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INTERNATIONAL CONVENTION ON LOAD LINES, 1966

Unified interpretations of the Convention

1 The Maritime Safety Committee at its seventy-first session (19 to 28 May 1999), noting LL.3/Circ.69 and LL.3/Circ.77 by which five sets of unified interpretations of the 1966 LL Convention were circulated, approved the sixth set of unified interpretations of the provisions of the 1966 LL Convention, set out in the annex, which includes new interpretations and revisions to those included in the aforementioned LL.3 circulars.

2 Member Governments are invited to:

.1 take note of the annexed unified interpretations and use them when applying the relevant requirements of the 1966 LL Convention in order to ensure the uniform application thereof; and

.2 bring the annexed unified interpretations to the attention of all interested parties.

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ANNEX

UNIFIED INTERPRETATIONS OF THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966
(Sixth set)

1 Machinery space and emergency generator room ventilator coaming heights (LL regulations 17(2), 19(3) and 19(4)
(IACS interpretation LL.58)

1.1 Regulation 17(2) requires that the coamings of machinery space ventilators situated in exposed positions on the freeboard and superstructure decks shall be as high above the deck as is reasonable and practicable.

1.2 In general, ventilators necessary to continuously supply the machinery space and, on demand, immediately supply the emergency generator room should have coamings which comply with regulation 19(3), without having to fit weathertight closing appliances.

1.3 However, where due to ship size and arrangement this is not practicable, lesser heights for machinery space and emergency generator room ventilator coamings may be accepted with the provision of weathertight closing appliances in accordance with regulation 19(4) in combination with other suitable arrangements to ensure an uninterrupted, adequate supply of ventilation to these spaces.

2 Protection of openings in raised quarterdeck (LL regulations 18(2) and 23)
(IACS interpretation LL.46/Rev.2)

2.1 By extension of regulation 23 and the interpretation of regulation 18(2) and (3) regarding miscellaneous openings in freeboard and superstructure decks, referred to LL.3/Circ.69, deckhouses situated on a raised quarterdeck or on a superstructure of less than standard height may be treated as being on the second tier as far as the provision of deadlights and side scuttles and windows is concerned, provided that the height of the raised quarterdeck or superstructure on which they are situated is equal to, or greater than, the standard quarterdeck height.

2.2 Regarding the requirement to protect openings in superstructures (regulation 18(2)), it is considered that openings in the top of a deckhouse on a raised quarterdeck or superstructure of less than standard height having a height equal to, or greater than, the standard quarterdeck height should be provided with an acceptable means of closing but need not be protected by an efficient deckhouse or companionway as defined in the regulation provided that the height of the deckhouse is at least the height of superstructure.

3 Side scuttles, windows and skylights (LL regulation 23)
(IACS interpretation LL.62)

3.1 Side scuttles and windows together with their glasses, deadlights* and storm covers*, if fitted, should be of approved design and substantial construction in accordance with, or equivalent to, recognized national or international standards. Non-metallic frames should not be acceptable.

3.2 Side scuttles are defined as being round or oval openings with an area not exceeding 0.16 m^2. Round or oval openings having areas exceeding 0.16 m^2 should be treated as windows.

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* Deadlights, in accordance with recognized standards, are fitted to the inside of windows and side scuttles, while storm covers, of comparable specifications to deadlights, are fitted to the outside of windows, where accessible, and may be hinged or portable.

3.3 Windows are defined as being rectangular openings generally, having a radius at each corner relative to the window size in accordance with recognized national or international standards, and round or oval openings with an area exceeding 0.16 m^2.

3.4 Side scuttles to the following spaces should be fitted with efficient hinged inside deadlights:

.1 spaces below freeboard deck;

.2 spaces within the first tier of enclosed superstructures; and

.3 first tier deckhouses on the freeboard deck protecting openings leading below or considered buoyant in stability calculations.

The deadlights should be capable of being effectively closed and secured watertight, if fitted below freeboard deck, and weathertight, if fitted above.

3.5 Side scuttles should not be fitted in such a position that their sills are below a line drawn parallel to the freeboard deck at side and having its lowest point 2.5% of the breadth B, or 500 mm, whichever is the greatest distance, above the summer load line (or timber summer load line, if assigned).

3.6 Side scuttles should be of the non-openings type in ships subject to damage stability regulations, if calculations indicate that they would become immersed by any intermediate stage of flooding or the final equilibrium waterplane in any required damage case.

