13.1.1.3)” in the explanatory notes for “Gauging (column j)”.

Replace “Emergency escape (column n)” by “Emergency equipment (column n)”.

Replace existing list of products with attached.

Footnotes

In footnote “k”, replace “column be” by “column e”.

Add new footnote “1” as follows:

“1 Applicable where the melting point is equal to or greater than 0°C”.

Chapter 18

Replace paragraph numbering “1, 2, 3, 4” by “18.1, 18.2, 18.3, 18.4” respectively.

Replace existing list of products with attached.

Chapter 19

Replace paragraph numbering “1, 2, 3, 4, 5” by “19.1, 19.2, 19.3, 19.4, 19.5” respectively.

Replace existing text of paragraph 4 by the following:

“Prefixes that are disregarded for purposes of alphabetical order are in italics and include the following:

n-	(normal-)
sec-	(secondary-)
tert-	(tertiary-)
o-	(ortho-)
m-	(meta-)
p-	(para-)
N-	
O-	
sym-	(symmetrical)
uns-	(unsymmetrical)
dl-	
cis-	
trans-	
(E)-	
(Z)-	
alpha-	(α -)
beta-	(β -)
gamma-	(γ -)
epsilon-	(ϵ -)

Replace existing index with attached.

Chapter 20

Paragraph 20.3.2.1

Replace “MARPOL requirements” *by* “the requirements of MARPOL 73/78”.

Chapter 21

Paragraph 21.4.3.1

Replace “MARPOL Annex II” *by* “Annex II of MARPOL 73/78”.

Paragraph 21.4.8.1

Replace the existing text defining the criteria “No:” *by the following:*

“No: Where the above criteria do not apply, (inerting requirements may be required under SOLAS)”.

Paragraph 21.5.3

Replace existing header by the following:

“21.5.3 Paragraphs 15.2 to 15.10 and 15.20”

Paragraph 21.5.8

Replace existing header by the following:

“21.5.8 Paragraph 15.16 - Cargo contamination”

Paragraph 21.5.12

Replace existing header by the following:

“21.5.12 Paragraph 15.21 - Temperature sensors”

Paragraph 21.6.4

Replace existing header by the following:

“21.6.4 Paragraph 16.6 - Cargo not to be exposed to excessive heat”

Paragraph 21.7.9.2

Delete “(see 21.4.9.2.2)”.

Appendix - MODEL FORM OF INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK

Replace existing text in “Notes on completion of Certificate:” by the following:

“Notes on completion of Certificate:

- 1 The Certificate can be issued only to ships entitled to fly the flags of States which are both a Contracting Government to the 1974 SOLAS Convention and a Party to MARPOL 73/78.
- 2 Ship Type: Any entry under this column must relate to all relevant recommendations, e.g. an entry “Type 2” means Type 2 in all respects prescribed by the Code.
- 3 Products: products listed in chapter 17 of the Code, or which have been evaluated by the Administration in accordance with 1.1.6 of the Code, shall be listed. In respect of the latter “new” products, any special requirements provisionally prescribed shall be noted.
- 4 Products: The list of products the ship is suitable to carry shall include the Noxious Liquid Substances of Category Z which are not covered by the Code and shall be identified as “chapter 18 Category Z”.

RESOLUTION MSC.177(79)
(adopted on 10 December 2004)

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE FOR THE
CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN
BULK (IGC CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.5(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (hereinafter referred to as “the IGC Code”), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation VII/11.1 of the Convention concerning the procedure for amending the IGC Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the IGC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IGC Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION
AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK
(IGC CODE)**

Chapter 3 – Ship arrangements

(Following amendment applies to ships constructed on or after 1 January 2007)

- 1 In paragraph 3.6.4, the reference to “10.2.5.4” is replaced by “10.1.4”.

Chapter 10 - Electrical installations

(Following amendments apply to ships constructed on or after 1 January 2007)

- 2 In paragraph 10.1.4, the words “when the exceptions listed in 10.2 are permitted” in the first sentence are deleted.
- 3 The following new sentence is added at the end of paragraph 10.1.4:
- “Electrical equipment, cables and wiring should not be installed in hazardous locations unless it conforms with the standards not inferior to those acceptable to the Organization*. However, for locations not covered by such standards, electrical equipment, cables and wiring which do not conform to the standards may be installed in hazardous locations based on a risk assessment to the satisfaction of the Administration, to ensure that an equivalent level of safety is assured.”
- 4 Existing paragraph 10.2 is deleted.⁹

* Refer to the standards published by the International Electrotechnical Commission, IEC 60092-502:1999 ‘Electrical installations in ships – Tankers’.

