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STATUTORY INSTRUMENTS

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**1998 No. 2514**

**MERCHANT SHIPPING**

**SAFETY**

**The Merchant Shipping (Passenger Ship Construction:  
Ships of Classes I, II and II(A)) Regulations 1998**

<i>Made</i>	- - - -	<i>8th October 1998</i>
<i>Laid before Parliament</i>		<i>19th October 1998</i>
<i>Coming into force</i>	- -	<i>12th November 1998</i>

The Secretary of State, after consulting the persons referred to in section 86(4) of the Merchant Shipping Act 1995<sup>(1)</sup>, in exercise of powers conferred by section 85(1)(a) and (b), (3) and (5) to (7) and section 86(1) and (2) of that Act and all other powers enabling him in that behalf, hereby makes the following Regulations:

**PART I**

**PRELIMINARY**

**Citation, commencement and revocation**

**1.**—(1) These Regulations may be cited as the Merchant Shipping (Passenger Ship Construction: Ships of Classes I, II and II(A)) Regulations 1998 and shall come into force on 12th November.

(2) The following Regulations are hereby revoked—

- (a) the Merchant Shipping (Passenger Ship Construction) Regulations 1980<sup>(2)</sup>;
- (b) the Merchant Shipping (Passenger Ship Construction) (Amendment) Regulations 1981<sup>(3)</sup>;
- (c) the Merchant Shipping (Passenger Ship Classification) Regulations 1981<sup>(4)</sup>;
- (d) the Merchant Shipping (Passenger Ship Construction and Survey) Regulations 1984<sup>(5)</sup>;

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(1) [1995 c. 21](#); sections 85 & 86 were amended by the Merchant Shipping and Maritime Securities Act 1997 ([c. 28](#)), section 8.  
(2) S.I.1980/535.  
(3) S.I. [1981/580](#).  
(4) S.I. [1981/1472](#).  
(5) S.I. [1984/1216](#).

- (e) the Merchant Shipping (Passenger Ship Construction) (Amendment) Regulations 1985<sup>(6)</sup>;
- (f) the Merchant Shipping (Application of Construction and Survey Regulations to Other Ships) Regulations 1985<sup>(7)</sup>;
- (g) the Merchant Shipping (Passenger Ship Construction) (New and Existing Ships) (Amendment) Regulations 1986<sup>(8)</sup>;
- (h) the Merchant Shipping (Passenger Ship Construction) (Amendment) Regulations 1987<sup>(9)</sup>;
- (i) the Merchant Shipping (Closing of Openings in Hulls and in Watertight Bulkheads) Regulations 1987<sup>(10)</sup>;
- (j) the Merchant Shipping (Stability of Passenger Ships) Regulations 1988<sup>(11)</sup>;
- (k) the Merchant Shipping (Closing of Openings in Enclosed Superstructures and in Bulkheads above the Bulkhead Deck) Regulations 1988<sup>(12)</sup>;
- (l) the Merchant Shipping (Closing of Openings in Enclosed Superstructures and in Bulkheads above the Bulkhead Deck) (Application to Non-United Kingdom Ships) Regulations 1988<sup>(13)</sup>;
- (m) the Merchant Shipping (Loading and Stability Assessment of Ro-Ro Passenger Ships) (Non-United Kingdom Ships) Regulations 1989<sup>(14)</sup>;
- (n) the Merchant Shipping (Passenger Ship Construction and Survey) (Amendment) Regulations 1990<sup>(15)</sup>;
- (o) the Merchant Shipping (Passenger Ship Construction and Survey) (Amendment) Regulations 1992<sup>(16)</sup>; and
- (p) the Anchors and Chain Cables Rules 1970<sup>(17)</sup>.

## Interpretation

### 2.—(1) In these Regulations—

- (a) 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; but in the case of a ship the keel of which was laid or which was at a similar stage of construction before a specified date, but which was not a passenger ship, which is converted to a passenger ship after that date, the ship is to be treated as constructed on the date on which such conversion commences;
- (b) a reference to a numbered regulation is, unless otherwise stated, a reference to the regulation of that number in these Regulations;
- (c) a reference in a regulation to a numbered paragraph is, unless otherwise stated, a reference to the paragraph of that number in that regulation; and
- (d) where a sub-heading refers to “requirements” or to “additional requirements” for certain ships, the text following such a sub-heading in that regulation (or until the next sub-heading in that regulation) shall (unless the context otherwise requires) relate only to such ships.

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(6) S.I. 1985/660.  
 (7) S.I. 1985/661.  
 (8) S.I. 1986/1074.  
 (9) S.I. 1987/1886.  
 (10) S.I. 1987/1298.  
 (11) S.I. 1988/1693.  
 (12) S.I. 1988/317.  
 (13) S.I. 1988/642.  
 (14) S.I. 1989/567.  
 (15) S.I. 1990/892.  
 (16) S.I. 1992/2358.  
 (17) S.I. 1970/1453.

(2) In these Regulations the following expressions have the following meanings respectively, except where the context requires otherwise—

“approved” means approved by the Secretary of State or, in relation to any equipment or arrangement mentioned in Merchant Shipping Notice No. M1645, by any persons specified in that Notice in relation to such equipment or arrangement;

“auxiliary steering gear” means the equipment, other than any part of the main steering gear, necessary to steer the ship in the event of failure of the main steering gear but not including the tiller, quadrant or components serving the same purpose;

“breadth of the ship” means the greatest moulded breadth at or below the ship’s deepest subdivision load waterline;

“bulkhead deck” means the uppermost deck up to which transverse watertight bulkheads are carried;

“Certifying Authority” means the Secretary of State or any person authorised by the Secretary of State;

“control room” means a room either within or outside a propelling machinery space, from which propelling machinery and boilers may be controlled;

“crew space” means crew accommodation within the meaning of section 43 in the Merchant Shipping Act 1995;

“dangerous goods” means goods defined as such in the Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997<sup>(18)</sup>, and any reference to a particular Class of dangerous goods is a reference to that Class of dangerous goods as defined in those Regulations;

“dead ship condition” means the condition under which the main propulsion plant, boilers and auxiliaries are not in operation due to the absence of power;

“draught” unless stated otherwise, means the vertical distance from the underside of keel amidships to a subdivision load waterline;

“EEA Agreement” means the Agreement on the European Economic Area signed at Oporto on 2nd May 1992 as adjusted by the Protocol signed at Brussels on 17th May 1993<sup>(19)</sup>;

“EEA State” means a State which is a Contracting Party to the EEA Agreement;

“emergency condition” means a condition under which any services needed for normal operational and habitable conditions are not in working order due to failure of the main source of electrical power;

“emergency source of electrical power” means a source of electrical power intended to supply the emergency switchboard in the event of failure of the main source of electrical power;

“emergency switchboard” means a switchboard which in the event of failure of the main electrical power supply system is directly supplied by the emergency source of electrical power or the transitional source of emergency electrical power and is intended to distribute electrical energy to the emergency services;

“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 the sides or ends thereof are fitted with efficient weathertight means of closing;

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<sup>(18)</sup> S.I. 1997/2367.

<sup>(19)</sup> Cm. 2073.

but does 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;  
 “factor of subdivision” in relation to any ship or portion thereof means the factor of subdivision determined in accordance with such provisions of Schedule 2 in Merchant Shipping Notice MSN 1698(M) as apply to that ship or portion as the case may be;

“forward perpendicular” means the forward extremity of the length of the ship;

“freeboard deck” has the same meaning as in the Merchant Shipping (Load Line) Rules 1998(20);

“hazardous area” means an area in which explosive gas-air mixtures are, or may be expected to be, present in quantities such as to require special precautions for the construction and use of electrical apparatus or other apparatus which otherwise would constitute a source of ignition;

“high speed craft” is a craft capable of a maximum speed in metres per second (m/s) equal to or exceeding—

$$3.7V^{0.1667}(\text{m/s})$$

where

# = volume of displacement corresponding to the design waterline (m<sup>3</sup>);

“IMO” means the International Maritime Organization;

“IMO Resolution A.265 (VIII)” means Resolution A.265 (VIII) adopted by IMO, entitled “Regulations on Subdivision and Stability of Passenger Ships as an Equivalent to Part B of Chapter II of the International Convention for the Safety of Life at Sea 1960”;

“independent power pump” means a pump operated by power otherwise than from the ship’s main engines;

“length” in relation to a ship, unless otherwise defined, means the length of a ship measured between perpendiculars taken at the extremities of the deepest subdivision load waterline;

“lightweight” means the displacement of a ship in tonnes without cargo, fuel, lubricating oil, ballast water, fresh water and feed water in tanks, consumable stores and passengers and crew and their effects;

“machinery space”, except in Parts II to VI, means any space which contains propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and major electrical machinery, oil filling stations, refrigerating, stabilising, ventilation and air conditioning machinery and similar spaces, and where the context so admits any trunk to such a space;

“machinery space” in Parts II to VI means any space extending from the moulded base line of the ship to the bulkhead deck and between the extreme transverse watertight bulkheads bounding the spaces containing the main and auxiliary propelling machinery, generators and boilers serving the needs of propulsion, when installed;

“machinery spaces of Category A” means a machinery space which contains—

- (a) internal combustion type machinery used either for main propulsion purposes or for other purposes where such machinery has in the aggregate a total power output of not less than 375 kilowatts; or
- (b) any oil-fired boiler or oil fuel unit;

“main generating station” means the space in which the main source of electrical power is situated;

“main source of electrical power” means a source intended to supply electrical power to the main switchboard for distribution to all services necessary for maintaining the ship in a normal operational and habitable condition;

“main steering gear” means the machinery, rudder actuators, steering gear power units, if any, and auxiliary equipment and the means of applying torque to the rudder stock, such as the tiller or quadrant, necessary for effecting movement of the rudder for the purpose of steering the ship under normal service conditions;

“main switchboard” means a switchboard which is directly supplied by the main source of electrical power and is intended to distribute electrical energy to the ship’s services;