3.7 Windows should not be fitted below the freeboard deck, in the first tier end bulkheads or sides of enclosed superstructures and in first tier deckhouses considered buoyant in the stability calculations or protecting openings leading below.

3.8 Side scuttles and windows at the side shell in the second tier, protecting direct access below or considered buoyant in the stability calculations, should be provided with efficient hinged inside deadlights capable of being effectively closed and secured weathertight.

3.9 Side scuttles and windows set inboard from the side shell in the second tier, protecting direct access below to spaces listed in paragraph 3.4 above, should be provided with either efficient hinged inside deadlights or, where they are accessible, permanently attached external storm covers of approved design and of substantial construction and capable of being effectively closed and secured weathertight.

3.10 Cabin bulkheads and doors in the second tier separating side scuttles and windows from a direct access leading below may be accepted in place of deadlights or storm covers fitted to the side scuttles and windows.

3.11 Deckhouses situated on a raised quarterdeck or on the deck of a superstructure of less than standard height may be regarded as being in the second tier as far as the provision of deadlights is concerned, provided the height of the raised quarterdeck or superstructure is equal to, or greater than, the standard quarterdeck height.

3.12 Fixed or opening skylights should have glass thickness appropriate to their size and position as required for side scuttles and windows. Skylights glasses in any position should be protected from mechanical damage and, where fitted in position 1 or 2, should be provided with robust deadlights or storm covers permanently attached.

4 Freeing ports in way of wells in combination with open superstructures (LL regulations 24(1) and 24(4))
(IACS interpretation LL.60)

4.1 In the case of ships having open superstructures on the freeboard or superstructure decks, which open to wells formed by bulwarks on the peripheries of the open decks, the Convention leaves to the satisfaction of the Administration how the freeing port areas for the open spaces within the superstructures should be calculated.

4.2 Since water can enter only through the end bulkhead openings, the freeing port areas for the open spaces within the superstructures should be a function of the breadth of the end openings and the extent to which wells formed by the open decks and common spaces within the open superstructures are covered by the open superstructures.

4.3 To determine the minimum freeing port area on each side of the ship for the open superstructure (A_s) and for the open well (A_w), the following procedure is recommended:

.1 Determine the total well length (l_t) equal to the sum of the length of the open deck enclosed by bulwarks (l_w) and the length of the common space within the open superstructure (l_s).

.2 To determine (A_s) :

.1 calculate the freeing port area (A) required for an open well of length l_t in accordance with regulation 24(1) with standard height bulkwark assumed;

.2 multiply by the factor of 1.5 to correct for the absence of sheer, if applicable, in accordance with regulation 24(2);

.3 multiply by the factor ($b_o l l_t$) to adjust the freeing port area for the breadth (b_o) of the openings in the end bulkhead of the enclosed superstructure. (Note: This cancels the l_t terms from the calculation);

.4 to adjust the freeing port area for that part of the entire length of the well which is enclosed by the open superstructure, multiply by the factor:

$$(l - l_w/l_t^2)$$

where l_w and l_t are defined in 4.3.1 above;

.5 to adjust the freeing port area for the distance of the well deck above the freeboard deck, multiply by the factor:

$$0.5\ (h_s/h_w)$$

where h_w is the distance of the well deck above the freeboard deck and h_s is one standard superstructure height.

.3 To determine (A_w):

.1 the freeing port area for the open well (A_w) should be calculated in accordance with .2.1 above, using l_w to calculate (A') and then adjusted for the actual height of the bulwark (h_b) by the application of one of the following area corrections, whichever is applicable:

.1.1 for bulwarks greater than 1.2 m in height:

$A_c = l_w (h_b - 1.2)/(0.1) (0.004) m^2$;

.1.2 for bulwarks less than 0.9 m in height:

$A_c = l_w (h_b - 0.9)/(0.1) (0.004) m^2$;

.1.3 for bulwarks between 1.2 m and 0.9 m in height:

$A_c = 0.00 m^2$;

.2 the corrected freeing port area ($A_w = A' + A_c$) is then adjusted for absence of sheer, if applicable, and height above freeboard deck as in .2.2 and .2.5 above, using h_s and h_w.

.4 The resulting freeing port areas for the open superstructure (A_s) and for the open well (A_w) should be provided along each side of the open space covered by the open superstructure and each side of the open well respectively.