⁹ **Note by the Secretariat:**
In paragraph 10.1.2, at the end of the first sentence, the following footnote is added:
“* Refer to the relevant standards of the International Electrotechnical Commission, in particular publication 60092-502.”
In paragraph 10.1.3, the footnote at the end of the paragraph is deleted.

Appendix

Model form of International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk

5 In the form of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

RESOLUTION MSC.178(79)
(adopted on 10 December 2004)

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE FOR THE SAFE
CARRIAGE OF PACKAGED IRRADIATED NUCLEAR FUEL, PLUTONIUM AND
HIGH-LEVEL RADIOACTIVE WASTES ON BOARD SHIPS (INF CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.88(71), by which it adopted the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (hereinafter referred to as “the INF Code”), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation VII/14.1 of the Convention concerning the procedure for amending the INF Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the INF Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the INF Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE FOR THE SAFE CARRIAGE OF
PACKAGED IRRADIATED NUCLEAR FUEL, PLUTONIUM AND HIGH-LEVEL
RADIOACTIVE WASTES ON BOARD SHIPS (INF CODE)**

Appendix

Form of International Certificate of Fitness for the Carriage of INF Cargo

In the form of the International Certificate of Fitness for the Carriage of INF Cargo, the following new section is inserted between the section commencing with the words “This certificate is issued” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:.....”
(dd/mm/yyyy)

RESOLUTION MSC.179(79)
(adopted on 10 December 2004)

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL MANAGEMENT CODE
FOR THE SAFE OPERATION OF SHIPS AND FOR POLLUTION PREVENTION
(INTERNATIONAL SAFETY MANAGEMENT (ISM) CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.5(48), by which it adopted the International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management (ISM) Code) (hereinafter referred to as “the ISM Code”), which has become mandatory under chapter IX of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”),

NOTING ALSO article VIII(b) and regulation IX/1.1 of the Convention concerning the procedure for amending the ISM Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the ISM Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the ISM Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL MANAGEMENT CODE FOR THE
SAFE OPERATION OF SHIPS AND FOR POLLUTION PREVENTION
(INTERNATIONAL SAFETY MANAGEMENT (ISM) CODE)**

Appendix

**Forms of the Document of Compliance, the Safety Management Certificate,
the Interim Document of Compliance and the Interim Safety Management Certificate**

1 In the form of the Document of Compliance, the following new section is inserted between the section commencing with the words “This Document of Compliance is valid until” and the section commencing with the words “Issued at”:

“Completion date of the verification on which this certificate is based:”
(*dd/mm/yyyy*)

2 In the form of the Safety Management Certificate, the following new section is inserted between the section commencing with the words “This Safety Management Certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the verification on which this certificate is based:”
(*dd/mm/yyyy*)

RESOLUTION MSC.180(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article XII and regulation I/1.2.3 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, hereinafter referred to as "the Convention", concerning the procedures for amending Part A of the Seafarers' Training, Certification and Watchkeeping (STCW) Code,

HAVING CONSIDERED, at its seventy-ninth session, amendments to Part A of the STCW Code, proposed and circulated in accordance with article XII(1)(a)(i) of the Convention,

1. ADOPTS, in accordance with article XII(1)(a)(iv) of the Convention, amendments to the STCW Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the Convention, that the said amendments to the STCW Code shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross tonnage or more, have notified their objections to the amendments;
3. INVITES Parties to the Convention to note that, in accordance with article XII(1)(a)(ix) of the Convention, the annexed amendments to the STCW Code shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article XII(1)(a)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the Convention.

ANNEX

**AMENDMENTS TO THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE**

Table A-VI/2-1 – Specifications of minimum standards of competence in survival crafts and rescue boats other than fast rescue boats.