“margin line” means a line at least 76 millimetres below the upper surface of the bulkhead deck at the side of a subdivided ship;

“Maritime and Coastguard Agency” means the Maritime and Coastguard Agency, an executive agency of the Department of the Environment, Transport and the Regions;

“maximum ahead service speed” means the greatest speed which the ship is designed to maintain in service at sea at her deepest seagoing draught;

“Merchant Shipping Notice”, “Marine Guidance Note” or “Marine Information Note” means a Notice/Note described as such and issued by the Maritime and Coastguard Agency;

“mile” means a nautical mile of 1852 metres;

“navigable speed” means the minimum speed at which a ship can be effectively steered in the ahead direction;

“noise level” means “A” weighted sound pressure level in decibels dB(A) as defined and tabulated in the British Standards specification number EN 60651: 1994;

“nominated surveyor” means a surveyor nominated by the Secretary of State to undertake the surveys required by these Regulations and includes a marine surveyor of the Maritime and Coastguard Agency;

“normal operational and habitable condition” means a condition under which the ship as a whole, the machinery, services, means and aids ensuring propulsion, ability to steer, safe navigation, fire and flooding safety, internal and external communications and signals, means of escape, and winches for emergency boats, as well as the designed comfortable conditions of habitability are in working order and functioning normally;

“oil fuel unit” means the equipment used for the preparation of oil fuel for delivery to an oil-fired boiler or the equipment used for the preparation for delivery of heated oil to an internal combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a pressure greater than 1.8 bar;

“open ro-ro cargo spaces” means ro-ro cargo spaces which are open at both ends, or open at one end and provided with adequate natural ventilation effective over their entire length through permanent openings in the side plating or deckhead;

“passenger” means any person carried in a ship except—

- (a) a person employed or engaged in any capacity on board the ship on the business of the ship;
- (b) a person on board the ship either in pursuance of the obligation laid upon the master to carry shipwrecked, distressed or other persons, or by reason of any circumstances that neither the master nor the owner nor the charterer (if any) could have prevented; and
- (c) a child under one year of age.

“passenger ship” means a ship carrying more than 12 passengers and propelled by electricity or other mechanical power;

“passenger space” means a space provided for the use of passengers, except as otherwise defined in paragraph 1(4) of section 1 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M);

“permeability” in relation to a space means the percentage of that space, on the assumption that it is in use for the purpose for which it was appropriated, that can be occupied by water;

“periodic survey” means a periodical survey pursuant to regulation 4(b) of the Merchant Shipping (Survey and Certification) Regulations 1995<sup>(21)</sup>;

“pleasure vessel” has the same meaning as in the Merchant Shipping (Vessels in Commercial Use for Sport or Pleasure) Regulations 1993<sup>(22)</sup>;

“public spaces” includes halls, dining rooms, bars, smoke rooms, lounges, recreation rooms, nurseries, libraries and similar public permanently enclosed spaces;

“relevant standard of an EEA state other than the United Kingdom”, in relation to a reference to an International Standard or a British Standard means—

- (a) a relevant standard or code of practice of a national standards body or equivalent body of an EEA State other than the United Kingdom;
- (b) a relevant international standard recognised for use in an EEA State other than the United Kingdom; or
- (c) a relevant specification acknowledged for use as a standard by a public authority of an EEA State other than the United Kingdom;

being a standard, code of practice or specification which provides, in use, levels of safety, suitability and fitness of purpose equivalent to those provided by the International Standard or the British Standard.

“ro-ro cargo spaces” means spaces not normally subdivided in any way and extending to either a substantial length or the entire length of the ship in which goods (packaged or in bulk, in or on rail or road cars, vehicles (including road or rail tankers), trailers, containers, pallets, demountable tanks or in or on similar stowage units or other receptacles) can be loaded and unloaded normally in a horizontal direction;

“ro-ro passenger ship” means a passenger ship provided with cargo or vehicle spaces not normally subdivided in any way and extending to either a substantial length or the entire length of the ship in which vehicles or cargo can be loaded or unloaded in a horizontal direction;

“settling tank” means an oil storage tank having a heating surface of not less than 0.183 square metre per tonne of oil capacity;

“similar stage of construction” means the stage at which—

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

“special category space” means any enclosed space above or below the bulkhead deck intended for the carriage of motor vehicles with fuel in their tanks for their propulsion, into and from which such vehicles can be driven and to which passengers have access;

“SOLAS” means the Safety of Life at Sea Convention 1974<sup>(23)</sup>, and its 1978 Protocol<sup>(24)</sup> and amendments in force on 1st July 1998;

“stability information” means the information required to be provided in compliance with regulation 38;

(21) S.I. 1995/1210, to which there is an amendment not relevant to these Regulations.

(22) S.I. 1993/1072.

(23) Cmnd. 7874.

(24) Cmnd. 7346.

“steering gear power unit” means—

- (a) in the case of electric steering gear, the electric motor and its associated electrical equipment;
- (b) in the case of electro-hydraulic steering gear, the electric motor, its associated electrical equipment and connected pump; or
- (c) in the case of steam-hydraulic or pneumatic-hydraulic steering gear, the driving engine and connected pump;

“subdivided ship” means a ship which has a factor of subdivision of unity or 0.5;

“subdivision load waterline” means the waterline assumed in determining the subdivision of the ship in accordance with these Regulations;

“suitable” in relation to material means approved as suitable for the purpose for which it is used;

“superstructure” means a decked structure situated on or above the bulkhead 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 of the ship by more than 4 per cent of the breadth of the ship and, where the bulkhead deck of the ship consists of a lower deck, includes that part of the hull of the ship which extends above the bulkhead deck;

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

“United Kingdom ro-ro passenger ship” means a ro-ro passenger ship which is a United Kingdom ship;

“voyage” includes an excursion; and shall be taken to commence when a ship leaves its berth or anchorage at a port;

“watertight” in relation to a structure means capable of preventing the passage of water through the structure in any direction under the maximum head of water which it might have to sustain in the event of damage to the ship, but for structures below the bulkhead deck at least the head of water up to the ship’s bulkhead deck;

“weathertight” in relation to a structure means capable of preventing the passage of sea water through the structure in the worst sea and weather conditions likely to be encountered by the ship.

(3) Any reference in these Regulations to—

- (a) a British Standard;
- (b) a Merchant Shipping Notice;
- (c) SOLAS; or
- (d) any other specified Code, Circular, Resolution or Guidelines;

shall include—

- (i) a reference to any document amending that publication which is considered by the Secretary of State to be relevant from time to time and is specified in a Merchant Shipping Notice, Marine Guidance Note or Marine Information Note; and
- (ii) with respect to a British Standard, a reference to a relevant standard of an EEA State other than the United Kingdom.

(4) Where a ship is operated by a person other than its owner (whether on behalf of the owner or some other person, or on his own behalf), a reference in these Regulations to the owner shall be construed as including a reference to that person.

(5) Any approval given pursuant to these Regulations shall be given in writing and shall specify the date when it is to come into force and the conditions (if any) on which it is given.

- (a) (6) (a) For the purposes of these Regulations passenger ships shall be arranged in Classes as follows—

*Ships engaged on international voyages*

Class I	Ships engaged on voyages any of which are long international voyages.
Class II	Ships engaged on voyages any of which are short international voyages.

*Ships not engaged on international voyages*

Class II(A)	Ships engaged on voyages of any kind other than international voyages, which are not ships of Classes III to VI(A) as defined in the Merchant Shipping (Passenger Ship Construction: Ships of Classes III to VI(A)) Regulations 1998(25).
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(b) For the purposes of this regulation the following expressions have the following meanings respectively—

“long international voyage” means a voyage from a port in one country to which SOLAS applies to a port in another country or conversely and which is not a short international voyage;

“short international voyage” means an international voyage—

- (i) in the course of which a ship is not more than two hundred nautical miles from a port or place in which the passengers and crew could be placed in safety; and
- (ii) which does not exceed six hundred nautical miles in distance between the last port of call in the country in which the voyage begins and the first port of destination.

### Application

3.—(1) Subject to paragraphs (2) to (6) below, these Regulations apply to passenger ships of Classes I, II and II(A).

(2) These Regulations apply to United Kingdom ships wherever they may be, and to other ships whilst they are in United Kingdom waters.

- (a) (3) (a) Regulations 22, 24 to 26, 31(2) and (3), 34(b), 35, 36 and 43(2) shall not apply to ships which are not United Kingdom ships; and
- (b) any requirement that ships comply with Section 4 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M) shall not apply to passenger ships constructed on or after 1st September 1984 which are not United Kingdom ships; but such ships shall comply instead with Section 3 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M).

(4) These Regulations shall not apply to high-speed craft to which the Merchant Shipping (High Speed Craft) Regulations 1996(26) apply.

(5) No account shall be taken of any deviation by a ship from her intended voyage due solely to stress of weather or any other circumstances that neither the master nor the owner nor the charterer (if any) of the ship could have prevented or forestalled.

(25) S.I. 1998/2515.

(26) S.I. 1996/3188.



- (6) Part IV of these Regulations applies only to—
- (a) United Kingdom ro-ro passenger ships; and
  - (b) non-United Kingdom ro-ro passenger ships with the exception of—
    - (i) regulation 31(2) and (3);
    - (ii) regulation 34(b) to the extent that it relates to regulation 31(2); and
    - (iii) regulation 35(1) and (2) to the extent that it relates to any berth which is not situated within a port in the United Kingdom.

(7) Where any requirement relates to a ship constructed on or after a certain date, then to the extent that the Secretary of State deems reasonable and practical that requirement shall apply in respect of any major repair, alteration or modification carried out on or after that date to a United Kingdom ship constructed before that date.

