



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

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NVIC **5-83**

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. **5-83** **28 APR 1983**

Subj: Unified Interpretations of the International Convention
on Load Lines, 1966

1. PURPOSE. The purpose of this Circular is to issue the three sets of Unified Interpretations of the International Convention on Load Lines, 1966 that have been approved by the Maritime Safety Committee of the International Maritime Organization (IMO).
2. DIRECTIVES AFFECTED. This Circular cancels and supersedes NVIC 1-77.
3. ACTION. Enclosures (1) through (3) may be used as an aid in interpreting specific provisions of the 1966 International Load Line Convention. Only those interpretations approved by the Maritime Safety Committee of IMO are contained in the enclosures.

[Signature]
CLYDE LUCK, Jr.
Chief, Office of Merchant Marine Safety

- Encl: (1) LL.3/Circ.20 "List of Unified Interpretations issued by the International Association of Classification Societies in 1972" dated 26 May 1976.
(2) LL.3/Circ.22 "List of Unified Interpretations" dated 19 May 1977.
(3) LL.3/Circ.42 "List of Unified Interpretations" dated 13 April 1982.

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(See page 2)

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. **5-83**

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Enclosure (3) to NVIC
LL.3/Circ.42
13 April 1982

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28 APR 1983

Ref. T4/1.03

IMCO

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

List of Unified Interpretations

The Secretary-General has the honour to refer to LL.3/Circ.20 and LL.3/Circ.22 with which unified interpretations of the International Convention on Load Lines, 1966 were circulated to Contracting Governments.

The Secretary-General would like to inform Contracting Governments that the Maritime Safety Committee at its forty-sixth session approved a third set of unified interpretations to the International Convention on Load Lines, 1966 which is attached hereto.

Contracting Governments of the International Convention on Load Lines, 1966 are invited to take note of these additional interpretations with a view to their application.

The Secretary-General would also like to state that the Maritime Safety Committee at its forty-sixth session also urged Contracting Governments to ratify the Amendments adopted by the Assembly in:

- October 1971 by resolution A.231(VII);
- November 1975 by resolution A.319(IX); and
- November 1979 by resolution A.411(XI).

ANNEX VIII

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

LIST OF THOSE UNIFIED INTERPRETATIONS, ISSUED BY IACS IN 1972,
ACCEPTED BY THE MARITIME SAFETY COMMITTEE

Interpretation LL, 1

Application (Article 4(4))

Even where the increase in draught is only of the order of 1 in. or 2 in. there should be no relaxation from the condition that existing ships comply with all the requirements.

Interpretation LL, 2

Depth for Freeboard (Regulation 3(6))

The correction for thickness of sheathing on the exposed freeboard deck, $\frac{T(L-S)}{L}$ is applicable only when the deck is completely sheathed between superstructures. In other cases the correction should be $\frac{T \times l}{L}$ where l = length of sheathed area which extends from side to side. Only wood sheathing should be considered.

Interpretation LL, 3

Superstructure (Regulation 3(10)(b))

A bridge or poop shall not be regarded as enclosed unless access is provided for the crew starting from any point on the uppermost complete exposed deck or higher to reach machinery and other working spaces inside these superstructures by alternative means which are available at all times when bulkhead openings are closed.

Interpretation LL, 4

Details of Marking (Regulation 8)

"Permanently marked" is considered to include welding of the marks on the sides of the ship provided the usual precautions as to material, electrodes etc. are observed.

Interpretation LL. 5

Doors (Regulation 12)

- (a) Doors should generally open outwards to provide additional security against the impact of the sea. Doors which open inwards are to be especially approved.
- (b) Portable sills should be avoided. However, in order to facilitate the loading/unloading of heavy spare parts or similar portable sills may be fitted on the following conditions:
 - (1) They must be installed before the ship leaves port.
 - (2) Sills are to be gasketed and fastened by closely spaced through bolts.
 - (3) Whenever the sills are replaced after removal, the weathertightness of the sills and the related doors must be verified by hose testing. The dates of removal, replacing and hose testing shall be recorded in the ship's log book.

Interpretation LL. 6

Hatchways closed by weathertight covers of steel or other equivalent material fitted with Gaskets and Clamping Devices (Regulations 16 and 27(7)(c))-

Regulation 16:

Where hatchways are fitted with coamings of standard height, no extra strengthening (beyond what is required in the Load Line Convention) shall be required for covers loaded with cargo, even if dense cargo, provided the load does not exceed 1.75 tons/m^2 (in position 1).

Regulation 27(7)(c):

No extra strengthening is recommended for hatchway covers on vessels which are assigned freeboards less than those based on Table B, except for flush hatchway covers which are fitted on the freeboard deck forward of the quarter length, in which case the section modulus and the moment of inertia shall be increased 15% over that required by Regulation 16.