.5 The above relationships should be summarized by the following equations, assuming l_t, the sum of l_w and l_s, is greater than 20 m:

.1 freeing port area A_w for the open well:

$A_w = (0.07\ 1_w + A_c)$ (sheer correction) $(0.5h_s/h_w)$; and

.2 freeing port area A_s for the open superstructure:

$A_s = (0.07\ l_t)$ (sheer correction) $(b_o/l_t)\ (l - (l_w/l_t)^2)(0.5h_s/h_w)$,

Where l_t is 20 m or less, the basic freeing port area is $A = 0.7 + 0.035l_t$ in accordance with regulation 24(1). Units should be consistent with those in the Convention.

5 **Protection of crew (LL regulations 25(4), 26(2) and 27(7) and SOLAS regulation II-1/3-3)** (IACS interpretation LL.50/Rev.4.1)

1 When applying regulations 25(4), 26(2) and 27(7) of the 1966 LL Convention, as well as SOLAS regulation II-1/3-3, the protection of crew should be provided at least by one of the means denoted in the table given below:

Type of ship	Locations of access in ship	Assigned summer freeboard	Acceptable arrangements according to type of freeboard assigned:			
			Type A	Type B-100	Type B-60	Type B&B+
All ships other than oil tankers*, chemical tanker* and gas carriers*	1.1 Access to midship quarters 1.1.1 Between poop and bridge, or 1.1.2 Between poop and deckhouse containing living accommodation or navigation equipment or both	#3000 mm	a b e	a b e	a b c(1) e f(l)	a b c(1) c(2) c(4) d(1) d(2) d(3) e f(l) f(2) f(4)
		>3000 mm	a b e	a b e	a b c(1) c(2) e f(1) f(2)	
	1.2 Access to ends 1.2.1 Between poop and bow (if there is no bridge) 1.2.2 Between bridge and bow, or 1.2.3 Between a deckhouse containing living accommodation or navigation equipment, or both and bow, or 1.2.4 In the case of a flush deck ship, between crew accommodation and the forward and after ends of ship	#3000 mm	a b c(l) e f(l)	a b c(l) c(2) e f(l) f(2)	a b c(l) c(2) e f(1) f(2)	
		>3000 mm	a b c(l) d(l) e f(l)	a b c(1) c(2) d(1) d(2) e f(1) f(2)	a b c(1) c(2) c(4) d(1) d(2) d(3) e f(1) f(2) f(4)	

Type of ship	Locations of access in ship	Assigned summer freeboard	Acceptable arrangements according to type of freeboard assigned:
			Type A
Oil tankers*, chemical tankers* and gas carriers*	2.1 Access to bow 2.1.1 Between poop and bow or 2.1.2 Between a deckhouse containing living accommodation or navigational equipment, or 2.1.3 In the case of a flush deck ship, between crew accommodation and the forward ends of ship.	#(A_f+H_s)**	a e f(1) f(5)
		>(A_f+H_s)**	a e f(1) f(2)
	2.2 Access to after end In the case of a flush deck ship, between crew accommodation and the after end of ship	as required in 1.2.4 for other types of ships	

* Oil tankers, chemical tankers and gas carriers as defined in SOLAS regulations II-1/2.12, VII/8.2 and VII/11.2, respectively.

** A_f = the minimum summer freeboard calculated as type A ship regardless of the type freeboard actually assigned.

H_s = the standard height of superstructure as defined in LL regulation 33.

Note: Deviations from some or all of these requirements or alternative arrangements for such cases as ships with very high gangways (i.e. certain gas carriers) may be allowed subject to agreement on a case-by-case basis with the relevant Administration.

2 For oil tankers, as defined in SOLAS regulation II-1/2.12, chemical tankers as defined in SOLAS regulation VII/8.2 or gas carriers as defined in SOLAS regulation VII/11.2, constructed before 1 July 1998, existing arrangements which complied with (b) or (c) may be accepted in lieu of (e) or (f) provided such existing arrangements are fitted with shelters and means of access to and from the deck as required for the arrangements (e) or (f) as defined below.

3 For tankers less than 100 m in length, the minimum width of the gangway platform or deck level walkway fitted in accordance with arrangement (e) or (f), respectively, may be reduced to 0.6 m.

4 Acceptable arrangements referred to in the table are defined as follows:

(a) A well lighted and ventilated underdeck passageway (clear opening 0.8 m wide, 2 m high) as close as practicable to the freeboard deck, connecting and providing access to the locations in question.

