MERCHANT SHIPPING ACT 1985

THE MERCHANT SHIPPING (LOAD LINE) REGULATIONS 2000

Coming into operation: 1st September 2000

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In exercise of the powers conferred on the Department of Trade and Industry by sections 1 and 2 of the Merchant Shipping Act 1985, and of all other enabling powers, after consultation with the Secretary of State and those persons referred to in section 2(2) of the Merchant Shipping Act 1985, the following Regulations are hereby made:-

PART I - GENERAL

Citation, commencement, interpretation and revocation

1. (1) These Regulations may be cited as the Merchant Shipping (Load Line) Regulations 2000 and shall come into operation on 1st September 2000.

(2) In these Regulations -

“the 1966 Convention” means the International Convention on Load Lines 1966;

“alteration” includes deterioration;

“amidships” means the middle of the ship's Length;

“anniversary date” means the day and the month of each year which will correspond to the date of the expiry of the relevant certificate;

“appropriate load line” means the load line which, in accordance with these Regulations, indicates the maximum depth to which the ship may be loaded in salt water in a particular zone or area and seasonal period;

“appropriate load line certificate” means:

(a) in the case of a pre-1966 Convention ship of not less than 150 tons gross tonnage, and in the case of a post- 1966 Convention ship of not less than 24 metres in length, an “International Load Line Certificate (1966)”; and

(b) in the case of any other ship, a “Manx Load Line certificate”;?

“appropriate marks” means the load lines directed to be marked on the ship pursuant to regulation 14 and the deck-line and load line mark;

“Assigning Authority” means the Department or any person or organisation authorised by the Department;

“Convention country” means a country or territory which is either:

(a) a country the Government of which has accepted or acceded to 1

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1 1985 c. 3. Functions transferred to the Department of Trade and Industry by the Transfer of Functions (Marine Administration) Order 1997 (SD 51/97)

2 Cmd 3708
the 1966 Convention as amended by the Protocol of 1988; or

(b) a territory to which the 1966 Convention as amended by the Protocol of 1988 extends;

“Department” means the Department of Trade and Industry;

“freeboard” means the distance measured vertically downwards at amidships from the upper edge of the deck-line described in regulation 15 to the position at which the upper edge of the load line appropriate to the freeboard is to be marked;

“freeboard deck” means the deck from which the freeboards assigned to the ship are calculated, being:

(a) the uppermost complete deck exposed to weather and sea, which has permanent means of closing all openings open to the weather, and below which all openings in the sides of the ship are fitted with permanent means of watertight closing; or

(b) subject to the approval of the Assigning Authority, a deck lower than that described in subparagraph (a), it being a complete and permanent deck which is continuous both in a fore and aft direction at least between the machinery space and peak bulkheads of the ship, and athwartships.

For this purpose, a deck which is stepped is taken to be the lowest line of the deck and the continuation of that line parallel to the upper part of the deck;

“international voyage” means a voyage between:

(a) a port in the Island and a port outside the Island; or

(b) a port in a Convention country and a port in any other country or territory (whether a Convention country or not) which is outside the Island;

“Length” means 96% of the total length on a waterline of 85% of the least moulded depth measured from the top of the keel, or the length from the fore-side of the stem to the axis of the rudder stock on that waterline, if that be greater. Where the stem contour is concave above the waterline at 85% of the least moulded depth, both the forward terminal of the total length and the fore-side of the stem respectively shall be taken at the vertical projection to that waterline of the aftermost point of the stem contour (above the waterline). In ships designed with a rake of keel, the waterline on which this length is measured shall be parallel to the designed waterline;

“load line” means a mark on the ship in the position of a load line specified in the appropriate load line certificate;

“load line certificate” means a load line certificate issued in accordance with
“load line exemption certificate” means a load line exemption certificate issued in accordance with these Regulations;

“Manx ship” has the same meaning as in section 1 of the Merchant Shipping Registration Act 1991\(^1\);

“material date” for the purposes of the definitions of a post-1966 and pre-1966 Convention ship is:

(a) in relation to a ship whose parent country is a Convention country other than the United Kingdom, the date as from which it is declared either that the Government of that country has accepted or acceded to the 1966 Convention or that it is a territory to which that Convention extends; and

(b) in relation to any other ship, the 21st July 1968.

“mean freeboard” means the arithmetic mean of the freeboards measured on each side of the ship;

“mean draught” means the mean of the draughts shown on the scales of measurement on the stem and on the stern post of the ship;

“mobile offshore drilling unit” means a ship capable of engaging in drilling operations for the exploration or exploitation of resources beneath the sea bed such as liquid or gaseous hydrocarbons, sulphur or salt;

“mobile offshore support unit” means a ship used in connection with the offshore petroleum industry to provide ancillary services such as accommodation, cranes or repair facilities;

“moulded depth” means the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side, except that:

(a) in the case of a wood or composite ship, it shall be measured from the lower edge of the keel rabbet;

(b) if the form at the lower part of the midship section of the ship is of a hollow character or if thick garboards are fitted, it shall be measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel;

(c) in the case of a ship having rounded gunwales it shall be measured to the point of intersection of the moulded lines of deck and sides, the lines extending as though the gunwale were of angular design;

(d) if the freeboard deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be

\(^1\) 1991 c. 15
determined, it shall be measured to a line of reference extending from the lower part of the deck along a line parallel to the raised part of the deck;

“non-Manx ship” means a ship which is not a Manx ship;

“operator” means the owner, manager, demise charterer or other person other than the master having immediate control over the day to day employment and operation of the ship.

“parent country” means the country or territory in which the ship is registered or, if the ship is not registered anywhere, it means the country or territory whose flag the ship flies;

“post-1966 Convention ship” means a ship whose keel is laid, or which is at a similar stage of construction, on or after the material date; and “pre 1966 Convention ship” means a ship which is not a post-1966 Convention ship;

**Definition of Pleasure Vessel as amended by SD 396/03 MS (Pleasure Vessel) Regulations 2003**

“Pleasure Vessel” means any vessel which at the time it is being used:

(a) is wholly owned by an individual or individuals, and is used only for the sport or pleasure of the owner or the immediate family or friends of the owner; or

(b) is owned by a body corporate, and is carrying only such persons as are the employees or officers of the body corporate, or their immediate family or friends; and

(c) is on a voyage or excursion which is one for which the owner does not receive money or money’s worth for or in connection with the operation of the vessel or the carrying of any person other than as a contribution to the direct expenses of the operation of the vessel incurred during the voyage or excursion, and no other payments are made by, on behalf of, or for the benefit of users of the vessel, other than by the owner; or

(d) is owned by a body corporate but pursuant to a long term lease agreement, is used only for the sport or pleasure of the lessee, and the immediate friends or family of the lessee, if an individual, or the employees or officers and their immediate friends and family, if a corporate lessee.

Such lease agreement must specify that:

(i) the vessel may only be used for private purposes and must not be used for commercial purposes;

(ii) the vessel must not be sub-leased or chartered, and

(iii) no other payments are made by, on behalf of, or for the benefit of
users of the vessel, other than by the lessee.

(e) is wholly owned by or on behalf of a members’ club formed for the purpose of sport or pleasure, and at the time it is being used, is used only for the sport or pleasure of members of that club or their immediate family, and any charges levied in respect of that use are paid into club funds and applied for the general use of the club, and no other payments are made by, on behalf of, or for the benefit of users of the vessel, other than by the club.


“rake of keel” means the inclination of the keel to a horizontal baseline;

“sailing ship” means a ship designed to carry sail whether as the sole means of propulsion or as a supplementary means;

“surveyor” means a surveyor appointed by the Department or by any other Assigning Authority;

“valid Convention certificate” means a certificate issued under the International Convention on Load Lines;

“watertight” in relation to any part of the ship, means capable of preventing the passage of water in any direction;

“weathertight” means that in any sea condition water will not penetrate into the ship.

(3) In determining what is an international voyage no account shall be taken of any ship by reason of her being within the Island or the territorial waters thereof if she would not have been there but for stress of weather or any other circumstance which neither the master nor the owner nor the charterer (if any) of the ship could have prevented or forestalled.

(4) Any reference in these Regulations to the gross tonnage of a ship shall be construed as a reference to the tonnage of the ship as ascertained in accordance with the Merchant Shipping (Tonnage) Regulations 1998.

(5) Any reference in these Regulations to any provision of the 1966 Convention shall, in relation to any time after that provision has been amended in pursuance of Article 29 of that Convention, be construed as a reference to that provision as so amended.

(6) The public documents referred to in Schedule 7 are revoked to the extent specified in column 3 of that Schedule

1 cmd 4419
2 SD 513/98
Application

2.- (1) These Regulations apply to Manx ships wherever they may be and to other ships whilst they are in the Island or the territorial waters thereof, except -

(a) ships of war;
(b) ships solely engaged in fishing;
(c) pleasure vessels;
(d) ships which do not go to sea; and
(e) ships under 80 net tons falling within one of the classes specified in paragraph (2) engaged solely in the coasting trade, and, subject to paragraph (3), not carrying cargo.

(2) Those classes are:

(a) tugs or salvage ships;
(b) ships engaged in the surveying of harbours or the approaches thereto;
(c) hopper barges or dredgers;
(d) ships which are pilot boats;
(e) ships used by or on behalf of:

   (i) a general or local lighthouse authority for the purpose of the authority's functions as such;
   (ii) the Department of Agriculture Fisheries and Forestry for fishery protection purposes or for the regulation of sea fisheries;
   (iii) a Department or a Statutory Board within the meaning of the Interpretation Act 1976\(^1\) for fishery or scientific research;
   (iv) the Secretary of State for Defence for the purpose of ensuring safety in the use of firing ranges or weapons at sea;

(3) A ship referred to in paragraph (1)(e) falling within the class in paragraph (2)(d) shall be exempted from the provisions of these Regulations while carrying cargo in accordance with the terms, if any, of the ship’s passenger certificate expressly authorising the carriage of cargo.

Exemptions

3.- (1) The Department may grant exemptions from all or any of the provisions of these Regulations (as may be specified in the exemption certificate) on such terms (if any) as it may so specify and, subject to giving reasonable notice, may alter or cancel any such exemption.

(2) If the sheltered nature and conditions of international voyages between

\(^1\) 1976 C.20
neighbouring ports in any two or more countries or territories outside the Island make it unreasonably impracticable to apply the provisions of these Regulations to ships plying on such voyages, and the Department is satisfied that the Government of the other country or territory (or, as the case may be, of each of the other countries or territories) concurs in that opinion, the Department may exempt from these Regulations ships, or any class of ships, plying on international voyages between those ports.

(3) The Department may exempt any ship which embodies features of a novel kind if the development of those features and their incorporation in ships engaged on international voyages might be seriously impeded if the ship had to comply with all the requirements of these Regulations.

(4) The Department may exempt from these Regulations, either:
   (a) a pre-1966 Convention ship of less than 150 tons gross tonnage or a post-1966 Convention ship of less than 24 metres in length; or
   (b) a ship (not falling within subparagraph (a) ) which does not ply on international voyages.

(5) Where a Manx ship does not normally ply on international voyages but is, in exceptional circumstances, required to undertake a single international voyage, the Department may exempt the ship while engaged on that voyage subject to such conditions as the Department thinks fit.

**General compliance**

4.-(1) A ship shall not proceed or attempt to proceed to sea on an international voyage unless:
   (a) it has been surveyed in accordance with these Regulations;
   (b) it is marked with a deck-line and with load lines in accordance with these Regulations;
   (c) it complies with the conditions of assignment applicable to it; and
   (d) the information required by regulation 31 and 32 is provided for the guidance of the master of the ship.

(2) (a) A ship shall not be so loaded that:
   (i) if the ship is in salt water and has no list the appropriate load line on each side of the ship is submerged; or
   (ii) in any other case, the appropriate load line on each side of the ship would be submerged if the ship were in salt water and had no list.

   (b) A ship shall not proceed to sea when it is in contravention of sub-paragraph (a).

(3) Before any ship proceeds to sea, the master of every ship shall produce to an officer of customs from whom a clearance for the ship is demanded for an international voyage the appropriate certificates.
For the purpose of these Regulations, where a valid Convention Certificate cannot be produced the freeboard deck and the freeboard shall be determined in accordance with these Regulations and the appropriate load lines shall be the maximum depth to which the ship may be loaded in salt water.

PART II - SURVEY AND CERTIFICATES

Assignment of freeboards

5.- (1) The Assigning Authority shall assign freeboards to a Manx ship in accordance with the requirements of these Regulations.

(2) The Assigning Authority shall:
   (a) determine the particulars of the freeboards to be assigned;
   (b) determine which of the load lines described in Part III are to be marked on the sides of the ship in accordance with the requirements of that Part;
   (c) determine the position in which those load lines, the deck-line and the load line mark are to be so marked; and
   (d) complete a copy of the record of Particulars relating to the Conditions of Assignment.

(3) Where a passenger ship is marked with subdivision load lines, and the lowest of those lines is lower than the line which is the appropriate load line then that subdivision load line shall have effect as if it is the appropriate load line for the purposes of these Regulations.

Initial, renewal and annual surveys

6.- (1) A ship shall be subject to the surveys specified below:
   (a) An initial survey before the ship is put in service, which shall include a complete inspection of its structure and equipment as required by these Regulations. This survey shall be such as to ensure that the arrangements, materials and scantlings fully comply with the requirements of these Regulations.
   (b) A renewal survey at intervals specified by the Department but not exceeding five years, except where paragraph (2), (5), (6) or (7) of regulation 9 is applicable, which shall be such as to ensure that the structure, equipment, arrangements, materials and scantlings fully comply with the requirements of these Regulations.
   (c) An annual survey within three months before or after each anniversary date of the certificate to ensure that:
      (i) alterations have not been made to the hull or superstructures which would affect the calculations determining the position of the load line;
      (ii) the fittings and appliances for the protection of openings, guard rails, freeing ports and means of access to crew’s quarters are
maintained in an effective condition;

(iii) the freeboard marks are correctly and permanently indicated; and

(iv) the information required by Schedule 5 is provided.

(2) The annual surveys referred to in paragraph (1)(c) shall be endorsed on the International Load Line Certificate or the International Load Line Exemption Certificate issued to the ship, or, as the case may be, the Manx Load Line Certificate or the Manx Load Line Exemption Certificate issued to the ship.

(3) The owner and master shall ensure that after any of the surveys referred to in sub-paragraphs (1)(a) to (1)(c) has been completed, no material change is made to the ship, its structure, equipment, arrangements, materials and scantlings, without the approval of the Administration concerned or in the case of a Manx ship the Assigning Authority, except by direct replacement.

Issue of appropriate certificates

7.- (1) Subject to the provisions of regulation 9, the Assigning Authority shall issue the appropriate load line certificate to a Manx ship which has been surveyed and marked in accordance with these Regulations.

(2) (a) If the certificate is an International Load Line Certificate it shall be in the form prescribed by the 1966 Convention, as amended by the Protocol of 1988.

(b) If the certificate is a Manx Load Line Certificate it shall indicate compliance with the provisions of these Regulations and state:

(i) the particulars of the freeboards assigned;

(ii) the dates and places of annual surveys; and

(iii) any conditions with which the ship has to comply.

(3) A ship shall not proceed or attempt to proceed to sea unless the appropriate certificate is in force in respect of that ship.

(4) The Department may request, through a Consular Officer, the Government of a country to which the Load Line Convention applies, to survey a Manx ship and, if satisfied that the provisions of these Regulations are complied with, to issue or authorise the issue to the ship an International Load Line Certificate, or where appropriate, endorse or authorise the endorsement of the certificate on the ship in accordance with these Regulations. A certificate issued in accordance with such a request shall contain a statement that it has been so issued, and shall have the same effect as if it was issued by the Department.

(5) In the case of a ship that has transferred from the registry of the Government of another country to the Manx registry, the Assigning Authority, subject to such survey requirements it considers to be necessary may issue an International Load Line Certificate for a period to be determined by the Assigning Authority, but for not longer than the period of validity of the certificate issued by or on behalf of the Government of that other country if
satisfied that:

(a) the ship has already been subjected to satisfactory initial, renewal, annual and additional surveys, as appropriate;
(b) the condition of the ship, including its structure, equipment, arrangements, materials and scantlings, have been maintained so as to comply with the relevant regulations applicable to the ship; and
(c) after any of the surveys referred to in sub-paragraph (a) have been completed, no material change has been made to the ship, including its structure, equipment, arrangements, materials and scantlings, subject to such surveys, without the approval of the administration of that State, except by direct replacement.

Issue of exemption certificates

8.- Where a ship is exempted under these Regulations:

(a) and the exemption is conferred under regulation 3(3) or regulation 3(4), an “International Load Line Exemption Certificate” in the form prescribed by the 1966 Convention as amended by the Protocol of 1988 shall be issued to the ship;
(b) and the certificate is conferred under regulation 3(5), a “Manx Load Line Exemption Certificate” shall be issued to the ship which shall state the conditions on which the ship is to comply.

Duration and validity of certificates

9.- (1) Subject to paragraphs (2), (4), (5) and (6), the duration of an appropriate Load Line Certificate shall not exceed five years beginning with the date of completion of the initial or renewal survey referred to in regulation 6(1)(a) or (b) respectively.

(2) (a) When the renewal survey referred to in regulation 6(1)(b) is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate;
(b) When the renewal survey referred to in regulation 6(1)(b) is completed after the expiry date of the existing certificate, the new certificate shall be valid for a period beginning with the date of completion of the renewal survey and ending on a date which does not exceed five years from the date of expiry of the existing certificate;
(c) When the renewal survey referred to in regulation 6(1)(b) is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey and ending on a date which does not exceed five years from the date of completion of the renewal survey.