Interpretation LL. 7

Machinery Space Openings (Regulation 17(1))

Where casings are not protected by other structures double doors should be required for ships assigned freeboards less than those based on Table B. An inner sill of 230 mm in conjunction with the outer sill of 600 mm is recommended.

Interpretation LL. 8

Miscellaneous Openings in Freeboard and Superstructure Decks
(Regulation 18(2) and 18(3))

Regulation 18(2):

Only those doorways in deckhouses leading to or giving access to companionways leading below, need to be fitted with doors in accordance with Regulation 12.

Alternatively, if stairways within a deckhouse are enclosed within properly constructed companionways fitted with doors complying with Regulation 12, then the external doors need not be weathertight.

Where an opening in a superstructure deck or in the top of a deckhouse on the freeboard deck which gives access to space below the freeboard deck or to a space within an enclosed superstructure and is protected by a deckhouse, then it is considered that only those side scuttles fitted in spaces which give direct access to an open stairway need be fitted with deadlights in accordance with Regulation 23. A cabin is considered to provide adequate protection against the minimal amount of water which will enter through a broken side scuttle glass fitted on the second tier.

Regulation 18(3):

In the application of Regulation 18 it is understood that:

- (a) where access is provided from the deck above as an alternative to access from the freeboard deck in accordance with Regulation 3(10)(b) then the height of sills into a bridge or poop should be 380 mm.
The same consideration should apply to deckhouses on the freeboard deck.

- (b) where access is not provided from above, the height of the sills to doorways in a poop bridge or deckhouse on the freeboard deck should be 600 mm.
- (c) where the closing appliances of access openings in superstructures and deckhouses are not in accordance with Regulation 12, interior deck openings are to be considered exposed, i.e. situated in the open deck.

Interpretation LL. 10

Air Pipes (Regulation 20)

For ships assigned timber freeboards the air pipes should be provided with automatic closing appliances.

Interpretation LL. 11

Scuppers, Inlets and Discharges (Regulation 22(1))

It is considered that an acceptable equivalent to one automatic non-return valve with a positive means of closing from a position above the freeboard deck would be one automatic non-return valve and one sluice valve controlled from above the freeboard deck. Where two automatic non-return valves are required, the inboard valve must always be accessible under service conditions, i.e. the inboard valve should be above the level of the tropical load water line. If this is not practicable, then, provided a locally controlled sluice valve is interposed between the two automatic non-return valves, the inboard valve need not be fitted above the LWL.

Where sanitary discharges and scuppers lead overboard through the shell in way of manned machinery spaces, the fitting to shell of a locally operated positive closing valve together with a non-return valve inboard, is considered to provide protection equivalent to the requirements of Regulation 22(1).

It is considered that the requirements of Regulation 22(1) for non-return valves are applicable only to those discharges which remain open during the normal operation of a vessel. For discharges which must necessarily be closed at sea such as gravity drains from topside ballast tanks, a single screw down valve operated from the deck is considered to provide efficient protection.

Interpretation LL. 12

Side Scuttles (Regulation 23)

For those vessels where the freeboard is reduced on account of subdivision characteristics, side scuttles fitted outside the space considered flooded and which are below the final waterline shall be of the non-opening type.

Interpretation LL. 13

Freeing Ports (Regulation 24(1) and 24(5))

Regulation 24(1):

On a flush deck ship with a substantial deckhouse amidships it is considered that the deckhouse provides sufficient break to form two wells and that each could be given the required freeing port area based upon the length of the "well". It would not then be allowed to base the area upon $0.7L$.

In defining a substantial deckhouse it is suggested that the breadth of the deckhouse should be at least 80% of the beam of the vessel, and that the passageways along the side of the ship should not exceed 1.5 m (4.9 ft.) in width.

Where a screen bulkhead is fitted completely across the vessel, at the forward end of a midship deckhouse, this would effectively divide the exposed deck into wells and no limitation on the breadth of the deckhouse is considered necessary in this case.

It is considered that wells on raised quarter decks should be treated as previously, i.e. as being on freeboard decks.

Regulation 24(5):

With zero or little sheer on the exposed freeboard deck or an exposed superstructure deck it is considered that the freeing port area should be spread along the length of the well.

Interpretation LL. 14

Protection of the Crew (Regulation 25(2))

A guard rail shall also be required for first tier deckhouses and for superstructures' ends.

Interpretation LL. 15

Length of Superstructure (Regulation 34(1) and 34(2))

Regulation 34(1):

Where a superstructure bulkhead is recessed, the effective length of the superstructure shall be reduced by an amount equivalent in area to the area of the recess related to the breadth of the ship at the mid-length of the recess.

