Maritime and Coastguard Agency

MERCHANT SHIPPING NOTICE

MSN 1752 (M)

The Merchant Shipping (Load Line) Regulations 1998, as amended by the Merchant Shipping (Load Line) (Amendment) Regulations 2000

Notice to Shipowners, Masters, Assigning Authorities and Surveyors

Summary

This Notice replaces MSN 1701 (M) and advises all Shipowners, Masters, Assigning Authorities and Surveyors of the requirements of the Merchant Shipping (Load Line) Regulations 1998, as amended by the Merchant Shipping (Load Line) (Amendment) Regulations 2000. The 1998 Regulations as amended are referred to as "the Regulations" in this Notice.

The Regulations now incorporate amendments to the International Convention on Load Lines, 1966 contained in the Protocol of 1988 relating to the International Convention on Load Lines, 1966. The Protocol was adopted by the International Maritime Organization on 11th November 1998.

Key Points:-

- The Schedules in this Notice are an integral part of the Regulations.
- Schedules contained in this Notice apply to United Kingdom ships and to other ships whilst they are in United Kingdom national waters. They do not apply to ships of war, ships solely engaged in fishing, pleasure vessels, certain ships under 80 net tons engaged solely in the coasting trade while not carrying cargo, and ships that do not go to sea.

List of Schedules

Schedule 5: Freeboard tables

Schedule 6: Stability

Part I Information as to stability
Part II Ships in relation to which the Secretary of State's or the Assigning Authority's approval of the stability information is required.

Schedule 7: Notice of load lines to be posted up before sailing

Schedule 8: United Kingdom Load Line Certificates

In this Merchant Shipping Notice –

(1) "mean freeboard" means the mean of the freeboard 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;

"the Regulations" means the Merchant Shipping (Load Line) Regulations 1998 (SI 1998/2241), as amended by the Merchant Shipping (Load Line) (Amendment) Regulations 2000 (SI 2000/1335);

and other expressions used have the same meaning as they bear in the Regulations;

(2) a reference to a ship constructed on or after a specified date is a reference to a ship, the keel of which is laid or which is at a similar stage of construction on or after that date;

(3) a reference to a ship constructed before a specified date is a reference to a ship, the keel of which is laid or which is at a similar stage of construction before that date.

MSPP1E Load Line & Cargo Ship Safety Branch
Maritime and Coastguard Agency
Spring Place
105 Commercial Road
Southampton SO15 1EG

Tel: 023 80 329 119
Fax: 023 80 329 161

September 2000

DETR
ENVIRONMENT
TRANSPORT
REGIONS

An executive agency of the Department of the Environment, Transport and the Regions

SCHEDULE 1

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 Chart No D.6083 "Load Line Regulations: Zones, Areas & Seasonal Periods, Edition No 2"; available from the Hydrographic Office.

2. Subject to subparagraphs (d) to (g) below 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 subparagraph (d) above applies;

(f) an All Seasons load line, in the case of a ship marked in accordance with regulation 30;

(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 into 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 50ºW from the coast of Greenland to latitude 45ºN, thence the parallel of latitude 45ºN to longitude 15ºW, thence the meridian of longitude 15ºW to latitude 60ºN, thence the parallel of latitude 60ºN 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 68º 30'W from the coast of the United States to latitude 40ºN, thence the rhumb line to the point latitude 36ºN longitude 73ºW, thence the parallel of latitude 36ºN to longitude 25ºW 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 68º30'W from the coast of the United States to latitude 40ºN, thence the rhumb line to the southernmost intersection of the meridian of longitude 61ºW 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 50ºN 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 145ºE, thence the meridian of longitude 145ºE to latitude 35ºN, thence the parallel of latitude 35ºN to longitude 150ºW 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 34ºS, longitude 50ºW, thence the parallel of latitude 34ºS to longitude 17ºE, thence the rhumb line to the point latitude 35º10'S, longitude 20ºE, thence the rhumb line to the point latitude 34ºS, longitude 28ºE, thence the rhumb line to the point latitude 35º30'S, longitude 118ºE, 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 47ºS, longitude 170ºE, thence the rhumb line to the point latitude 33ºS, longitude 170ºW, and thence the parallel of latitude 33ºS to the point latitude 33ºS, longitude 79ºW, thence the rhumb line to the point latitude 41ºS, longitude 75ºW, thence the rhumb line to Punta Corona lighthouse on Chiloe Island, latitude 41º47'S longitude 75º53'W, thence along the north, east and south coasts of Chiloe Island to the point latitude 43º20'S, longitude 74º20'W, and thence the meridian of longitude 74º20'W, to the parallel of latitude 45º45'S, including the inner zone of Chiloe channels from the meridian 74º20'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 13ºN from the east coast of the American continent to longitude 60ºW, thence the rhumb line to the point latitude 10ºN, longitude 58ºW, thence the parallel of latitude 10ºN to longitude 20ºW, thence the meridian of longitude 20ºW to latitude 30ºN and thence the parallel of latitude 30ºN to the west coast of Africa; from the east coast of Africa the parallel of latitude 8ºN to longitude 70ºE, thence the meridian of longitude 70ºE to latitude 13ºN, thence the parallel of latitude 13ºN to the west coast of India; thence the south coast of India to latitude 10º30'N on the east coast of India, thence the rhumb line to the point latitude 9ºN, longitude 82ºE, thence the meridian of longitude 82ºE to latitude 8ºN, thence the parallel of latitude 8ºN to the west coast of Malaysia, thence the coast of South-East Asia to the east coast of Vietnam at latitude 10ºN, thence the parallel of latitude 10ºN to longitude 145ºE, thence the meridian of longitude 145ºE to latitude 13ºN and thence the parallel of latitude 13ºN 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 45ºE;

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 59ºE; and

(c) the area bounded by the parallel of latitude 22ºS from the east coast of Australia to the Great Barrier Reef, thence the Great Barrier Reef to latitude 11ºS. 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 20ºN and thence the parallel of latitude 20ºN to longitude 20ºW;
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 45ºE in the Gulf of Aden, the coast of South Arabia and the meridian of longitude 59ºE 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 20ºS;
on the east by the rhumb line from the point latitude 20ºS, longitude 50ºE, to the point latitude 15ºS, longitude 51º30'E, and thence by the meridian of longitude 51º30'E to latitude 10ºS.

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 15ºS from longitude 51º30'E, to longitude 114ºE and thence the meridian of longitude 114ºE 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 10ºN 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 10ºN;
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 25ºN;
on the west by the meridian of longitude 160ºE;
on the south by the parallel of latitude 13ºN;
on the east by the meridian of longitude 130ºW.

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 123ºW from the coast of the American continent to latitude 33ºN and by the rhumb line from the point latitude 33ºN, longitude 123ºW to the point latitude 13ºN, longitude 105ºW;
on the south by the parallel of latitude 13ºN.

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 11ºS

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 3ºE from the coast of Spain to latitude 40ºN;
on the south by the parallel of latitude 40ºN from longitude 3ºE to the west coast of Sardinia;
on the east by the west and north coasts of Sardinia from latitude 40ºN to latitude 9ºE to the south coast of Corsica, hence by the west and north coasts of Corsica to longitude 9ºE 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 50ºN is included in the Summer Zones.