(3) If a certificate is issued for a period of less than five years, the Department may
extend the validity of the certificate beyond the expiry date to the maximum period specified in paragraph (1), provided that the annual surveys referred to in regulation 6(1)(c) are carried out as appropriate.

(4) If, after the renewal survey referred to in regulation 6(1)(b), a new certificate cannot be issued to the ship before the expiry date of the existing certificate, the person or organisation carrying out the survey may extend the validity of the existing certificate for a period which shall not exceed five months. This extension shall be endorsed on the certificate, and shall be granted only where there have been no alterations in the structure, equipment, arrangements, materials or scantlings which affect the ship’s freeboard.

(5) If at the time when a certificate expires a ship is not in a port in which it is to be surveyed, the Department may extend the period of validity of the certificate but this extension shall be granted only for the purposes of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such an extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

(6) A certificate issued to a ship engaged on short voyages which has not been extended under the provisions of paragraph (5), may be extended by the Department for a period of grace of up to one month from the date of expiry stated on it. When renewal survey is completed the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

(7) In such circumstances as the Department may determine, the Department may grant an exemption from the requirement for a new certificate to be dated from the date of the expiry of the existing certificate as required by paragraphs (2), (5) and (6). In such circumstances, the new certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

(8) If an annual survey is completed before the period prescribed in regulation 6(1)(c) then:

(a) the anniversary date shown on the certificate shall be amended by endorsement to a date which shall not be more than three months later than the date on which the survey was completed;

(b) the subsequent annual survey required by regulation 6(1)(c) shall be completed at the intervals prescribed by the regulations using the new anniversary date;

(c) the expiry date may remain unchanged provided one or more annual surveys are carried out so that the maximum intervals between the surveys as prescribed by the regulations are not exceeded.

(9) An appropriate Load Line Certificate issued in respect of a Manx ship shall cease to be valid where -
(a) material alterations have taken place in the hull or superstructures of the
ship such as would necessitate the assignment of an increased
freeboard;
(b) the fittings and appliances mentioned in regulation 6(1)(c)(ii) are not
maintained in an effective condition;
(c) the certificate is not endorsed to show that the ship has been surveyed as
required by regulation 6(2);
(d) the structural strength of the ship is lowered to such an extent that the
ship is unsafe.

(10) (a) The duration of the International Load Line Exemption Certificate
issued by the Department to a ship exempted under regulation 3(3) shall
not exceed five years. Such certificate shall be subject to a renewal,
endorsement, extension and cancellation procedure similar to that
provided for the International Load Line Certificate prescribed by these
regulations;
(b) The duration of an International Load Line Exemption Certificate issued
to a ship exempted under regulation 3(5) shall be limited to the single
voyage for which it is issued.

(11) A certificate issued to a ship by the Department, or the assigning authority on
behalf of the Department, shall cease to be valid upon transfer of that ship to the flag of another
State.

Cancellation of certificates

10.- (1) The Department may cancel a load line certificate:
(a) if satisfied that:
(i) the certificate was issued on false or erroneous information;
(ii) the ship does not comply with the conditions of assignment;
(iii) the structural strength of the ship is reduced to an extent that the
ship is unsafe; or
(iv) information on the basis of which freeboards were assigned to
the ship was incorrect in a material respect;
(b) if the certificate is not endorsed in accordance with the requirements of
regulation 6(2) to show that the ship has been inspected in accordance
with that regulation;
(c) if a new certificate is issued in respect of the ship;
(d) if the ship ceases to be a Manx Ship.

(2) The Department may require any certificate issued under these Regulations
which has expired or been cancelled, to be delivered up as it directs.
Publication of load line certificate and notification of draughts

11.- (1) Where a certificate is issued in respect of a Manx ship, the owner and master of the ship shall ensure that it is kept legible and posted up in some conspicuous place on board the ship.

(2) Before any Manx ship leaves any dock, wharf, harbour or other place for the purpose of proceeding to sea, the master of the ship, subject to paragraph (4) shall ensure a notice is posted up in some conspicuous place on board the ship, in a form and containing such particulars relating to the depth to which the ship is loaded as is specified in Schedule 6.

(3) Where a notice has been posted up, in accordance with paragraph (2), the master of the ship shall cause it to be kept posted and legible until the ship arrives at some other dock, wharf, harbour or place.

Ships not registered in the Island

12.- The Department may, at the request of a Government of a country to which the 1966 Convention applies, survey a ship registered in that country and if satisfied that the requirements of the 1966 Convention are complied with and that a survey has been satisfactorily completed in accordance with these Regulations, issue to the ship an International Load Line Certificate and, where appropriate, endorse such certificates in accordance with the requirements of the 1966 Convention. A certificate issued in accordance with such a request shall contain a statement that it has been so issued and shall have the same effect as if it was issued by that Government and not by the Department.

Provisions as to inspection

13.- (1) A surveyor from the Department may inspect any ship for the purpose of seeing that the provisions of these Regulations have been complied with in respect of the ship.

(2) Notwithstanding paragraph (1), a surveyor from the Department may go on board any non-Manx ship to which the 1966 Convention applies for the purpose of verifying that there is in force a Certificate or Certificates required by the 1966 Convention. If a valid Convention Certificate is produced, this inspection shall be limited to seeing that:

(a) the ship is not loaded beyond the limits allowed by the certificate;
(b) lines are marked on the ship in the positions of the load lines specified in the certificate;
(c) no material alterations have taken place in the hull or superstructures of the ship which affect the basis on which any of those lines have been marked; and
(d) the fittings and appliances for the protection of openings, the guard rails, the freeing ports and the means of access to the crew's quarters have been maintained on the ship in as effective a condition as they were when the certificate was issued.
(3) If on inspection the ship is found to have been so materially altered in respect of the matters referred to in subparagraph (2)(c) or (d) that the ship is manifestly unfit to proceed to sea without danger to human life, it shall be deemed to be dangerously unsafe for the purposes of section 98 of the Merchant Shipping Act 1995\(^1\) an Act of Parliament as it has effect in the Island.

**PART III - LOAD LINES AND MARKS**

**Marking**

14.- The appropriate marks shall be marked on each side of the ship in accordance with the directions of the Assigning Authority and the requirements of this Part.

**Deck-line**

15.- (1) The deck-line shall consist of a horizontal line 300 millimetres in length and 25 millimetres in width and shall be marked amidships on each side of the ship so as to indicate the position of the freeboard deck.

(2) Subject to paragraph (3), the deck-line shall be marked in such a position on the side of the ship that its upper edge passes through the point amidships where the continuation outwards of the upper surface of the freeboard deck, or of any sheathing of that deck, intersects the outer surface of the shell of the ship as shown in Figure 1.

(3) Where the design of the ship, or other circumstances, render it impracticable to mark the deck-line in accordance with paragraph (2) the Assigning Authority may direct that it be marked by reference to another fixed point as near as practicable to the position described in paragraph (2).

**Load line mark**

16.- The load line mark as shown in Figure 2, shall consist of a ring 300 millimetres in outside diameter and 25 millimetres wide, intersected by a horizontal line 450 millimetres long and 25 millimetres wide the upper edge of which passes through the centre of the ring. The centre of the ring shall be marked amidships vertically below the deck-line so that, except as otherwise provided in regulation 29, the distance from the centre of the ring to the upper edge of the deck-line is equal to the Summer freeboard assigned to the ship.

**Load lines**

17.- (1) Load lines indicate the maximum depth to which a ship may be loaded in the circumstances described in Schedule 1 (Appropriate Load Lines and Seasonal Zones, Areas and Periods).

(2) Except as otherwise provided for in paragraph (4), the load lines shown in Figure 2, shall consist of horizontal lines of 230 millimetres in length and 25 millimetres in width

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\(^1\) 1995 c. 21. applied by SD 23/99
extending forward or abaft of a vertical line 25 millimetres in width marked 540 millimetres forward of the centre of the ring of the load line mark and at right angles to that line. The individual load lines shall be as follows -

(a) the Summer load line, which shall extend forward of the vertical line corresponding horizontally with the line passing through the centre of the ring of the load line mark, and be marked S;

(b) the Winter load line, which shall extend forward of the vertical line, and be marked W;

(c) the Winter North Atlantic load line, which shall extend forward of the vertical line, and be marked WNA;

(d) the Tropical load line, which shall extend forward of the vertical line, and be marked T;

(e) the Fresh Water load line, which shall extend abaft the vertical line, and be marked F;

(f) the Tropical Fresh Water load line, which shall extend abaft the said vertical line, and be marked TF.

(3) The maximum depth of loading referred to in paragraph (1) shall be the depth indicated by the upper edge of the appropriate load line.

(4) In the case of a sailing ship-

(a) the Summer load line shall consist of the line passing through the centre of the ring of the load line mark; and

(b) the Winter North Atlantic load line and Fresh Water load line only shall be marked on the ship as shown in Figure 3.

Timber load lines

18.- (1) Timber load lines shown in Figure 4 shall consist of horizontal lines of the dimensions specified in respect of such lines in regulation 17(2), extending abaft or forward of a vertical line 25 millimetres in width and marked 540 millimetres abaft the centre of the ring of the load line mark and at right angles to that line; and individual Timber load line shall be as follows:

(a) the Summer Timber load line, which shall extend abaft the said vertical line and be marked LS;

(b) the Winter Timber load line, which shall extend abaft the said vertical line and be marked LW;

(c) the Winter North Atlantic Timber load line, which shall extend abaft
the vertical line and be marked LWNA;

(d) the *Tropical Timber load line*, which shall extend abaft of the vertical line and be marked LT;

(e) the *Fresh Water Timber load line*, which shall extend forward of the vertical line and be marked LF; and

(f) the *Tropical Fresh Water Timber load line*, which shall extend forward of the vertical line and be marked LTF.

(2) The maximum depth of loading referred to in regulation 17(1) shall be the depth indicated by the upper edge of the appropriate Timber load line.

**Appropriate load line**

19.- The appropriate load line in respect of a ship varies at any particular place and time and shall be ascertained in accordance with the provisions of Schedule 1.

**Position of Load Lines**

20.- Each load line shall be marked in such a position on each side of the ship that the distance measured vertically downwards from the upper edge of the deck-line to the upper edge of the load line is equal to the freeboard assigned to the ship which is appropriate to that load line.

**Method of marking**

21.- (1) The appropriate marks shall be marked in such a manner as to be plainly visible.

(2) If the sides of the ship are of metal the appropriate marks shall be cut in, centre punched or welded; if the sides of the ship are of wood the marks shall be cut into the planking to a depth of not less than 3 millimetres; if the sides are of other materials to which the foregoing methods of marking cannot effectively be applied the marks shall be permanently affixed by bonding or some other effective method.

(3) The appropriate marks shall be painted in white or yellow if the back ground is dark, and in black if the background is light.

**Authorisation of removal, etc., of appropriate marks**

22.- After the appropriate marks have been made on a ship, they shall not be concealed, removed, altered, defaced or obliterated except with the authority of the Assigning Authority.

**Mark of Assigning Authority**

23.- (1) The identity of the Assigning Authority may be marked alongside the load line ring either above the horizontal line which passes through the centre of the ring, or above and below it.

(2) This mark shall consist of not more than four initials each measuring approximately 115 millimetres in height and 75 millimetres in width.
PART IV - CONDITIONS OF ASSIGNMENT

Requirements relevant to the assignment of freeboards

24.- (1) Freeboards assigned under these Regulations shall comply with the requirements applicable to the ship in Part I of Schedule 2.

(2) In addition to complying with paragraph (1) every Type ‘A’ ship, certain Type ‘B’ ships and ships assigned Timber freeboards shall comply respectively with Part II, III and IV of Schedule 2.

Compliance with conditions of assignment

25.- (1) Except as otherwise provided for in paragraph (2), a ship shall cease to comply with the conditions of assignment:

(a) if at any time after the assignment of freeboards there has been any alteration of the hull, structure, equipment, arrangements, materials and scantlings, of the ship such that:

(i) a requirement applicable to the ship under regulation 24 is not complied with; or

(ii) it differs in a material respect from the record of particulars provided in accordance with regulation 26;

(b) if the record of particulars is not on board in accordance with regulation 26(2).

(2) A ship shall be taken to comply with the conditions of assignment notwithstanding an alteration referred to in subparagraph (1)(a), if:

(a) amended freeboards appropriate to the condition of the ship have been assigned, the ship has been marked with these load lines and a new certificate issued to the owner of the ship accordingly; or

(b) the alteration has been inspected by a surveyor on behalf of the Assigning Authority and that Authority is satisfied that the alteration is not such as to require any change in the freeboards assigned to the ship, and full particulars of the alteration together with the date and place of his inspection have been endorsed by the surveyor on the record referred to in regulation 26(1).

Record of Particulars

26.- (1) A record of particulars listing in respect of the hull, superstructures, fittings and appliances of the ship the basis on which freeboards were assigned shall be provided on the ship
in a form that is recommended by the International Maritime Organisation.

(2) The record shall be furnished by the Assigning Authority and be retained on board at all times.

PART V - FREEBOARDS

Types of freeboard

27.- The freeboards that can be assigned to a ship under these Regulations are the Summer freeboard; Tropical freeboard; Winter freeboard; Winter North Atlantic freeboard; Fresh Water freeboard and Tropical Fresh Water freeboard. In the case of ships carrying Timber the freeboards that may be assigned are the Summer Timber freeboard, Winter Timber freeboard Winter North Atlantic Timber freeboard; Tropical Timber freeboard; Fresh Water Timber freeboard and Tropical Fresh Water Timber freeboard.

Determination of freeboards

28.- Except as otherwise provided for in regulation 29 the freeboards assigned to a ship shall be determined in accordance with the provisions of Schedule 3.

Greater than minimum freeboards

29.- (1) A freeboard determined in accordance with regulation 28 is the minimum freeboard that may be assigned to the ship.

(2) (a) Subject to subparagraph (b) the Assigning Authority may however, if it is satisfied that the ship complies with the requirements of these Regulations, assign freeboards (other than Timber freeboards) which exceed the minimum freeboards by such an amount as it may determine.

(b) Timber freeboards shall not be assigned to a ship to which greater than minimum freeboards have been assigned.

(3) Where a freeboard greater than the minimum is assigned to a ship and the load line appropriate to that freeboard corresponds to, or is lower than, the position at which the lowest of the load lines appropriate to minimum freeboards would be marked then:

(a) load lines only appropriate to the greater than minimum Summer freeboard and Fresh Water freeboard shall be marked on the sides of the ship;

(b) the load line appropriate to the greater than minimum Summer freeboard shall be known as the “All Seasons load line” and shall consist of the horizontal line intersecting the load line mark;

(c) the vertical line described in regulation 17 shall be omitted;

(d) subject to the provisions of subparagraph (c), the Fresh Water load line shall be as described in regulation 17(2) and be marked accordingly.

Special position of deck-line: correction of freeboards

30.- In any ship where the deck line is marked in accordance with regulation 15(3), the
freeboards assigned to the ship shall be corrected to allow for the vertical distance by which the position of the deck-line is altered by virtue of that paragraph. The reference point to which the deck-line has been so marked, and the identity of the deck which has been taken as the freeboard deck, shall be specified in the load line certificate issued to the ship.

**PART VI - STABILITY**

**Information as to stability of ships**

31.- (1) The owner of every ship to which these Regulations apply shall provide, for the guidance of the master, information relating to the stability of the ship in accordance with this regulation. The information shall be in the form of a book which shall be kept on the ship at all times in the custody of the master, together with evidence that the information has been approved by the Department.

(2) In the case of a Manx ship this information shall include all matters specified in Schedule 5, and be in the form required by that Schedule. This information shall also be in accordance with the requirements of paragraphs (3), (4), (5) and (6).

(3) Subject to paragraph (4), this information shall be based on the determination of stability taken from an inclining test carried out in the presence of a surveyor appointed by the Assigning Authority. This information shall be amended whenever any alterations are made to the ship or changes occur to it which will materially affect this information and, if necessary, the ship shall be re-inclined.

(4) The Assigning Authority may allow the inclining test to be dispensed with, provided basic stability data is available from the inclining test of a sister ship and it is shown to the satisfaction of the Department that reliable stability information for the ship can be obtained from such basic data.

(5) Every ship which is not required under the International Convention for Safety of Life at Sea in force to undergo an inclining test upon its completion shall -

(a) be so inclined and the actual displacement and position of the centre of gravity shall be determined for the light ship condition;

(b) have supplied for the use of its master such reliable information as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under all conditions likely to be encountered in normal service.

(6) Before this information is issued to the master it shall be approved either by the Department or by the Assigning Authority which assigned freeboards to the ship.

**Information as to loading and ballasting of ships**

32.- (1) The owner of any ship of more than 150 metres in length specially designed for the carriage of liquids or ore in bulk shall provide, for the guidance of the master, information relating to the loading and ballasting of the ship.
(2) This information shall indicate the maximum stresses permissible for the ship and specify the manner in which the ship is to be loaded and ballasted to avoid the creation of unacceptable stresses in its structure.

(3) In the case of a Manx ship the provisions of regulation 31(6) shall have effect in respect of information required under this regulation, and the information so approved shall be included in the book referred in regulation 31(1).