Where the recess is unsymmetrical about the centre line, the largest portion of the recess shall be considered as applying to both sides of the ship.

It is considered that such a recess need not be decked over.

Regulation 34(2):

Where there is an extension to a superstructure, which extension has a breadth on each side of the centre line of at least 30% of the breadth of the ship, the effective length of the superstructure may be increased by considering an equivalent superstructure bulkhead in the form of a parabola. This parabola should extend from the extension at the centre line and pass through the junction of the actual superstructure bulkhead with the sides of the extension and extend to the sides of the ship. This parabola should be completely contained within the boundary of the superstructure and its extensions.

Interpretation LL. 16

Sheer (Regulation 38)

Where the height of a superstructure is less than standard, paragraph 12 may be applied except that the superstructure deck shall be not less than the minimum height of the superstructure above the virtual sheer curve at any point.

For this purpose "y" shall be taken as the difference between the actual and minimum height of the superstructure at the end of sheer.

Interpretation LL. 18

Freeboard Tables (Regulation 28)

(1) Type "A" ships

- (a) Freeboards for Type "A" ships with lengths of between 365 m and 400 m shall be determined by the following formula:

$$f = 221 + 16,10L - 0,02L^2$$

where f is the freeboard in mm

L is the length as defined in Regulation 3(1).

- (b) Freeboards for Type "A" ships with lengths of 400 m and above shall be the constant value, 3460 mm.

(2) Type "B" ships

- (a) Freeboards for Type "B" ships with lengths between 365 m and 400 m shall be determined by the following formula:

$$f = -587 + 23L - 0,0188L^2$$

where f is the freeboard in mm

L is the length as defined in Regulation 3(1).

- (b) Freeboards for Type "B" ships with lengths of 400 m and above shall be the constant value, 5605 mm.

Interpretation LL. 19

Form of Certificates (Article 18)

It is recommended that the model form of certificates given in Annex III of the Load Line Convention should be strictly adhered to and any deviations from this pattern should be avoided.

Interpretation LL. 20

Hatch beams and cover stiffeners of variable cross section
(Regulations 15(4), 15(5), 15(6), 15(7) and 16)

To avoid stresses and deflections exceeding those given in the above Regulations along construction elements of variable cross section, the required section

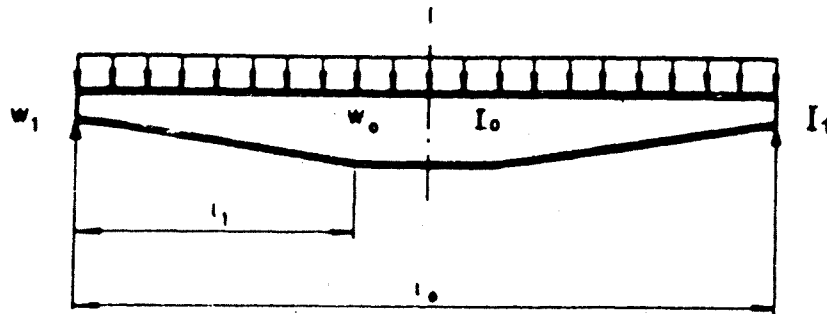
modulus calculated as for construction elements of constant cross section is to be increased by a factor K expressed by:

$$K = 1 + \frac{3.2 \alpha - \gamma - 0.8}{7\gamma + 0.4}$$

where $\alpha = l_1/l_0$, $\gamma = W_1/W_0$

The value of factor K obtained by the formula is to be not less than unity.

l_1 , l_0 , W_1 and W_0 are indicated on the sketch below:



The moment of inertia is likewise to be increased by the factor C expressed by:

$$C = 1 + 8 \alpha^3 \cdot \frac{1 - \beta}{0.2 + 3\sqrt{\beta}}$$

where $\alpha = l_1/l_0$, $\beta = I_1/I_0$

The value of factor C obtained by the formula is to be not less than unity.

l_1 and l_0 are indicated on the sketch above.

The use of the above formulae is limited to the determination of the strength of hatch beams and covers in which abrupt changes in the section of the face material do not occur along the length of the beam or cover.

Interpretation LL. 21

Cargo ports or similar openings below the uppermost load line (Regulation 21(2))

It is recommended that cargo ports or similar openings may be accepted submerged provided the safety of the ship is in no way impaired. It is considered that the fitting of a second door of equivalent strength and watertightness is one acceptable arrangement. In that case a leakage detection device should be provided in the compartment between the two doors. Further, drainage of this compartment to the bilges controlled by an easily accessible screw down valve, should be arranged. The outer door should preferably open outwards.