However, for ships of 100 metres or less in length, the area between the parallel of latitude 50ºN and the rhumb line from the east coast of Korea at latitude 38ºN to the west coast of Hokkaido, Japan, at latitude 43º12'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. (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 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 4;

"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 located 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 subparagraph (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 is designed to carry only liquid cargoes in bulk and has the characteristics set out below –

(a) the cargo tanks of the ship have only small access openings closed by watertight gasketed covers of steel or equivalent material;

(b) the ship has high integrity of the exposed deck and has a low permeability of loaded cargo compartments;

(c) **(i)** in the case of a ship constructed before 8th June 2000, if over 150 metres in length and designed to have empty compartments when loaded to the Summer load waterline, the ship shall be capable of remaining afloat after the flooding of any one of these empty compartments, at an assumed permeability of 0.95 in a condition of equilibrium; if over 225 metres in length its machinery space shall be treated as a floodable compartment, but with an assumed permeability of 0.85;

(ii) in the case of a ship constructed on or after 8th June 2000, if over 150m in length and a freeboard of less than required for a type "B" ship has been assigned, when loaded in accordance with the initial condition of loading before flooding, the ship is capable of remaining afloat in a satisfactory condition of equilibrium after the flooding of any compartment or compartments with an assumed permeability of 0.95, consequent upon the damage assumptions specified in paragraph 5(8) of Part 1 of Schedule 4; in such a ship the machinery space shall be treated as a floodable compartment, but with a permeability of 0.85.

(d) the condition of equilibrium referred to in subparagraph (c)(i) is as follows.

(i) 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;

(ii) 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;

(iii) the metacentric height calculated using the constant displacement method has a positive value in the upright condition after the flooding;

(iv) the ship has adequate residual stability; and

(v) the ship has sufficient stability during intermediate stages of flooding to the satisfaction of the Assigning Authority;

(e) The condition of equilibrium referred to in subparagraph (c)(ii) shall be regarded as satisfactory provided the following conditions are fulfilled.

(i) The final waterline after flooding, taking into account sinkage, heel and trim, is below the lower edge of any opening through which progressive downflooding 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 of the type described in subparagraph (a), remotely operated sliding watertight doors, and sidescuttles of non-opening type. However, in the case of doors separating a main machinery space from a steering gear 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.

(ii) If pipes, ducts or tunnels are situated within the assumed extent of damage penetration as defined in paragraph 5(8)(b) of Part 1 Schedule 4, 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.

(iii) If no part of the deck is immersed, the angle of heel due to unsymmetrical flooding does not exceed 17°. If any part of the deck is immersed, the angle of heel due to unsymmetrical flooding does not exceed 15°.

(iv) The metacentric height in the flooded condition is positive.

(v) When any part of the deck outside the compartment assumed flooded in a particular case of damage is immersed, or in any case where the margin of stability in the flooded condition may be considered doubtful, the residual stability is to be investigated by the Assigning Authority. 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 0.1m within this range. The area under the righting lever curve within this range shall not be less than 0.0175m.rad. The Assigning Authority shall give consideration to the potential hazard presented by protected or unprotected openings which may become temporarily immersed within the range of residual stability.

(vi) The Assigning Authority is satisfied that the stability is sufficient during the intermediate stages of flooding.

"Type "B" ship" means a ship other than a Type "A" ship;

"unattended machinery space" means a machinery space which during the normal operation of the ship at sea is unattended for any period, and "attended 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 be 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.

1. (2) In the definition of a "Type "A" ship", the initial condition of loading before flooding referred to in paragraph (c)(ii) 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) homogenous cargo is carried

(ii) all cargo compartments, except those referred to under subparagraph (iii), but including compartments intended to be partially 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 subparagraph (ii);

(iv) 50 % of the individual total 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 a 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 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 heel of not more than 5° in each compartment containing liquids, as prescribed in subparagraph (ii) except that in the case of compartments containing consumable fluids, as prescribed in subparagraph (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 Assigning Authority;

(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 oil	0.900
lubricating oil	0.900

PART I – SHIPS IN GENERAL

Structural strength and stability

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

(2) 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 subparagraph (ii) above.

(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) above by taking into account the volume of timber deck cargo, the initial transverse metacentric height shall not be less than 0.05 metres.

(3) To determine whether the ship complies with the requirements of subparagraph (2) 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 Secretary of State or, for the ships listed in regulation 32(5), 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 subparagraph (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 l.5 metres, and the thickness of covers for larger spans shall be increased by 4 millimetres for each 100 millimetres above the 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;

TABLE 1

Ship's Length(L)	Assumed Load, per square metre	
	Hatchway in Position 1	Hatchway in Position 2
24 metres	1 metric ton	0.75 metric ton
100 metres or over	1.75 metric tons	1.30 metric tons
Over 24 metres but less than 100 metres	to be ascertained by linear interpolation	

(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 which 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 subparagraph (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 or 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 materials other than mild steel shall have a strength and stiffness equivalent to that required for a cover of mild steel.

(c) 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 subparagraph (b) below, 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 subparagraph (a) above 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 subparagraph (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 subparagraph (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 the fitting of such an appliance is considered necessary by the Assigning Authority in order to provide adequate protection.

(b) A ventilator 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 subparagraph (4), the height above the deck of the exposed opening of any such airpipe shall be –

(a) at least 760 millimetres, if that deck is the freeboard deck;

(b) 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 –

(a) the working of the ship would be unreasonably impaired if those heights were adhered to; and

(b) 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) Subject to subparagraphs (4) and (9), every discharge led through the shell of a ship either –

(a) 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 subparagraphs (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 substantially 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 subparagraph (a) above 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) (a) The controls of any valve in an attended 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 subparagraph (a) and (b) above shall be equipped with an indicator showing whether the valve is open or closed.

(5) Subject to subparagraph (6) every scupper and discharge pipe originating at any level and penetrating the shell of the ship either –

(a) more than 450 millimetres below the freeboard deck; or

(b) less than 600 millimetres above the Summer load waterline;

shall be equipped with an automatic non-return valve situated as close to the ship's shell as practicable and substantially connected thereto.

(6) Subparagraph (5) 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 subparagraphs (1) to (3); or

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

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

(8) 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.

(9) In ships constructed on or after 8th June 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 to a suitable space, or spaces, of adequate capacity having a high water level alarm and provided with suitable arrangements for discharge overboard.

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 waterline (or Summer Timber load waterline, if assigned); or

(b) 500 millimetres above the Summer load waterline (or Summer Timber load waterline, 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 subparagraphs (2) to (9) shall be complied with.

(2) Except as otherwise provided in subparagraphs (4) and (5), 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 subparagraph (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 subparagraph (3).

(3) **(a)** Subject to subparagraph (c) below, where the length (l) of a bulwark in the well is 20 metres or less –

$$(A) = 0.7 + 0.035\ (l)\ \text{(square metres)};\ \text{and}$$

(b) Subject to subparagraph (c) below, where (l) exceeds 20 metres,

$$(A) = 0.07\ (l)\ \text{(square metres)}.$$

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 subparagraph (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 subparagraph (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 4, “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:

BREADTH OF HATCHWAY OR TRUNK IN RELATION TO THE BREADTH OF SHIP	AREA OF FREEING PORTS IN RELATION TO THE TOTAL AREA OF THE BULWARKS
40% or less 75% or more	20% 10%

The area of freeing ports at intermediate breadths shall be obtained by linear interpolation.

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 subparagraph (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 subparagraph (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 subparagraph (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 subparagraph (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.