#### **Exemptions for certain classes of ships and individual ships**

4. The Secretary of State may exempt classes of ships or individual ships from the provisions of these Regulations, subject to such conditions as he may specify, and may on giving reasonable notice alter or cancel any exemption so granted. In particular he may exempt from any of the requirements of these Regulations—

- (a) any ship the keel of which was laid, or which was at a similar stage of construction before 25th May 1980, or any other ship which was converted to a passenger ship before that date, to the extent that he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances;
- (b) any ship of Class II or II(A) which does not proceed more than 20 miles from the nearest land, to the extent that he is satisfied that compliance therewith is unreasonable or unnecessary by reason of the sheltered nature and conditions of the intended services of the ship;
- (c) any ship which is not normally engaged on international voyages but which, in exceptional circumstances is required to undertake a single international voyage, provided that it complies with safety requirements which are adequate for the voyage which is to be undertaken by the ship;
- (d) any ship which embodies features of a novel kind, if the application might seriously impede research into the development of such features and their incorporation in ships engaged on international voyages. Any such ship shall, however, comply with safety requirements which are adequate for the service for which it is intended and are such as to ensure the overall safety of the ship;
- (e) any ship of Class I or II employed in special trades for the carriage of large numbers of special trade passengers, such as the pilgrim trade, provided that it complies fully with the provisions of—
  - (a) the Final Act of the International Conference on Special Trade Passenger Ships 1971<sup>(27)</sup>; or
  - (b) the Protocol on Space Requirements for Special Trade Passenger Ships 1973<sup>(28)</sup>; and
- (f) pleasure vessels.

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<sup>(27)</sup> Cmnd. 5103.

<sup>(28)</sup> Cmnd. 5530.

**Approved standards**

5. In complying with the requirements of these Regulations with respect to construction or maintenance relating to hull, machinery, electrical installations and control installations United Kingdom ships shall comply with the approved standards listed in Merchant Shipping Notice No. M.1672 which are relevant to it.

**PART II****STRENGTH, CONSTRUCTION AND WATERTIGHT SUBDIVISION****Application**

6. This Part applies to all ships, except that a ship which complies fully with regulations 2 to 8, 11 and 13 of IMO Resolution A.265(VIII) need not comply with all the requirements of this Part, but only with regulations 10, 14, 17 to 19 (inclusive) and 21, Sections 2, 3 and 4 of Schedule 4 and Schedules 10 in Merchant Shipping Notice MSN 1698 (M).

**Structural strength**

7. The structural strength of every ship shall be sufficient for the service for which the ship is intended.

**Watertight subdivision**

8. Every ship shall be subdivided by bulkheads, which shall be watertight up to the bulkhead deck, into compartments the maximum length of which shall be calculated in accordance with such of the provisions of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) as apply to that ship. Every other portion of the internal structure which affects the efficiency of the subdivision of the ship shall be watertight, and shall be of a design which will maintain the integrity of the subdivision.

**Construction of watertight bulkheads**

9.—(1) Every portion of the ship required by these Regulations to be watertight shall be constructed in accordance with such of the requirements of Section 1 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M) as apply to it.

(2) All tanks forming part of the structure of the ship and used for the storage of oil fuel or other liquids including double bottoms, peak tanks, settling tanks and bunkers shall be of a design and construction adequate for that purpose.

**Collision, machinery space and afterpeak bulkheads and shaft tunnels**

10.—(1) Every ship shall be provided with a collision bulkhead which shall be watertight up to the bulkhead deck and shall be fitted at a distance from the ship's forward perpendicular of not less than 5 per cent of the length of the ship and not more than 3.0 metres plus 5 per cent of such length.

(2) Where, in a ship constructed on or after 1st September 1984, any part below the waterline extends forward of the forward perpendicular, the distances specified in paragraph (1) shall be measured from a point either—

- (a) at the mid-point of the maximum length forward of the forward perpendicular of such an extension;
- (b) at a horizontal distance forward of the forward perpendicular equal to 1.5 per cent of the length of the ship; or

(c) at a horizontal distance 3.0 metres forward of the forward perpendicular; whichever gives the smallest measurement.

(3) Where a long forward superstructure is fitted, the forepeak or collision bulkhead on all passenger ships shall be extended weathertight to the next full deck above the bulkhead deck. The extension may only open forwards and shall be so arranged as to preclude the possibility of the bow door causing damage to it in the case of damage to, or detachment of, a bow door.

(4) The extension required in paragraph 3 need not be fitted directly above the bulkhead below, provided that no part of the extension is located outside of the limits specified in paragraph (1) or paragraph (2) as applicable. However, in ships constructed before 1st July 1997:

- (a) where a sloping loading ramp forms part of the extension, the part of the extension which is more than 2.3 metres above the bulkhead deck may extend no more than 1 metre forward of the forward limit specified in paragraph (1) or paragraph (2) as applicable; and
- (b) where the existing ramp does not comply with the requirements for acceptance as an extension to the collision bulkhead and the position of the ramp prevents the location of such extension within the limits specified in paragraph (1) or paragraph (2), as applicable, the extension may be situated within a limited distance aft of the aft limit specified in paragraph (1) or paragraph (2) as applicable. The limited distance aft should be no more than is necessary to ensure non-interference with the ramp. The extension to the collision bulkhead shall comply with the requirements of paragraph (3) and shall be so arranged as to preclude the possibility of the ramp causing damage to it in the case of damage to, or detachment of, the ramp.

(5) Ramps not meeting the requirements of paragraph (4) shall be disregarded as an extension of the collision bulkhead.

(6) Every ship shall be provided with a watertight afterpeak bulkhead and with watertight bulkheads dividing the space appropriated to the main and auxiliary propelling machinery, and boilers, if any, from other spaces. Such bulkheads shall be watertight up to the bulkhead deck provided that the afterpeak bulkhead may be stepped below the bulkhead deck if the safety of the ship as regards subdivision is not thereby impaired.

(7) The stern gland of every ship shall be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such a volume that if the tunnel or space is flooded the bulkhead deck will not be submerged. The stern tube shall be enclosed in a watertight compartment of moderate volume.

## **Double bottoms**

**11.—(1)** Every ship shall be fitted with a watertight double bottom which shall extend from the forepeak bulkhead to the afterpeak bulkhead, as far as this is practicable, provided that a double bottom may be dispensed with in compartments where its fitting would not be compatible with the design and proper working of the ship, subject to the following minimum requirements for fitting such a double bottom—

- (a) in ships of 50 metres but less than 61 metres in length, a double bottom shall extend from the machinery space to the collision bulkhead or as near to that bulkhead as is practicable;
- (b) in ships of 61 metres but less than 76 metres in length, a double bottom shall extend from the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable, but not necessarily in the machinery space; and
- (c) in ships of 76 metres in length or over, a double bottom shall be fitted amidships and shall extend from the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable.

(2) Any ship of Class II or II(A) may be exempted by the Secretary of State from the requirements for a double bottom in any portion of the ship which is subdivided by application of a factor of subdivision not exceeding 0.5 if it can be shown that the fitting of a double bottom in that portion of the ship would not be compatible with the design and proper working of the ship.

(3) When a double bottom is required by this regulation to be fitted, its moulded depth shall be of a satisfactory height and the inner bottom shall be continued out to the ship's sides in such a manner as to protect the bottom to the turn of the bilge. The inner bottom shall be deemed to be adequate for this purpose if the line of intersection of the outer edge of the margin plate with the bilge plating is not lower at any point than a horizontal plane passing through the point of intersection with the frame line amidships of a transverse diagonal line inclined at 25 degrees to the base line and cutting it at a point one-half of the ship's moulded breadth from the centreline.

(4) Wells constructed in the double bottom for the purpose of drainage shall not be larger nor extend downwards more than is necessary for such purpose. The depth of the well shall in no case be more than the depth of the double bottom at the centre line, less 460 millimetres, nor shall the well extend below the horizontal plane referred to in paragraph (3), provided that a well extending to the outer bottom may be constructed at the after end of a watertight shaft tunnel fitted in accordance with regulation 10(3).

(5) Wells for purposes other than drainage shall not be constructed in the double bottom. A ship may be exempted from the requirements of this paragraph in respect of any well if it can be shown that it will not diminish the protection given by the double bottom.

(6) Nothing in this regulation shall require a double bottom to be fitted in way of watertight compartments of moderate size used exclusively for the carriage of liquids if the safety of the ship will not be impaired in the event of bottom or side damage by reason of the absence of a double bottom in that position.

### **Weather deck**

**12.—**(1) The bulkhead deck or a deck above the bulkhead deck shall be weathertight. All openings in an exposed weathertight deck shall have coamings of adequate height and strength and shall be provided with efficient and rapid means of closing so as to make them weathertight. Freeing ports, open rails and scuppers shall be fitted as necessary for rapidly clearing the weather deck of water under all weather conditions.

(2) In passenger ships constructed on or after 1st July 1997, the open end of air pipes terminating within a superstructure shall be at least 1 m above the waterline when the ship heels to either an angle of 15 degrees, or the maximum angle of heel during intermediate stages of flooding, as determined by direct calculation, whichever is the greater. Alternatively, air pipes from tanks other than oil tanks may discharge through the side of the superstructure. The provisions of this paragraph are without prejudice to the provisions of the Merchant Shipping (Load Lines) Rules 1968.

### **Partial subdivision above the bulkhead deck**

**13.** All reasonable and practicable measures shall be taken to limit where necessary the entry and spread of water above the bulkhead deck; such measures may include partial bulkheads or webs. Where such partial watertight bulkheads and webs are fitted on the bulkhead deck, above or in the immediate vicinity of main subdivision bulkheads, they shall have watertight shell and bulkhead deck connections so as to restrict the flow of water along the deck when the ship is heeled in a damaged condition. Where such partial watertight bulkheads do not coincide with the bulkheads below, the bulkhead deck between shall be made effectively watertight.

**Openings in watertight bulkheads**

**14.—**(1) The number of openings in watertight bulkheads shall be reduced to the minimum compatible with the design and proper working of the ship and means shall be provided for satisfactorily closing these openings.