Interpretation LL. 22

Position of the inboard end of discharges when a timber freeboard is assigned (Regulation 22(1))

It is considered that the position of the inboard end of discharges should be related to the timber summer load waterline when a timber freeboard is assigned.

Interpretation LL. 23

Freeing arrangement (Regulations 26(5), 27(7) and 36(1)(e))

Regulation 27(7): Freeing arrangements on ships having reduced B freeboard assigned and fitted with bulwarks on the freeboard deck

For Type "B" ships with freeboards reduced by not more than 60% of the difference between B and L tables there shall be freeing port area in the lower part of the bulwarks equal to at least 25% of the total area of the bulwarks.

The upper edge of the sheer strake shall be kept as low as possible.

Regulations 26(5) and 36(1)(e): Freeing arrangements for Type "A" ships and Type "B" ships with trunks

It is considered that a freeing port area, in the lower part of the bulwarks, of 33% of the total area of the bulwarks provides the "other effective freeing arrangements" mentioned in Regulation 26(5), and may be considered equivalent to the 50% open rails in way of trunks required by Regulation 36(1)(e).

Interpretation LL, 24

Negative depth correction (Regulation 31(3))

When the height of a superstructure, raised quarter deck or trunk is less than the corresponding standard height, it is recommended that the calculated reduction be corrected in the ratio of the height of the actual superstructure, raised quarter deck or trunk, to the applicable standard height as defined in Regulation 33.

Interpretation LL, 25

Effective length of raised quarter deck (Regulation 35(4))

It is recommended that the maximum effective length of 0.6L of a raised quarter deck which is stipulated by Regulation 35(4), is to be measured from the after perpendicular even where a poop is fitted in conjunction with the raised quarter deck.

Interpretation LL, 26

Continuous hatchways as trunk (Regulation 36)

It is recommended that continuous hatchways may be treated as a trunk in the freeboard computation provided Regulation 36 is complied with in all respects.

The trunk deck stringer referred to in Regulation 36(1)(b) may be fitted outboard of the trunk side bulkhead in association with the following:

- (1) The stringer so formed is to provide a clear walkway of at least 450 mm in width on each side of the ship.
- (2) The stringer is to be of solid plate efficiently supported and stiffened.
- (3) The stringer is to be as high above the freeboard deck as practicable and not more than 600 mm below the top of the hatchway coamings.
- (4) Hatch cover securing appliances are to be accessible from the stringer or walkway.
- (5) The breadth of the trunk is to be measured between the trunk side bulkheads.
- (6) Regulation 36 is to be complied with in all other respects.

Interpretation LL. 27

Less than standard height hatch coamings on trunks of less than standard height (Regulation 36(4))

In the case where the trunk height is less than standard and the trunk hatch coamings are also of less than standard height, or omitted entirely, doubt may arise whether the trunk hatchways are located in position 1 or position 2 and, consequently, about the reduction to be made in the actual trunk height. It is considered that in these cases the reduction from the actual height of trunk on account of insufficient hatch coaming height shall be taken as the difference between 600 mm and the actual height of coaming, or 600 mm if no hatch coamings are fitted. Reduction in the actual height of trunk shall not be required in cases where only small hatches with less than standard height are fitted in the trunk deck for which dispensation from the requirement of standard coaming height may be given.

Interpretation LL. 29

Sheer credit for superimposed superstructure (Regulation 38(5) and 38(12))

In applying Regulation 38(5) (sheer on complete superstructure ship), where there is an enclosed poop or forecastle superimposed on a complete superstructure, sheer credit shall be allowed for such poop or forecastle according to the method of Regulation 38(12), except that "y" is to be the actual height of the poop or forecastle at the end ordinate.

Interpretation LL. 30

Sheer allowance for excess height of superstructure (Regulation 38(7) and 38(12))

As Regulation 38(7) and (12) does not refer to a raised quarter deck it is recommended that credit under this paragraph be given for this type of superstructure only when the height of the raised quarter deck is greater than the standard height of "other superstructures" as defined in Regulation 33, and only for the amount by which the actual height of the raised quarter deck exceeds that standard height.

Interpretation LL. 31

Deduction for excess sheer (Regulation 38(15))

Since no stipulation is made as to the height of the superstructure referred to in Regulation 38(15), it is recommended that the height of this superstructure shall be related to its standard height. When the height of the superstructure or raised quarter deck is less than standard, the reduction shall be in the ratio of the actual to the standard height thereof.

Interpretation LL. 32

Special requirements for vehicle ferries, Ro-Ro ships and other ships of similar type

- (a) Stern, bow and side doors of large dimensions, when manual devices would not be readily accessible, are to be normally secured by means of power systems. Alternative means of securing are also to be provided for emergency use in case of failure of the power systems.