(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 subparagraph (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) Subparagraph (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 weathertight 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 millimetres 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;

(ii) the passage shall be well lighted, and be fitted with efficient gas detection and ventilation systems;

(iii) it shall be situated immediately below the freeboard deck;

(iv) 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) above;

(v) means of exit from the passage to the freeboard deck shall be –

(aa) so arranged as to be as near as practicable to the working areas to be used by the crew;

(bb) in no case be more than 90 metres apart; and

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

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

(c) equivalent means of access.

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

(b) an underdeck passage complying with the requirements of subparagraph (2)(b); or

(c) a walkway complying with the following requirements –

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

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

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

(iv) 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 assigned a reduced freeboard under the provisions of paragraph 5(3) of Schedule 4.

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 in 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. The requirements of paragraph 30 shall apply in respect of timber deck cargo carried by a ship which is marked with timber load lines and is loaded to a depth greater than that indicated by the load line which, if timber load lines were not marked, would be appropriate in the circumstances.

(2) In this Part 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 its height above the deck, or any other part of the ship on which it stands will not interfere with the navigation or working of the ship;

(e) that it will not interfere with, or obstruct access to, the ship's steering arrangements, including emergency 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

(4) **(a)** Where timber deck cargo occupies the whole or substantially the whole of the uncovered space on the deck of a ship, means of access shall be provided for the crew between their quarters and the machinery spaces and other parts of the ship used in the working of the ship, as follows.

(b) The means of access shall be provided in the form of a walkway fitted over the timber deck cargo, and the walkway shall be:

(i) as near as practicable on the centreline of the ship.

(ii) not less than 600mm in width, and

(iii) provided with a lifeline which, where practicable, shall be a wire rope set taut with a stretching screw.

(c) In addition guard rails or lifelines spaced not more than 350 mm apart vertically shall be provided on each side of the deck cargo to a height of at least 1 metre above the cargo.

(d) The stanchion supports to all guard rails and lifelines shall be so spaced as to prevent undue sagging.

Uprights

(5) If the nature of the timber is such that uprights are necessary in order to comply with subparagraphs (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 subparagraph (a) above.

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. 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 bulk head 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 15 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 lengths less than 3.6 metres the spacing of the lashings shall be reduced or suitable provision made to suit the length of timber.

PART V – GENERAL

Equivalence

31. The Assigning Authority may, with the approval of the Secretary of State, –

(a) allow any fitting, material, appliance or apparatus to be fitted in a ship, or allow other provisions to be made in a ship, in the place of any fitting, material, appliance, apparatus or provision respectively which is required under any of the provisions of the 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 Secretary of State 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.

SCHEDULE 3

RECORD OF PARTICULARS
MERCHANT SHIPPING (LOAD LINE) REGULATIONS 1998

RECORD OF PARTICULARS RELATING TO CONDITIONS OF ASSIGNMENT

In this record, reference to regulations are references to the regulations set out in Annex I to the Convention of 1966, and reference to paragraphs are references to paragraphs of Schedule 2 (Conditions of Assignment) of Merchant Shipping Notice 1752 (M)

Name of ship

Port of registry

Nationality

Distinctive number or letters

Shipbuilders

Yard number

Date of Build / conversion

Freeboards assigned as a ship of Type

Classification

Date and place of initial survey

A plan of suitable size may be attached to this report in preference to the sketches on this page

Disposition and dimensions of superstructures, trunks, deckhouses, machinery casings; extent of bulwarks, guard rails and wood sheathing on exposed deck, to be inserted in the diagrams and tables following; together with positions of hatchways, gangways, and other means for the protection of the crew; cargo ports, bow and stern doors, side scuttles, scuppers, ventilators, air pipes, companionways, and other items that would affect the seaworthiness of the ship.

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraphs 7 & 8)

DOORWAYS IN SUPERSTRUCTURES, EXPOSED MACHINERY CASINGS AND DECKHOUSES PROTECTING OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS
(Regulations 12, 17, and 18)

LOCATION	REF NO ON SKETCH OR PLAN	NUMBER AND SIZE OF OPENINGS	HEIGHT OF SILLS	CLOSING APPLIANCES	
				TYPE AND MATERIAL	NUMBER OF CLIPS
In forecastle bulkhead					
In bridge forward bulkhead					
In bridge after bulkhead					
In raised quarter deck bulkhead					
In poop bulkhead					
In exposed machinery casings on freeboard or raised quarter decks					

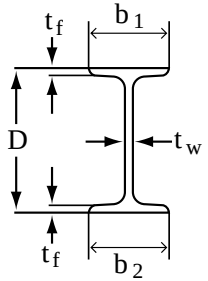
DOORWAYS IN SUPERSTRUCTURES, EXPOSED MACHINERY CASINGS AND DECKHOUSES PROTECTING OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS

(continued)

LOCATION	REF NO ON SKETCH OR PLAN	NUMBER AND SIZE OF OPENINGS	HEIGHT OF SILLS	CLOSING APPLIANCES	
				TYPE AND MATERIAL	NUMBER OF CLIPS
In exposed machinery casings on superstructure decks					
In machinery casings within superstructures or deckhouses on freeboard deck					
In deckhouses in Position 1 enclosing openings leading below freeboard deck					
In deckhouses in Position 2 enclosing openings leading within enclosed superstructures or below freeboard deck					
In exposed pump room casings					

(See Schedule 2 to this Merchant Shipping Notice 1752 (M), paragraph 5)

HATCHWAYS AT POSITIONS 1 AND 2 CLOSED BY PORTABLE COVERS AND SECURED WEATHERTIGHT BY TARPAULINS AND BATTENING DEVICES (Regulation 15)

Position and Reference No. on Sketch or Plan							
Dimensions of clear opening at top of coaming							
Height of coamings above deck							
PORTABLE BEAMS	Number						
	Spacing $b_1 \times t_f$ $D \times t_w$ $b_2 \times t_f$ Bearing surface Means of securing each beam						
PORTABLE COVERS	Material Thickness Direction fitted Bearing surface						
Spacing of cleats							
TARPAULINS	No. of layers Material						

Means of securing each section of covers .....
Are wood covers fitted with galvanized end bands .....

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraphs 7 and 8)

HATCHWAYS AT POSITIONS 1 AND 2 CLOSED BY WEATHERTIGHT COVERS OF STEEL (OR OTHER EQUIVALENT MATERIAL) FITTED WITH GASKETS AND CLAMPING DEVICES (Regulation 16)

Position and reference No. on Sketch or Plan						
Dimensions of clear opening at top of coaming						
Height of coaming above deck						
Type of cover or Patent Name						
Material						

Position and reference No. on Sketch or Plan						
Dimensions of clear opening at top of coaming						
Height of coaming above deck						
Type of cover or Patent Name						
Material						

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraphs 7 and 8)

MACHINERY SPACE OPENINGS AND MISCELLANEOUS OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS
(Regulations 17 and 18)

Positions and Reference No. on Sketch or Plan							
Dimensions							
Height of coaming							
COVER	Material						
	How attached						
Number and spacing of Toggles							
Positions and Reference No. on Sketch or Plan							
Dimensions							
Height of coaming							
COVER	Material						
	How attached						
Number and spacing of Toggles							

Particulars of spurling pipe closing arrangements

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 9)

VENTILATORS ON FREEBOARD AND SUPERSTRUCTURE DECKS (POSITIONS 1 AND 2)
(Regulation 19)

DECK ON WHICH FITTED	NUMBER FITTED	COAMING		TYPE (STATE PATENT NAME IF ANY)	CLOSING APPLIANCES
		DIMENSIONS	HEIGHT		

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 10)