(b) A permanent and efficiently constructed gangway fitted at or above the level of the superstructure deck on or as near as practicable to the centreline of the ship, providing a continuous platform, at least 0.6 in width and a non-slip surface, with guard rails extending on each side throughout its length. Guard rails should be at least l m high with courses as required in LL regulation 25(3), and supported by stanchions spaced not more than 1.5 m; a foot-stop should be provided.

(c) A permanent walkway at least 0.6 m in width fitted at freeboard deck level consisting of two rows of guard rails with stanchions spaced not more than 3 m. The number of courses of rails and their spacing should be as required by LL regulation 25(3). On type B ships, hatchway coamings not less than 0.6 m in height may be regarded as forming one side of the walkway, provided that between the hatchways two rows of guard rails are fitted.

(d) A 10 mm minimum diameter wire rope lifeline supported by stanchions about 10 m apart, or a single hand rail or wire rope attached to hatch coamings, continued and adequately supported between hatchways.

(e) A permanent and efficiently constructed gangway fitted at or above the level of the superstructure deck on or as near as practicable to the centre line of the ship:

- located so as not to hinder easy access across the working areas of the deck;
- providing a continuous platform at least 1 m in width;
- constructed of fire resistant and non-slip material;
- fitted with guard rails extending on each side throughout its length; guard rails should be at least 1 m high with courses as required by LL regulation 25(3) and supported by stanchions spaced not more than 1.5 m;
- provided with a foot-stop on each side;
- having openings, with ladders, where appropriate, to and from the deck. Openings should not be more than 40 m apart;
- having shelters of substantial construction set in way of the gangway at intervals not exceeding 45 m if the length of the exposed deck to be traversed exceeds 70 m. Every such shelter should be capable of accommodating at least one person and be so constructed as to afford weather protection on the forward, port and starboard sides.

(f) A permanent and efficiently constructed walkway fitted at freeboard deck level on or as near as practicable to the centreline of the ship having the same specifications as those for a permanent gangway listed in (e) except for foot-stops. On type B ships (certified for the carriage of liquids in bulk), with a combined height of hatch coamings and fitted hatch cover of together not less than 1m in height the hatchway coaming may be regarded as forming one side of the walkway, provided that between the hatchways two rows of guard rails are fitted.

5 Alternative transverse locations for (c), (d) and (f) above, where appropriate:

.1 At or near centreline of ship; or fitted on hatchways at or near centreline of ship.

.2 Fitted on each side of the ship.

.3 Fitted on one side of the ship, provision being made for fitting on either side.

.4 Fitted on one side only.

.5 Fitted on each side of the hatchways as near to the centreline as practicable.

Notes:

1 In all cases where wire ropes are fitted, adequate devices should be provided to ensure their tautness.

2 Wire ropes may only be accepted in lieu of guard rails in special circumstances and then only in limited lengths.

3 Lengths of chain may only be accepted in lieu of guard rails if fitted between two fixed stanchions.

4 Where stanchions are fitted, every third stanchion should be supported by a bracket or stay.

5 Removable or hinged stanchions should be capable of being locked in the upright position.

6 A means of passage over obstructions, if any, such as pipes or other fittings of a permanent nature should be provided.

7 Generally, the width of the gangway or deck-level walkway should not exceed 1.5 m.

6 **Cargo manifold gutter bars - freeing arrangements and intact stability (LL regulation 26)** (IACS interpretation LL 59)

6.1 Where gutter bars are installed on the weather decks of tankers in way of cargo manifolds and are extended aft as far as the after house front for the purpose of containing cargo spills on deck during loading and discharge operations, the free surface effects caused by containment of a cargo spill during liquid transfer operations or of boarding seas while underway require consideration with respect to the ship's available margin of positive initial stability (GM_o).

6.2 Where the gutter bars installed are greater than 300 mm in height, they should be treated as bulwarks according to the Convention with freeing ports arranged in accordance with regulation 24 and effective closures provided for use during loading and discharge operations. Attached closures should be arranged in such a way that jamming cannot occur while at sea, ensuring that the freeing ports will remain fully effective.

6.3 On ships without deck camber or where the height of the installed gutter bars exceeds the camber, and for tankers having cargo tanks exceeding 60% of the ship's maximum beam at midships regardless of gutter bar height, gutter bars should not be accepted without an assessment of the initial stability (GM_o) for compliance with the relevant intact stability requirement taking into account the free surface effects caused by liquids contained by the gutter bars.

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