**PART VII - EQUIVALENCE, PENALTIES AND DETENTION**

**Equivalence**

33.- The Assigning Authority may, with the approval of the Department -

(a) allow any structure, equipment, arrangements, materials and scantlings to be fitted in a ship, or allow other provisions to be made in a ship, in the place of any structure, equipment, arrangements, materials and scantlings or provision respectively which is required under any of the provisions of these Regulations, if satisfied by trial or otherwise that it is at least as effective as that so required; or

(b) allow in any exceptional case departure from the requirements of any of the said provisions on condition that the freeboards to be assigned to the ship are increased to such an extent as to satisfy the Department that the safety of the ship and protection afforded to the crew will be no less effective than would be the case if the ship fully complied with those requirements and there were no such increase of freeboards.

**Penalties**

34.- (1) Any contravention of regulation 4(1) shall be an offence by both the operator and master of the ship and shall be punishable:

(a) on summary conviction, to a fine not exceeding £5,000;

(b) on conviction on information, to a fine.

(2) Any contravention of regulation 4(2)(a), being an offence corresponding to the offence under section 1(2) of the Merchant Shipping (Detention of Ships) Act 1979, shall be an offence by both the operator and master and shall be punishable:

(a) on summary conviction, to a fine not exceeding £5,000 and to such additional fine, not exceeding an amount calculated in accordance with paragraph (3), as the court thinks fit to impose, having regard to the extent to which the earning capacity of the ship was increased by reason of the contravention;

(b) on conviction on information, to a fine.

(3) Any additional fine imposed under subparagraph (2)(a) shall not exceed £1,000 for each complete centimetre by which:

(a) in a case falling within regulation 4(2)(a)(i), the appropriate load line on each side of the ship was submerged; or

(b) in a case falling within regulation 4(2)(a)(ii), the appropriate load line on each side of the ship would have been submerged.
Any contravention of regulation 4(2)(b) shall be an offence by the master and any other person who, having reason to believe that the ship is so loaded, sends or is party to sending the ship to sea (without prejudice to any fine liable in respect of an offence under paragraph (2)) and shall be punishable -

(a) on summary conviction, to a fine not exceeding £5,000;
(b) on conviction on information, to a fine.

Where a person is charged with an offence under paragraph (2), it shall be a defence to prove that the contravention was due solely to deviation or delay and that the deviation or delay was caused solely by stress of weather or other circumstances which neither the master nor the owner nor the charterer (if any) could have prevented or forestalled.

Any contravention of regulation 22, without reasonable excuse to keep the ship so marked, shall be an offence by both the operator and the master and shall be punishable on summary conviction to a fine not exceeding £5,000.

Any contravention of regulation 7(3) shall be an offence by the master and shall be punishable:

(a) on summary conviction, to a fine not exceeding £5,000;
(b) on conviction on information, to a fine.

Any contravention of regulation 11 shall be an offence by both the master and operator and shall be punishable on summary conviction to a fine not exceeding £1,000.

Detention

35.- (1) Any ship which, in contravention of regulation 4(1), attempts to proceed to sea without being surveyed and marked may be detained until it has been so surveyed and marked.

(2) Any ship which does not comply with the conditions of assignment applicable to it shall be liable to be detained until it complies.

(3) Without prejudice to any proceedings under regulation 34, any ship which is loaded in contravention of regulation 4(2) may be detained until it ceases to be so loaded.
APPROPRIATE LOAD LINES AND SEASONAL ZONES, AREAS AND PERIODS

Appropriate Load Lines

1. The seasonal zones, areas and periods which determine the appropriate load line in a particular sea area at a given time are set out in this Schedule and shown by way of illustration on the chart annexed to these Regulations.

2. Subject to subparagraphs (d) to (g) the load line appropriate to a ship shall be:
   - (a) the Summer load line, when the ship is in a Summer Zone (excluding any part of such a zone which is a seasonal area in relation to the ship);
   - (b) the Tropical load line, when the ship is in a Tropical Zone;
   - (c) the Summer load line, the Winter load line or the Tropical load line, according to the season when the ship is in a seasonal zone or area (including any part of a Summer Zone which is a seasonal area in relation to the ship);
   - (d) the Winter North Atlantic load line in the case of a ship of 100 metres or less in length when it is in these zones during the Winter seasonal periods applicable to them:
     - (i) North Atlantic Winter Seasonal Zone I, as set out in paragraph 4(a);
     - (ii) North Atlantic Winter Seasonal Zone II, as set out in paragraph 4(b) as lies between the meridians of longitude 15°W and 50°W; during the Winter seasonal periods applicable in those zones;
   - (e) the Summer load line; in the case of a sailing ship, except in circumstances in which sub-paragraph (d) applies;
   - (f) an All Seasons load line, in the case of a ship marked in accordance with regulation 29;
   - (g) the Timber load line, corresponding to the seasons and zones, in the case of a ship marked with Timber load lines and carrying timber deck cargo in accordance with Part IV of Schedule 2.

Ports on Boundary Lines

3. For the purposes of applying the provisions of this Schedule to a ship at a port which stands on the boundary line between two zones or areas or between a zone and an area, or which is required by this Schedule to be considered as being on such a boundary line, the port shall be deemed to be within the zone or area in to which the ship is about to proceed or from which she has arrived as the case may be.
Zones, Areas and Seasonal Periods

NORTHERN WINTER SEASONAL ZONES AND AREA

North Atlantic Winter Seasonal Zones I and II

4. (a) The North Atlantic Winter Seasonal Zone I lies within the meridian of longitude 50°W from the coast of Greenland to latitude 45°N, thence the parallel of latitude 45°N to longitude 15°W, thence the meridian of longitude 15°W to latitude 60°N, thence the parallel of latitude 60°N to the Greenwich Meridian, thence this meridian northwards.

Seasonal periods:

WINTER: 16th October to 15th April.

SUMMER: 16th April to 15th October.

(b) The North Atlantic Winter Seasonal Zone II lies within the meridian of longitude 68°30'W from the coast of the United States to latitude 40°N, thence the rhumb line to the point latitude 36°N longitude 73°W, thence the parallel of latitude 36°N to longitude 25°W and thence the rhumb line to Cape Torinana.

Excluded from this zone are the North Atlantic Winter Seasonal Zone I, the North Atlantic Winter Seasonal Area and the Baltic Sea bounded by the parallel of latitude of The Skaw in the Skagerrak. The Shetland Islands are to be considered as being on the boundary line between the North Atlantic Winter Seasonal Zones I and II.

Seasonal periods:

WINTER: 1st November to 31st March.

SUMMER: 1st April to 31st October.

North Atlantic Winter Seasonal Area

5. The boundary of the North Atlantic Winter Seasonal Area is:

the meridian of longitude 68°30'W from the coast of the United States to latitude 40°N, thence the rhumb line to the southernmost intersection of the meridian of longitude 61°W with the coast of Canada and thence the east coasts of Canada and the United States.

Seasonal periods:

For ships over 100 metres in length:

WINTER: 16th December to 15th February.

SUMMER: 16th February to 15th December.
For ships of 100 metres or less in length:

**WINTER:** 1st November to 31st March.

**SUMMER:** 1st April to 31st October.

**North Pacific Winter Seasonal Zone**

6. The southern boundary of the North Pacific Winter Seasonal Zone is:

the parallel of latitude 50°N from the east coast of the Russian Federation to the west coast of Sakhalin, thence the west coast of Sakhalin to the southern extremity of Cape Krilon, thence the rhumb line to Wakkanai, Hokkaido, Japan, thence the east and south coasts of Hokkaido to longitude 145°E, thence the meridian of longitude 145°E to latitude 35°N, thence the parallel of latitude 35°N to longitude 150°W and thence the rhumb line to the southern extremity of Dall Island, Alaska.

**Seasonal periods:**

**WINTER:** 16th October to 15th April.

**SUMMER:** 16th April to 15th October.

**SOUTHERN WINTER SEASONAL ZONE**

**Southern Winter Seasonal Zone**

7. The northern boundary of the Southern Winter Seasonal Zone is:

the rhumb line from the east coast of the American continent at Cape Tres Puntas to the point latitude 34°S, longitude 50°W, thence the parallel of latitude 34°S to longitude 17°E, thence the rhumb line to the point latitude 35°10'S, longitude 20°E, thence the rhumb line to the point latitude 34°S, longitude 28°E, thence the rhumb line to the point latitude 35°30'S, longitude 118°E, and thence the rhumb line to Cape Grim on the northwest coast of Tasmania; thence along the north and east coasts of Tasmania to the southernmost point of Bruny Island, thence the rhumb line to Black Rock Point on Stewart Island, thence the rhumb line to the point latitude 47°S, longitude 170°E, thence the rhumb line to the point latitude 33°S, longitude 170°W, and thence the parallel of latitude 33°S to the point latitude 33°S, longitude 79°W, thence the rhumb line to the point latitude 41°S, longitude 75°W, thence the rhumb line to Punta Corona lighthouse on Chiloe Island, latitude 41° 47'S, longitude 73° 53’W, thence along the north, east and south coasts of Chiloe Island to the point latitude 43° 20’S, longitude 74° 20’W, and thence the meridian of longitude 74° 20’W to the parallel of latitude 45° 45’S, including the inner zone of Chiloe channels from the meridian 74° 20’W to the east.

**Seasonal Periods:**

**WINTER:** 16th April to 15th October.

**SUMMER:** 16th October to 15th April.
TROPICAL ZONE

Northern Boundary of the Tropical Zone

8. The northern boundary of the Tropical Zone is:

the parallel of latitude 13°N from the east coast of the American continent to longitude 60°W, thence the rhumb line to the point latitude 10°N, longitude 58°W, thence the parallel of latitude 10°N to longitude 20°W, thence the meridian of longitude 20°W to latitude 30°N and thence the parallel of latitude 30°N to the west coast of Africa; from the east coast of Africa the parallel of latitude 8°N to longitude 70°E, thence the meridian of longitude 70°E to latitude 13°N, thence the parallel of latitude 13°N to the west coast of India; thence the south coast of India to latitude 10°30′N on the east coast of India, thence the rhumb line to the point latitude 9°N, longitude 82°E, thence the meridian of longitude 82°E to latitude 8°N, thence the parallel of latitude 8°N to the west coast of Malaysia, thence the coast of South-East Asia to the east coast of Vietnam at latitude 10°N, thence the parallel of latitude 10°N to longitude 145°E, thence the meridian of longitude 145°E to latitude 13°N and thence the parallel of latitude 13°N to the west coast of the American continent.

Saigon is to be considered as being on the boundary line of the Tropical Zone and the Seasonal Tropical Area.

Southern Boundary of the Tropical Zone

9. The southern boundary of the Tropical Zone is:

the rhumb line from the Port of Santos, Brazil, to the point where the meridian of longitude 40°W intersects the Tropic of Capricorn; thence the Tropic of Capricorn to the west coast of Africa; from the east coast of Africa the parallel of latitude 20°S to the west coast of Madagascar, thence the west and north coasts of Madagascar to longitude 50°E, thence the meridian of longitude 50°E to latitude 10°S, thence the parallel of latitude 10°S to longitude 98°E, thence the rhumb line to Port Darwin, Australia, thence the coasts of Australia and Wessel Island eastwards to Cape Wessel, thence the parallel of latitude 11°S to the west side of Cape York; from the east side of Cape York the parallel of latitude 11°S to longitude 150°W, thence the rhumb line to the point latitude 26°S, longitude 75°W, thence the rhumb line to the point latitude 32° 47′S, longitude 72°W, and thence to the parallel of latitude 32° 47′S to the west coast of South America.

Valparaiso and Santos are to be considered as being on the boundary line of the Tropical and Summer Zones.

Areas to be included in the Tropical Zone

10. The following areas are to be as included in the Tropical Zone:

(a) The Suez Canal, The Red Sea and the Gulf of Aden, from Port Said to the meridian of longitude 45°E;

Aden and Berbera are to be considered as being on the boundary line of the Tropical Zone and the Seasonal Tropical Area;

(b) The Persian Gulf to the meridian of longitude 59°E; and

(c) The area bounded by the parallel of latitude 22°S from the east coast of Australia
to the Great Barrier Reef, thence the Great Barrier Reef to latitude 11°S. The northern boundary of the area is the southern boundary of the Tropical Zone.

**SEASONAL TROPICAL AREAS**

11. The following are Seasonal Tropical Areas:

(a) **In the North Atlantic**

An area bounded
- on the north by the rhumb line from Cape Catoche, Yucatan, to Cape San Antonio, Cuba, the north Coast of Cuba to latitude 20°N and thence the parallel of latitude 20°N to longitude 20°W;
- on the west by the coast of the American continent;
- on the south and east by the northern boundary of the Tropical Zone.

**Seasonal Periods:**

**TROPICAL:** 1st November to 15th July.

**SUMMER:** 16th July to 31st October.

(b) **In the Arabian Sea**

An area bounded
- on the west by the coast of Africa, the meridian of longitude 45°E in the Gulf of Aden, the coast of South Arabia and the meridian of longitude 59°E in the Gulf of Oman;
- on the north and East by the coasts of Pakistan and India;
- on the south by the northern boundary of the Tropical Zone.

**Seasonal periods:**

**TROPICAL:** 1st September to 31st May.

**SUMMER:** 1st June to 31st August.

(c) **In the Bay of Bengal**

The Bay of Bengal north of the northern boundary of the Tropical Zone.

**Seasonal Periods:**

**TROPICAL:** 1st December to 30th April.

**SUMMER:** 1st May to 30th November.
(d) **In the South Indian Ocean**

(i) An area bounded

- on the north and west by the southern boundary of the Tropical Zone and the east coast of Madagascar;
- on the south by the parallel of latitude 20°S;
- on the east by the rhumb line from the point latitude 20°S, longitude 50°E, to the point latitude 15°S, longitude 51°30'E, and thence by the meridian of longitude 51°30'E to latitude 10°S.

**Seasonal periods:**

TROPICAL: 1st April to 30th November.

SUMMER: 1st December to 31st March

(ii) An area bounded

- on the north by the southern boundary of the Tropical Zone;
- on the east by the coast of Australia;
- on the south by the parallel of latitude 15°S from longitude 51°30'E, to longitude 114°E and thence the meridian of longitude 114°E to the coast of Australia;
- on the west by the meridian of longitude 51°30'E.

**Seasonal periods:**

TROPICAL: 1st May to 30th November.

SUMMER: 1st December to 30th April

(e) **In the China Sea**

An area bounded

- on the west and north by the coasts of Vietnam and China from latitude 10°N to Hong Kong;
- on the east by the rhumb line from Hong Kong to the Port of Sual (Luzon Island) and the west coasts of the Islands of Luzon, Samar and Leyte to latitude 10°N;
- on the south by the parallel of latitude 10°N.

Hong Kong and Sual are to be considered as being on the boundary of the Seasonal Tropical Area and Summer Zone.

**Seasonal periods:**

TROPICAL: 21st January to 30th April.

SUMMER: 1st May to 20th January.
(f) In the North Pacific
   (i) An area bounded
       - on the north by the parallel of latitude 25°N;
       - on the west by the meridian of longitude 160°E;
       - on the south by the parallel of latitude 13°N;
       - on the coast by the meridian of longitude 130°W.
   Seasonal Periods:
   
   TROPICAL: 1st April to 31st October.
   SUMMER: 1st November to 31st March.

(ii) An area bounded
       - on the north and east by the west coast of the American continent;
       - on the west by the meridian of longitude 123°W from the coast of the American continent to latitude 33°N and by the rhumb line from the point latitude 33°N, longitude 123°W to the point latitude 13°N, longitude 105°W;
       - on the south by the parallel of latitude 13°N.
   Seasonal periods:
   
   TROPICAL: 1st March to 30th June and 1st November to 30th November.
   SUMMER: 1st July to 31st October and 1st December to 28th/29th February.

(g) In the South Pacific
   (i) The Gulf of Carpentaria south of latitude 11°S
   Seasonal periods:
   
   TROPICAL: 1st April to 30th November.
   SUMMER: 1st December to 31st March.

(ii) An area bounded
       - on the north and east by the southern boundary of the Tropical Zone;
       - on the south by the parallel of latitude of 24° S to longitude 154 ° E, thence by the meridian of longitude 154 ° E to the Tropic of Capricorn and thence by the Tropic of Capricorn to longitude 150°W, thence by the meridian of longitude 150°W to latitude 20°S and thence by the parallel of latitude 20°S to the point where it intersects the southern boundary of the Tropical Zone;
       - on the west by the boundaries of the area within the Great Barrier Reef included in the Tropical Zone and by the east coast of Australia.
Seasonal periods:

**TROPICAL:** 1st April to 30th November.

**SUMMER:** 1st December to 31st March.

**SUMMER ZONES**

12. The remaining sea areas constitute the Summer Zones. However, for ships of 100 metres or less in length, the area bounded
- on the north and west by the east coast of the United States;
- on the east by the meridian of longitude 68°30'S from the coast of the United States to latitude 40°N and thence by the rhumb line to the point latitude 36°N longitude 73°W;
- on the south by the parallel of latitude 36°N;

is a Winter Seasonal Area.

Seasonal periods:

**WINTER:** 1st November to 31st March.

**SUMMER:** 1st April to 31st October.

**ENCLOSED SEAS**

13. Baltic Sea

This sea bounded by the parallel of latitude of The Skaw in the Skagerrak is included in the Summer Zones.

However, for ships of 100 metres or less in length, it is a Winter Seasonal Area.

Seasonal periods:

**WINTER:** 1st November to 31st March.

**SUMMER:** 1st April to 31st October.

14. Black Sea

This sea is included in the Summer Zones.

However, for ships of 100 metres or less in length, the area north of latitude 44°N is a Winter Seasonal Area.

Seasonal periods:

**WINTER:** 1st December to 28th/29th February.

**SUMMER:** 1st March to 30th November.
15. Mediterranean

This sea is included in the Summer Zones.