With respect to Competence “Take charge of a survival craft or rescue boat during and after launch” (Column 1) amend as follows:

- 1 In column 2, the following two items are added at the end of the seventh paragraph:
 - “Dangers associated with the use of on-load release devices”
 - “Knowledge of maintenance procedures”
- 2 In column 3, the following additional text is added at the end of subparagraph .4:
 - “and operate off-load and on-load release devices.”
- 3 In column 3, the following additional item is added at the end of the present text of subparagraph .5:
 - “including the proper resetting of both off-load and on-load release devices.”
- 4 In column 4, the following new item is added at the end of the third paragraph:
 - “Equipment is operated in accordance with manufacturers’ instructions for release and resetting.”

RESOLUTION MSC.171(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO
THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”) and article VI of the Protocol of 1988 relating to the Convention (hereinafter referred to as “the 1988 SOLAS Protocol”) concerning the procedure for amending the 1988 SOLAS Protocol,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the 1988 SOLAS Protocol proposed and circulated in accordance with article VIII(b)(i) of the Convention and article VI of the 1988 SOLAS Protocol,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention and article VI of the 1988 SOLAS Protocol, amendments to the appendix to the Annex to the 1988 SOLAS Protocol, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention and article VI of the 1988 SOLAS Protocol, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Parties to the 1988 SOLAS Protocol or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES the Parties concerned to note that, in accordance with article VIII(b)(vii)(2) of the Convention and article VI of the 1988 SOLAS Protocol, the amendments shall enter into force on 1 July 2006, upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention and article VI of the 1988 SOLAS Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the 1988 SOLAS Protocol;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the 1988 SOLAS Protocol.

ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

APPENDIX

MODIFICATIONS AND ADDITIONS TO THE APPENDIX TO THE ANNEX TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

Form of Safety Certificate for Passenger Ships

1 In the form of the Passenger Ship Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(dd/mm/yyyy)

Form of Safety Construction Certificate for Cargo Ships

2 In the form of the Cargo Ship Safety Construction Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(dd/mm/yyyy)

Form of Safety Equipment Certificate for Cargo Ships

3 In the form of the Cargo Ship Safety Equipment Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(dd/mm/yyyy)

Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E)

4 Existing section 3 is replaced by the following:

“3 Details of navigational systems and equipment

Item	Actual provision
1.1 Standard magnetic compass*
1.2 Spare magnetic compass*
1.3 Gyro compass*
1.4 Gyro compass heading repeater*
1.5 Gyro compass bearing repeater*
1.6 Heading or track control system*
1.7 Pelorus or compass bearing device*
1.8 Means of correcting heading and bearings
1.9 Transmitting heading device (THD)*
2.1 Nautical charts/Electronic chart display and information system (ECDIS)**
2.2 Back up arrangements for ECDIS
2.3 Nautical publications
2.4 Back up arrangements for electronic nautical publications
3.1 Receiver for a global navigation satellite system/ terrestrial radionavigation system* **
3.2 9 GHz radar*
3.3 Second radar (3 GHz/ 9 GHz**)*
3.4 Automatic radar plotting aid (ARPA)*
3.5 Automatic tracking aid*
3.6 Second automatic tracking aid*
3.7 Electronic plotting aid*
4 Automatic identification system (AIS)
5.1 Voyage data recorder (VDR)**
5.2 Simplified voyage data recorder (S-VDR)**
6.1 Speed and distance measuring device (through the water)*
6.2 Speed and distance measuring device (over the ground in the forward and athwartship direction)*
6.3 Echo sounding device*

Item		Actual provision
7.1	Rudder, propeller, thrust, pitch and operational mode indicator*	.....
7.2	Rate of turn indicator*	.....
8	Sound reception system*	.....
9	Telephone to emergency steering position*	.....
10	Daylight signalling lamp*	.....
11	Radar reflector*	.....
12	International Code of Signals	.....
13	IAMSAR Manual, Volume III	.....

* Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means they shall be specified.

** Delete as appropriate.”

Form of Safety Radio Certificate for Cargo Ships

5 In the form of the Cargo Ship Safety Radio Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
 (dd/mm/yyyy)

Form of Safety Certificate for Cargo Ships

6 In the form of the Cargo Ship Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
 (dd/mm/yyyy)

RESOLUTION MSC.172(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO
THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VI of the Protocol of 1988 relating to the International Convention on Load Lines, 1966 (hereinafter referred to as the "1988 Load Lines Protocol") concerning amendment procedures,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the 1988 Load Lines Protocol proposed and circulated in accordance with paragraph 2(a) of article VI thereof,

1. ADOPTS, in accordance with paragraph 2(d) of article VI of the 1988 Load Lines Protocol, amendments to Annex B to the 1988 Load Lines Protocol, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with paragraph 2(f)(ii)(bb) of article VI of the 1988 Load Lines Protocol, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Parties to the 1988 Load Lines Protocol or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;
3. INVITES the Parties concerned to note that, in accordance with paragraph 2(g)(ii) of article VI of the 1988 Load Lines Protocol, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with paragraph 2(e) of article VI of the 1988 Load Lines Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the 1988 Load Lines Protocol;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the 1988 Load Lines Protocol.