Interpretation LL. 33

Timber freeboards for ships having reduced Type "B" freeboards assigned

It is understood that some Administrations accept that timber freeboards may be assigned to ships with reduced Type "B" freeboards, provided the timber freeboards are calculated on the basis of the ordinary Type "B" freeboard.

It is recommended that Regulation 45(2) and (3) is interpreted or, if necessary, amended such that the Timber Winter mark and/or the Timber Winter North Atlantic mark are placed at the same level as the reduced Type "B" Winter mark when the computed Timber Winter mark and/or the computed Timber Winter North Atlantic mark fall below the reduced Type "B" Winter mark.

Interpretation LL. 34

Freeboard for lighters and barges (Regulation 27(11))

In applying Regulation 27(11) to deck cargo barges it is recommended that only Type "B" freeboard be assigned, even if the barges possess the same integrity of exposed decks and equivalent safety against flooding as normal tank barges.

This view is taken as a result of the consideration that Type "A" freeboard can be assigned only to liquid cargo barges. It is further concluded that deck cargo can be carried only on barges to which Type "B" freeboard is assigned.

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Enclosure (2) to NVIC
LL.3/Circ.22
19 May 1977

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28 APR 1983

Ref: T4/1.03

IMCO

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

List of Unified Interpretations

The Secretary-General has the honour to refer to LL.3/Circ.20 with which a list of unified interpretations of the International Convention on Load Lines, 1966 was circulated to Contracting Governments.

The Secretary-General now has the honour to state that the Maritime Safety Committee at its thirty-sixth session approved a further set of unified interpretations of the International Convention on Load Lines, 1966 to be considered as IMCO interpretations. This further set (Annex VIII of MSC XXXVI/22) is attached hereto.

Contracting Governments of the International Convention on Load Lines, 1966, are invited to take note of these additional interpretations.

ANNEX VIII

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

Unified Interpretation of Regulations of
the Convention

In applying the Regulations of the 1966 Load Line Convention, the following interpretations are recommended to Contracting Governments in order to ensure the uniform application of the relevant Regulations:

Regulation 21(1) - Cargo Ports and other Similar Openings

In a ship in which the lower deck has been designated as the freeboard deck, the means of closing openings in the shell plating below the weather deck but above the freeboard deck should be so designed as to ensure integrity against the sea commensurate with the surrounding shell plating, having regard to the position of the opening in relation to the waterline. In such a ship the following principles apply:

- (a) the effectiveness of closing appliances fitted at cargo ports and other similar openings in the shell of a ship depends on regular observations and maintenance;
- (b) hose tests are a practical means of verifying the weathertightness or watertightness of such closing appliances; and
- (c) consideration should be given to the fitting of alarms giving warning of leakage in way of doors in exposed positions.

Regulations 34, 35 and 38(12) - Treatment of Superstructures with Sloping
End Bulkheads

(In conformity with IACS interpretation LL.37)

The freeboard deduction for superstructures which have sloping end bulkheads should be determined in the following manner:

- (a) Regulation 34 - Length of Superstructure
 - (1) When the height of the superstructure, clear of the slope, is equal to or smaller than the standard height, its length (S) shall be obtained as shown on sketch I.
 - (2) When the height is greater than the standard, its length (S) shall be obtained as shown on sketch II.

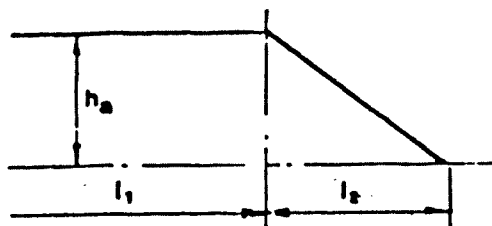
(b) Regulation 35 - Effective Length of Superstructure

When the height of the superstructure, clear of the slope, is less than the standard height, its effective length (E) shall be its length (S), as obtained per paragraph (a)(1), reduced in the ratio of its actual height to the standard height.

(c) Regulation 38(12) - Sheer

When a poop or a forecastle have sloping end bulkheads, and sheer credit may be allowed on account of excess height, the formula given in Regulation 38(12) should be used, the values for (y) and L' being as shown on sketch III.