However, for ships of 100 metres or less in length, the area bounded

- on the north and west by the coasts of France and Spain and the meridian of longitude 3°E from the coast of Spain to latitude 40°N;

- on the south by the parallel of latitude 40°N from longitude 3°E to the west coast of Sardinia;

- on the east by the west and north coasts of Sardinia from latitude 40°N to latitude 9°E to the south coast of Corsica, thence by the west and north coasts of Corsica to longitude 9°E and thence by the rhumb line to Cape Sicié

is a winter Seasonal Area.

**Seasonal periods:**

- **WINTER:** 16th December to 15th March.
- **SUMMER:** 16th March to 15th December.

16. Sea of Japan

This sea south of latitude 50°N is included in the Summer Zones.

However, for ships of 100 meters or less in length, the area between the parallel of latitude 50°N and the rhumb line from the east coast of Korea at latitude 38°N to the west coast of Hokkaido, Japan, at latitude 43°12'N is a Winter Seasonal Area.

**Seasonal periods:**

- **WINTER:** 1st December to 28th/29th February.
- **SUMMER:** 1st March to 30th November.
SCHEDULE 2
CONDITIONS OF ASSIGNMENT

Interpretation

1. In this Schedule, except where the context otherwise requires:

“breadth (B)” means the maximum breadth of the ship measured amidships to the moulded line of the frame in the case of a ship having a metal shell, or to the outer surface of the hull in the case of a ship having a shell of any other material;

“enclosed superstructure” means a superstructure:
   (a) which has enclosing bulkheads of efficient construction in which all access openings are fitted with sills and weathertight doors; and
   (b) in which all other openings in sides or ends are fitted with efficient weathertight means of closing;

but shall not include a bridge or poop fulfilling these requirements unless access to machinery and other working spaces within the bridge or poop is provided by alternative means which are available at all times when access openings in the bulkheads of the bridge or poop are closed;

“exposed position” means a position which is either:
   (a) exposed to weather and sea; or
   (b) within a structure so exposed other than an enclosed superstructure;

“forward perpendicular” means the perpendicular taken at the forward end of the ship's length (L), coinciding with the foreside of the stem on the waterline on which such length is measured; and “after perpendicular” means the perpendicular taken at the after end of such length;

“freeing port area (A)” means the sum of the areas of the openings of freeing ports on each side of the ship for each well;

“height” in relation to a superstructure means the least vertical height measured at side from the top of the superstructure deck beams to the top of the freeboard deck beams; and the “standard height” of a superstructure means the height ascertained in accordance with the provisions of paragraph 9 of Schedule 3;

“Position 1” or “Position 2” means those positions in which structure, openings or fittings are situated:
   (a) in the case of Position 1, upon exposed freeboard and raised quarter decks, and upon exposed superstructure decks situated forward of a point a quarter of the ship's length from the forward perpendicular; and
   (b) in the case of Position 2, upon exposed superstructure decks situated abaft a quarter of the ship's length from the forward perpendicular;
“Summer load waterline” means the waterline which corresponds to the Summer load line of the ship;

“superstructure” means a decked structure (including a raised quarter deck) situated on the freeboard deck which either extends from side to side of the ship or is such that its side plating is not inboard of the shell plating by more than 4 per cent of the breadth of the ship; and where the freeboard deck consists of a lower deck as described in sub-paragraph (b) of the definition of “freeboard deck”, includes that part of the hull which extends above the freeboard deck;

“superstructure deck” means a deck forming the top of a superstructure;

“Type ‘A’ ship” means a ship which:

1. (a) is designed to carry only liquid cargoes in bulk;
   (b) has a high integrity of the exposed deck with only small access openings to cargo compartments, closed by watertight gasketed covers of steel or equivalent material; and
   (c) has low permeability of loaded cargo compartments.

2. A type ‘A’ ship if over 150 metres in length to which a freeboard less than type ‘B’ has been assigned, when loaded in accordance with paragraph (4), shall be able to withstand the flooding of any compartment or compartments, with an assumed permeability of 0.95, consequent upon the damage assumptions specified in paragraph (5), and shall remain afloat in a satisfactory condition of equilibrium as specified in paragraph (6) or (7) as the case requires. In such a ship the machinery space shall be treated as a floodable compartment, but with a permeability of 0.85. Except that in the case of ships constructed before 3rd February 2000 this requirement shall only apply to such ships of over 225 metres in length.

3. A type ‘A’ ship shall be assigned a freeboard not less than that based on table A of Schedule 4.

4. In the case of ships constructed on or after 3rd February 2000 the initial condition of loading before flooding as required in paragraph (2) shall be determined as follows:
   (a) The ship is loaded to its summer load waterline on an imaginary even keel.
   (b) When calculating the vertical centre of gravity, the following principles apply:
      (i) Homogeneous cargo is carried.
      (ii) All cargo compartments, except those referred to under (iii), but including compartments intended to be partially

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1 Definition of a Type A ship amended by SD736/01
filled, shall be considered fully loaded except that in the case of fluid cargoes each compartment shall be treated as 98% full.

(iii) If the ship is intended to operate at its summer load waterline with empty compartments, such compartments shall be considered empty provided the height of the centre of gravity so calculated is not less than as calculated under (ii).

(iv) 50% of the individual capacity of all tanks and spaces fitted to contain consumable liquids and stores is allowed for. It shall be assumed that for each type of liquid, at least one transverse pair or single centreline tank has maximum free surface, and the tank or combination of tanks to be taken into account shall be those where the effect of free surfaces is the greatest; in each tank the centre of gravity of the contents shall be taken at the centre of the volume of the tank. The remaining tanks shall be assumed either completely empty or completely filled, and the distribution of consumable liquids between these tanks shall be effected so as to obtain the greatest possible height above the keel for the centre of gravity.

(v) At an angle of keel of not more than 5° in each compartment containing liquids, as prescribed in (ii) except that in the case of compartments containing consumable fluids, as prescribed in (iv), the maximum free surface effect shall be taken into account. Alternatively, the actual free surface effects may be used, provided the methods of calculation are acceptable to the Department.

(vi) Weights shall be calculated on the basis of the following values for specific gravities:

- salt water: 1.025
- fresh water: 1.000
- oil fuel: 0.950
- diesel fuel: 0.900
- lubricating oil: 0.900

(5) The principles regarding the character of assumed damage as required in paragraph (2) shall apply as follows:

(a) The vertical extent of damage in all cases is assumed to be from the base line upwards without limit.

(b) The transverse extent of damage is equal to B/5 or 11.5 metres, whichever is the lesser, measured inboard from the side of the ship perpendicularly to the centreline at the level of the summer waterline.
load waterline.

(c) If damage of a lesser extent than specified in subparagraphs (a) and (b) results in a more severe condition, such lesser extent shall be assumed.

(d) Except where otherwise required by these regulations, the flooding shall be confined to a single compartment between adjacent transverse bulkheads provided the inner longitudinal boundary of the compartment is not in a position within the transverse extent of the assumed damage. Transverse boundary bulkheads of wing tanks which do not extend over the full breadth of the ship shall be assumed not to be damaged, provided they extend beyond the transverse extent of assumed damage described in subparagraph (b). If in a transverse bulkhead there are steps or recesses of not more than 3 metres in length located within the transverse extent of assumed damage as prescribed in subparagraph (b), such transverse bulkhead may be considered intact and the adjacent compartment may be flooded singly. If, however, within the transverse extent of assumed damage there is a step or recess of more than 3 metres in length in a transverse bulkhead, the two compartments adjacent to this bulkhead shall be considered as flooded. The step formed by the afterpeak tank top shall not be regarded as a step for the purpose of these regulations.

(e) Where a main transverse bulkhead is located within the transverse extent of assumed damage and is stepped in way of the double bottom or side tank by more than 3 metres, the double bottom or side tanks adjacent to the stepped portion of the main transverse bulkhead shall be considered as flooded simultaneously. This provision is applicable even where such openings are fitted with closing appliances, except in the case of sluice valves fitted in bulkheads between tanks and where the valves are controlled from the deck. Manhole covers with closely spaced bolts are considered equivalent to the unpierced bulkhead except in the case of openings in topside tanks making the topside tanks common to the holds.

(f) Where the flooding of any two adjacent fore and aft compartments is envisaged main transverse watertight bulkheads shall be spaced at least $1/3L^{2/3}$ or 14.5 metres, whichever is the lesser, in order to be considered effective. Where transverse bulkheads are spaced at a lesser distance, one or more of these bulkheads shall be assumed as non-existent in order to achieve the minimum spacing between bulkheads.

(6) In the case of ships constructed on or after 3rd February 2000 the condition of equilibrium after flooding referred to in paragraph (2) shall be regarded as satisfactory provided:

(a) The final waterline after flooding, taking into account sinkage,
heel and trim, is below the lower edge of any openings through which progressive down flooding may take place. Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers, and may exclude those openings closed by means of manhole covers and flush scuttles, cargo hatch covers, remotely operated sliding watertight doors, and sidescuttles of the non opening type. However, in the case of doors separating a main machinery space from a steering compartment, watertight doors may be of a hinged, quick acting type kept closed at sea, whilst not in use, provided also that the lower sill of such doors is above the summer load waterline.

(b) If pipes, ducts or tunnels are situated within the assumed extent of damage penetration as defined in paragraph (5)(b), arrangements shall be made so that progressive flooding cannot thereby extend to compartments other than those assumed to be floodable in the calculation for each case of damage.

c) The angle of heel due to unsymmetrical flooding does not exceed 15°. If no part of the deck is immersed, an angle of heel up to 17° may be accepted.

d) The metacentric height in the flooded condition is positive.

e) When any part of a deck outside the compartment assumed flooded in a particular case of damage is immersed, or in any case where the margin of stability in a flooded condition may be considered doubtful, the residual stability is to be investigated. It may be regarded as sufficient if the righting lever curve has a minimum range of 20° beyond the position of equilibrium with a maximum righting lever of at least 0.1 metres within this range. The area under the righting lever curve within this range shall be not less than 0.0175 metre radians. The Department shall give consideration to the potential hazard presented by protected or unprotected openings which may become temporarily immersed within the range of residual stability.

f) The Department is satisfied that the stability is sufficient during intermediate stages of flooding.

(7) In the case of ships constructed before 3rd February 2000 the condition of equilibrium after flooding referred to in paragraph (2) shall be regarded as satisfactory provided:

(a) the final water line after the flooding is below the top of any ventilator coaming, the lower edge of any air pipe opening, the upper edge of the sill of any access opening fitted with a weathertight door, and the lower edge of any other opening through which progressive flooding may take place;

(b) the angle of heel due to unsymmetrical flooding does not exceed 15 degrees or, if no part of the deck is immersed, an angle of heel of up to 17 degrees may be accepted;
(c) the metacentric height calculated using the constant displacement method has a positive value in the upright condition after flooding;

(d) the ship has adequate residual stability; and

(e) the ship has sufficient stability during intermediate stages of flooding to the satisfaction of the Department.

“Type ‘B’ ship” means all ships which do not come within the provisions, regarding Type ‘A’ ships;

“unattended machinery space” means a machinery space which during the normal operation of the ship at sea is unmanned for any period, and “manned machinery space” means a machinery space other than an unattended machinery space;

“weathertight” in relation to any part of a ship other than a door in a bulkhead means that water will not penetrate it and so enter the hull of the ship in the worst sea and weather conditions likely to been encountered by the ship in service; and in relation to a door in a bulkhead it means a door which:

(a) is constructed of steel or other equivalent material, is permanently and strongly attached to the bulkhead, and is framed, stiffened and fitted so that the whole structure in which it is set is of equivalent strength to the unpierced bulkhead;

(b) is closed by means of gaskets, clamping devices or other equivalent means permanently attached to the bulkhead or to the door itself;

(c) when closed, is weathertight as above defined; and

(d) it can be operated from either side of the bulkhead.
PART I - SHIPS IN GENERAL

Structural strength and stability

2. (1) For the purposes of freeboard computation, ships shall be divided into type ‘A’ and type ‘B’.

(2) The construction of the ship shall be such that its general structural strength is sufficient for the freeboards assigned.

(3) The design and construction of the ship shall be such as to ensure that its stability in all probable loading conditions shall be sufficient for the freeboards assigned, and for this purpose due consideration shall be given to the intended service of the ship and to the following criteria -

(a) The area under the curve of righting levers (GZ curve) shall not be less than:
   (i) 0.055 metre-radians up to an angle of 30 degrees;
   (ii) 0.09 metre-radians up to an angle of 40 degrees or the angle at which the lower edge of any openings in the hull, superstructures or deckhouses which cannot be closed weathertight, are immersed if that angle is less; and
   (iii) 0.03 metre-radians between the angles of heel of 30 degrees and 40 degrees or such lesser angle as is referred to in sub-paragraph (ii).

(b) The righting lever (GZ) shall be at least 0.20 metres at an angle of heel equal to or greater than 30 degrees.

(c) The maximum righting lever shall occur at an angle of heel not less than 30 degrees.

(d) The initial transverse metacentric height shall not be less than 0.15 metres. In the case of a ship carrying a timber deck cargo which complies with subparagraph (a) by taking into account the volume of timber deck cargo, the initial transverse metacentric height shall not be less than 0.05 metres.

(4) To determine whether the ship complies with the requirements of subparagraph (3) the ship shall, unless otherwise permitted, be subject to an inclining test which shall be carried out in the presence of a surveyor appointed by the Department or a surveyor appointed by the Assigning Authority.

Superstructure end bulkheads

3. Bulkheads at exposed ends of enclosed superstructures shall be of efficient construction. The height of any sill in an access opening in such a bulkhead shall, except where otherwise stated, be at least 380 millimetres above the deck.
Hatchways: general

4. (1) The provisions of this paragraph and of paragraphs 5 and 6 apply to all hatchways in Position 1 or in Position 2 except where otherwise stated.

(2) Subject to sub-paragraph (3), the construction and the means for securing the weathertightness of a hatchway shall:

(a) in the case of a hatchway closed by a portable cover and secured weathertight by tarpaulins and battening devices, comply with the requirements of paragraph 5; and

(b) in the case of a hatchway closed by a weathertight cover of steel or other equivalent material fitted with gaskets and clamping devices, comply with the requirements of paragraph 6.

(3) Every hatchway located in an exposed position on a deck above a superstructure deck and leading to a space below shall be of such a construction and be fitted with such means as will secure the weathertightness of the hatchway, having regard to its position.

Hatchways closed by portable covers and secured weathertight by tarpaulins and battening devices.

Coamings

5. (1) Every hatchway shall have a coaming of substantial construction. The coaming shall be constructed of mild steel but may be constructed of other material provided that the strength and stiffness of the coaming are equivalent to those of a coaming of mild steel. The height of the coaming above the deck shall be at least:

(a) 600 millimetres, if the hatchway is in Position 1;

(b) 450 millimetres, if the hatchway is in Position 2.

Covers

(2) (a) The width of every bearing surface for a hatchway cover shall be at least 65 millimetres.

(b) In the case of a cover made of wood:

(i) the finished thickness of the cover shall be at least 60 millimetres in association with a span of not more than 1.5 metres, and the thickness of covers for larger spans shall be increased in the ratio of 60 millimetres in a span of 1.5 metres;

(ii) the ends of the cover shall be protected by galvanised steel bands efficiently secured.
(c) In the case of a cover made of mild steel:

(i) the strength of the cover shall withstand the assumed load given in Table 1, and the product of the maximum stress thus calculated and the factor 4.25 shall not exceed the minimum ultimate strength of the material.

(ii) the cover shall be so designed as to limit the deflection to not more than 0.0028 times the span under the assumed load in Table 1 appropriate to the hatchway cover.

(d) In the case of a cover made neither of mild steel nor wood the strength and stiffness of the cover shall be equivalent to those of a cover of mild steel.

**Portable beams**

(3) (a) Where portable beams for supporting hatchway covers are made of mild steel, their strength shall be such as to withstand the assumed load given in Table 1, and the product of the maximum stress thus calculated and the factor 5 shall not exceed the minimum ultimate strength of the material.

(b) Such beams shall be so designed as to limit the deflection to not more than 0.0022 times the span under the assumed load in Table 1 appropriate to the beam.

(c) In the case of portable beams not made of mild steel, the strength and stiffness of the beams shall be equivalent to those of beams of mild steel.

**Pontoon covers**

(4) (a) Where pontoon covers of mild steel are used in place of portable beams and covers, their strength shall be such as to withstand the assumed load given in Table 1, and the product of the maximum stress thus calculated and the factor 5 shall not exceed the minimum ultimate strength of the material.
(b) Such pontoon covers shall be so designed as to limit the deflection to not more than 0.0022 times the span under the assumed load in Table 1 appropriate to the pontoon cover.

(c) Mild steel plating forming the tops of such covers shall not be less in thickness than 1 per cent of the spacing of the stiffeners or 6 millimetres, whichever is the greater.

(d) In the case of pontoon covers not made of mild steel, the strength and stiffness of the cover shall be equivalent to those of a cover of mild steel.

**Carriers or sockets**

(5) Carriers or sockets for portable beams shall be of substantial construction and provide efficient means for the fitting and securing of the beams. Where rolling types of beams are used the arrangements shall ensure that the beams remain properly in position when the hatchway is closed.

**Cleats**

(6) Cleats shall be set to fit the taper of the wedges. They shall be at least 65 millimetres wide and spaced not more than 600 millimetres, centre to centre. The end cleats along each side or end of the hatchway shall not be more than 150 millimetres from the hatch corners.