ANNEX

**AMENDMENTS TO ANNEX B TO THE PROTOCOL OF 1988 RELATING TO THE
INTERNATIONAL CONVENTION ON LOAD LINES, 1966**

Annex III

Certificates

Form of International Certificate on Load Lines

1 In the form of the International Load Line Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(*dd/mm/yyyy*)

Form of International Exemption Certificate on Load Lines

2 In the form of the International Load Line Exemption Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:”
(*dd/mm/yyyy*)

RESOLUTION MSC.181(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND
EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS
IN BULK, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.212(VII) by which the Assembly, at its seventh session, adopted the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code), which provides safety requirements for chemical tankers supplementary to the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended,

RECALLING FURTHER resolution MEPC.20(22) by which the Marine Environment Protection Committee adopted the BCH Code to make it mandatory under MARPOL 73/78,

NOTING resolution MSC.29(61) by which, at its sixty-first session, it adopted the revised BCH Code,

NOTING ALSO resolution MSC.176(79) by which it adopted amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code),

HAVING CONSIDERED, at its seventy-ninth session, amendments to the BCH Code proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee at its seventy-eighth session,

RECOGNIZING the need to bring the approved amendments to the BCH Code into force on the date on which corresponding amendments to the IBC Code enter into force,

1. ADOPTS amendments to the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code), as amended, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 January 2007* upon acceptance and entry into force of the corresponding amendments to the IBC Code adopted by resolution MSC.176(79).

* Date of entry into force of the aforementioned amendments to the IBC Code, which is linked to the date of entry into force of the revised Annex II to MARPOL 73/78.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK,
AS AMENDED**

APPENDIX

**MODEL FORM OF CERTIFICATE OF FITNESS FOR
THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**

1 In the form of the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.182(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE CODE FOR THE CONSTRUCTION
AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES
IN BULK, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.328(IX), by which the Assembly, at its ninth session, adopted the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (Gas Carrier Code),

RECOGNIZING the need for the amendments to the GC Code to become effective on the date on which the corresponding amendments to the IGC Code enter into force,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the Gas Carrier Code proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee at its seventy-eighth session,

NOTING resolution MSC.177(79), by which it adopted amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code),

1. ADOPTS amendments to the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, as amended, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 July 2006 upon acceptance and entry into force of the corresponding amendments to the IGC Code adopted by resolution MSC.177(79).

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
SHIPS CARRYING LIQUEFIED GASES IN BULK, AS AMENDED**

APPENDIX

**MODEL FORM OF CERTIFICATE OF FITNESS FOR
THE CARRIAGE OF LIQUEFIED GASES IN BULK**

1 In the form of the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.183(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE CODE OF SAFETY FOR SPECIAL
PURPOSE SHIPS, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.534(13) by which the Assembly, at its thirteenth session, adopted the Code of Safety for Special Purpose Ships (SPS Code),

NOTING that the Assembly authorized the Committee to amend the Code as may be necessary,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the SPS Code proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee, at its seventy-eighth session,

1. ADOPTS amendments to the Code of Safety for Special Purpose Ships, as amended, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 July 2006.