- (a) (2) (a) Every tunnel above the double bottom, if any, whether for access from the crew space to the machinery space, for piping or for any other purpose, which passes through such a bulkhead shall be watertight;
- (b) The means of access to at least one end of such a tunnel, if it may be used as a passage at sea, shall be through a trunkway extending watertight to a height sufficient to permit access above the bulkhead deck;
- (c) The means of access to the other end of the tunnel shall be through a watertight door;
- (d) No tunnel shall extend through the first subdivision bulkhead abaft the collision bulkhead.
- (a) (3) (a) Within spaces containing the main and auxiliary propelling machinery including boilers serving the needs of propulsion and all permanent bunkers, not more than one doorway, apart from the doorways to shaft tunnels, may be fitted in each main transverse bulkhead;
- (b) Where two or more shafts are fitted, the tunnels shall be connected by an inter-communicating passage;
- (c) There shall be only one doorway between the machinery space and tunnel spaces where one or two shafts are fitted and only two doorways where there are more than two shafts;
- (d) All such doorways shall be located so as to have their sills as high as practicable.

(4) Doorways, manholes and access openings shall not be fitted in the collision bulkhead below the bulkhead deck of any ship or in any other bulkhead which is required by these Regulations to be watertight and which divides a cargo space from another cargo space or from a permanent or reserve bunker: Provided that any ship may be permitted to fit doorways in bulkheads dividing two between-deck cargo spaces if—

- (a) the doorways are necessary for the proper working of the ship;
- (b) the number of such doorways in the ship is the minimum compatible with the design and proper working of the ship, and they are fitted at the highest practicable level; and
- (c) the outboard vertical edges of such doorways are situated at a distance as far as practicable from the ship's shell plating and in no case less than one-fifth of the breadth of the ship, such distance being measured at right angles to the centre line of the ship at the level of the deepest subdivision load water line,

provided also that in ships constructed on or after 1st September 1984 carrying goods vehicles and accompanying personnel, doorways may be fitted in bulkheads dividing cargo spaces at any level, subject to compliance with regulation 19(1).

(5) Bulkheads in spaces that do not contain machinery and are required by these Regulations to be watertight shall not be pierced by openings which are capable of being closed only by portable bolted plates.

- (a) (6) (a) In every ship—
  - (i) valves not forming part of a pipe system shall not be fitted in any bulkhead or other division required by these Regulations to be watertight;
  - (ii) if any such bulkhead or other division is pierced by pipes, scuppers, electric cables or other similar fittings, provision shall be made which will ensure that its watertightness is not thereby impaired;

- (iii) lead or other heat sensitive materials shall not be used in systems which penetrate watertight subdivision bulkheads where deterioration of such systems in the event of fire would impair the watertight integrity of the bulkheads; and
- (iv) in ships constructed on or after 1st September 1984, valves which are fitted in piping systems to maintain the integrity of the watertight bulkheads in the event of damage, should be screw-down valves capable of being controlled manually at the valve, and from a position above the bulkhead deck.
- (b) (i) The collision bulkhead of a ship shall not be pierced below the bulkhead deck by more than one pipe: Provided that if the forepeak in such a ship is divided to hold two different kinds of liquids the collision bulkhead may be pierced below the bulkhead deck by not more than two pipes;
- (ii) Any pipe which pierces the collision bulkhead of such a ship shall be fitted with a screw-down valve capable of being operated from above the bulkhead deck, the valve chest being secured to the forward side of the collision bulkhead;
- (iii) This valve may be fitted on the after side of the collision bulkhead if it is readily accessible under all service conditions and the space in which it is located is not a cargo space.

#### **Openings in the shell plating below the bulkhead deck**

**15.—**(1) The number of sidescuttles, scuppers, sanitary discharges and other openings in the shell below the bulkhead deck shall be the minimum which is compatible with the design and proper working of the ship.

(2) The arrangements for closing every such opening below the bulkhead deck shall be consistent with its intended purpose and shall be such as will ensure watertightness.

(3) The design and arrangements of openings in the shell plating below the margin line shall be in accordance with the specifications set out in Schedule 10 in Merchant Shipping Notice MSN 1698 (M).

- (a) (4) (a) In all ro-ro passenger ships, scuppers shall be fitted in special category spaces so as to ensure that water which may otherwise accumulate by operation of the fixed pressure water-spraying system is rapidly discharged directly overboard.
- (b) In all ro-ro passenger ships, discharge valves for scuppers leading from special category spaces which are fitted with positive means of closing operable from a position above the bulkhead, in accordance with regulation 15(3), shall be kept open when the ship is at sea.

#### **Side and other openings above the bulkhead deck**

**16.—**(1) Sidescuttles, windows, gangway ports, cargo ports, bunkering ports and other openings in the shell above the bulkhead deck and their means of closing shall be of efficient design and construction and of sufficient strength having regard to the spaces in which they are fitted and to their positions relative to the deepest subdivision load waterline and to the intended service of the ship. All sidescuttles and windows shall be designed and constructed to standards recognised by the Certifying Authority.

(2) Efficiently hinged deadlights, which can be easily closed and secured watertight shall be provided for all sidescuttles to spaces below the first deck above the bulkhead deck.

(3) Each discharge led through the shell above the bulkhead deck from a space below the freeboard deck or from within any enclosed superstructure or from within any deckhouse on the freeboard deck which is fitted with weathertight doors, shall be fitted in compliance with the

requirements of paragraph 2(2) of Schedule 10 in Merchant Shipping Notice MSN 1698 (M) with efficient means for preventing water from passing inboard.

### Construction and testing of watertight doors

17. Every door required to be watertight shall be of such design, material and construction as will maintain the integrity of the watertight bulkhead in which it is fitted. Any such door shall, together with its frame, be made of cast or mild steel and comply with the specifications set out in section 2 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M).

### Construction and testing of watertight decks, trunks etc.

18.—(1) Watertight decks, trunks, tunnels, duct keels and ventilators shall be of the same strength as watertight bulkheads at corresponding levels. The means used for making them watertight, and the arrangements adopted for closing openings in them, shall be to the satisfaction of the Certifying Authority. Watertight ventilators and trunks shall be carried at least up to the bulkhead deck.

(2) Where a ventilation trunk passing through a structure penetrates the bulkhead deck, the trunk shall be capable of withstanding the water pressure that may be present within the trunk, assuming that the maximum heel angle allowable during intermediate stages of flooding shall be the angle specified in Schedule 1 of Merchant Shipping Notice MSN 1698 (M).

(3) Where all or part of the penetration of the bulkhead deck is on the main ro-ro deck, the trunk shall be capable of withstanding impact pressure due to internal water motions (sloshing) of water trapped on the ro-ro deck.

(4) In ships constructed before 1st July 1997, the requirements of paragraph (2) shall apply not later than the date of the first periodic survey after 1st July 1997 or the date on which these Regulations come into force whichever is later.

(5) After completion, a hose or flooding test shall be applied to watertight decks and a hose test to watertight trunks, tunnels and ventilators.

### **Ships carrying goods vehicles and accompanying personnel (watertight doors) Requirements for ships constructed on or after 1st September 1984**

- (a) 19. (1) (a) In every ship designed or adapted for the carriage of goods vehicles and accompanying personnel, hinged, rolling or sliding watertight doors may be fitted at any level in watertight bulkheads dividing cargo spaces intended for such vehicles, if the total number of passengers, including the personnel accompanying the goods vehicles, which the ship is intended to carry does not exceed—

$$N = 12 + \frac{A}{25}$$

where

A is the total deck area in square metres available in any spaces for the stowage of goods vehicles which has a clear height of not less than 4 metres and has a clear height at the entrance or access of not less than 4 metres; provided that in calculating A any part of any space which does not have a clear height of 4 metres and any part of space, of whatever height, which does not have a clear height at the entrance or access of 4 metres shall be excluded from the calculation.

- (b) Every watertight door fitted in accordance with this regulation shall comply with the requirements of paragraph 10 of Section 3 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M) and every such door shall be connected with an indicator on the navigating bridge showing when the door is closed and all door fastenings are secured.

(2) In applying sub-paragraph (1)(1) of Schedule 1 in Merchant Shipping Notice MSN 1698 (M) for the worst operating condition, the permeability of cargo spaces used for the stowage of containers shall be derived by calculation in which the containers shall be assumed to be non-watertight and their permeability taken as 65 per cent. For ships which are dedicated to a particular trade or trades the actual value of permeability for the containers may be applied. In no case shall the permeability of the cargo spaces in which the containers are carried be taken as less than 60 per cent.

## PART III

### CLOSING OF OPENINGS IN HULLS AND WATERTIGHT BULKHEADS

#### Interpretation

**20.** In this Part the following expressions have the following meanings respectively—

“locked” means secured by a device which prevents unauthorised operation;

“restricted visibility” means any condition in which visibility is restricted by fog, mist, snow, rainstorms, sandstorms or any other similar causes;

“a closing appliance” shall be deemed to be below the margin line if the sill of the opening with which it is associated is below that line.

#### Means of closing openings in watertight bulkheads and operating sliding watertight doors

**21.—(1)** Every door fitted to an opening in a watertight bulkhead shall comply with the specifications set out in either Section 3 or 4 of Schedule 4 in Merchant Shipping Notice MSN 1698 (M), as appropriate.

(2) In ships constructed before 1st February 1992, doors not complying with Section 3 of Schedule 4 of Merchant Shipping Notice MSN 1698 (M) shall be closed before each voyage commences, and shall be kept closed during navigation; the time of opening such doors in port and of closing them before the ship leaves port shall be entered in the log-book.

#### Closure of hull openings, watertight doors, openings in watertight bulkheads

**22.—(1)** The following closing appliances are to be securely closed before the ship proceeds on any voyage and are to be kept closed until the ship has been secured at a berth or anchorage—

(a) watertight doors below the margin line fitted in bulkheads which are required to be watertight and which separate cargo spaces;

(b) sidescuttles which can be opened and which are situated below the margin line;

(c) deadlights of any sidescuttles which are situated below the margin line and which—

(i) will not be accessible whilst the ship is at sea; or

(ii) are situated in spaces appropriated for use sometimes for the carriage of cargo and sometimes for use by passengers, while such spaces are being used for the carriage of cargo; and

(d) gangway and cargo loading doors below the margin line.