AIR PIPES ON FREEBOARD AND SUPERSTRUCTURE DECKS
(Regulation 20)

DECK ON WHICH FITTED	NUMBER FITTED	COAMING		TYPE (STATE PATENT NAME IF ANY)	CLOSING APPLIANCES
		DIMENSIONS	HEIGHT		

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 11)

CARGO PORTS AND OTHER SIMILAR OPENINGS
(Regulation 21)

POSITION OF PORT	DIMENSIONS OF OPENING	DISTANCE OF LOWER EDGE FROM FREEBOARD DECK	SECURING DEVICES	REMARKS

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 12)

SCUPPERS, INLETS AND DISCHARGES
(Regulation 22)

STATE IF SCUPPER OR DISCHARGE	NUMBER	PIPE			FROM	VERTICAL DISTANCE ABOVE TOP OF KEEL			NUMBER, TYPE AND MATERIAL OF DISCHARGE VALVES	POSITION OF CONTROLS
		DIAMETER	THICK -NESS	MATERIAL		DISCHARGE		UPPERMOST VALVE		
						OUTLET IN HULL	INBOARD END			

NOTE: In Ro-ro ships, indicate how ready accessibility to scupper valves is ensured when vehicle space is filled .....

S – Scupper
D – Discharge

MS – Mild Steel
CS – Cast Steel
GM – Gun Metal

SD – Screw down
ANR – Automatic non-return
SD ANR – Screw down automatic non-return

Any other approved material to be designated

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 13)

SIDE SCUTTLES
(Regulation 23)

POSITION	NUMBER FITTED	CLEAR GLASS SIZE	FIXED OR OPENING	MATERIAL		TYPE OF GLASS AND THICKNESS	STANDARDS USED AND TYPE NO
				FRAME	DEADLIGHT		

Indicate the vertical distance between the freeboard deck and the lower sill of the side scuttle positioned at the greatest vertical distance below the freeboard deck .....

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraphs 14 and 20)

FREEING PORTS
(Regulation 24)

	LENGTH OF BULWARK	HEIGHT OF BULWARK	NUMBER AND SIZE OF FREEING PORTS EACH SIDE	TOTAL AREA EACH SIDE	REQUIRED AREA EACH SIDE
FREEBOARD DECK AFTER WELL					
FORWARD WELL					
SUPERSTRUCTURE DECK					

State fore and aft position of each freeing port in relation to superstructure end bulkheads — After Well / Forward Well

Particulars of shutters, bars or rails fitted to freeing ports.

Height of lower edge of freeing port above deck.

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraphs 15, 18, 22, 23 and 24)

PROTECTION OF THE CREW
(Regulations 25 and 26)

State particulars of bulwarks or guardrails on freeboard and superstructure decks:

State details of lifelines, walkways, gangways or underdeck passageways where required to be fitted:

(See Schedule 2 to this Merchant Shipping Notice 1752(M), paragraph 29)

TIMBER DECK CARGO FITTINGS
(Regulation 44)

State particulars of uprights, sockets, lashings, guardrails and lifelines;

OTHER SPECIAL FEATURES

INITIAL SURVEY

The conditions of assignment shown on this form are a record of the arrangements and fittings provided on the ship and are in accordance with the requirements of the relevant regulations set out in Annex I to the Convention of 1966 and of this Merchant Shipping Notice 1752 (M).

. . . . . .
(Surveyor's Signature)

. . . . . .
(Date)

SUBSEQUENT PERIODICAL SURVEYS

I have completed the periodical survey and am satisfied that the fittings and appliances are in accordance with the particulars shown in this record and are in good condition and that approved stability information and, where applicable, information relating to loading and ballasting of the ship is on board.

Signature	Port of Survey	Date of Survey
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

SCHEDULE 4

FREEBOARDS

Interpretation

1. Expressions in this Schedule have the same meanings as those assigned to them in Schedule 2, and –

"block coefficient (C_b)" means the product of –

$$\frac{\nabla}{LBd_1}$$

where –

∇ 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 subparagraph (b) below, 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 subparagraph (a) above, 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 5 Table B.

Freeboards: general

2. **(1)** Except as otherwise provided in subparagraph (2), the freeboards, other than Timber freeboards, to be assigned to a ship shall be determined in accordance with the provisions of Part I, 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 subparagraph (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 subparagraph (3), the Summer freeboard shall be determined in accordance with the provisions of paragraphs 4 to 16.

(2) Subject to subparagraph (3), 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 subparagraphs (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 subparagraph (b) below, the fresh water freeboard shall be obtained by deducting from the Summer freeboard the quantity –

$$\frac{\Delta}{4T}$$

where –

Δ 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.

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 from Table A in Schedule 5.

(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 from Table B in 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 (8) 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 (9).

(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 subparagraphs (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;

(d) in the case of a ship constructed before 8th June 2000, when the ship is loaded to the Summer load waterline it 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 (6). 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.

(e) in the case of a ship constructed on or after 8th June 2000 which is loaded in accordance with the initial condition of loading before flooding, the ship will –

(i) 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(8), and,

(ii) remain afloat in a satisfactory condition of equilibrium, as referred to in subparagraph (c)(ii) of the definition of a Type "A" ship in paragraph 1(1) of Schedule 2; and if the ship is over 150 metres in length, the machinery space shall be treated for these purposes as a floodable compartment, but with a permeability of 0.85.

(4) Subject to subparagraph (5) no reduction of freeboard pursuant to subparagraph (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 subparagraph(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 subparagraphs (3)(a) to (c);

(c) in the case of a ship constructed before 8th June 2000, when loaded to the Summer waterline the ship will remain afloat in the condition of equilibrium described in subparagraph (6) after the flooding –

(i) 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; and

(d) in the case of a ship constructed on or after 8th June 2000, the ship complies with the requirements of subparagraph (3)(e); but in relation to the damage assumptions specified in paragraph 5(8), 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.

(6) In the case of a ship constructed before 8th June 2000, the condition of equilibrium referred to in subparagraphs (3) and (5) above is as follows –

(a) the final waterline after 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°, or if no part of the deck is immersed the angle of heel does not exceed 17°; and

(c) the metacentric height calculated using the constant displacement method has a positive value of at least 50 millimetres in the upright condition after flooding; and

(d) the ship has adequate residual stability; and

(e) the ship has sufficient stability during intermediate stages of flooding to the satisfaction of the Assigning Authority;

(7) In the case of a ship constructed before 8th June 2000, the following assumptions shall be made for the purposes of calculations pursuant to subparagraphs (3)(d) and (5)(c) –

(a) the vertical extent of damage is equal to the depth of the ship at the point of damage, measured from and including the freeboard deck at side to the underside of the keel;

(b) the transverse penetration of damage is not more than one fifth of the breadth of the ship (B), this distance being measured inboard from the ship's side at right angles to the centre line of the ship at the level of the Summer load waterline. The depth of transverse penetration damage assumed shall be that which results in the most severe conditions;

(c) except in the case of compartments referred to in subparagraph (5)(c)(i), no transverse bulkhead is damaged;

(d) the height of the centre of gravity above the base-line is assessed allowing for homogeneous loading of cargo holds and for 50 per cent of the designed capacity of consumable fluids and stores.