**Battens and wedges**

(7) Battens and wedges shall be efficient for their purpose and in good condition. Wedges shall be of tough wood or equivalent material cut to a taper of not more than 1 in 6 and shall not be less than 13 millimetres thick at the toes.

**Tarpaulins**

(8) At least two layers of tarpaulins shall be provided for every hatchway. They shall be waterproof, in good condition, and have satisfactory strength and quality.

**Security of hatchway covers**

(9) (a) Except as otherwise provided in subparagraph (b), steel bars shall be provided for every hatchway to ensure that each section of hatchway covers can be efficiently and independently secured after the tarpaulins have been battened down and that hatchway covers of more than 1.5 metres in length are secured by at least two such bars.

(b) Bars of material other than steel, or means of securing hatchway covers otherwise than by bars, may be used provided:

(i) in the case of the former the strength and stiffness of the bars used are equivalent to those of steel bars;
(ii) in either case the degree of security so achieved is not less than that would be achieved by the use of steel bars.

**Hatchways closed by weathertight covers of steel or equivalent material fitted with gaskets and clamping devices**

**Coamings**

6. (1) (a) Except as otherwise provided in subparagraph (b), every hatchway shall have a coaming of substantial construction the height of which above the deck shall be at least:

(i) 600 millimetres, if the hatchway is in Position 1;

(ii) 450 millimetres, if the hatchway is in Position 2.

(b) A hatchway may have a coaming of less than the height applicable under the provisions of sub-paragraph (a), or in exceptional circumstances a coaming may be dispensed with altogether, provided that:

(i) the safety of the ship will not be impaired in the worst sea and weather conditions likely to be encountered by the ship in service;

(ii) when any coaming is fitted it shall be of substantial construction.

**Weathertight covers**

(2) (a) The strength of every cover of mild steel shall be such as to withstand the assumed load given in Table 1, and the product of the maximum stress thus calculated and the factor 4.25 shall not exceed the minimum ultimate strength of the material. Every such cover shall be so designed as to limit the deflection under such a load to not more than 0.0028 times the span.

(b) Every such cover made of material other than mild steel shall have strength and stiffness equivalent to the required in the case of a cover of mild steel.

(a) Every cover shall be fitted with efficient means by which it can be secured and made weathertight.

(d) Mild steel plating forming the top of any cover shall be not less in thickness than one per cent of the spacing of the stiffeners or 6 millimetres whichever is the greater.
**Machinery space openings**

7. (1) Every machinery space opening situated in Position 1 or Position 2 shall be efficiently framed and enclosed by a steel casing of substantial strength, account being taken of the extent, if any, to which the casing is protected by other structures.

    (2) Every doorway in a casing referred to in the subparagraph (1) shall be fitted with a steel watertight door having a sill the height of which shall be at least -

        (a) 600 millimetres above the deck, if the opening is in Position 1;

        (b) 380 millimetres above the deck, if the opening is in Position 2.

    (3) Every opening in such a casing other than a doorway shall be provided with a permanently attached cover of steel fitted with efficient means by which it can be secured and maintained weathertight and, except in the case of a cover consisting of a plate secured by bolts, is capable of being operated from either side of the opening.

    (4) Every fiddley, funnel or machinery space ventilator situated in an exposed position on the freeboard deck or on a superstructure deck shall have a coaming of such a height above the deck as will provide adequate protection having regard to its position.

**Miscellaneous openings in freeboard and superstructure decks**

8. (1) Every manhole and flush scuttle in Position 1 or Position 2 shall be provided with a substantial cover fitted with efficient means to secure and maintain it watertight. Unless secured by closely spaced bolts, every such cover shall be permanently attached by a chain or equivalent means so as to be available for immediate use at all times.

    (2) Every opening in a deck other than a hatchway, machinery space opening, manhole or flush scuttle shall:

        (a) if situated in the freeboard deck, be protected either by an enclosed superstructure or by a deckhouse or companionway equivalent in strength and weathertightness to an enclosed superstructure;

        (b) if situated in an exposed position:

            (i) in a deck over an enclosed superstructure and giving access to space within that superstructure; or

            (ii) on top of a deckhouse on the freeboard deck and giving access to space below that deck;

            be protected by an efficient deckhouse or companionway fitted with weathertight doors;

        (c) if situated in an exposed position in a deck above the deck over an enclosed superstructure and giving access to space within that superstructure, be protected either in accordance with the requirements
of subparagraph (b) or to such lesser extent as may be adequate having regard to its position.

(3) Every door in a companionway, deckhouse or enclosed superstructure referred to in subparagraph 2(a) or (b) shall have a sill the height of which shall be at least:

(a) 600 millimetres, if the structure is in Position 1;

(b) 380 millimetres, if the structure is in Position 2.

Ventilators

9. (1) (a) Except as otherwise provided in sub-paragraph (b), every ventilator in Position 1 or Position 2 leading to spaces below the freeboard deck or below the deck of an enclosed superstructure shall have a coaming of steel or equivalent material, substantially constructed and efficiently connected to the deck. The height of such coamings shall be at least:

(i) 900 millimetres above the deck, if the ventilator is in Position 1;

(ii) 760 millimetres above the deck, if the ventilator is in Position 2.

(b) Where the coaming for any ventilator referred to in sub-paragraph (a) is situated in a position in which it will be especially exposed to weather and sea the height of the coaming shall be increased by such an amount as is necessary to provide adequate protection having regard to its position.

(2) If the coaming of any ventilator referred to in the sub-paragraph (1) exceeds 900 millimetres in height above the deck it shall be efficiently supported by stays, brackets or other means.

(3) Every ventilator in Position 1 or Position 2 which passes through a superstructure, other than an enclosed superstructure, shall have a coaming of steel or equivalent material at the freeboard deck substantially constructed and efficiently connected to that deck and at least 900 millimetres in height above that deck.

(4) Subject to sub-paragraph (5), every ventilator opening in Position 1 or Position 2 shall be provided with an efficient appliance by which it can be closed and secured weathertight. Every such closing appliance provided on board a ship of not more than 100 metres in length shall be permanently attached and, in the case of any other ship, shall either be so attached or be conveniently stowed near to the ventilator for which it is provided.

(5) (a) A ventilator in Position 1 the coaming of which exceeds 4.5 metres in height above the deck and a ventilator in Position 2 the coaming of which exceeds 2.3 metres in height above the deck, need not be fitted with a closing appliance unless:

(i) it serves the machinery spaces or a cargo compartment; or

(ii) the fitting of such an appliance is necessary in order to provide adequate protection.
A ventilator in Position 1 or Position 2 leading to a battery room shall not be fitted with a closing appliance.

**Air pipes**

10. (1) The exposed parts of any air pipe leading to a ballast or other tank and extending above the freeboard deck or a superstructure deck shall be of substantial construction.

(2) The exposed opening of any such air pipe shall be fitted with efficient means of closing the opening weathertight, which shall be permanently attached so as to be ready for immediate use.

(3) Subject to paragraph (4), the height above the deck of the exposed opening of any such air pipe shall be:

- at least 760 millimetres, if that deck is the freeboard deck;
- at least 450 millimetres, if that deck is a superstructure deck or, if the superstructure is of less than standard height, such height as is necessary to adequately compensate for the lower height of the superstructure.

(4) The heights given in subparagraph (3) may be reduced if:

- the working of the ship would be unreasonably impaired if those heights were adhered to; and
- the closing arrangements will ensure that the lower height is adequately compensated for.

**Cargo ports and similar openings**

11. (1) Cargo ports and similar openings in the ship's side below the freeboard deck or in the sides or ends of superstructures which form part of the shell of the ship shall be compatible with the design of the ship and shall not exceed in number those necessary for the proper working of the ship.

(2) Every such cargo port and opening shall be provided with a door or doors so fitted and designed as to ensure watertightness and structural integrity commensurate with the surrounding shell plating.

(3) Unless the Assigning Authority permits, the lower edge of any such cargo port or opening shall not be so situated that it is below a line drawn parallel to the freeboard deck at side having as its lowest point the upper edge of the uppermost load line.

**Scuppers, inlets and discharges**

12. (1) Every discharge led through the shell of a ship either:

- from spaces below the freeboard deck; or
(b) from within any enclosed superstructure, or from within any deckhouse on the freeboard deck which is fitted with weathertight doors;

shall be fitted in accordance with paragraphs (2) and (3) with the means for preventing water from passing inboard.

(2) Subject to subparagraph (3), this shall consist of a single automatic non-return valve fitted at the shell of the ship and having positive means of closure from a position or positions above the freeboard deck. Such positions shall be readily accessible at all times under service conditions and shall be provided with an indicator showing whether the valve is open or closed.

(3) (a) If the vertical distance from the Summer load waterline to the inboard end of a discharge pipe exceeds 0.01(L) two automatic non-return valves having no positive means of closure may be fitted. One valve shall be situated as close to the ship's shell as practicable and be connected to it and the inboard valve shall be so situated that at all times under service conditions it will be readily accessible for examination.

(b) If the vertical distance referred to in sub-paragraph (a) exceeds 0.02(L) the Assigning Authority may permit a single automatic non-return valve having no positive means of closure, to be fitted. This valve shall be situated as close to the ship's shell as practicable and substantially connected to it.

(4) In ships constructed on or after 3rd February 2000 scuppers led through the shell from enclosed superstructures used for the carriage of cargo shall be permitted only where the edge of the freeboard deck is not immersed when the ship heels 5° either way. In other cases the drainage shall be led inboard in accordance with the requirements of the International Convention for the Safety of Life at Sea in force.

(5) (a) The controls of any valve in a manned machinery space and serving a main or auxiliary sea inlet or discharge or bilge injection system shall be so sited as to be readily accessible for examination at all times under service conditions.

(b) The controls of any valve in an unattended machinery space and serving a sea inlet or discharge or bilge injection system shall be so sited as to be readily accessible at all times under service conditions, particular attention being paid in this regard to possible delay in reaching or operating the controls. In addition, the machinery space in which the valve is situated shall be equipped with an efficient warning device to give warning at suitable control positions of any entry of water into the machinery space other than water resulting from the normal operation of machinery.

(c) Valves referred to in sub-paragraph (a) and (b) shall be equipped with an indicator showing whether the valve is open or closed.

(6) Subject to paragraph (7) every scupper and discharge pipe originating at any level and penetrating the shell of the ship either:
shall be equipped with an automatic non-return valve situated as close to the ship’s shell as practicable and substantially connected thereto.

(7) Subparagraph (6) shall not apply:

(a) where the scupper or discharge pipe is fitted with the means for preventing water from passing inboard in accordance with the provisions of paragraphs (1) to (3); or

(b) where the piping of the scupper or discharge pipe is of substantial thickness.

(8) Every scupper leading from a superstructure other than an enclosed superstructure or from a deckhouse not fitted with weathertight doors, shall be led overboard.

(9) All shell fittings and the valves required by this paragraph shall be of steel, bronze or other suitable ductile material, and all pipes referred to in this paragraph shall be of steel or equivalent material.

Side scuttles

13. (1) Every side scuttle to a space below the freeboard deck or to a space within an enclosed superstructure shall be fitted with a hinged inside deadlight so that it can be effectively closed and secured watertight.

(2) No side scuttle shall be fitted in a position such that its sill will be below a line drawn parallel to the freeboard deck at side and having its lowest point:

(a) 2.5 per cent. of the breadth of the ship above the Summer load line (or Summer Timber load line, if assigned); or

(b) 500 millimetres above the Summer load line (or Summer Timber load line, if assigned);

whichever is the greater distance.

(3) Every side scuttle, glass and deadlight (if fitted) shall be of substantial construction and be efficiently fitted.

Freeing ports and arrangements

14. (1) Where bulwarks on the weather portions of the freeboard deck, a raised quarter deck or a superstructure deck form wells, efficient provision shall be made for rapidly freeing the decks of water in bulk and for draining them, and in particular the requirements set out in paragraphs (2) to (9) shall be complied with.

(2) Except as otherwise provided in paragraphs (3) and (4), the freeing port area (A) for each well shall:
(a) if the well is on the freeboard deck or on a raised quarter deck, be not less than the area ascertained in accordance with paragraph (3); and
(b) if the well is on a superstructure deck, other than a raised quarter deck be not less than one half of the area given by paragraph (3).

(3) (a) Subject to sub-paragraph (c), where the length (l) of a bulwark in the well is 20 metres or less:

\[ A = 0.7 + 0.035 \times l \] (square metres); and

(b) Subject to sub-paragraph (c), where (l) exceeds 20 metres,

\[ A = 0.07 \times l \] (square metres).

The length (l) need in no case be greater than 0.7(L).

(c) If the bulwark is more than 1.2 metres in average height the required area shall be increased by 0.004 square metres per metre of length of well for each 0.1 metre difference in height. If the bulwark is less than 0.9 metre in average height, the required area may be decreased by 0.004 square metre per metre of length of well for each 0.1 metre difference in height.

(4) (a) If the deck on which the well is situated has no sheer, the freeing port area shall be the area ascertained in accordance with paragraph (3) increased by 50 per cent.

(b) If the deck on which the well is situated has sheer less than standard sheer, the freeing port area shall be the area ascertained in accordance with paragraph (3) increased by a percentage to be obtained by linear interpolation.

(c) If the deck on which the well is situated has sheer, two thirds of the freeing port area shall be situated in the half of the well which is nearest to the lowest point of the sheer.

(5) The lower edge of every freeing port shall be as near to the deck as practicable.

(6) Every freeing port more than 230 millimetres in depth shall be protected by rails or bars so fixed that the distance between the lowest rail or bar and the lower edge of the freeing port does not exceed 230 millimetres.

(7) Every freeing port fitted with a shutter shall have sufficient clearance to prevent jamming of the shutter, and the shutter hinges shall have pins or bearings of efficient non-corrodible material.

(8) Efficient provision shall be made for freeing water from any superstructure other than an enclosed superstructure.

(9) Where a ship fitted with a trunk does not comply with the requirements of paragraph 10(2)(b)(vi) of Schedule 3 - Freeboards, or where continuous or substantially continuous hatchway side coamings are fitted between detached superstructures, the minimum area of the freeing port openings shall be calculated from the following table:
<table>
<thead>
<tr>
<th>Breadth of Hatchway or Trunk in relation to the breadth of the ship</th>
<th>Area of freeing ports in relation to the total area of the bulwarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% or less</td>
<td>20%</td>
</tr>
<tr>
<td>75% or more</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Protection of the crew**

15. (1) Every deckhouse used for the accommodation of members of the crew shall be of efficient construction.

(2) Except as otherwise provided in paragraph (3), all exposed parts of the freeboard deck and of every superstructure deck shall be fitted at their perimeter with efficient guard rails or guard wires and stanchions complying with the requirements of paragraph (4), or with bulwarks. In either case this protection shall be at least 1 metre in height from the deck.

(3) The height specified in paragraph (2) may be reduced at a particular point if:
   (a) the normal working of the ship would be unreasonably impeded; and
   (b) adequate protection is provided at that point.

(4) Guard rails or guard wires fitted in accordance with sub-paragraph (2) shall consist of courses of rails or wires supported by stanchions efficiently secured to the deck. The opening between the lowest course of the rails or wires and the deck shall not exceed 230 millimetres in height and no opening above that course of rails or wires shall exceed 380 millimetres in height. Where the ship has rounded gunwales the stanchions shall be secured at the perimeter of the flat of the deck.

(5) Gangways, underdeck passages and all other means of access used by members of the crew to pass between their quarters, the machinery space and any other space in the ship in the course of their necessary work shall be so designed and constructed, and be fitted, where necessary, with life lines, access ladders, guard rails, guard wires, hand rails or other safety fittings, as to afford effective protection for the crew.

(6) Deck cargo carried on any ship shall be so stowed that any opening which is in way of the cargo and which gives access to and from the crew’s quarters, the machinery space and all other parts used in the necessary work of the ship, can be properly closed and secured against the admission of water. Effective protection for the crew in the form of guard rails or life lines shall be provided above the deck cargo if there is no convenient passage on or below the deck of the ship. In addition a lifeline, a wire rope set up taut with a stretching screw or equivalent arrangement acceptable to the Department, shall be provided as near as practicable to the centreline of the ship. The stanchion supports to all guard-rails and lifelines shall be so spaced 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.

(7) The requirements of this paragraph shall not apply in the case of unmanned barges.
PART II

SPECIAL REQUIREMENTS APPLICABLE TO TYPE ‘A’ SHIPS

Application

16. The requirements of paragraphs 17 to 20 apply only to Type ‘A’ ships.

Machinery casings

17. (1) Subject to paragraph (2), every casing enclosing a machinery space opening in Position 1 or Position 2 shall be protected by either:

   (a) an enclosed poop or bridge of at least standard height; or

   (b) a deckhouse of equal height and equivalent strength and weathertightness.

(2) Paragraph (1) shall not apply and the casing need not be protected if:

   (a) there is no opening in the casing which gives direct access from the freeboard deck to the machinery space; or

   (b) the only opening in the casing has a steel weathertight door and leads to a space or passage way which is as strongly constructed as the casing and is separated from the stairway to the machinery space by a second steel weather tight door.

Gangway and access

18. (1) References in this paragraph to a poop or detached bridge apply also to a deckhouse fitted in lieu of and serving the purpose of a poop or detached bridge.