ANNEX

**AMENDMENTS TO THE CODE OF SAFETY FOR
SPECIAL PURPOSE SHIPS, AS AMENDED**

APPENDIX

FORM OF SAFETY CERTIFICATE FOR SPECIAL PURPOSE SHIPS

1 In the form of the Special Purpose Ship Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.184(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND
HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID
SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.673(16) by which the Assembly, at its sixteenth session, adopted the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels,

NOTING that the Assembly authorized the Committee and the Marine Environment Protection Committee to amend the Guidelines as may be necessary,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the Guidelines proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee, at its seventy-eighth session,

1. ADOPTS amendments to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 January 2007.

ANNEX

**AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND HANDLING OF
LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID SUBSTANCES IN
BULK ON OFFSHORE SUPPORT VESSELS**

APPENDIX 2

MODEL FORM OF CERTIFICATE OF FITNESS

1 In the form of the Certificate of Fitness, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.185(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE
CODE OF SAFETY FOR DIVING SYSTEMS**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.536(13) by which the Assembly, at its thirteenth session, adopted the Code of Safety for Diving Systems,

NOTING that the Assembly authorized the Committee to amend the Code as may be necessary,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the Code of Safety for Diving Systems proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee at its seventy-eighth session,

1. ADOPTS amendments to the Code of Safety for Diving Systems, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 July 2006.

ANNEX

AMENDMENTS TO THE CODE OF SAFETY FOR DIVING SYSTEMS

APPENDIX

MODEL FORM OF DIVING SYSTEM SAFETY CERTIFICATE

1 In the form of the Diving System Safety Certificate, the following new section is inserted between the section commencing with the words “This Certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.186(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE CODE OF SAFETY FOR DYNAMICALLY
SUPPORTED CRAFT, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.373(X) by which the Assembly, at its tenth session, adopted the Code of Safety for Dynamically Supported Craft (DSC Code),

NOTING that the Assembly authorized the Committee to amend the Code as may be necessary,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the Code of Safety for Dynamically Supported Craft proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee, at its seventy-eighth session,

1. ADOPTS amendments to the Code of Safety for Dynamically Supported Craft, as amended, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 July 2006.

ANNEX

**AMENDMENTS TO THE CODE OF SAFETY FOR
DYNAMICALLY SUPPORTED CRAFT, AS AMENDED**

ANNEX I

**SAMPLE OF THE DYNAMICALLY SUPPORTED CRAFT CONSTRUCTION
AND EQUIPMENT CERTIFICATE**

1 In the form of the Dynamically Supported Craft Construction and Equipment Certificate, the following new section is inserted between the section commencing with the words “It will remain in force until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

RESOLUTION MSC.187(79)
(adopted on 9 December 2004)

**ADOPTION OF AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND
EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.649(16) by which the Assembly, at its sixteenth session, adopted the Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code),

NOTING that the Assembly authorized the Committee to amend the Code when appropriate,

HAVING CONSIDERED, at its seventy-ninth session, amendments to the MODU Code proposed by the Sub-Committee on Flag State Implementation, at its eleventh session, which were approved by the Committee, at its seventy-eighth session,

1. ADOPTS amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code), as amended, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 July 2006.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS, AS AMENDED**

APPENDIX

MODEL FORM OF MOBILE OFFSHORE DRILLING UNIT SAFETY CERTIFICATE (1989)

1 In the form of the Mobile Offshore Drilling Unit Safety Certificate (1989), the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

MSC CIRCULAR 1125

**AMENDMENTS TO THE GUIDELINES FOR THE DESIGN, CONSTRUCTION AND
OPERATION OF PASSENGER SUBMERSIBLE CRAFT**

1 The Maritime Safety Committee, at its seventy-ninth session (1-10 December 2004), approved amendments to the Guidelines for the design, construction and operation of passenger submersible craft (MSC/Circ.981), regarding the date of completion of the survey, the text of which is set out in the annex.

2 Member Governments are invited to bring the annexed amendments to the attention of parties concerned and to apply them when issuing the Safety Compliance Certificates for Passenger Submersible Craft.

ANNEX

**AMENDMENTS TO THE GUIDELINES FOR THE DESIGN, CONSTRUCTION AND
OPERATION OF PASSENGER SUBMERSIBLE CRAFT**

APPENDIX 1

**MODEL FORM OF SAFETY COMPLIANCE CERTIFICATE
FOR PASSENGER SUBMERSIBLE CRAFT**

1 In the form of the Safety Compliance Certificate for Passenger Submersible Craft, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

MSC CIRCULAR 1126

**AMENDMENTS TO THE INTERIM GUIDELINES FOR
WING-IN-GROUND CRAFT**

1 The Maritime Safety Committee, at its seventy-ninth session (1-10 December 2004), approved amendments to the Interim Guidelines for Wing-in-ground (WIG) Craft (MSC/Circ.1054), regarding the date of completion of the survey, the text of which is set out in the annex.