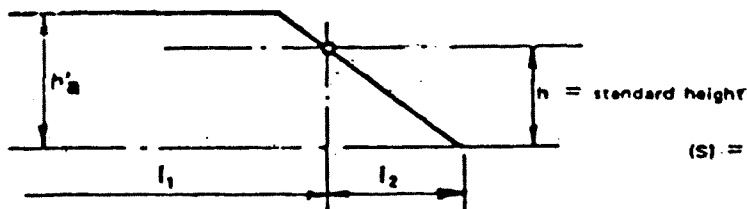
I. HEIGHT OF SUPERSTRUCTURE EQUAL TO OR SMALLER THAN THE STANDARD HEIGHT (h)



$$(S) = l_1 + \frac{l_2}{2}$$

$$(E) = (S) \cdot \frac{h_a}{h}$$

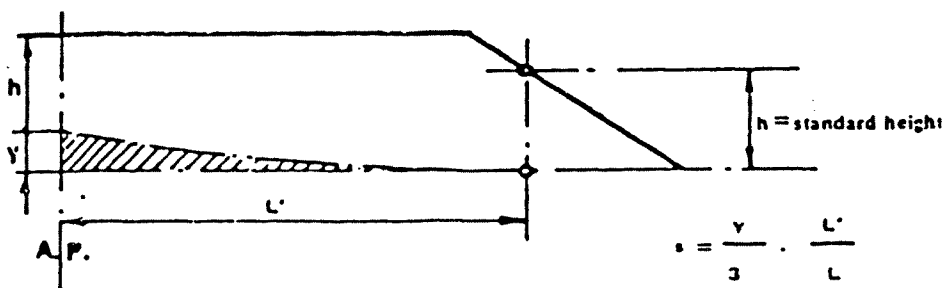
II. HEIGHT OF SUPERSTRUCTURE GREATER THAN THE STANDARD HEIGHT



$$(S) = l_1 + \frac{l_2}{2}$$

$$(E) = (S)$$

III. SHEER CREDIT FOR EXCESS HEIGHT



$$s = \frac{y}{3} \cdot \frac{L'}{L}$$

Regulation 35(3) and (4) - Effective Length of Superstructure

With particular regard to the length of raised quarterdeck in paragraphs (3) and (4) of this Regulation, the following interpretation applies:

In a ship with a superstructure which extends over the whole length of the freeboard deck, the part of the superstructure from the after perpendicular up to a maximum of $0.6 L$ may be treated as a raised quarterdeck. In this respect if no watertight front bulkhead is fitted the bow may be considered to act as such.

The length limit imposed by paragraph (4) of this Regulation for a raised quarterdeck of less than standard height applies to the length calculated as indicated in paragraph (3) of this Regulation.

Regulation 38(12) - Sheer

The final explanatory sub-paragraph of paragraph (12) of Regulation 38 should be interpreted to read:

"The above formula determines the mean ordinate of a curve in the form of a parabola tangent to the actual sheer curve of the freeboard deck at the after end of a forecastle or at the forward end of a poop, and intersecting the end ordinate at a point below the superstructure deck a distance equal to the standard height of a superstructure. The superstructure deck shall not be less than standard height above this curve at any point. This curve shall be used in determining the sheer profile for forward and after halves of the ship."

Regulation 40 - Minimum Freeboards

When the geometric freeboard calculated in accordance with paragraph (1) is less than the minimum freeboard allowed by paragraph (2) of this Regulation, the corrections for Winter freeboard and Winter North Atlantic freeboard should be added to the allowed minimum Summer freeboard and not to the calculated value. Similarly, the allowance for fresh water should be a deduction from the allowed minimum Summer freeboard.

Regulation 44 - Stowage

The following text should be regarded as an interpretation of Regulation 44 in order to harmonize this Regulation with the Code of Practice for Ships Carrying Timber Deck Cargoes (Resolution A.287(VIII)).

Stowage

General

- (1) Openings in the weather deck over which cargo is stowed shall be securely closed and battened down.

The ventilators and air pipes shall be efficiently protected.

- (2) Timber deck cargoes shall extend over at least the entire available length which is the total length of the well or wells between superstructures.

Where there is no limiting superstructure at the after end, the timber shall extend at least to the after end of the aftermost hatchway.

The timber deck cargo shall extend athwartships as close as possible to the ship side due allowance being given for obstructions such as guard rails, bulwark stays, uprights, etc. provided any gap thus created at the side of the ship shall not exceed 4 per cent of the breadth (b). The timber shall be stowed as solidly as possible to at least the standard height of a superstructure other than a raised quarterdeck.

- (3) On a ship within a seasonal winter zone in winter, the height of the deck cargo above the weather deck shall not exceed one-third of the extreme breadth of the ship.
- (4) The timber deck cargo shall be compactly stowed, lashed and secured. It shall not interfere in any way with the navigation and necessary work of the ship.

Uprights

- (5) Uprights, when required by the nature of the timber, shall be of adequate strength considering the breadth of the ship; the strength of the uprights shall not exceed the strength of the

bulwark and the spacing shall be suitable for the length and character of timber carried, but shall not exceed 3 metres. Strong angles or metal sockets or equally efficient means shall be provided for securing the uprights.