(2) Access between the poop and the detached bridge shall be by means of either:

   (a) a permanent and efficiently constructed gangway of substantial strength. The gangway shall be at the level of the superstructure deck and have a platform at least 1 metre in width and of non-slip material. Efficient means of access from gangway level to the deck shall be provided at each terminal point. The platform shall be fitted on each side throughout its length with guard rails or guard wires supported by stanchions. Such rails or wires shall consist of not less than 3 courses, the lowest being not more than 230 millimetres, and the uppermost being at least 1 metre above the platform, and no intermediate opening being more than 380 millimetre metres in height. Stanchions shall be at intervals of not more than 1.5 metres; or

   (b) an underdeck passage connecting and providing unobstructed access between those structures and complying with the following requirements

      (i) the passage and all its fittings shall be oil and gas tight;
the passage shall be well lighted, and be fitted with efficient gas detection and ventilation systems;

it shall be situated immediately below the freeboard deck;

its distance from the shell plating shall at no point throughout its length be less than one fifth of the breadth of the ship. Alternatively two underdeck passages may be provided one to port and one to starboard each of which shall comply with the requirements of subparagraphs (i), (ii) and (iii);

means of exit from the passage to the freeboard deck shall be:

so arranged as to be as near as practicable to the working areas to be used the crew;

in no case be more than 90 metres apart; and

fitted with efficient means of closing which are capable of quick release and operable from either side;

openings in the freeboard deck corresponding to the means of exit referred to in sub-paragraph (v) shall be protected in accordance with the requirements of paragraph 8(2)(a).

equivalent means of access.

In adverse weather conditions, where the crew in the course of their duties may be required to go to working areas forward of the detached bridge, or forward of the poop in cases where there is no detached bridge, access shall be by means of:

a gangway complying with the requirements of subparagraph (2)(a);

an underdeck passage complying with the requirements of sub-paragraph (2)(b); or

a walkway complying with the following requirements:

be not less than 1 metre in width and be situated on or as near as practicable to the centre line of the ship;

if obstructed by pipes or other fittings of a permanent nature, be provided with efficient means of passage over such obstruction;

be fitted on each side and throughout its length with guard rails or guard wires complying with the requirements in subparagraph (2)(a);

have openings in these guard rails or guard wires which give access to and from the freeboard deck to the working areas used
by the crew. These openings shall be on alternate sides of the walkway and be situated not more than 90 metres apart on either side;

(v) if the length of exposed deck to be traversed by the crew exceeds 70 metres, shelters of substantial construction shall be set in way of the walkway at intervals not exceeding 45 metres, every such shelter being capable of accommodating at least one person and be so constructed as to afford weather protection on the forward, port and starboard sides.

(4) The requirements of this paragraph shall not apply in the case of unmanned barges.

Hatchway covers

19. The covers of hatchways in exposed positions on the freeboard deck, on a forecastle deck or on the top of an expansion trunk shall be of steel, of efficient construction, and watertight when secured.

Freeing arrangements

20. (1) All exposed parts of the freeboard deck and superstructure decks shall be fitted at their perimeter for at least half their length with guard rails or guard wires in lieu of bulwarks or with other equally effective freeing arrangements. Such guard rails or guard wires shall comply with the requirements set out in relation to such rails or wires in paragraph 18(2)(a).

(2) The upper edge of the sheer strake shall be as low as practicable.

(3) If superstructures of the ship are connected by a trunk, the exposed parts of the freeboard deck in way of the trunk shall be fitted at their perimeter throughout their length with guard rails or guard wires complying with the requirements set out in paragraph 18(2)(a).

(4) If the ship is so constructed that notwithstanding the provision of freeing ports and arrangements it will be particularly subjected under service conditions to the building up of quantities of water on the freeboard deck efficient breakwaters shall be fitted in suitable positions on that deck.
PART III
SPECIAL REQUIREMENTS APPLICABLE TO CERTAIN TYPE ‘B’ SHIPS

Application
21. The requirements of paragraphs 22 to 25 apply only to Type ‘B’ ships to be assigned a reduced freeboard under the provisions of paragraph 5(3) of Schedule 3.

Gangway and access
22. The ship shall comply with the requirements of either:
   (1) paragraph 18 as if it were a Type ‘A’ ship; or
   (2) paragraphs 23 and 24.

23. (1) References in this paragraph to a poop or detached bridge apply also to a deckhouse fitted in lieu of and serving the purpose of a poop or detached bridge.

   (2) Access between the poop and the detached bridge shall be by means of an efficiently constructed gangway of substantial strength fitted on or near the centre line of the ship. The gangway shall be at least 1 metre in width and shall be fitted on each side and throughout its length with guard rails or guard wires complying with the requirements as set out in paragraph 18(2)(a). If the length of the gangway exceeds 70 metres, shelters complying with the requirements set out paragraph 18(3)(c)(v) shall be provided in way of the gangway.

24. (1) In adverse weather conditions, where the crew in the course of their duties may be required to go to working areas forward of the detached bridge, or forward of the poop in cases where there is no detached bridge, access shall be by:
   (a) the means described in paragraph 18(3);
   (b) the means described in paragraph 23(2); or
   (c) equivalent means of access.

   (2) Where hatchway coamings are 600 millimetres or more in height, two walkways complying with the following requirements may be provided in lieu of subparagraph (1):
   (a) the walkways shall be efficiently constructed and of satisfactory strength;
   (b) the walkways shall each be at least 1 metre in width and be fitted on the freeboard deck alongside the outboard structure of the hatchway coamings, one to port and the other to starboard of the hatchways;
   (c) on the side outboard of the hatchways each walkway shall be fitted with guard rails or guard wire complying with the requirements set out in paragraph 18(2)(a).

Freeing arrangements
25. The ship shall comply with the requirements of paragraph 20(4).
PART IV
SPECIAL REQUIREMENTS APPLICABLE TO SHIPS
ASSIGNED TIMBER FREEBOARDS

Application and interpretation

26. (1) The requirements of paragraphs 27 to 29 apply only to ships assigned Timber freeboards.

(2) In this Schedule except where the context otherwise requires:

“deck cargo” means cargo carried in any uncovered space on the deck of a ship
“timber deck cargo” means deck cargo consisting of timber;
“weather deck” means the uppermost complete deck exposed to weather and sea, a deck which is stepped being taken to consist for this purpose of the lowest line of the deck and the continuation of that line parallel to the upper part of the deck.

Superstructures

27. (1) The ship shall have a forecastle of not less than the standard height of an enclosed superstructure and not less in length than 0.07 L.

(2) If the ship is less than 100 metres in length it shall be fitted aft with either:
(a) a poop of not less than standard height; or
(b) a raised quarter deck having either a deck house or a strong steel hood, so that the total height is not less than the standard height of an enclosed superstructure.

Double bottom tanks

28. Double bottom tanks fitted within the midship half length of the ship shall have satisfactory watertight longitudinal subdivision.

Bulwarks, guard rails and stanchions

29. The ship shall be fitted with:

(1) permanent bulwarks at least 1 metre in height which are specially stiffened on the upper edge and supported by strong bulwark stays attached to the deck, and provided with freeing ports complying with the requirements of paragraph 14(1) to (7); or

(2) efficient guard rails and stanchions at least 1 metre in height, of specially strong construction, and complying with the requirements of paragraph 15(4).
**Stowage**

**Siting, distribution and stowage of timber deck cargo**

30. (1) The cargo shall be distributed and stowed so:

(a) as to avoid excessive loading having regard to the strength of the deck and the supporting structure of the ship;

(b) as to ensure that the ship will retain adequate stability at all stages of the voyage having regard in particular to:

(i) the vertical distribution of the deck cargo;

(ii) the wind moments which can be expected on the voyage;

(iii) the losses of weight in the ship, including those due to the consumption of fuel and stores; and

(iv) possible increases of weight of the ship or deck cargo, including those due to the absorption of water and to icing.

(c) as not to impair the weathertight or watertight integrity of any part of the ship or its fittings or appliances, and to ensure the proper protection of ventilators and air pipes;

(d) that it shall be compactly stowed, lashed and secured and that its height above the deck, or any other part of the ship on which it is stowed will not interfere with the navigation or working of the ship;

(e) that steering arrangements shall be effectively protected from damage and, as far as is practicable, it will not interfere with or obstruct access to, the ship's steering arrangements, including emergency steering arrangements. Efficient means shall be provided for steering in the event of a breakdown in the main steering arrangements;

(f) that it is in accordance with paragraph 15(6).

**Securing of deck cargo**

(2) Deck cargo shall be so secured as to ensure, as far as practicable, that there will be no movements of that cargo relative to the ship in the worst sea and weather conditions which may normally be expected on the voyage; and lashings and all fittings used for their attachment shall be of adequate strength for that purpose.

**Maximum height of timber deck cargo**

(3) Timber deck cargo carried by a ship within a Winter seasonal area during the period specified as the Winter period shall be so stowed that at no point throughout its length does the height of the deck cargo above the level of the weather deck at side exceed one third of the extreme breadth of the ship.

**Access**
Where timber deck cargo occupies the whole or substantially the whole of the uncovered space on the deck of a ship, means of access for the crew between their quarters and the machinery spaces and other parts of the ship used in the working of the ship shall be provided in the form of a walkway fitted over the timber deck cargo and complying with the requirements of paragraph 15(6). In addition guard rails or life lines spaced not more than 350 millimetres apart vertically shall be provided on each side of the deck cargo to a height of at least 1 metre above the cargo.

**Uprights**

If the nature of the timber is such that uprights are necessary in order to comply with paragraphs (6) and (7), uprights shall be fitted which are of sufficient strength for the purpose. They shall be secured in position by angles or metal sockets of sufficient strength for the purpose or by equivalent means and shall be so spaced as to provide efficient support taking into account the nature and length of the timber, so however that the space between any two uprights fore and aft shall not exceed 3 metres.

**Stowage of timber deck cargo in relation to superstructures**

(6) (a) Timber deck cargo stowed in any well between superstructures shall be stowed as solidly as possible so as to extend over the entire available length of the well to a height not less than the standard height of a superstructure other than a raised quarter deck.

(b) Timber deck cargo stowed in a position having a limiting superstructure at the forward end but no such superstructure at the after end shall be stowed so as to extend over the entire available length between the superstructure and the after end of the aftermost hatchway, to the height and in the manner specified in sub-paragraph (a).

**Securing of Timber deck cargo**

(7) (a) Timber deck cargo shall be efficiently secured throughout its length by independent overall lashings spaced not more than 3 metres apart save as otherwise provided in paragraph (3). Eye plates for these lashings shall be efficiently attached to the sheer strake or to the deck stringer plate at intervals of not more than 3 metres. The distance from an end bulkhead of a superstructure to the first eye plate shall be not more than 2 metres. Where there is no bulkhead, eye plates and lashings shall be provided at distances of 0.6 metres and 1.5 metres from the ends of the timber deck cargo.

(b) Lashings shall be of not less than 19 millimetres close link chain or of flexible wire rope of equivalent strength, fitted with sliphooks and turnbuckles so positioned as to be accessible at all times. Wire rope lashings shall have a length of long link chain sufficient to permit the length of lashings to be regulated.

(c) When timber is in length less than 3.6 metres the spacing of the lashings shall be reduced or suitable provision made to suit the length of timber.
Interpretation

1. In this Schedule:

“block coefficient \((C_b)\)” means the product of:

\[
\frac{V}{LBd_1}
\]

where:

- \(V\) is the volume of the moulded displacement of the ship (excluding bossing) if the ship has a metal shell, and of displacement to the outer surface of the hull if the ship has a shell of any other material, displacement being taken in each case at a moulded draught of \(d_1\); and

- \(d_1\) is 85 per cent of the least moulded depth, provided that in no case shall the block coefficient \((C_b)\) be taken to be less than 0.68;

“depth for freeboard \((D)\)” means:

(a) except as otherwise stated in sub-paragraph (b), the moulded depth of the ship amidships plus the thickness of the freeboard deck stringer plate where fitted, plus, if the exposed freeboard deck is sheathed, the product of:

\[
\frac{T(L)-(S))}{(L)}
\]

where: \(T\) is the mean thickness of the exposed sheathing clear of deck openings;

(b) in a ship having a rounded gunwale with a radius greater than 4 per cent of the breadth of the ship or having topsides of unusual form, the depth calculated in accordance with sub-paragraph (a), would be the depth for freeboard purposes of a ship having a midship section with vertical topsides and with the same round of beam and the same area of topside section as that of the midship section of the actual ship;

“effective length \((E)\)” in relation to a superstructure means the effective length of the superstructure determined in accordance with the provisions of paragraph 9(3);

“flush deck ship” means a ship which has no superstructure on the freeboard deck;

“length \((S)\)” in relation to a superstructure means the length of the superstructure determined in accordance with the provisions of paragraph 9(2);

“salt water” means water having a relative density of 1.025;
“Summer draught” means the draught measured from:

(a) in the case of a wood or composite ship, the lower edge of the keel rabbet;

(b) if the form at the lower part of the midship section is of a hollow character, or if thick garboards are fitted, the point where the line of the flat of the bottom continued inwards cuts the side of the keel; and

(c) in any other case, the top of the keel
to the point which, when load lines and marks have been marked on the ship's side, will correspond to the centre of the ring of the load line mark;

“Summer Timber draught” means the draught measured from point (a), (b) or (c) described in the definition of the Summer draught to the point which when Timber load lines have been marked on the ship's side will correspond to the upper edge of the Summer Timber load line;

“tabular freeboard” means in the case of a Type ‘A’ ship the freeboard appropriate to the ship's length under Freeboard Table A set out in Schedule 4 and in the case of a Type ‘B’ ship the freeboard appropriate to the ship's length under Freeboard Table B in that Schedule.

Freeboards: general

2. (1) Except as otherwise provided in paragraph (2), the freeboards, other than Timber freeboards, to be assigned to a ship shall be determined in accordance with the provisions of Part I of this Schedule, and Timber freeboards to be assigned to a ship shall be determined in accordance with Part II.

(2) The freeboards to be assigned to:

(a) sailing ships;

(b) tugs;

(c) ships of wood or of composite construction or of other materials;

(d) ships with constructional features such as to render freeboards determined in accordance with paragraph (1) unreasonable or impracticable; and

(e) unmanned barges having on the freeboard deck only small access openings closed by watertight gasketed covers of steel;

shall be determined in accordance with the provisions of Part III of this Schedule.
PART I

FREEBOARDS OTHER THAN TIMBER FREEBOARDS

Determination of freeboards

3. (1) Subject to paragraph (3), the Summer freeboard shall be determined in accordance with the provisions of paragraphs 4 to 16.

(2) Subject to paragraphs (3) and (4), the Tropical freeboard shall be obtained by deducting from the Summer freeboard one forty-eighth (1/48th) of the Summer draught of the ship.

(3) The freeboard so obtained in paragraphs (1) and (2), but omitting any correction made in paragraph 8 for deck line, shall be not less than 50 millimetres except in the case of a ship with hatchways in Position 1 to which paragraph 5 of Schedule 2 applies but which do not have pontoon covers, in which case it shall be not less than 150 millimetres.

(4) The Winter freeboard shall be obtained by adding to the Summer freeboard one forty-eighth (1/48th) of the Summer draught of the ship.

(5) The Winter North Atlantic freeboard shall be obtained by adding to the Winter freeboard a distance of 50 millimetres.

(6) (a) Subject to sub-paragraph (b), the Fresh Water freeboard shall be obtained by deducting from the Summer freeboard the quantity:

\[
\frac{\Delta}{4T} \text{ millimetres}
\]

where: \( \Delta \) is the displacement in salt water in metric tons at the Summer load waterline, and

T represents metric tons per centimetre immersion in salt water at that waterline.

(b) In any case in which the displacement at that waterline cannot be ascertained the deduction shall be one forty-eighth (1/48th) of the Summer draught of the ship.

(7) The Tropical Fresh Water freeboard shall be obtained by deducting 1/48th of the Summer draught of the ship from the Fresh Water freeboard obtained in paragraph (6).

Summer freeboard: Type ‘A’ ships

4. The Summer freeboard assigned to a Type ‘A’ ship shall be determined as follows:

(1) There shall first be ascertained the ship's tabular freeboard in accordance with Table A of Schedule 4.
(2) If the block coefficient \( C_b \) of the ship exceeds 0.68 the tabular freeboard shall be multiplied by the factor:

\[
\frac{C_b + 0.68}{1.36}
\]

(3) Corrections in accordance with paragraphs 6 to 16 shall be applied to the freeboard obtained in accordance with subparagraphs (1) and (2).

(4) Subject to paragraph 3(3), the freeboard so corrected shall be the Summer freeboard assigned to the ship.

**Summer freeboard: Type ‘B’ ships**

5. The Summer freeboard to be assigned to a Type ‘B’ ship shall be determined as follows:

(1) There shall first be ascertained the ship's tabular freeboard in accordance with Table B of Schedule 4.

(2) (a) If the ship has hatchways in Position 1 the covers of which are either pontoon covers complying with the requirements of paragraph 5 (4) of Schedule 2 or covers which comply with paragraph 6(2) of that Schedule, the tabular freeboard may be corrected in accordance with such of the provisions of subparagraphs (3) to (7) as are applicable to the ship.

(b) If the ship has hatchways in Position 1 the covers of which comply with the requirements of paragraph 5 of Schedule 2 except those of subparagraph (4) of that paragraph, the tabular freeboard shall be corrected in accordance with the provisions of subparagraph (8).