(8) In the case of a ship constructed on or after 8th June 2000, the following assumptions shall be made for the purposes of the calculations pursuant to subparagraphs (3)(e) and (5)(d) –

(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 one fifth of the breadth of the ship (B) or 11.5m, whichever is the lesser, measured inboard from the side of the ship perpendicularly to the centreline at the level of the summer load waterline;

(c) if damage of a lesser extent than that specified in subparagraphs (a) and (b) above results in a more severe condition, such lesser extent shall be assumed;

(d) except where otherwise required by subparagraph (5), 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 postition within the transverse extent of 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 prescribed in subparagraph (b)above.

If in a transverse bulkhead there are steps or recesses of not more than 3m in length located within the transverse extent of assumed damage as defined in subparagraph (b), such transverse bulkhead may be assumed 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 3m in length in a transverse bulkhead, the two compartments adjacent to this bulkhead shall be considered as flooded. The step formed by the afterpeak bulkhead and the afterpeak tank top shall not be regarded as a step for the purpose of this regulation;

(e) where a main transverse bulkhead is located within the transverse extent of assumed damage and is stepped in way of a double bottom or side tank by more than 3m, the double bottom or side tanks adjacent to the stepped portion of the main transverse bulkhead shall be considered as flooded simultaneously. If this side tank has openings, into one or several holds, such as grain feeding holes, such hold or holds shall be considered as flooded simultaneously. Similarly in a ship designed for the carriage of liquid cargoes, if a side tank has openings into adjacent compartments, such adjacent compartments shall be considered as empty and as being 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 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 $1/3\ L^{2/3}$ or 14.5m, 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.

(9) The tabular freeboard of a ship to which subparagraph (2)(b) applies shall be increased by the amount shown in Table 1 appropriate to the ship's length –

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 Secretary of State determines in each particular case.

(10)(a) This subparagraph applies to every Type "B" ship of not more than 100 metres in length having enclosed superstructures the total effective length (e) of 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 subparagraphs (1), (2) and (9) shall be increased by the following amount –

$$7.5\left(100-(L)\right)\left(0.35-\frac{(E)}{(L)}\right)$$

(11) In the case of a ship with a block coefficient (C_b) exceeding 0.68, the freeboard calculated in accordance with subparagraphs (1) to (10) shall be multiplied by the factor –

$$\frac{(C_b) + 0.68}{1.36}$$

(12) Corrections in accordance with paragraphs 6 to 16 shall be applied to the freeboard calculated in accordance with subparagraphs (1) to (11) and, subject to paragraph 3(3), the freeboard so corrected shall be the Summer freeboard to be assigned to the ship.

TABLE 1

Length of ship (metres)	Freeboard increase (millimetres)	Length of ship (metres)	Freeboard increase (millimetres)	Length of ship (metres)	Freeboard increase (millimetres)
108 and below	50	139	175	170	290
109	52	140	181	171	292
110	55	141	186	172	294
111	57	142	191	173	297
112	59	143	196	174	299
113	62	144	201	175	301
114	64	145	206	176	304
115	68	146	210	177	306
116	70	147	215	178	308
117	73	148	219	179	311
118	76	149	224	180	313
119	80	150	228	181	315
120	84	151	232	182	318
121	87	152	236	183	320
122	91	153	240	184	322
123	95	154	244	185	325
124	99	155	247	186	327
125	103	156	251	187	329
126	108	157	254	188	332
127	112	158	258	189	334
128	116	159	261	190	336
129	121	160	264	191	339
130	126	161	267	192	341
131	131	162	270	193	343
132	136	163	273	194	346
133	142	164	275	195	348
134	147	165	278	196	350
135	153	166	280	197	353
136	159	167	283	198	355
137	164	168	285	199	357
138	170	169	287	200	358

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), or in the case of a Type "B" ship the corrections referred to in paragraph 5(12).

Correction for Depth

7. **(1)** If the depth for freeboard (D) exceeds $\frac{(L)}{15}$, the basic freeboard of the ship shall be

increased by – $\left((D)-\frac{(L)}{15}\right)$ ***R*** millimetres

where R is –

$\frac{(L)}{0.48}$, 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 $\frac{(L)}{15}$, the basic freeboard of the ship shall be reduced by –

$\left((D)-\frac{(L)}{15}\right)$ ***R*** 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 subparagraph (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 subparagraph (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 16(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 of 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 2

Length of ship (L) (metres)	Standard Height (metres)	
	of a raised quarter deck	of a superstructure other than a raised quarter deck
30 or less	0.90	1.80
75	1.20	1.80
125 or more	1.80	2.30

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

(2) **(a)** Subject to subparagraph (b)below, the length of a superstructure (S) shall be the mean length of the parts of the superstructure which lie within the length of the ship.

(b) 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 subparagraph (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 subparagraph (c) below, 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 subparagraphs (a) above and (c) below, 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 subparagraph (b) below 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 subparagraph (d) below, 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 subparagraph (c) above 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 trunk is less than 1.0 (L), the basic freeboard of a ship shall be reduced by a percentage of the figures in subparagraph (1) according to the total effective length of its superstructures and trunks as follows.

(a) In the case of a Type "A" ship, by a percentage given in 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.

(b) (i) Subject to subparagraphs (ii), (iii) and (iv) below, in the case of a Type "B" ship, by a percentage 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.

(ii) 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.

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

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

$$5.\frac{(0.07(L)-f)}{0.07(L)}$$

where "f" is the effective length of the forecastle.

TABLE 3

PERCENTAGE OF DEDUCTION FOR TYPE "A" SHIPS

Percentage of deduction for all types of superstructure and trunks	Total effective length of superstructure and trunks										
	0	0.1(L)	0.2(L)	0.3(L)	0.4(L)	0.5(L)	0.6(L)	0.7(L)	0.8(L)	0.9(L)	1.0(L)
	0	7	14	21	31	41	52	63	75.3	87.7	100

TABLE 4

PERCENTAGE OF DEDUCTION FOR TYPE "B" SHIPS

Ships with forecastle and without detached bridge	Total effective length of superstructure and trunks										
	Line	0	0.1(L)	0.2(L)	0.3(L)	0.4(L)	0.5(L)	0.6(L)	0.7(L)	0.8(L)	0.9(L)	1.0
	I	0	5	10	15	23.5	32	46	63	75.3	87.7	100
Ships with forecastle and detached bridge	II	0	6.3	12.7	19	27.5	36	46	63	75.3	87.7	100

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 in 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 5

	Station	**Ordinate (in millimetres)**	**Factor**
After half	After perpendicular (A.P.)	25.0((L) /3 + 10)	1
	1/6(L) from A.P.	11.1((L) /3 + 10)	3
	1/3(L) from A.P.	2 .8((L) /3 + 10)	3
	Amidships	0	1
Forward half	Amidships	0	1
	1/3(L) from F.P.	5.6((L) /3 + 10)	3
	1/6(L) from F.P.	22.2((L) /3 + 10)	3
	Forward perpendicular (F.P.)	50.0((L) /3 + 10)	1

Measurement of variation front 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 halves 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 halves 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 –

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

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 halves 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 subparagraph (1) shall be added to the basic freeboard of the ship.

(3) Subject to subparagraph (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 subparagraph (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 subparagraph (1) shall be modified in the ratio of the amount of 0.2(L) amidship which is covered by the superstructure, to 0.2(L).

(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 subparagraphs (2) and (3), where the bow height determined in accordance with subparagraph (4) is less than the minimum bow height determined in accordance with subparagraph (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 subparagraph (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 subparagraph (1) applies, being a ship which is constructed to meet exceptional operational requirements, the correction to be made in accordance with subparagraphs (1) and (2) may be reduced or waived if the Secretary of State 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.