Lashings

- (6) Timber deck cargo shall be efficiently secured throughout its length by independent overall lashings.

The spacing of the lashings shall be determined by the maximum height of the cargo above the weather deck in the vicinity of the lashing:

- (a) for a height of 4 metres and below the spacing shall be not more than 3 metres;
- (b) for a height of 6 metres and above the spacing shall be not more than 1.5 metres;
- (c) at intermediate heights the average spacing shall be obtained by linear interpolation.

Where the height of timber deck cargo exceeds 6 metres the strength of the lashings shall be to the satisfaction of the Administration.

Eye plates for these lashings shall be efficiently attached to the sheerstrake or to the deck stringer plate. The distance from an end bulkhead of a superstructure to the first eye plate shall be not more than 2 metres. Eye plates and lashings shall be provided 0.6 metre and 1.5 metres from the ends of timber deck cargoes where there is no bulkhead.

- (7) The lashings shall be capable of withstanding an ultimate load of not less than 13,600 kg. They shall be fitted with sliphooks and turnbuckles, which shall be accessible at all times.

Wire rope lashings shall have a short length of long link chain to permit the length of lashings to be regulated.

- (8) When timber is in lengths of less than 3.6 metres, the spacing of the lashings shall be reduced or other suitable provisions made to suit the length of timber.
- (9) Shackles, stretching devices and all other ancillary components incorporated into a chain or wire rope lashing and its securings shall have a minimum ultimate load of 14,100 kg. Each component shall be proof loaded to 5,600 kg. No part shall be damaged or permanently deformed after proof loading.

Stability

- (10) Provision shall be made for a safe margin of stability at all stages of the voyage, regard being given to additions of weight, such as those due to absorption of water and icing and to losses of weight such as those due to consumption of fuel and stores.

Protection of Crew, Access to Machinery Spaces, etc.

- (11) In addition to the requirements of Regulation 25(5) of this Annex, guard rails or lifelines not more than 330 millimetres apart vertically shall be provided on each side of the cargo deck to a height of at least 1 metre above the cargo.

In addition a lifeline, preferably wire rope, set up taut with a stretching screw, shall be provided as near as practicable to the centreline of the ship. The stanchion supports to all guard rails and lifelines shall be spaced so as to prevent undue sagging.

Where the cargo is uneven a safe walking surface of not less than 600 millimetres in width shall be fitted over the cargo and effectively secured beneath or adjacent to the lifeline.

Steering Arrangements

- (12) Steering arrangements shall be effectively protected from damage by cargo and, as far as practicable, shall be accessible. Efficient provision shall be made for steering in the event of a breakdown in the main steering arrangements.

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IMCO

INTERNATIONAL CONVENTION ON LOAD LINES, 1966

List of unified interpretations issued by the
International Association of Classification
Societies in 1972

The Secretary-General has the honour to refer to the decision by the Maritime Safety Committee at its thirty-fourth session by which it approved the list of unified interpretations of the International Convention on Load Lines, 1966, issued by IACS in 1972. The Committee agreed further that these ... interpretations (Annex VIII of MSC XXXIV/18), attached hereto, should also be considered as IMCO interpretations.

Consideration of interpretations of the load line provisions is continuing within the Sub-Committee on Subdivision, Stability and Load Lines and in due course an additional list of such interpretations will be circulated when approved by the Maritime Safety Committee.

Contracting Governments of the International Convention on Load Lines, 1966, are invited to take note of these interpretations. The Secretary-General would be grateful to receive information on action taken by Contracting Governments.

UNIFIED INTERPRETATIONS OF THE REGULATIONS OF THE
INTERNATIONAL CONVENTION ON LOAD LINES, 1966
(Third set)

Security of Hatch Covers (Regulation 15(13))
(IACS interpretation LL.40/Rev.1)

This interpretation is not intended to be applied to existing ships.

Acceptable equivalent means to steel bars should consist of devices and materials which could provide strength equivalent to, and elasticity not greater than that, of steel.

Steel wire ropes should not be regarded as satisfactory equivalent means.

Care should be taken to ensure that tarpaulins are adequately protected from the possibility of damage arising from the use of securing devices which do not provide a flat bearing surface.

Protection of Openings in Raised Quarterdecks
(Regulations 18(2) and 23)*
(IACS Interpretation LL.46/Rev.1)

When applying Regulation 23, deckhouses situated on a raised quarterdeck may be treated as being second tier as far as the provision of deadlights and side scuttles and windows is concerned, provided the height of the raised quarterdeck is equal to or greater than the standard quarterdeck height.