2 Member Governments are invited to bring the annexed amendments to the attention of parties concerned and to apply them when issuing Wing-in-ground Craft Safety Certificates.

ANNEX

**AMENDMENTS TO THE INTERIM GUIDELINES FOR
WING-IN-GROUND CRAFT**

ANNEX 1

**FORM OF WING-IN-GROUND CRAFT SAFETY CERTIFICATE
AND RECORD OF EQUIPMENT**

1 In the form of the Wing-in-Ground Craft Safety Certificate, the following new section is inserted between the section commencing with the words “This certificate is valid until” and the section commencing with the words “Issued at”:

“Completion date of the survey on which this certificate is based:
.....”
(*dd/mm/yyyy*)

MSC CIRCULAR 1127**EARLY IMPLEMENTATION OF AMENDMENT TO
SOLAS REGULATION III/19.3.3.3 ADOPTED BY RESOLUTION MSC.152(78)**

1 The Maritime Safety Committee, at its seventy-eighth session, noting the urgent need to give effect to measures to prevent accidents with lifeboats and in particular to reduce personal injuries resulting from such accidents, adopted an amendment to SOLAS regulation III/19.3.3.3 in relation to the operating crew being aboard lifeboats at the time of launching during abandon ship drills. The amendment is not scheduled to enter into force until 1 July 2006.

2 Recognizing the effect of this amendment in improving the occupational health and safety of seafarers and thus the importance of avoiding delays in relation to this matter, the Committee, at its seventy-ninth session, urged Contracting Governments to the SOLAS Convention to implement the amendment prior to its scheduled date of entry into force. The Committee further urged Contracting Governments to provide appropriate documentation for ships flying their flag to which such early implementation has been granted and port States to accept such early implementation.

3 The Committee also urged Member Governments, masters and owners to take caution that ship's crew are not exposed to new or additional risks in accessing or exiting lifeboats once they are deployed/recovered unmanned, and that a safe means of access is provided.

MSC CIRCULAR 1128
MEPC CIRCULAR 423

**LIST OF PRODUCTS THAT HAVE BEEN OMITTED FROM EITHER
CHAPTER 17 OR 18 FROM THE IBC CODE DUE TO MISSING SAFETY DATA,
POLLUTION DATA OR BOTH**

1 The Marine Environment Protection Committee, at its forty-ninth session (14 to 18 July 2003) and the Maritime Safety Committee, at its seventy-eighth session (12 to 21 May 2004) agreed that products lacking essential data will not be included in the 2004 edition of the IBC Code, which enters into force on 1 January 2007.

2 The essential data needed to assign Pollution Category and Ship Type based on the revised GESAMP Hazard Profile are A1 (aquatic bioaccumulation), B1 (acute aquatic toxicity), E2 (physical effects on wildlife and benthic habitats), C1 (mammalian acute oral toxicity), C2 (mammalian acute dermal toxicity) and C3 (mammalian acute inhalation toxicity). Information on A2 (aquatic biodegradation), B2 (chronic aquatic toxicity) and D3 (long-term human health effects) would also greatly assist the process.

3 The Marine Environment Protection Committee, at its fifty-second session (11 to 15 October 2004) and the Maritime Safety Committee, at its seventy-ninth session (1 to 10 December 2004), agreed to jointly circulate the list of products with missing data, as contained in the annex to this circular, to give industry the opportunity to provide missing data to the GESAMP/EHS Working Group for evaluation and to allow for subsequent inclusion of the products in List 1 of the MEPC.2/Circ prior to the entry into force of the revised IBC Code.

4 In order to allow sufficient time for evaluation by the GESAMP/EHS Working Group and, where necessary, discussion by the BLG Sub-Committee and/or ESPH Working Group, the data should be sent to the Secretariat of the GESAMP/EHS Working Group¹ by **31 December 2005** at the latest.

5 Information on the “Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships” can be found in GESAMP Reports and Studies No. 64 (<http://gesamp.imo.org/publicat.htm>).

6 Member Governments and NGOs are urged to bring this circular and in particular the attached annex to the attention of the chemical industry and other parties concerned.

¹ The Technical Secretary of GESAMP/EHS Working Group
International Maritime Organization (IMO)
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United Kingdom