(3) The tabular freeboard of a ship to which subparagraph (2)(a) applies and which exceeds 100 metres in length may be reduced by an amount not exceeding the maximum applicable under sub-paragraphs (4) and (5) if the Assigning Authority is satisfied that:

(a) the measures for the protection of the crew comply with the requirements of paragraph 15 of Schedule 2;

(b) the freeing arrangements comply with the requirements of paragraph 14 of Schedule 2;

(c) all covers of hatchways in Positions 1 and 2 comply with the requirements of paragraph 6 of Schedule 2 and the covers have adequate strength with special care being given to their sealing and securing arrangements;

(d) in the case of ships constructed on or after 3rd February 2000 the ship when loaded in accordance with the requirements of Schedule 2,
paragraph 1, sub-paragraph (4) of the definition for a Type ‘A’ ship, shall be able to withstand the flooding of any compartment or compartments, with an assumed permeability of 0.95, consequent upon the damage assumptions specified in sub-paragraph (5) of the definition for a Type ‘A’ ship, and shall remain afloat in a satisfactory condition of equilibrium as specified in sub-paragraph (6) of the definition for a Type ‘A’ ship. In such a ship, if over 150 metres in length, the machinery space shall be treated as a floodable compartment, but with a permeability of 0.85.

(e) In the case of ships constructed before 3rd February 2000, the ship when loaded to the Summer load waterline will remain afloat, after the flooding of any single damaged compartment other than the machinery space at an assumed permeability of 0.95, in the condition of equilibrium described in subparagraph (7) of the definition of a “Type ‘A’ ship”. If the length of the ship exceeds 225 metres the machinery space shall rank as a floodable compartment for the purposes of this requirement having for the purpose an assumed permeability of 0.85

(4) Subject to sub-paragraph (5) no reduction of freeboard pursuant to sub-paragraph (3) shall exceed 60 per cent of the difference between the tabular freeboards under Freeboard Table A and Freeboard Table B.

(5) The reduction of 60 per cent referred to in sub-paragraph (4) may be increased to 100 per cent if the Assigning Authority is satisfied that:

(a) the ship complies with the requirements of paragraphs 17 and 20 of Schedule 2 as if it were a Type ‘A’ ship and with those of paragraph 22 of that Schedule;

(b) the ship complies with the requirements of sub-paragraphs (3)(a) to (c); and

(c) in the case of ships constructed on or after 3rd February 2000 the ship when loaded to the Summer load waterline will remain afloat in the condition of equilibrium as specified in Schedule 2 paragraph 1, sub-paragraph (6) of the definition for a Type ‘A’ ship, provided that throughout the length of the ship any one transverse bulkhead will be assumed to be damaged, such that two adjacent fore and aft compartments shall be flooded simultaneously, except that such damage will not apply to the boundary bulkheads of a machinery space.

(d) In such a ship, if over 150 metres in length, the machinery space shall be treated as a floodable compartment, but with a permeability of 0.85.

(e) For ships constructed before 3rd February 2000 the ship when loaded to the Summer load waterline will remain afloat in the condition of equilibrium described in subparagraph (7) of the definition of a “Type ‘A’ ship” after the flooding -
of any two compartments adjacent fore and aft, neither of which is the machinery space, at an assumed permeability of 0.95; and

(ii) in the case of a ship exceeding 225 metres in length, of the machinery space alone, at an assumed permeability of 0.85.”.

(6) The tabular freeboard of a ship to which sub-paragraph (2)(b) applies shall be increased by the amount shown in Table 1 appropriate to the ship's length:

TABLE 1

<table>
<thead>
<tr>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
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</thead>
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<td>139</td>
<td>175</td>
<td>170</td>
<td>290</td>
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<td>109</td>
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<td>140</td>
<td>181</td>
<td>171</td>
<td>292</td>
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<td>146</td>
<td>210</td>
<td>177</td>
<td>306</td>
</tr>
<tr>
<td>116</td>
<td>70</td>
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<td>215</td>
<td>178</td>
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<td>117</td>
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<td>219</td>
<td>179</td>
<td>311</td>
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<tr>
<td>118</td>
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<td>149</td>
<td>224</td>
<td>180</td>
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<td>142</td>
<td>164</td>
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<td>147</td>
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<td>278</td>
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<td>166</td>
<td>280</td>
<td>197</td>
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<tr>
<td>136</td>
<td>159</td>
<td>167</td>
<td>283</td>
<td>198</td>
<td>355</td>
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<tr>
<td>137</td>
<td>164</td>
<td>168</td>
<td>285</td>
<td>199</td>
<td>357</td>
</tr>
<tr>
<td>138</td>
<td>170</td>
<td>169</td>
<td>287</td>
<td>200</td>
<td>358</td>
</tr>
</tbody>
</table>
Freeboards, at intermediate lengths of ship shall be obtained by linear interpolation. The increase in the case of ships of more than 200 metres in length shall be by an amount which the Assigning Authority determines in each particular case.

(7) (a) This sub-paragraph applies to every Type ‘B’ ship of not more than 100 metres in length having enclosed superstructures of total effective length (E) which does not exceed 35 per cent of the ship's length (L).

(b) The freeboard calculated in respect of such a ship in accordance with sub-paragraphs (1),(2) and (6) shall be increased by the following amount:

\[ 7.5(100 - \frac{L}{E})(0.35 - \frac{E}{L}) \text{ millimetres} \]

(8) In the case of a ship with a block coefficient \( C_b \) exceeding 0.68, the freeboard calculated in accordance with sub-paragraphs (1) to (7) shall be multiplied by the factor:

\[ \frac{C_b + 0.68}{1.36} \]

(9) Corrections in accordance with paragraphs 6 to 16 shall be applied to the freeboard calculated in accordance with sub-paragraphs (1) to (8) and, subject to paragraph 3(3), the freeboard so corrected shall be the Summer freeboard to be assigned to the ship.

**Basic freeboard**

6. In the following paragraphs “basic freeboard” means the Summer freeboard calculated in accordance with paragraph 4 or 5, whichever is applicable but, omitting in the case of a Type ‘A’ ship the corrections referred to in paragraph 4(3) and, in the case of a Type ‘B’ ship the corrections referred to in paragraph 5(9).

**Correction for Depth**

7. (1) If the depth for freeboard (D) exceeds (L)/15, the basic freeboard of the ship shall be increased by:

\[ ((D) - \frac{L}{15} )R \text{ millimetres} \]

where R is: (L)/0.48, in the case of a ship less than 120 metres in length; and

250 in the case of a ship of 120 metres or more in length.
(2) If \((D)\) is less than \((L)/15\), the basic freeboard of the ship shall be reduced by:

\[
((D) - \frac{(L)}{15})R \text{ millimetres}
\]

if, but only if, the ship has, subject to subparagraph (3), either:

(a) an enclosed superstructure covering at least 0.6 \((L)\) amidships;

(b) an efficient trunk extending for the ship's length; or

(c) a combination of enclosed superstructures connected by efficient trunks, being a combination extending for the ship's length.

(3) If the height of any such superstructure or trunk in sub-paragraph (2) is less than standard height the amount of reduction shall be reduced in the ratio of the actual to the standard height of the superstructure or trunk.

**Correction for position of deck-line**

8. (1) Subject to the provisions of sub-paragraph (2), if the actual depth to the upper edge of the deck-line is greater or less than the depth for freeboard, the difference if greater shall be added to, or if less shall be deducted from, the basic freeboard of the ship.

(2) If the position of the deck-line has been fixed in accordance with the provisions of regulation 15(3), the actual depth of the ship shall be taken to the point amidships where the continuation outwards of the upper surface of the freeboard deck or on any sheathing on that deck intersects the outer surface of the shell of the ship.

**Standard height, length and effective length of superstructures**

9. (1) The standard height of a superstructure shall be determined in accordance with Table 2:

<table>
<thead>
<tr>
<th>Length of ship (L) (metres)</th>
<th>Standard Height (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>of a raised quarter deck</td>
</tr>
<tr>
<td>30 or less</td>
<td>0.90</td>
</tr>
<tr>
<td>75</td>
<td>1.20</td>
</tr>
<tr>
<td>125 or more</td>
<td>1.80</td>
</tr>
</tbody>
</table>

Standard heights for intermediate lengths of the ship shall be obtained by linear interpolation.

(2) (a) Subject to sub-paragraph (b), the length of a superstructure shall be the mean length of the parts of the superstructure which lie within the length of the ship.
In the case of an enclosed superstructure having an end bulkhead which extends in a fair convex curve beyond its intersection with the superstructure sides, the length of the superstructure (S) may be taken as its length determined in accordance with sub-paragraph (a), but increased by two-thirds of the fore and aft extent of the curvature to a maximum of one half the breadth of the superstructure at the point of intersection of the curved end of the superstructure with its side.

(3) (a) In the case of an enclosed superstructure of standard height, the effective length of a superstructure (E) shall be, subject to sub-paragraph (c), either:

(i) its length; or

(ii) if the superstructure is set in from the sides of the ship, its length modified in the ratio b/Bs, where:

(aa) “b” is the breadth of the superstructure at the middle of its length; and

(bb) “Bs” is the breadth of the ship at the middle of the length of the superstructure:

where the superstructure is only set in for part of its length, this modification shall be applied only to that part.

(b) In the case of an enclosed superstructure of less than standard height the effective length of a superstructure, subject to sub-paragraphs (a) and (c), shall be its length reduced in the ratio of the actual height of the superstructure to its standard height.

(c) In the case of an enclosed superstructure consisting of a raised quarter deck the effective length of a superstructure shall, if the deck is fitted with an intact front bulkhead, be its length subject to a maximum of 0.6 of the ship’s length and, if not so fitted, be determined by treating the raised quarter deck as a poop of less than standard height.

(d) A superstructure which is not an enclosed superstructure as defined in paragraph 1 of Schedule 2 shall have no effective length.

**Standard height and effective length of trunks**

10. (1) The standard height of a trunk shall be that applicable to a superstructure other than a raised quarter deck in paragraph 9(1).

(2) The effective length of a trunk shall be determined as follows:

(a) a trunk which is not an efficient trunk as described in sub-paragraph (b) shall have no effective length;
(b) a trunk shall be treated as an efficient trunk provided:

(i) it is at least as strong as a superstructure;

(ii) the hatchways in way of the trunk are in the trunk deck, and the hatchway coamings and covers comply with the requirements of paragraphs 4 to 6 of Schedule 2, except that small access openings with watertight covers may be permitted in the freeboard deck;

(iii) the width of the trunk deck stringer provides a satisfactory gangway and sufficient lateral stiffness;

(iv) a permanent working platform fore and aft fitted with guard rails or guard wires complying with applicable requirements in paragraph 18(2)(a) of Schedule 2 is provided by the trunk deck, or by detached trunks connected to superstructures by efficient permanent gangways;

(v) ventilators are protected by the trunk, by watertight covers or by equivalent means;

(vi) open rails or wires are fitted on the weather parts of the freeboard deck in way of the trunk for at least half their length;

(vii) the machinery casings are protected by the trunk, or by an enclosed superstructure of at least standard height, or by a deckhouse of the same height, strength and weathertightness equivalent to such an enclosed superstructure;

(viii) the breadth of the trunk is at least 60 per cent of the breadth of the ship;

(ix) where there is no superstructure the length of the trunk is at least $0.6\, L$.

(c) Except as otherwise provided in sub-paragraph (d), the effective length of an efficient trunk shall be its full length reduced in the ratio of its mean breadth to the breadth of the ship.

(d) If the actual height of an efficient trunk is less than the standard height, its effective length shall be the length calculated in accordance with sub-paragraph (c) reduced in the ratio of the actual to the standard height of the trunk. In addition, if the ship is a Type ‘B’ ship and the height of hatchway coamings on the trunk deck is less than that required by paragraph 5(1) or 6(1) of Schedule 2 a reduction from the actual height of the trunk shall be made of an amount corresponding to the difference between the actual height and the required height of the hatchway coamings.
**Deduction for effective length of superstructures and trunks**

11. (1) Where the sum of the effective lengths of superstructures and trunks of a ship is 1.0 L, the basic freeboard of the ship shall be reduced by:

- 350 millimetres if the ship is 24 metres in length (L);
- 860 millimetres if the ship is 85 metres in length (L);
- 1070 millimetres if the ship is 122 metres in length or more;

and by amounts obtained by linear interpolation in the case of ships of intermediate length.

(2) Where the sum of the effective lengths of superstructures and trunks is less than 1.0 (L) the basic freeboard of a ship shall be reduced by a percentage of the figures in sub-paragraph (1) according to the total effective length of its superstructures and trunks as follows:

- in the case of a Type ‘A’ ship, by a percentage appropriate to its length given in the Table 3. The percentage in the case of a ship having superstructures and trunks of an effective length intermediate to those specified in Table 3 is to be obtained by linear interpolation;

- Subject to sub-paragraphs (ii), (iii) and (iv), in the case of a Type ‘B’ ship, by a percentage appropriate to its length given in Table 4. The percentage in the case of a ship having superstructures and trunks of an effective length intermediate to those specified in Table 4 is to be obtained by linear interpolation.

- Where the effective length of a bridge covers less than 0.1(L) before and 0.1 (L) abaft amidships the percentages shall be obtained by linear interpolation between the lines I and II.

- Where the effective length of a forecastle is more than 0.4 (L), the percentages shall be obtained from line II.

- Where the effective length of a forecastle is less than 0.07 (L), the above percentages shall be reduced by:

\[ \frac{5(0.07(L) - f)}{0.07(L)} \]

where: “f” is the effective length of the forecastle.
TABLE 3
PERCENTAGE OF DEDUCTION FOR TYPE ‘A’ SHIPS

<table>
<thead>
<tr>
<th>Percentage of deduction superstructure and trunks</th>
<th>Total effective length of superstructure and trunks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

TABLE 4
PERCENTAGE OF DEDUCTION FOR TYPE 'B' SHIPS

<table>
<thead>
<tr>
<th>Ships with forecastle and without detached</th>
<th>Total effective length of superstructure and trunks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>II</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ships with forecastle and detached bridge</th>
<th>Total effective length of superstructure and trunks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>II</td>
<td>0</td>
</tr>
</tbody>
</table>

Measurement of Sheer

12. (1) The sheer shall be measured from the deck at side to a line of reference drawn parallel to the keel through the sheer line at amidships.

(2) In ships designed with a rake of keel, the sheer shall be measured in relation to a line of reference drawn parallel to the Summer load waterline.

(3) In flush deck ships and in ships with detached superstructures the sheer shall be measured at the freeboard deck.

(4) In ships with topsides of unusual form in which there is a step or break the topsides, the sheer shall be considered in relation to the equivalent depth amidships.

(5) In ships with a superstructure of standard height which extends over the whole length of the freeboard deck, the sheer shall be measured at the superstructure deck. Where the
height of the superstructure exceeds the standard height the least difference \((Z)\) between the actual and standard heights shall be added to each end ordinate. Similarly, the intermediate ordinates at distances of \(1/6\) \(L\) and \(1/3\) \(L\) from each perpendicular shall be increased by 0.444 \((Z)\) and 0.111 \((Z)\) respectively.

(6) Where the deck of an enclosed superstructure has at least the same sheer as the exposed freeboard deck, the sheer of the enclosed portion of the freeboard deck shall not be taken into account.

(7) Where an enclosed poop or forecastle is either (a) of standard height with greater sheer than that of the freeboard deck, or (b) is of more than standard height, an addition to the sheer of the freeboard deck shall be made calculated in accordance with paragraph 14(4).

**Standard sheer profile**

13. The ordinates of the standard sheer profile are given in Table 5:

<table>
<thead>
<tr>
<th>Station</th>
<th>Ordinate (in millimetres)</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>After Half</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After perpendicular (AP)</td>
<td>25.0 (((L)/3)+10)</td>
<td>1</td>
</tr>
<tr>
<td>(1/6(L)) from AP</td>
<td>11.1 (((L)/3)+10)</td>
<td>3</td>
</tr>
<tr>
<td>(1/3(L)) from AP</td>
<td>2.8 (((L)/3)+10)</td>
<td>3</td>
</tr>
<tr>
<td>Amidships</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Forward Half</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amidships</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>(1/3) (L) from FP</td>
<td>5.6 (((L)/3)+10)</td>
<td>3</td>
</tr>
<tr>
<td>(1/6) (L) from FP</td>
<td>22.2 (((L)/3)+10)</td>
<td>3</td>
</tr>
<tr>
<td>Forward perpendicular (FP)</td>
<td>50.0 (((L)/3)+10)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Measurement of variation from standard sheer profile**

14. (1) Where the sheer profile differs from the standard sheer profile, the four ordinates of each profile in the forward or after half of the ship shall be multiplied by the appropriate factors given in paragraph 13. The difference between the sums of the respective products and those of the standard divided by 8 shall be the deficiency or excess of sheer in the forward or after half. The arithmetical mean of the excess or deficiency in the forward and after half shall be the excess or deficiency of sheer.

(2) Where the after half of the sheer profile is greater than the standard sheer profile and the forward half is less than the standard sheer profile, no credit shall be allowed for the part in excess, and deficiency only shall be measured.

(3) Where the forward half of the sheer profile exceeds the standard sheer profile, and the after half of the sheer profile is not less than 75 per cent of the standard sheer profile, credit shall be allowed for the part in excess. Where the after half of the sheer profile is less than
50 per cent. of the standard sheer profile, no credit shall be given for the excess of sheer forward. Where the sheer in the after half is between 50 per cent and 75 per cent of the standard sheer profile, intermediate allowances may be granted for excess sheer forward.

(4) Where sheer credit is given for a poop or forecastle the following formula shall be used:

\[ s = \frac{y}{3} \left( \frac{L'}{L} \right) \]

where:

- \( s \) = sheer credit, to be deducted from the deficiency or added to the excess of sheer;
- \( y \) = difference between actual and standard height of superstructure at the after or forward perpendicular; and
- \( L' \) = mean enclosed length of poop or forecastle up to a maximum length of \( 0.5 \) (L).