Regarding the requirement to protect openings in superstructures (Reg.18(2)), it is considered that openings in the top of a deckhouse on a raised quarterdeck having a height equal to or greater than a standard height raised quarterdeck are to be provided with an acceptable means of closing but need not be protected by an efficient deckhouse or companion-way provided the height of the deckhouse is at least the height of a full superstructure.

* See also interpretation of Reg.18(2) and (3) (IACS Interpretation LL.3) in the "Supplement relating to the International Convention on Load Lines, 1966" which was issued in 1981.

Air Pipes (Regulation 20)

In cases where air pipes are led through the side of superstructures, it is recommended that the height of their openings be more than 2.3 metres above the summer load waterline.

Air Pipe Closing Devices (Regulation 20)
(IACS Interpretation LL.49)

This interpretation is not intended to be applied to existing ships.

The means of closing air pipes should be weathertight and of an automatic type if the openings of the air pipes to which the devices are fitted would be submerged at an angle of less than 40° (or any lesser angle which may be needed to suit stability requirements) when the ship is floating at its summer load line draught. Pressure vacuum valves (P.V. valves) may be accepted on tankers.

Wooden plugs and trailing canvas hoses should not be accepted as closing devices for air pipes in positions 1 and 2.

Freeing Ports (Regulation 24(3))
(IACS Interpretation LL.44)

The effectiveness of the freeing area in bulwarks required by Regulation 24(1) and (2) depends on free flow across the deck of a ship. Where there is no free flow due to the presence of a continuous trunk or hatchway coaming, the freeing area in bulwarks is calculated in accordance with Regulation 24(3).

The free flow area on deck is the net area of gaps between hatchways, and between hatchways and superstructures and deckhouses up to the actual height of the bulwark.

The freeing port area in bulwarks should be assessed in relation to the net flow area as follows:

- .1 If the free flow area is not less than the freeing area calculated from Regulation 24(3) as if the hatchway coamings were continuous, then the minimum freeing port area calculated from Regulation 24(1) and (2) should be deemed sufficient.
- .2 If the free flow area is equal to, or less than the area calculated from Regulation 24(1) and (2), minimum freeing area in the bulwarks should be determined from Regulation 24(3).

- .3 If the free flow area is smaller than calculated from Regulation 24(3) but greater than calculated from Regulation 24(1) and (2), the minimum freeing area in the bulwark should be determined from the following formula:

$$F = F_1 + F_2 - f_p \text{ (m}^2\text{)}$$

where F_1 is the minimum freeing area calculated from Regulation 24(1) and (2).

F_2 is the minimum freeing area calculated from Regulation 24(3).

f_p is the total net area of passages and gaps between hatch ends and superstructures or deckhouses up to the actual height of bulwark.

Guardrails (Regulation 25(2) and (3))
(IACS Interpretation LL.47/Rev.1)

Fixed, removable or hinged stanchions should be fitted about 1.5 m apart.

At least every third stanchion should be supported by a bracket or stay.

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

Lengths of chain should be accepted in lieu of guard rails if they are fitted between two fixed stanchions and/or bulwarks.

The openings between courses should be in accordance with Regulation 25(3) of the Convention.

Wires should be made taut by means of turnbuckles.

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

Access Openings on Barges (Regulation 27(11))
(IACS Interpretation LL.42)

In applying Regulation 27(11) only those openings which are less than 1.5 m² in area should be considered as "small access openings".

Access plates should be considered as being equivalent to an intact deck on unmanned barges, provided they are secured by closely spaced bolts, are properly gasketed and for all practical purposes have equivalent structural integrity and tightness as an intact deck.

Trunks (Regulations 29, 31, 35, 36, 37 and 38)
(IACS Interpretation LL.41)

Where the length of a trunk, corrected for breadth and height as may be appropriate, can be included in the effective length used for calculating the correction for superstructures in accordance with Regulation 37, it should not be taken into account for calculating the total length (S) for the purpose of sheer correction according to Regulation 38(13).

The effective length of superstructures (E) which is used for calculating the freeboard correction according to Regulation 29 should be determined excluding the length of trunks.

The inclusion of a trunk in the calculation of freeboard need not prohibit the fitting of openings in the bulkheads of adjacent superstructures such as poops, bridges or forecastles provided there is no direct communication between the superstructure and the trunk.

The sides of a trunk included in the calculation of freeboard should be intact. Side scuttles of the non-opening type and bolted manhole covers may be allowed.

Minimum Bow Height (Regulation 39)
(IACS Interpretation LL.43)

When applying Regulation 39 to ships which have been assigned timber freeboards the bow height should be measured from the summer load waterline and not from the timber summer load waterline.