(2) No closing appliance described in paragraph (1) shall be considered as being securely closed unless it is locked.

(3) Watertight doors below the bulkhead deck fitted in bulkheads which are required to be watertight, other than those doors described in paragraph (1), shall be kept closed whilst the ship is on any voyage except—



- (a) when opened in accordance with the procedures laid down in written operational instructions;
  - (b) when opened for the purpose of drill required by regulation 24; or
  - (c) when any such door is opened on the express authority of the master for a specific purpose, for no longer than a specific period of time and on condition that all other watertight doors below the margin line, except those opened in accordance with the provisions of subparagraph (a), are closed during that period.
- (4) The operational instructions referred to in paragraph (3)(a) shall be kept on board the ship at all times in the custody of the master.
- (5) Any watertight door which may be opened in accordance with the requirements of paragraph (3) shall be kept clear of obstructions which might prevent its rapid closure.
- (6) Notwithstanding the requirements of this regulation, in an emergency situation the master may authorise the opening or closing of any watertight door, provided he is satisfied that such action is essential for the overall safety of the ship.
- (7) Every portable plate closing an opening below the bulkhead deck in any portion of the internal structure of the ship which is required to be watertight shall be fitted in place before the ship proceeds on any voyage and shall be kept in place, except in case of urgent necessity, until the ship has been secured at a berth or anchorage. In replacing any such plate all reasonable precautions shall be taken to ensure that the joints are watertight.
- (8) Both the watertight cover and the automatic non-return valve of a chute or other similar device on the ship having its inboard opening below the margin line shall be kept closed and secured when such device is not in use.

### **Marking of doors, mechanisms and valves**

**23.** In every ship constructed on or after 25th May 1980 all doors, mechanisms and valves connected with the damage control and watertight integrity of the ship shall be suitably marked to ensure that they may be properly used to provide maximum safety.

### **Drills and inspections**

**24.—(1)** All deadlights which are accessible, all watertight doors to which regulation 22(3) applies, all valves and closing mechanisms of scuppers and the devices referred to in regulation 22(8) shall be opened and closed for purposes of drill—

- (a) at intervals of not more than seven days; and
  - (b) immediately before the ship proceeds to sea if the ship is intended to remain at sea for a period of time of more than seven days.
- (2) All watertight doors fitted in bulkheads required to be watertight which may be opened for the working of the ship in accordance with the requirements of regulation 22(3) shall be opened and closed for the purpose of drill once in every period of 24 hours.
- (3) All closing appliances and devices referred to in regulation 22(1), (2) and (8) shall be inspected by a person appointed by the master for that purpose—
- (a) before the ship proceeds on any voyage; and
  - (b) at intervals of not more than seven days if the ship is intended to remain at sea for a period of more than seven days, except when they are not accessible.
- (4) The following closing appliances and mechanisms are to be inspected at intervals of not more than seven days by a person appointed for that purpose either generally or on any particular occasion by the master—

- (a) all watertight doors other than those of the type described in regulation 22(1);
  - (b) all mechanisms, indicators and warning devices connected with such doors;
  - (c) all valves, the closing of which is necessary to make watertight any compartment below the margin line; and
  - (d) all valves, the operation of which is necessary for the efficient operation of damage-control cross-connections.
- (5) Suitable notices and signs shall be provided on, or in the vicinity of, all the closing appliances referred to in paragraph (4) to indicate, as necessary, the procedures for operating the appliances, the purpose of the controls and any precautions to be observed.

### **Training**

25. All members of the crew who would have occasion to use any watertight doors shall be instructed in the safe operation of watertight doors. In addition written instructions on the safe operation of the doors, given in easily understood terms and illustrated wherever possible, shall be available to all members of the crew. Such instructions shall be based upon the operational instructions referred to in regulation 22(3)(a).

### **Entries in official log book**

26. Entries shall be made in the official log book recording the following—
- (a) the times of the last closing, before the ship proceeds on any voyage, of the watertight doors and other closing appliances referred to in regulation 22(1) and of the next opening of such doors and closing appliances;
  - (b) the times of the opening and closing of any watertight door pursuant to regulation 22(3)(c);
  - (c) the times when the portable plates referred to in regulation 22(7) are fitted in place and the times of any removal and replacement of such plates whilst the ship is on any voyage;
  - (d) the occasions on which drills are held and inspections made in compliance with these Regulations and whether or not the closing appliances and devices to which any such drill or inspection relates are in good working order when the drill or inspection takes place; and
  - (e) the occasions upon which the valves referred to in regulation 15(4) are operated.

## **PART IV**

### **CLOSING OF OPENINGS IN ENCLOSED SUPERSTRUCTURES AND IN BULKHEADS ABOVE THE BULKHEAD DECK**

### **Interpretation**

27.—(1) In this Part the following expressions have the following meanings respectively unless the context otherwise requires—

“doors” includes bow visors and appliances described in regulation 28(1)(c);

“length” means the ship’s overall length;

“loading doors” means the doors described in regulation 28(1)(a) to (d) inclusive; and

“locked” means secured by a device which prevents unauthorised operation.

(2) A door shall be deemed to be above the margin line if the sill of the opening with which it is associated is above that line.

- 28.**—(1) Except in the cases specified in paragraphs (2) and (4) the following loading doors—
- (a) gangway and cargo loading doors fitted in the shell or boundaries or enclosed superstructures;
  - (b) bow visors so fitted;
  - (c) weathertight ramps so fitted and used instead of doors for closing openings for cargo or vehicle loading; and
  - (d) cargo loading doors in the collision bulkhead;

shall be closed and locked before the ship leaves its berth and shall be kept closed and locked until the ship has been secured at its next berth.

(2) Where a bow visor or a weathertight ramp cannot be opened or closed while the ship is secured at its berth, it may so far as necessary and subject to paragraph (3) be opened or kept open while the ship approaches or draws away from its berth, as the case may be.

(3) In no case shall a loading door be open when the ship is more than one ship's length from the cargo loading or discharging position of its berth.

(4) Paragraph (1) shall not apply to small doors intended to be used for pilot access, fuelling or other matters necessary for the operation of the ship and not intended to be used by passengers or for loading cargo.

#### **Closure of bulkheads on the ro-ro deck**

**29.**—(1) All transverse or longitudinal bulkheads which are taken into account as effective to confine the seawater accumulated on the ro-ro deck shall be closed and locked before the ship leaves the berth, and shall remain locked until the ship has been secured at its next berth.

(2) Notwithstanding the requirements of paragraph (1), accesses through such bulkheads may be opened for a period sufficient to allow through passage, on the express authority of the master provided that this is required for the essential working of the ship.

#### **Supervision and reporting of closure**

**30.**—(1) Before the ship proceeds on a voyage an officer appointed for the purpose by the master shall—

- (a) verify that every loading door has been closed and locked; and
- (b) report the fact that they have been closed and locked to the master or other officer in charge of the bridge.

(2) Save as permitted by regulation 28(2) the ship shall not proceed on a voyage until the report referred to in sub-paragraph (1)(b) has been received by the master or other officer in charge of the bridge.

#### **Closure of watertight and weathertight doors in bulkheads**

**31.**—(1) Watertight or weathertight doors above the margin line (except doors fitted in collision bulkheads to which regulation 28 applies) which are fitted in bulkheads which are required to be watertight or weathertight as the case may be and which separate or form the boundary of cargo spaces shall be closed and locked before the ship leaves its berth and be kept closed and locked until the ship has been secured at its next berth.

(2) Watertight and weathertight doors above the margin line fitted in the shell or in bulkheads which are required to be watertight or weathertight, other than those doors described in regulations 28(1) and 31(1), shall be kept closed whilst the ship is on any voyage except when opened on the express authority of the master.

(3) Any watertight or weathertight door which may be opened in accordance with the exception to paragraph (2) shall be kept clear of obstructions which might prevent its rapid closure.

#### **Watertight integrity from the bulkhead deck to spaces below**

**32.**—(1) In ro-ro passenger ships constructed before 1st July 1997—

- (a) all accesses which lead to spaces below the bulkhead deck shall be made weathertight and means shall be provided on the navigation bridge, which will indicate whether the access is open or closed;
- (b) all such accesses shall be closed before the ship leaves the berth on any voyage and shall remain closed until the ship is at its next berth;
- (c) notwithstanding the requirements of sub-paragraph (b), accesses may be opened for a period sufficient to allow through passage on the express authority of the master, if this is required for the essential working of the ship; and
- (d) the requirements of sub-paragraphs (a) and (b) shall apply not later than the date of the first periodic survey after 1st July 1997, or the date on which these Regulations come into force whichever is later.

(2) In ro-ro passenger ships constructed on or after 1st July 1997—

- (a) subject to the provisions of sub-paragraphs (b) and (c), all accesses that lead to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 metres above the bulkhead deck in way of that opening;
- (b) where vehicle ramps are installed to give access to spaces below the bulkhead deck, their openings shall be capable of being closed weathertight to prevent ingress of water below, alarmed and indicated to the navigation bridge;
- (c) accesses, not complying with sub-paragraph (a), leading to spaces below the bulkhead deck, which are essential for the proper working of the ship, e.g. those required for the movement of stores, may be permitted subject to being made weathertight, alarmed and indicated to the navigation bridge;
- (d) the accesses referred to in sub-paragraphs (b) and (c) shall be closed before the ship leaves the berth on any voyage and shall remain closed until the ship is at its next berth;
- (e) the master shall ensure that an effective system of supervision and reporting of the closing and opening of such accesses referred to in sub-paragraphs (b) and (c) is implemented; and
- (f) the master shall ensure, before the ship leaves the berth on any voyage, that an entry in the log-book, as required by regulation 31, is made of the time of the last closing of the accesses referred to in sub-paragraphs (b) and (c).

#### **Opening of doors in an emergency**

**33.** Notwithstanding the provisions of regulations 28(1) and 31(1), gangway and cargo loading doors may be opened in an emergency but only when the master considers such opening will not put the safety of the ship at risk.