(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.

(5) The minimum bow height in millimetres shall be –

$$56(L)\left(1-\frac{(L)}{500}\right)\left(\frac{1.36}{C_b+0.68}\right)$$

where (L) is less than 250 metres; and

$$7000\left(\frac{1.36}{C_b+0.68}\right)$$

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),(10) and (11) and corrected in accordance with the provisions of paragraph 6 to 15, except that the percentages in Table 6 shall be substituted for those given in Table 4 of paragraph 11(2).

TABLE 6

PERCENTAGE OF DEDUCTION FOR TYPE "B" SHIPS

Percentage of deduction for all types of superstructure	Total effective length of superstructure										
	0	0.1(L)	0.2(L)	0.3(L)	0.4(L)	0.5(L)	0.6(L)	0.7(L)	0.8(L)	0.9(L	1.0(L)
	20	31	42	53	64	70	76	82	88	94	100

Percentages at intermediate lengths 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 subparagraph (b), obtained by deducting from the Summer Timber freeboard the quantity –

$$\frac{\Delta}{4T} \text{ millimetres}$$

where –

Δ is the displacement in salt water in tonnes 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 tonnes 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 in accordance with the provisions of Part I of this Schedule increased by such amounts as the Secretary of State may direct in each particular case.

Ships of wood and other ships

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 Secretary of State may direct in each particular case.

SCHEDULE 5

FREEBOARD TABLES

1. The following is the Freeboard Table referred to in paragraph 4 of Schedule 4:–

TABLE A

FREEBOARD TABLE TYPE "A" SHIPS

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
24	200	64	626	104	1196
25	208	65	639	105	1212
26	217	66	653	106	1228
27	225	67	666	107	1244
28	233	68	680	108	1260
29	242	69	693	109	1276
30	250	70	706	110	1293
31	258	71	720	111	1309
32	267	72	733	112	1326
33	275	73	746	113	1342
34	283	74	760	114	1359
35	292	75	773	115	1376
36	300	76	786	116	1392
37	308	77	800	117	1409
38	316	78	814	118	1426
39	325	79	828	119	1442
40	334	80	841	120	1459
41	344	81	855	121	1476
42	354	82	869	122	1494
43	364	83	883	123	1511
44	374	84	897	124	1528
45	385	85	911	125	1546
46	396	86	926	126	1563
47	408	87	940	127	1580
48	420	88	955	128	1598
49	432	89	969	129	1615
50	443	90	984	130	1632
51	455	91	999	131	1650
52	467	92	1014	132	1667
53	478	93	1029	133	1684
54	490	94	1044	134	1702
55	503	95	1059	135	1719
56	516	96	1074	136	1736
57	530	97	1089	137	1753
58	544	98	1105	138	1770
59	559	99	1120	139	1787
60	573	100	1135	140	1803
6l	587	101	1151	141	1820
62	600	102	1166	142	1837
63	613	103	1181	143	1853

TABLE A (continued)

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
144	1870	197	2582	250	3012
145	1886	198	2592	251	3018
146	1903	199	2602	252	3024
147	1919	200	2612	253	3030
148	1935	201	2622	254	3036
149	1952	202	2632	255	3042
150	1968	203	2641	256	3048
151	1984	204	2650	257	3054
152	2000	205	2659	258	3060
153	2016	206	2669	259	3066
154	2032	207	2678	260	3072
155	2048	208	2687	261	3078
156	2064	209	2696	262	3084
157	2080	210	2705	263	3089
158	2096	211	2714	264	3095
159	2111	212	2723	265	3101
160	2126	213	2732	266	3106
161	2141	214	2741	267	3112
162	2155	215	2749	268	3117
163	2169	216	2758	269	3123
164	2184	217	2767	270	3128
165	2198	218	2775	271	3133
166	2212	219	2784	272	3138
167	2226	220	2792	273	3143
168	2240	221	2801	274	3148
169	2254	222	2809	275	3153
170	2268	223	2817	276	3158
171	2281	224	2825	277	3163
172	2294	225	2833	278	3167
173	2307	226	2841	279	3172
174	2320	227	2849	280	3176
175	2332	228	2857	281	3181
176	2345	229	2865	282	3185
177	2357	230	2872	283	3189
178	2369	231	2880	284	3194
179	2381	232	2888	285	3198
180	2393	233	2895	286	3202
181	2405	234	2903	287	3207
182	2416	235	2910	288	3211
183	2428	236	2918	289	3215
184	2440	237	2925	290	3220
185	2451	238	2932	291	3224
186	2463	239	2939	292	3228
187	2474	240	2946	293	3233
188	2486	241	2953	294	3237
189	2497	242	2959	295	3241
190	2508	243	2966	296	3246
191	2519	244	2973	297	3250
192	2530	245	2979	298	3254
193	2541	246	2986	299	3258
194	2552	247	2993	300	3262
195	2562	248	3000	301	3266
196	2572	249	3006	302	3270

TABLE A (continued)

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
303	3274	324	3342	345	3394
304	3278	325	3345	346	3396
305	3281	326	3347	347	3399
306	3285	327	3350	348	3401
307	3288	328	3353	349	3403
308	3292	329	3355	350	3406
309	3295	330	3358	351	3408
310	3298	331	3361	352	3410
311	3302	332	3363	353	3412
312	3305	333	3366	354	3414
313	3308	334	3368	355	3416
314	3312	335	3371	356	3418
315	3315	336	3373	357	3420
316	3318	337	3375	358	3422
317	3322	338	3378	359	3423
318	3325	339	3380	360	3425
319	3328	340	3382	361	3427
320	3331	341	3385	362	3428
321	3334	342	3387	363	3430
322	3337	343	3389	364	3432
323	3339	344	3392	365	3433

Freeboards at intermediate lengths of ship shall be obtained by linear interpolation.

Freeboards, in mm, at length of ship less than 24 metres shall be –

$$50+\left[\frac{150\,(L)}{24}\right]$$

See also paragraph 3 of Schedule 4.

2. The following is Freeboard Table B referred to in paragraph 5 of Schedule 4:–

TABLE B

FREEBOARD TABLE FOR TYPE "B" SHIPS

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
24	200	72	754	120	1690
25	208	73	769	121	1709
26	217	74	784	122	1729
27	225	75	800	123	1750
28	233	76	816	124	1771
29	242	77	833	125	1793
30	250	78	850	126	1815
31	258	79	868	127	1837
32	267	80	887	128	1859
33	275	81	905	129	1880
34	283	82	923	130	1901
35	292	83	942	131	1921
36	300	84	960	132	1940
37	308	85	978	133	1959
38	316	86	996	134	1979
39	325	87	1015	135	2000
40	334	88	1034	136	2021
41	344	89	1054	137	2043
42	354	90	1075	138	2065
43	364	91	1096	139	2087
44	374	92	1116	140	2109
45	385	93	1135	141	2130
46	396	94	1154	142	2131
47	408	95	1172	143	2171
48	420	96	1190	144	2190
49	432	97	1209	145	2209
50	443	98	1229	146	2229
5l	455	99	1250	147	2250
52	467	100	1271	148	2271
53	478	101	1293	149	2293
54	490	102	1315	150	2315
55	503	103	1337	151	2334
56	516	104	1359	152	2354
57	530	105	1380	153	2375
58	544	106	1401	154	2396
59	559	107	1421	155	2418
60	573	108	1440	156	2440
61	587	109	1459	157	2460
62	601	110	1479	158	2480
63	615	111	1500	159	2500
64	629	112	1521	160	2520
65	644	113	1543	161	2540
66	659	114	1565	162	2560
67	674	115	1587	163	2580
68	689	116	1609	164	2600
69	705	117	1630	165	2620
70	721	118	1651	166	2640
71	738	119	1671	167	2660