This formula provides a curve in the form of a parabola tangential to the actual sheer curve at the freeboard deck and intersecting the end ordinate at a point below the superstructure deck at a distance equal to the standard height of the poop or forecastle. 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 the forward and the after half of the ship.

**Correction for Variations from standard sheer profile**

15. (1) The correction for sheer shall be the deficiency or excess of sheer determined in accordance with paragraph 14 multiplied by:

\[ 0.75 - \frac{S}{2(L)} \]

(2) In the case of a ship with sheer less than the standard sheer profile, the correction for deficiency of sheer determined in accordance with sub-paragraph (1) shall be added to the basic freeboard of the ship.

(3) Subject to sub-paragraph (4), in the case of a ship having an excess of sheer:

(a) if an enclosed superstructure covers 0.1 L before and 0.1 L abaft amidships, the correction for excess of sheer determined in accordance with sub-paragraph (1) shall be deducted from the basic freeboard of the ship;

(b) if no enclosed superstructure covers amidships, no deductions shall be made from the basic freeboard of the ship;

(c) if an enclosed superstructure covers less than 0.1 L before and 0.1 L abaft amidships, the correction for excess of sheer determined in accordance with sub-paragraph (1) shall be modified in the ratio of the
amount of 0.2 L amidship which is covered by the superstructure, to 02.

(4) The maximum deduction for excess sheer shall be at the rate of 125 millimetres per 100 metres of length (L).

**Correction for minimum bow height**

16. (1) Except as otherwise provided in sub-paragraphs (2) and (3), where the bow height determined in accordance with sub-paragraph (4) is less than the minimum bow height determined in accordance with sub-paragraph (5), the freeboard determined for the ship shall be increased by an amount equal to the difference between the bow height and the minimum bow height.

(2) Where an existing ship to which sub-paragraph (1) applies has been so constructed or modified as to comply with all the requirements of Schedule 2 applicable to a new ship of her type and is to be assigned freeboards determined in accordance with this Schedule, and/or:

(a) the forecastle is less than 0.07 L;

(b) the sheer extends for less than 15 per cent of the ship's length (L) measured from the forward perpendicular;

The freeboard shall be increased by such amount as the Assigning Authority may determine in each particular case.

(3) In the case of a ship to which sub-paragraph (1) applies, being a ship which is constructed to meet exceptional operational requirements, the correction to be made in accordance with sub-paragraphs (1) and (2) may be reduced or waived if the Assigning Authority is satisfied that the safety of the ship will not be impaired in consequence of the worst sea and weather conditions likely to be encountered by the ship in service.

(4) The bow height of a ship is the vertical distance at the forward perpendicular between the Summer load waterline at the designed trim and the top of the exposed deck at side.

(5) (a) Where the bow height is obtained by including sheer, the sheer shall extend for no less than 15 per cent of length (L) measured from the forward perpendicular.

(b) Where the bow height is obtained by including the height of a superstructure, such superstructure shall:

(i) extend from the stem to a point not less than 0.07 of the ship's length (L) measured from the forward perpendicular;

(ii) if length (L) is 100 metres or less, be an enclosed superstructure; and

(iii) if length (L) exceeds 100 metres in length, be fitted with satisfactory closing appliances.
(6) The minimum bow height in millimetres shall be:

\[ 56(L)(1 - \frac{(L)}{500})(\frac{1.36}{C_b + 0.68}) \]

where \((L)\) is less than 250 metres; and

\[ 7000(\frac{1.36}{C_b + 0.68}) \]

where \((L)\) is 250 metres or more;

\(C_b\) shall not be taken as less than 0.68.

PART II

TIMBER FREEBOARDS

Summer Timber freeboard

17. The Summer Timber freeboard is the freeboard determined in accordance with the provisions of paragraphs 5(1),(2)(a),(9) and (10) and corrected in accordance with the provisions of paragraph 6 to 15, except that deductions for the effective length of superstructures only shall be made from the freeboard so obtained. These deductions shall be in accordance with the provisions of paragraph 11(1) and (2)(b) but substituting the percentages in Table 6 for those given in Table 4 of paragraph 11(2).

**TABLE 6**

PERCENTAGE OF DEDUCTION FOR TYPE ‘B’ SHIPS

<table>
<thead>
<tr>
<th>Percentage of deduction for all types of super-structure</th>
<th>Total effective length of superstructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.1 L</td>
</tr>
<tr>
<td>20</td>
<td>31</td>
</tr>
</tbody>
</table>

Percentages at intermediate lengths of superstructures shall be obtained by linear interpolation.

Other Timber freeboards

18. (1) The Winter Timber freeboard shall be obtained by adding to the Summer Timber
freeboard one thirty-sixth (1/36th) of the Summer Timber draught.

(2) The Winter North Atlantic Timber freeboard shall be the same as the Winter North Atlantic freeboard assigned.

(3) The Tropical Timber freeboard shall be obtained by deducting from the Summer Timber freeboard one forty eighth (1/48th) of the Summer Timber draught.

(4) (a) The Fresh Water Timber freeboard shall, subject to sub-paragraph (b), obtained by deducting from the Summer Timber freeboard the quantity:

\[
\frac{\Delta}{4T} \text{ millimetres}
\]

where: \(\Delta\) is the displacement in salt water in metric tons at the waterline which will when load lines have been marked on the ship's side correspond to the Summer Timber load line; and

\(T\) represents metric tons per centimetre immersion in salt water at that waterline.

(b) Where the displacement at that waterline cannot be ascertained, the deduction shall be one forty-eighth (1/48th) of the Summer Timber draught of the ship.

PART III

SAILING SHIPS AND OTHER SHIPS

Sailing ships and tugs

19. The freeboards to be assigned to sailing ships and tugs shall be freeboards determined accordance with the provisions of Part I of this Schedule increased by such amounts as the Assigning Authority may direct in each particular case.

Ships of wood and other materials

20. The freeboards to be assigned to ships of wood or of composite construction or of other materials, or to ships with constructional features such as to render freeboards calculated in accordance with Part I of this Schedule unreasonable or impracticable shall be determined by the Assigning Authority in each particular case.

Unmanned barges

21. The freeboards to be assigned to unmanned barges having on the freeboard deck only small access openings closed by watertight gasketed covers of steel shall be freeboards determined in accordance with the provisions of Part I of this Schedule omitting paragraphs 5 and 16. Such freeboards may be reduced by such amounts not exceeding 25 per cent as the Assigning Authority may direct in each particular case.
SCHEDULE 4

FREEBOARD TABLES

1. The following is the Freeboard Table referred to in the definition of a "tabular freeboard" in paragraph 4 of Schedule 3

**TABLE A**
FREEBOARD TABLE TYPE ‘A’ SHIPS

<table>
<thead>
<tr>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
<th>Length of ship (m)</th>
<th>Freeboard increase (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>200</td>
<td>54</td>
<td>490</td>
<td>84</td>
<td>897</td>
</tr>
<tr>
<td>25</td>
<td>208</td>
<td>55</td>
<td>503</td>
<td>85</td>
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Freeboards at intermediate length of the ship shall be obtained by linear interpolation.

Freeboards at length of ship less than 24 metres shall be:

\[
50 + \left( \frac{150(L)}{24} \right) \text{ millimetres}
\]
2. The following is Freeboard Table B referred to in the definition of "tabular freeboard" in paragraph 5 of Schedule 3:

**TABLE B**

FREEBOARD TABLE FOR TYPE ‘B’ SHIPS

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Freeboard at intermediate lengths of ship less than 24 meters shall be obtained by linear interpolation.

Freeboards at lengths of ship less than 24 metres shall be:

\[ 50 + \left( \frac{150(L)}{24} \right) \text{ millimetres} \]
SCHEDULE 5

INFORMATION AS TO STABILITY

The information relating to the stability of a ship to be provided for the master shall include the particulars specified below.

1. The ship's name, official number, port of registry, gross and register tonnages, principal dimensions, displacement, deadweight and draught to the Summer load line.

2. A profile view and, if necessary, plan views of the ship drawn to scale showing all compartments, tanks, storerooms and crew and passenger accommodation spaces, with their position relative to mid-ship.

3. (1) The capacity and the longitudinal and vertical centre of gravity of every compartment available for the carriage of cargo, fuel, stores, feed water, domestic or water ballast.

   (2) In the case of a vehicle ferry, the vertical centre of gravity of compartments designated for the carriage of vehicles shall be based on the estimated centres of gravity of the vehicles and not on the volumetric centres of the compartments.

4. (1) The estimated total weight and the longitudinal and vertical centre of gravity of each such total weight of:

   (a) the passengers and their effects; and

   (b) the crew and their effects.

   (2) In estimating such centres of gravity, passengers and crew shall be assumed to be distributed about the ship in the spaces they will normally occupy, including the highest decks to which either or both have access.

5. (1) The estimated weight and the disposition and centre of gravity of the maximum amount of deck cargo which the ship may reasonably be expected to carry on an exposed deck.

   (2) In the case of deck cargo, the arrival condition shall include the weight of water likely to be absorbed by the cargo. (For timber deck cargo the weight of water absorbed shall be taken as 15 per cent of the weight when loaded.)

6. A diagram or scale showing:

   (a) the load line mark and load lines with particulars of the corresponding freeboards; and

   (b) the displacement, metric tons per centimetre immersion, and deadweight corresponding to a range of mean draughts extending between the waterline representing the deepest load line and the waterline of the ship in light condition.
7. (1) A diagram or tabular statement showing the hydrostatic particulars of the ship, including the heights of the transverse metacentre and the values of the moment to change trim one centimetre. These particulars shall be provided for a range of mean draughts extending at least between the waterline representing the deepest load line and the waterline of the ship in light condition.

(2) Where a tabular statement is used to comply with subparagraph (1), the intervals between such draughts shall be sufficiently close to permit accurate interpolation.

(3) In the case of ships having raked keels, the same datum for the heights of centres of buoyancy and metacentres shall be used as for the centres of gravity referred to in paragraphs 3, 4 and 5.

8. The effect on stability of free surface in each tank in the ship in which liquids may be carried, including an example to show how the metacentric height is to be corrected.

9. (1) A diagram showing cross curves of stability.

(2) The diagram shall indicate the height of the assumed axis from which the righting levers are measured and the trim which has been assumed.

(3) In the case of ships having raked keels and where a datum other than the top of keel has been used, the position of the assumed axis shall be clearly defined.

(4) Subject to sub-paragraph (5), only enclosed superstructures and efficient trunks as defined in paragraph 10 of Schedule 3 shall be taken into account in deriving such curves.

(5) The following structures may be taken into account in deriving such curves if the Assigning Authority is satisfied that their location, integrity and means of closure will contribute to the ship's stability:

(a) superstructures located above the superstructure deck;

(b) deckhouses on or above the freeboard deck whether wholly or in part only;

(c) hatchway structures on or above the freeboard deck.

(6) Subject to the approval of the Assigning Authority in the case of a ship carrying timber deck cargo, the volume of the timber deck cargo, or a part thereof, may be taken into account in deriving a supplementary curve of stability appropriate to the ship when carrying such cargo.

(7) An example shall be included to show how a curve of righting levers (GZ) may be obtained from the cross curves of stability.

(8) In the case of a vehicle ferry or a similar ship having bow doors, ship-side doors or stern doors and the buoyancy of a superstructure is taken into account in the calculation of stability information, and the cross curves of stability are based upon the assumption that such
doors are secured weathertight, there shall be a specific warning that such doors must be secured weathertight before the ship proceeds to sea.

10. (1) The diagram and statements referred to in subparagraph (2) shall be provided separately for each of the following conditions of the ship:

   (a) *light condition*. If the ship has permanent ballast, such diagram and statements shall be provided for the ship in light condition both with and without such ballast;

   (b) *ballast condition*, both on departure and on arrival. It is to be assumed that on arrival oil fuel, fresh water, consumable stores and the like are reduced to 10 per cent of their capacity;

   (c) condition on departure and on arrival, when loaded to the Summer load line with cargo filling all spaces available for cargo. Cargo shall be taken to be homogeneous except where this is clearly inappropriate, for example, in cargo spaces which are intended to be used exclusively for the carriage of vehicles or of containers;

   (d) service loaded conditions, both on departure and on arrival.

(2) A profile diagram of the ship drawn to a suitable small scale showing the disposition of all components of the deadweight, a statement showing the lightweight, the disposition and the total weights of all components of the deadweight, the displacement, the corresponding positions of the centre of gravity, the metacentre and also the metacentric height (GM) and a diagram showing the curve of righting levers (GZ). Where credit is given for the buoyancy of a timber deck cargo the curve of righting levers (GZ) must be drawn both with and without this credit. A statement should be given showing the elements of stability in the condition compared to the criteria laid down in Schedule 2, paragraph 2 (2).

(3) The metacentric height (GM) and the curve of righting levers (GZ) shall be corrected for liquid free surface.

(4) Where there is a significant amount of trim in any of the conditions referred to in sub-paragraph (1) the metacentric height and the curve of righting levers (GZ) may be required to be determined from the trimmed waterline.

(5) If in the view of the Assigning Authority the stability characteristics in either or both of the conditions referred to in sub-paragraph (1)(c) are not satisfactory, such conditions shall be marked accordingly and an appropriate warning to the master shall be inserted.

11. A statement of instructions on appropriate procedures to maintain adequate stability in each case where special procedures are applied such as partial or complete filling of spaces designated for cargo, fuel, fresh water or other purposes.

12. The report on the inclining test and of the calculation derived from it to obtain information of the light condition of the ship.
Regulation 11

SCHEDULE 6

NOTICE OF LOAD LINES TO BE POSTED UP BEFORE SAILING

Notice to be posted up on board ship

1. Before a ship leaves any dock, wharf or harbour or other place for the purpose of proceeding to sea, a notice is to be posted up in some conspicuous place on board ship in the form and containing the particulars in this Notice.

**NOTICE**

| SHIP | ........................................ |
| PORT OF REGISTRY | ............................... |
| GROSS TONNAGE | ............................... |

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>Summer freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>2</td>
<td>Winter freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>3</td>
<td>Tropical freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>4</td>
<td>Winter North Atlantic freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>5</td>
<td>Allowance for fresh water for all freeboards other than Timber freeboards</td>
</tr>
<tr>
<td>6</td>
<td>Timber Summer freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>7</td>
<td>Timber Winter freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>8</td>
<td>Timber Tropical freeboard corresponding to a mean draught of</td>
</tr>
<tr>
<td>9</td>
<td>Timber Winter North Atlantic freeboard</td>
</tr>
</tbody>
</table>

millimetres
corresponding to a mean draught of millimetres

(10) Allowance for fresh water for Timber freeboards millimetres

Notes

1. The particulars to be given above of freeboards and allowances for fresh water to be taken from the load line certificate currently in force in respect of the ship.

2. All freeboards given on the load line certificate must be stated.

3. The mean draught to be given above is the mean of the draughts which would be shown on the scales of measurement on the stem and on the stern post of the ship if it were so loaded that the upper edge of the load line on each side of the ship appropriate to the particular freeboard were on the surface of the water.

4. Where the draught is shown on the scales of measurement on the stem and on the stern post of the ship in feet the mean draught must be given in millimetres using an equivalent of 25.4 millimetres to one inch.
# PARTICULARS OF LOADING

<table>
<thead>
<tr>
<th>Date</th>
<th>Place</th>
<th>Actual Draught</th>
<th>Mean Freeboard</th>
<th>Signature of an Officer</th>
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<tbody>
<tr>
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### Notes

1. The actual mean freeboard (Column 6) is the mean of the freeboards on each side of the ship at the time when the ship is loaded and ready to leave.

2. If the actual mean freeboard is less than the appropriate minimum saltwater freeboard as shown on the load line certificate there must be entered in Column 7 the corrected freeboard arrived at after making any allowances for density of water, and fuel, water and stores to be consumed on any stretch of river or inland water, being allowances duly entered in the ship's official log-book.

3. If the actual mean freeboard is greater than the appropriate salt water freeboard, Column 7 need not be filled in.
### SCHEDULE 7

#### REVOCATIONS

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Extent of Revocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.C. 232/84</td>
<td>Merchant Shipping (Load Lines) (Modification) Order 1984</td>
<td>The Whole Order</td>
</tr>
<tr>
<td>G.C. 254/92</td>
<td>Merchant Shipping (Load Lines) Act (Amendment) Order 1992</td>
<td>The Whole Order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Schedule 3.</td>
</tr>
<tr>
<td>G.C. 483/93</td>
<td>Merchant Shipping (Load Lines) Act 1981 (Unregistered Ships) Order</td>
<td>The Whole Order</td>
</tr>
<tr>
<td></td>
<td>1993</td>
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DATED 31st July, 2000

*David North,*  
MINISTER for Trade and Industry
EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations replace the Merchant Shipping (Load Lines) Act 1981 and the Merchant Shipping (Load Lines) Rules 1968 as amended as they have effect in the Isle of Man. The provisions of this Act and Rules are re-enacted in the Regulations.

The Regulations apply the provisions of the International Convention on Load Lines, 1966, as amended by the 1988 Protocol, to all Manx ships which go to sea, with certain exceptions. The Regulations also apply to all sea-going foreign ships within the territorial waters of the Isle of Man.

Amendments:

This text includes the amendments (indicated by bold italics) made to the Regulations by:
SD 736/01 Merchant Shipping (Load Lines) (Amendment) Regulations 2001
SD396/03 Merchant Shipping (Pleasure Vessel) Regulations 2003