#### **Entries in official log book**

**34.** Entries shall be made in the official log book recording the following—

- (a) the times of the last closing, in accordance with regulations 28(1), 31(1), and 32(2) of the watertight and weathertight doors referred to in those regulations and of the next opening of such doors; and

- (b) The times of the opening and closing of any watertight or weathertight door pursuant to regulations 31(2) and 33.

#### **Listing of loading and unloading berths**

**35.**—(1) The owner of a ship shall ensure that the ship is provided with a list (“the Berth List”) of all loading berths at which it is intended the ship shall load or discharge cargo or vehicles.

(2) The Berth List shall list separately for each port which the ship is intended to visit to load or discharge cargo or vehicles—

- (a) the loading berths at which the ship in question can, when so loading or discharging, comply with the requirements of regulation 28(1) without relying on paragraph (2) of that regulation; and
- (b) where it is intended that the ship shall so load or discharge in the manner permitted by regulation 28(2), the loading berths at which it will so load or discharge.

The berths of the type described in sub-paragraph (b) shall be listed separately from those of the type described in sub-paragraph (a).

(3) A copy of the ship’s Berth List shall be supplied to the Maritime and Coastguard Agency.

(4) No ro-ro passenger ship shall, except in an emergency, load or discharge cargo or vehicles through a loading door at any berth which is not listed in the ship’s Berth List and in the copy thereof supplied to the Maritime and Coastguard Agency.

#### **Written instructions regarding the closure of doors above the bulkhead deck**

**36.**—(1) The owner of a ship shall ensure that the ship is provided with written instructions concerning the doors referred to in this Part.

(2) Such written instructions shall be approved by the Certifying Authority.

## **PART V**

### **STABILITY AND SHIPSIDE MARKINGS**

#### **Intact stability standard**

**37.** Every ship shall, in all probable loading conditions, satisfy the stability criteria set out in Schedule 1 in Merchant Shipping Notice MSN 1698(M).

#### **Inclining, lightweight survey and stability information**

**38.**—(1) Every ship on her completion shall be inclined and the elements of her stability determined. The master shall be supplied by the owner with approved information relating to the stability of the ship in accordance with the provisions of this regulation.

- (i) Every ship shall have a lightweight survey carried out within each period of five years to verify any changes in lightship displacement and longitudinal centre of gravity. Such periods shall commence on the date of issue of a Passenger Ship Safety Certificate or Passenger Certificate or from a previous inclining or lightweight survey, whichever date is the earliest.
- (ii) The ship shall be re-inclined whenever, in comparison with the ship’s approved stability information derived from the previous inclining experiment, a deviation from the lightship displacement exceeding 2 per cent or a deviation of the longitudinal centre of gravity exceeding 1 per cent of the ship’s length is found or anticipated.

(iii) Every inclining or lightweight survey made for the purpose of this paragraph shall be carried out in the presence of a nominated surveyor.

(iv) The interval between lightweight surveys of any such ship may be extended for a period of not more than one year if, on the production of relevant information about the ship, it can be shown that the lightweight survey is not necessary at the required interval.

(3) An approved report of each inclining or lightweight survey carried out in accordance with paragraph (2) and of the calculation therefrom of the lightship condition shall be placed on board for the use of the master.

(4) Where elements of a ship's stability have been found to have changed following any inclining or lightweight survey carried out in accordance with the requirements of paragraph (2) the master shall be supplied with amended approved stability information.

(5) Where any alterations are made to a ship so as materially to affect the stability information supplied to the master, amended stability information shall be provided, and the ship shall be re-inclined.

#### **Subdivision lines**

**39.** Every ship shall be marked on its side amidships with the subdivision load lines assigned to it in accordance with Schedule 5 in Merchant Shipping Notice MSN 1698 (M).

#### **Draughts marks**

**40.** Every ship shall have scales of draughts marked clearly at the bow and stern.

#### **Automatic draught gauge system**

**41.—**(1) Every ship of Class II shall be provided with a reliable automatic draught gauge system.

(a) (2) (a) Every ship of Class I or II(A) engaged on services which afford only short periods in port or where insufficient lighting is available during periods of darkness, or which include the use of berths exposed to adverse weather, shall be provided with a reliable automatic draught gauge system as prescribed in paragraph (1).

(b) Every other ship of Class I or II(A) shall be provided with such an automatic draught gauge system, except where the draught marks are located where they can be easily read.

#### **Recording of draught, trim and freeboard prior to departure**

**42.—**(1) On completion of loading of the ship and before it proceeds on a voyage, the master or an officer appointed for the purpose by the master shall ascertain—

(a) the ship's draught at the bow and at the stern;

(b) the trim of the ship by the bow or the stern; and

(c) the vertical distance from the waterline to the appropriate subdivision load line mark on each side of the ship.

(2) The draughts, trim and the vertical distances ascertained in accordance with paragraph (1) shall be recorded by the master or such officer as the case may be in the official log book.

#### **Calculation of stability prior to departure**

**43.—**(1) On completion of the loading of the ship and prior to its departure, the master shall determine the ship's trim and stability and also ascertain and record that the ship is in compliance with stability criteria in the relevant regulations. The determination of the ship's stability shall always

be made by calculation. Use of an electronic loading and stability computer or equivalent means may be accepted for this purpose.

(2) In the case of ships of Class II or II(A) the actual weights of goods vehicles and other items of cargo required to be provided for this calculation shall be in accordance with the Merchant Shipping (Weighing of Goods Vehicles and other Cargo) Regulations 1988<sup>(29)</sup>. In the case of ships of Class I, the actual weights of goods vehicles and other items of cargo shall be used and shall be determined in accordance with those Regulations as if that ship was a ship of Class II. For items not required to be so weighed, the declared weights or weights estimated as accurately as possible shall be used.

(3) Where the calculation is made by means of a shore-based loading and stability computer system, a print-out of the calculation shall be presented to the master before the ship proceeds on its voyage. It shall be the duty of the person responsible for that system to ensure that the calculations are substantially correct.

#### **Stability in the damaged condition** *Requirements for ships constructed before 29 April 1990*

- (a) **44.** (1) (a) Subject to the Merchant Shipping (Ro-Ro Passenger Ship Survivability) Regulations 1997<sup>(30)</sup> and regulation 45(2), in addition to the requirements of regulation 37, every ship shall be so constructed as to provide sufficient intact stability in all service conditions to enable the ship to withstand the flooding of any one of the main compartments into which the ship is subdivided in accordance with the provisions of regulation 8. If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 6(3)(a) of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) the intact stability shall be adequate to withstand the flooding of those two adjacent main compartments.
- (b) Where in any ship the factor of subdivision required under paragraph 4 or 9 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) is 0.50 or less but more than 0.33, the intact stability shall be adequate to withstand the flooding of any two adjacent main compartments.
- (c) Where in any ship the factor of subdivision required under paragraph 4 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) is 0.33 or less, the intact stability shall be adequate to withstand the flooding of any three adjacent main compartments.
- (a) (2) (a) For the purposes of this regulation the sufficiency of the intact stability of every ship shall be determined in accordance with the provisions of Sections 1 and 2 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M) except that for ro-ro passenger ships the sufficiency of intact stability shall be determined in accordance with sections 1 and 3 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) not later than the first periodic survey after the date of compliance prescribed below, according to the value of  $A/A_{max}$  as calculated in accordance with MSC/Circ.574.

<i>Value of <math>A/A_{max}</math></i>	<i>Date of Compliance</i>
Less than 85%	1 October 1998
85% or more but less than 90%	1 October 2000
90% or more but less than 95%	1 October 2002
95% or more but less than 97.5%	1 October 2004
97.5% or more	1 October 2005

<sup>(29)</sup> S.I. 1988/1275 as amended by S.I. 1989/270.

<sup>(30)</sup> S.I. 1997/647.

- (b) The intact stability of every United Kingdom ro-ro passenger ship shall be examined in accordance with the appropriate sections of Schedule 3 of Merchant Shipping Notice MSN 1698 (M) in order to establish the sufficiency of positive stability provided as required by subparagraphs (1)(a) and (2)(a) whenever considered necessary in connection with amended stability information prepared in accordance with regulation 38(4) and (5). Such re-examinations shall demonstrate that at all stages of flooding there is sufficient positive residual stability after the assumed damage prescribed in section 1 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).
- (a) (3) (a) Every ship shall be constructed as to keep asymmetrical flooding, when the ship is in a damaged condition, at the minimum consistent with efficient arrangements. If cross-flooding fittings are provided in any such ship the fittings shall, where practicable, be self-acting but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from above the bulkhead deck. The cross-flooding fittings shall be capable of reducing the heel within 15 minutes, sufficiently to meet the requirements of subparagraph 2(2)(c) of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).
- (b) If the margin line may become submerged during the flooding assumed for the purposes of the calculation referred to in Schedule 3 in Merchant Shipping Notice MSN 1698 (M), the construction of the ship shall be such as will enable the master of the ship to ensure—
  - (i) that the maximum angle of heel after flooding but before equalisation shall not exceed 15 degrees; and
  - (ii) that the margin line shall not be submerged in the final stage of flooding.
- (a) (4) (a) There shall be provided by the owner in every ship a document for the use of the master of the ship containing—
  - (i) information as to the use of any cross-flooding fittings provided in the ship;
  - (ii) information necessary for the maintenance of sufficient intact stability under service conditions to enable the ship to withstand damage to the extent referred to in section 1 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M); and
  - (iii) information as to the condition of stability on which the calculations of heel have been based, together with a warning that excessive heeling might result should the ship sustain damage when in a less favourable condition.
- (b) This additional information shall be included in the stability information book.

**Stability in the damaged condition** *Requirements for ships constructed on or after 29th April 1990*

**45.**—(1) Subject to paragraph (2) every ship shall comply with the provisions of regulation 44 except that—

- (a) for the purpose of regulation 44(2) the sufficiency of intact stability required shall be calculated in accordance with Section 1 and 3 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M); and
- (b) the cross-flooding fittings shall be capable of meeting the requirements of paragraph 3(2)(b) of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).