TABLE B (continued)

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
168	2680	221	3601	274	4327
169	2698	222	3615	275	4339
170	2716	223	3630	276	4350
171	2735	224	3645	277	4362
172	2754	225	3660	278	4373
173	2774	226	3675	279	4385
174	2795	227	3690	280	4397
175	2815	228	3705	281	4408
176	2835	229	3720	282	4420
177	2855	230	3735	283	4432
178	2875	231	3750	284	4443
179	2895	232	3765	285	4455
180	2915	233	3780	286	4467
181	2933	234	3795	287	4478
182	2952	235	3808	288	4490
183	2970	236	3821	289	4502
184	2988	237	3835	290	4513
185	3007	238	3849	291	4525
186	3025	239	3864	292	4537
187	3044	240	3880	293	4548
188	3062	241	3893	294	4560
189	3080	242	3906	295	4572
190	3098	243	3920	296	4583
191	3116	244	3934	297	4595
192	3134	245	3949	298	4607
193	3151	246	3965	299	4618
194	3167	247	3978	300	4630
195	3185	248	3992	301	4642
196	3202	249	4005	302	4654
197	3219	250	4018	303	4665
198	3235	251	4032	304	4676
199	3249	252	4045	305	4686
200	3264	253	4058	306	4695
201	3280	254	4072	307	4704
202	3296	255	4085	308	4714
203	3313	256	4098	309	4725
204	3330	257	4112	310	4736
205	3347	258	4125	311	4748
206	3363	259	4139	312	4757
207	3380	260	4152	313	4768
208	3397	261	4165	314	4779
209	3413	262	4177	315	4790
210	3430	263	4189	316	4801
211	3445	264	4201	317	4812
212	3460	265	4214	318	4823
213	3475	266	4227	319	4834
214	3490	267	4240	320	4844
215	3505	268	4252	321	4855
216	3520	269	4264	322	4866
217	3537	270	4276	323	4878
218	3554	271	4289	324	4890
219	3570	272	4302	325	4899
220	3586	273	4315	326	4909

TABLE B (continued)

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
327	4920	340	5055	353	5190
328	4931	341	5065	354	5200
329	4943	342	5075	355	5210
330	4955	343	5086	356	5220
331	4965	344	5087	357	5230
332	4975	345	5108	358	5240
333	4985	346	5119	359	5250
334	4995	347	5130	360	5260
335	5005	348	5140	361	5268
336	5015	349	5l50	362	5276
337	5025	350	5160	363	5285
338	5035	351	5170	364	5294
339	5045	352	5180	365	5303

Freeboards at intermediate lengths of ship shall be obtained by linear interpolation.

Freeboards, in mm, at length of ship less than 24 metres shall be –

$$50+\left[\frac{150\,(L)}{24}\right]$$

See also paragraphs 3 and 17 of Schedule 4.

SCHEDULE 6

STABILITY

PART I – 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, feedwater, 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, tonnes 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 or table showing cross curves of stability, covering the range of draughts referred to in paragraph 7(1).

(2) The information 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 subparagraph (5), only enclosed superstructures and efficient trunks as defined in paragraph 10 of Schedule 4 shall be taken into account in deriving such curves.

(5) The following structures may be taken into account in deriving such curves if the Secretary of State 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 Secretary of State 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 where 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)** A profile diagram of the ship drawn to a suitable small scale showing the disposition of all components of the deadweight.

(b) 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).

(c) 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.

(d) A statement showing the elements of stability in the condition compared to the crieria 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 subparagraph (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 subparagraph (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.

PART II – SHIPS IN RELATION TO WHICH THE SECRETARY OF STATE'S OR THE ASSIGNING AUTHORITY'S APPROVAL OF THE STABILITY INFORMATION IS REQUIRED

13. The ships referred to in regulation 32(3), (4)(a) and (5)(a) of the Regulations are as follows:

(a) an oil tanker over 100 metres in length;

(b) a bulk carrier, or an ore carrier, over 150 metres in length;

(c) a single deck bulk carrier over 100 metres in length but not exceeding 150 metres in length;

(d) a single deck dry cargo ship over 100 metres in length;

(e) a purpose built container ship over 125 metres in length;

(f) a column stabilised mobile offshore drilling unit; or

(g) a column stabilised mobile offshore support unit.

14. In paragraph 13 –

"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; and

"column stabilised" means constructed with the main deck of the unit connected to its underwater hull or footings by columns or caissons.

SCHEDULE 7

NOTICE OF LOAD LINES TO BE POSTED UP BEFORE SAILING

1. In this Schedule

"freeboard" means the distance measured vertically downwards amidships from the upper edge of the deck-line marked on the side of the ship to the surface of the water;

Availability of Standard Form

2. Copies of the "Draught of Water and Freeboard" Notice, FRE 13, an example of which is attached, are available from the Maritime and Coastguard Agency Marine Offices.

DRAUGHT OF WATER AND FREEBOARD

NOTICE

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

(1) Summer freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(2) Winter freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(3) Tropical freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(4) Winter North Atlantic freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(5) Allowance for fresh water for all freeboards other than Timber freeboards ..... millimetres

(6) Timber Summer freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(7) Timber Winter freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(8) Timber Tropical freeboard ..... millimetres corresponding to a mean draught of ..... millimetres

(9) Timber Winter North Atlantic freeboard ..... 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.

PARTICULARS OF LOADING

1	2	3	4	5	6	7	8	9
DATE	**PLACE**	**ACTUAL DRAUGHT**			**MEAN FREEBOARD**		**SIGNATURE OF MASTER AND AN OFFICER**	
		FORWARD	**AFT**	**MEAN**	**ACTUAL (See notes 1&2)**	**CORRECTED (See note 3)**	**MASTER**	**AN OFFICER**

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, rubbish to be discharged overboard 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 8

UNITED KINGDOM LOAD LINE CERTIFICATES

UNITED KINGDOM LOAD LINE CERTIFICATE

Issued under the provisions of the Merchant Shipping (Load Line) Regulations 1998 as amended under the authority of the Government of the United Kingdom of Great Britain and Northern Ireland by [official designation of the assigning authority]

PARTICULARS OF SHIP

Name of Ship _____

Distinctive Number or Letters _____

Port of Registry _____

Length (L) as defined by regulation 2 of the Merchant Shipping (Load Line) Regulations 1998 as amended _____

Gross Tonnage _____

Freeboard assigned as : _____ *Type of ship* _____

	Freeboard from deck line	*Load line*
Tropical	*mm. (T)*	*mm. above (S)*
Summer	*mm. (S)*	*Upper edge of line through centre of ring*
Winter	*mm. (W)*	*mm. below (S)*
Winter North Atlantic	*mm. (WNA)*	*mm. below (S)*

Note: Freeboards and Load Lines which are not applicable need not be entered on the certificate.