(2) This regulation shall not apply to ships which comply with those provisions of IMO Resolution A.265(VIII) as detailed in regulation 6.

**Requirements for ro-ro passenger ships which carry 400 persons or more**

**46.** In addition to the provisions of regulations 44 and 45, ro-ro passenger ships certificated to carry 400 persons or more shall comply with the following—



(1) Vessels constructed on or after 1st July 1997 shall comply with section 3 of Schedule 3 of Merchant Shipping Notice MSN 1698 (M) with the damage deemed to occur anywhere in the ship's length.

(2) Vessels constructed before 1st July 1997 shall comply with the requirements of paragraph (1) not later than the date of the first periodic survey following the compliance dates prescribed in subparagraphs (a), (b) and (c) below, whichever occurs latest—

Value of A/Amax	Date of Compliance
less than 85%	1 October 1998
85% or more but less than 90%	1 October 2000
90% or more but less than 95%	1 October 2002
95% or more but less than 97.5%	1 October 2004
97.5% or more	1 October 2010
(b) Number of persons permitted to be carried	
1,500 or more	1 October 2002
1,000 or more but less than 1,500	1 October 2006
600 or more but less than 1,000	1 October 2008
400 or more but less than 600	1 October 2010
Age of ship equal to or greater than 20 years	20 years after the construction of the ship

where age of the ship means the time from the date on which it was constructed.

### **Exhibition of damage control plans**

47. There shall be permanently exhibited in the ship, for the information of the officer in charge of the ship, plans showing clearly for each level the boundaries of the watertight compartments, the openings therein, the means of closing such openings and the position of the controls and the arrangements for the correction of any list due to flooding. In addition, booklets containing such information shall be made available by the owner for the use of the officers of the ship.

## **PART VI**

### **BILGE PUMPING ARRANGEMENTS**

#### **Application**

48. This Part applies to all ships; except that a ship which complies with requirements of the IMO Resolution A.265(VIII) need not comply with regulation 50 if it complies with regulation 19(b)(i) and (ii) of that Resolution.

#### **General**

- (i) Every ship shall be provided with an efficient pumping plant capable of pumping from and draining any watertight compartment in the ship, other than a space permanently appropriated for the carriage of fresh water, water ballast or oil and for which other efficient means of

pumping or drainage is provided, under all conditions likely to arise in practice after a casualty, whether or not the ship remains upright.

- (ii) Wing suctions shall be provided if necessary for that purpose.
- (iii) Efficient arrangements shall be provided whereby water in any watertight compartment may find its way to the suction pipes.
- (iv) Efficient means shall be provided for draining water from all insulated holds and insulated between-decks in such a ship; provided that the provision for drainage may be omitted in a particular compartment if—
  - (a) according to the calculations made in accordance with the conditions set out in Schedule 3 in Merchant Shipping Notice MSN 1698 (M) the safety of the ship will not be impaired; and
  - (b) that the provision of drainage would otherwise be undesirable.

(2) Sanitary, ballast and general service pumps having a capacity in accordance with paragraph 4(3) of Schedule 6 in Merchant Shipping Notice MSN 1698 (M) may be accepted as independent power pumps if fitted with the necessary connections to the bilge pump systems.

(3) All tanks forming part of the structure of the ship and all watertight compartments, not being part of the machinery space, shall be provided with efficient sounding arrangements which shall be protected where necessary against damage.

#### **Number and type of bilge pumps**

**50.** Every ship shall be provided with power pumps connected to the bilge main in accordance with the appropriate tables set out in Schedule 6 in Merchant Shipping Notice MSN 1698 (M).

#### **Requirements for bilge pumps and bilge sections**

**51.** Bilge pumps and bilge piping provided in any ship to meet the requirements of these Regulations shall meet the conditions and specifications set out in Schedule 6 in Merchant Shipping Notice MSN 1698 (M).

## **PART VII**

### **ELECTRICAL EQUIPMENT AND INSTALLATIONS**

#### **Application**

**52.** Unless otherwise stated this Part applies to ships constructed on or after 25th May 1980, and regulations 53(1) and (3)(b), 54, 57, 58(1) and (2), 59(1), (2), (3), (4), (8), (9) and (10), 60 and 61 shall apply to ships constructed before 25th May 1980.

#### **General**

**53.—(1)** In every ship the electrical equipment and installations (including any electrical means of propulsion) shall be such that the ship and all persons on board are protected against electrical hazards.

- (i) In every ship constructed before 25th May 1980 where the power supply for an automatic sprinkler system is required to have not less than two sources of power supply for sea-water pumps, air compressors and automatic alarms, and that power is electrical, such supplies shall be taken from the main generating sets and from an emergency source of electric power.

- (ii) One supply shall be taken from the main switchboard and another from the emergency switchboard, by separate feeders reserved solely for that purpose.
- (iii) Such feeders shall be run to a change-over switch situated near to the sprinkler unit and the switch shall normally be kept closed to the feeder from the emergency switchboard.
- (iv) The change-over switch shall be clearly labelled and no other switch shall be permitted in these feeders.
- (v) For ships constructed on or after 25th May 1980 the electrical arrangements for any automatic sprinkler and fire alarm and fire detection system shall comply with the requirements specified in Schedule 1 of Merchant Shipping Notice MSN 1666 (M).
- (3) The electrical equipment and installations in every ship shall be such that—
  - (a) all electrical auxiliary services essential for the propulsion and safety of the ship will be ensured without recourse to the emergency source of electrical power;
  - (b) the electrical services essential for safety will be ensured under emergency conditions; and
  - (c) for ships constructed on or after 1st September 1984, all electrical auxiliary services necessary for maintaining the ship in normal operational and habitable condition will be ensured without recourse to the emergency source of electrical power.

#### **Main source of electrical power and main switchboards**

**54.**—(1) In every ship a main source of electrical power shall be provided of sufficient capacity to supply all the services referred to in regulation 53(3). The main source of electrical power shall consist of at least two generating sets of such power, that services essential for the propulsion and safety of the ship can be operated when any one of the sets is out of service.

- (a) (2) (a) In any ship with only one main generating station, the main switchboard shall be located in the same space as the main generating sets;
- (b) Where there is more than one main generating station and only one main switchboard, that switchboard shall be located in the same space as one of the main generating stations;
- (c) Where other essential features of the ship render the application of these requirements impracticable, equivalent arrangements may be permitted;
- (d) For the purpose of this paragraph an environmental enclosure for the main switchboard, such as a machinery control room fitted within the boundary of the space, does not provide separation between the generating sets and switchboards.

#### *Additional requirements for ships constructed on or after 1st September 1984*

(3) The arrangement of the generating sets required by paragraph (1) shall be such that the services required by regulation 53(3) can be maintained regardless of the speed and direction of rotation of the propulsion machinery or shafting, and that with any one of the sets out of service—

- (a) normal operational conditions of propulsion and safety of the ship and minimum comfortable conditions of habitability including those for cooking, heating, domestic, refrigeration, mechanical ventilation, sanitary and fresh water can be maintained; and
- (b) from a dead ship condition, the remaining sets are capable of providing the electrical services necessary to start the main propulsion plant. The emergency source of electrical power may be used for this purpose if it is capable of simultaneously supplying the emergency supplies required by these Regulations or is capable of supplying such services when combined with any other source of electrical power.
- (a) (4) (a) Load shedding or other equivalent arrangements shall be provided to protect the generators required by paragraph (1) against sustained overload.

- (b) Where two or more generating sets may be in operation at the same time for maintaining the auxiliary services essential for the propulsion or safety of the ship, provision shall be made for the sets to operate in parallel.
- (5) Any transforming equipment supplying an electrical system referred to in this regulation shall be arranged to ensure the same continuity of supply as that required for generating sets by this regulation.
- (6) The main busbars shall be sub-divided in every ship which has a total installed electrical power of the main generating sets in excess of 3 megawatts. Each section of the busbars shall be interconnected by removable links or other suitable means such that the main generating sets and any supplies to duplicated services which are directly connected to the busbars are, so far as is practicable, equally divided between the sections. Other arrangements may be permitted if it can be shown that they can provide equivalent system redundancy.

#### **Lighting systems** *Requirements for ships constructed on or after 1st September 1984*

- 55.—(1) The main source of electrical power shall be capable of illuminating any part of the ship normally accessible to and used by the passengers or the crew.
- (2) Emergency electrical lighting provided in accordance with these Regulations shall be arranged so that a fire or other casualty in spaces containing the emergency source of electrical power, the associated transforming equipment, if any, the emergency switchboard and the emergency lighting switchboard will not render inoperative the main electrical lighting system required by paragraph (1).
- (3) Lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the fitting or the electric wiring or which would result in a risk of fire.

#### **Emergency and transitional sources of electrical power**

- 56.—(1) In every ship, there shall be provided a self-contained emergency source of electrical power which shall be so designed and arranged that it will operate at full rated power when the ship is listed 22.5 degrees and when the trim of the ship is 10 degrees from an even keel or any combination of heel and trim within these limits.
- (2) The emergency and transitional sources of electrical power and the associated equipment shall be in accordance with the conditions and specifications set out in Schedule 7 in Merchant Shipping Notice MSN 1698 (M).

#### **Distribution systems**

- 57. In every ship, distribution systems shall be so arranged that a fire in any main fire zone will not interfere with essential services in any other main fire zone. Main and emergency feeders passing through any main fire zone shall be separated as widely as is practicable both horizontally and vertically.

#### **Location and construction of electric cable**

- 58.—(1) All electric cables external to equipment shall be flame retardant and shall be installed so that their flame retarding or equivalent properties are not impaired. Installation of cables which do not comply with the foregoing for particular purposes, such as radio frequency cables, may be permitted if it can be shown that compliance would be impracticable.
- (2) Cables shall be installed and supported in such a manner as to avoid chafing and other damage. All metal sheaths and metal armour of cables shall be electrically continuous and shall be earthed except that such earthing may be omitted for particular purposes.