Allowance for Fresh Water for all freeboards : _____ *mm.*

The upper edge of the deck line from which these freeboards are measured is

Date of initial or renewal survey _____

THIS IS TO CERTIFY

that this ship has been surveyed and the freeboards and load lines shown above have been assigned in accordance with the Merchant Shipping (Load Line) Regulations 1998, as amended.

This certificate is valid until _____ *subject to annual surveys in accordance with those Regulations*

Issued at _____ *on* _____

Signed .....

An authorised official issuing the certificate

Name _____

FORMERLY FRE2 1/4 **MSF 2001**/REV 0500

Name of Ship

CONDITIONS:

ENDORSEMENT OF ANNUAL SURVEY

This is to certify

that at an annual survey required by Regulation 8(1)(c) of the Merchant Shipping (Load Line) Regulations 1998 as amended this ship was found to comply with the relevant requirements of those Regulations.

Place		*Date*	
		Name	

Siganture of an authorised official

Place		*Date*	
		Name	

Siganture of an authorised official

Place		*Date*	
		Name	

Signature of an authorised official

Place		*Date*	
		Name	

Signature of an authorised official

Notes

1. When a ship departs from a port situated on a river or inland water, deeper loading shall be permitted corresponding to the weight of fuel and all other materials required for consumption between the point of departure and the sea.

2. When a ship is in fresh water of unit density, the appropriate load line may be submerged by the amount of the fresh water allowance shown above. Where the density is other than unity, an allowance shall be made proportional to the difference between 1.025 and the actual density.

3. This certificate must be kept framed and posted up in some conspicuous place on board the ship, so long as it remains in force and the ship is in use.

Name of Ship

Annual survey in accordance with Regulation 10(8)(c)

THIS IS TO CERTIFY

that at an annual survey in accordance with Regulation 10(8)(c) of Merchant Shipping (Load Line) Regulations 1998, as amended , the ship was found to comply with the relevant requirements of those Regulations

Place _____ *Date* _____

Name _____

.....

Signature of an authorised official

Endorsement to extend the certificate if valid for less than 5 years where Regulation 10 (3) applies

The Ship complies with the relevant requirements of the Merchant Shipping (Load Line) Regulations 1998, as amended, and this certificate shall, in accordance with Regulation 10 (3) of those Regulations, be accepted as valid until _____

Place _____ *Date* _____

Name _____

.....

Signature of an authorised official

Endorsement where the renewal survey has been completed and Regulation 10 (4) applies

The Ship complies with the relevant requirements of the Merchant Shipping (Load Line) Regulations 1998, as amended, and this certificate shall, in accordance with Regulation 10 (4) of those Regulations, be accepted as valid until _____

Place _____ *Name* _____

Date _____

.....

Signature of an authorised official

Name of Ship

Endorsement to extend the validity of the certificate until reaching the port of survey or for a period of grace where Regulation 10 (5) or 10(6) applies

*This certificate shall, in accordance with Regulation 10(5)/10(6) * of the Merchant Shipping (Load Line) Regulations, as amended, be accepted as valid until*

Place | *Date*

Name

.....

Signature of an authorised official

Endorsement for advancement of anniversary date where Regulation 10 (8) (a) applies

In accordance with Regulation 10 (8) (a) of the Merchant Shipping (Load Line) Regulations 1998, as amended, the new anniversary date is

Place | *Date*

Name

.....

Signature of an authorised official

In accordance with Regulation 10(8) (a) of the Merchant Shipping (Load Line) Regulations 1998, as amended, the new anniversary date is

Place | *Date*

Name

.....

Signature of an authorised official

** Delete as appropriate*

4/4

UNITED KINGDOM LOAD LINE EXEMPTION CERTIFICATE

Issued under the provisions of the Merchant Shipping (Load Line) Regulations 1998, as amended under the authority of the Government of the United Kingdom of Great Britain and Northern Ireland by the Maritime and Coastguard Agency, an Executive Agency of the Department of the Environment, Transport and the Regions

PARTICULARS OF SHIP

Name of Ship	
Distinctive Number or Letters	
Port of Registry	

Length (L) in metres as defined by Regulation 2 of the Merchant Shipping (Load Line) Regulations 1998, as amended.		*Gross Tonnage*	

THIS IS TO CERTIFY

That the above-mentioned ship is exempt under Regulation 5(2) of the Merchant Shipping (Load Line) Regulations 1998, as amended, from the following provisions of those Regulations:-

SUBJECT TO THE FOLLOWING CONDITIONS

Date of initial or renewal survey _____

This certificate is valid until _____ *subject, where appropriate, to annual surveys in accordance with the Merchant Shipping (Load Line) Regulations 1998, as amended.*

Issued at _____ *on* _____

Name _____

An authorised official of the Department of the Environment,Transport and the Regions

Name of Ship

CONDITIONS (Continued):

ENDORSEMENT FOR ANNUAL SURVEYS

This is to certify

That at an annual survey required under Regulation 8(1)(c) of the Merchant Shipping (Load Line) Regulations 1998 as amended, this ship continues to comply with the conditions under which the exemption was granted.

Place | *Date*

Signed ---------- *Name*

An authorised official of the Department of the Environment,Transport and the Regions

Place | *Date*

Signed ---------- *Name*

An authorised official of the Department of the Environment,Transport and the Regions

Place | *Date*

Signed ---------- *Name*

An authorised official of the Department of the Environment,Transport and the Regions

Place | *Date*

Signed ---------- *Name*

An authorised official of theDepartment of the Environment, Transport and the Regions

Name of Ship

Annual survey in accordance with Regulation 10(8)(c)

This is to certify

that at an annual survey in accordance with Regulation 10(8)(c) of Merchant Shipping (Load Line) Regulations 1998, as amended, the ship was found to comply with the relevant requirements of those Regulations

Place | *Date* |

Name |

An authorised official of the Department of the Environment, Transport and the Regions

Endorsement to extend the certificate if valid for less than 5 years where Regulation 10 (3) applies

The Ship complies with the relevant requirements of the Merchant Shipping (Load Line) Regulations 1998, as amended, and this certificate shall, in accordance with Regulation 10 (3) of those Regulations, be accepted as valid until

Place | *Date* |

Name |

An authorised official of the Department of the Environment, Transport and the Regions

Endorsement where the renewal survey has been completed and Regulation 10 (4) applies

The Ship complies with the relevant requirements of the Merchant Shipping (Load Line) Regulations 1998, as amended, and this certificate shall, in accordance with Regulation 10 (4) of those Regulations, be accepted as valid until

Place | *Name* |

Date |

An authorised official of theDepartment of the Environment, Transport and the Regions

Name of Ship

Endorsement to extend the validity of the certificate until reaching the port of survey or for a period of grace where Regulation 10 (5) or 10(6) applies

*This certificate shall, in accordance with Regulation 10(5)/10(6) * of the Merchant Shipping (Load Line) Regulations, as amended, be accepted as valid until*

Place | *Date*

Name

An authorised official of the Department of the Environment, Transport and the Regions

Endorsement for advancement of anniversary date where Regulation 10 (8) (a) applies

In accordance with Regulation 10 (8) (a) of the Merchant Shipping (Load Line) Regulations 1998, as amended, the new anniversary date is

Place | *Date*

Name

An authorised official of the Department of the Environment, Transport and the Regions

In accordance with Regulation 10 (8) (a) of the Merchant Shipping (Load Line) Regulations 1998, as amended, the new anniversary date is

Place | *Date*

Name

An authorised official of theDepartment of the Environment, Transport and the Regions

** delete as appropriate*