(3) Cables serving emergency services shall not so far as is practicable be routed through galleys, laundries, machinery spaces of Category A and their casings or other high risk areas except insofar as it is necessary to provide emergency services in such areas. Cables connecting fire pumps to the emergency switchboard shall be of a fire resistant type where they pass through high fire risk areas.

(4) Cabling for emergency alarms and public address systems fitted in ro-ro passenger ships on or after 1st July 1998 shall be approved by a Certifying Authority.

(5) Cables serving emergency services shall where practicable be installed in such a manner as to preclude them being rendered unserviceable by the effect of a fire in an adjacent space and subsequent heating of the dividing bulkhead.

(6) The electrical, mechanical, flame retarding and, where applicable, fire resisting properties of the terminations and joints in any conductor shall be at least equivalent to those of the conductor.

### **General precautions against shock, fire and other hazards**

**59.**—(1) All electrical equipment shall be so constructed and installed that there will be no danger or injury to any person handling it in a proper manner. Exposed metal parts of electrical equipment which are not intended to have a voltage above that of earth, but which may have such a voltage under fault conditions, shall be earthed unless such equipment is—

- (a) supplied at a voltage not exceeding 50 volts direct current or 50 volts root mean square alternating current between conductors, hereinafter referred to as “RMS ac”, from a source other than an auto-transformer;
- (b) supplied at a voltage not exceeding 250 volts RMS ac by safety isolating transformers supplying only one consuming device; or
- (c) of double insulation construction.

(2) All electrical apparatus shall be constructed and installed so that it will not cause injury when handled or touched in the normal manner. In particular when electrical lamps, welding equipment, tools or other apparatus are used in confined or damp spaces or spaces with large exposed conductive surfaces, special provision shall be made so far as is practicable, to ensure that the danger of electric shock is reduced to a minimum. Such spaces shall at least include open decks and machinery spaces.

(3) Every main and emergency switchboard shall be so arranged as to give easy access for operation and sufficient access for maintenance without danger to any person. Every such switchboard shall be suitably guarded and a non-conducting mat or grating shall be provided at the back and front where necessary. No exposed parts which may have a voltage between conductors or to earth exceeding 250 volts direct current or 50 volts RMS ac shall be installed on the face of any switchboard or control panel.

(4) The hull return system shall not be used in any such ship for the power, heat and light distribution systems thereof.

(5) The final sub-circuits of any hull return system of distribution shall be two wire.

(6) The requirements of paragraphs (4) and (5) do not preclude the use of—

- (a) impressed current cathodic protection systems;
- (b) limited and locally earthed systems; and
- (c) insulation monitoring devices with a maximum circulation current of 30 milliamperes.

(7) The insulation of any distribution system that is not earthed shall be continuously monitored by a system capable of giving audible and visual indication of abnormally low insulation values.

(8) For ships constructed on or after 1st October 1994, [the requirement of] paragraph (4) does not preclude the use of limited and locally earthed systems, provided that any possible resulting current does not flow directly through any dangerous spaces.

(9) Every separate electrical circuit shall be protected against short circuits.

(10) Each separate electrical circuit, other than a circuit which operates the ship's steering gear shall, unless it is permitted otherwise, be protected against overload. There shall be clearly and permanently indicated on or near each overload protective device the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(11) All lighting and power circuits terminating in a cargo space shall be provided with a multiple pole switch outside the space for disconnecting all such circuits.

(12) Accumulator batteries shall be housed in boxes or compartments which are constructed to protect the batteries from damage and are so ventilated as to minimise the accumulation of explosive gas. Subject to regulation 60(1), electrical or other equipment which may constitute a source of ignition of flammable vapours shall not be installed in any compartment assigned to accumulator batteries. Accumulator batteries shall not be installed in sleeping accommodation spaces.

(13) Every electrical space-heater forming part of the equipment of a ship shall be fixed in position and shall be so constructed as to reduce the risk of fire to a minimum. No such heater shall be constructed with an element so exposed that clothing, curtains or other material can be scorched or set on fire by heat from the element.

*Additional requirements for ships constructed on or after 1st September 1984*

(14) The insulation of any distribution system that is not earthed shall be continuously monitored by a system capable of giving audible and visual indication of abnormally low insulation values.

**Electrical equipment in hazardous areas and spaces**

**60.**—(1) Electrical equipment shall not be installed in any hazardous area unless such equipment is—

- (a) essential for operational or safety purposes;
- (b) of a type that is certified for use in the flammable dusts, gases or vapours to which it may be subjected; and
- (c) appropriate to the space concerned.

*Additional requirements for ships constructed on or after 1st September 1984*

(2) Cables passing through any hazardous areas or serving electrical equipment in such areas shall—

- (a) be appropriate having regard to the dusts, gases or vapours to which they may be subjected; and
- (b) unless they form part of intrinsically safe circuits be enclosed in a gas-tight steel conduit or include a metallic sheath braid or wire armour for earth leakage detection or be protected in some other satisfactory manner. Additional protection against mechanical damage shall be provided in locations where such damage may occur.

(3) In special category spaces the electrical equipment shall be certified for use in explosive petrol and air mixtures and the cables shall be appropriate for use in such mixtures; except that in such spaces above the bulkhead deck, electrical equipment that is enclosed and protected to prevent discharge of sparks may be used if installed more than 450 millimetres above any deck on which vapours may accumulate.

(4) In cargo spaces, other than special category spaces, intended for the carriage of motor vehicles with fuel in their tanks for their propulsion the electrical equipment shall be certified for use in explosive petrol and air mixtures and the cables shall be appropriate for use in such mixtures.

(5) In any ventilation trunk connected to any enclosed space for the carriage of motor vehicles with fuel in their tanks for their propulsion, including a special category space, electrical equipment shall be certified for use in explosive petrol and air mixtures and the cables shall be appropriate for use in such mixtures.

- (i) Electrical equipment and cables shall not be installed in enclosed cargo spaces, special category spaces or open ro-ro cargo spaces intended for the carriage of dangerous goods which are flammable liquids with a flash point below 23°C (Closed Cup Test) or flammable gases unless the Secretary of State considers the location therein essential.
- (ii) If permitted, any electrical equipment installed in such spaces shall be certified for, and cables shall be appropriate for, use with the flammable dusts, gases or vapours to which it may be exposed.
- (iii) Cable penetrations of the decks and bulkheads of such spaces shall be sealed against the passage of gas or vapour.
- (iv) Electrical equipment and cables which do not comply with the foregoing for particular applications may be installed, provided such equipment and cables are capable of being electrically isolated by the removal of links or the operation of lockable switches.

### **Spare parts and tools**

**61.** Every ship shall be provided with an adequate quantity of replacements for those parts of the ship's electrical equipment and installations which, having regard to the intended service of the ship, it would be essential for the safety of the ship and of persons on board to replace in the event of failure while the ship is at sea, together with such tools as are necessary for the fitting of these replacements.

## **PART VIII**

### **BOILERS AND MACHINERY**

#### **General**

**62.—(1)** In every ship the machinery, boilers and other pressure vessels, associated piping systems and fittings shall be of a design and construction adequate for the service for which they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board, due regard being paid to moving parts, hot surfaces and other hazards. The design shall have regard to the materials used in construction including design standards, material specifications, and certification etc, the purpose for which the equipment is intended, the working conditions to which it will be subjected and the environmental conditions on board.

(2) Where the arrangements of the main propulsion machinery are unconventional and without a known history of satisfactory service the Secretary of State may require a separate source of propulsion power to be provided sufficient to give the ship a navigable speed.

(3) The main and auxiliary machinery essential for the propulsion and overall safety of the ship shall be provided with effective means of control. In addition, suitable means shall be provided to ensure that machinery can be brought into operation from dead ship conditions.

(4) Where risk from over-speeding of machinery would otherwise exist, two independent means of control shall be provided to ensure that the safe speed is not exceeded; provided that where the Secretary of State considers it is safe to do so, a single means of limiting the speed of machinery may be permitted.

(5) All boilers, main or auxiliary machinery or any parts of such machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure, shall be subjected to appropriate testing including a pressure test in excess of the working pressure, prior to being put into service for the first time. The pressure test shall have regard to—

- (a) the design/standards and materials of which the respective items are constructed;
- (b) the purpose for which they are intended to be used; and
- (c) the working conditions under which they are intended to be used, and such parts shall be maintained in an efficient condition and be subject to periodic inspection/testing.

(6) Access shall be provided to facilitate the cleaning, maintain cleanliness, inspection and maintenance of main propulsion and auxiliary machinery including boilers and pressure vessels.

*Additional requirements for ships constructed on or after 1st September 1984*

(7) In every ship means shall be provided whereby the normal operation of propulsion machinery can be sustained or restored when there is a breakdown of—

- (a) a generating set which serves as a main source of electrical power;
- (b) the sources of steam supply;
- (c) the boiler feed water systems;
- (d) the fuel oil supply systems for boilers or engines;
- (e) the sources of lubricating oil pressure;
- (f) the sources of water pressure;
- (g) a condensate pump and the arrangements to maintain vacuum in condensers;
- (h) the mechanical air supply for boilers;
- (i) an air compressor and receiver for starting or control purposes;
- (j) the hydraulic, pneumatic or electrical means for control of main propulsion machinery including controllable pitch propellers; or
- (k) any other auxiliary system essential for propulsion.

A partial reduction in propulsion capability from normal operation may be permitted if it can be shown that the safety of the ship will not be impaired.

(8) In any such ship the main propulsion machinery and all auxiliary machinery essential to the propulsion and the safety of the ship shall be designed to operate when the ship is upright and when inclined at any angle of list up to and including 15 degrees either way under static conditions and 22.5 degrees either way under dynamic conditions (rolling) and simultaneously inclined dynamically (pitching) 7.5 degrees by bow or stern. Where it can be shown that the overall safety of the ship will not be impaired, deviation from the aforesaid angles may be permitted, taking into account the type, size and service conditions.

## **Machinery**

**63.—**(1) In every such ship the propulsion machinery systems shall be designed, constructed and installed so that undue stress due to vibration is not induced during normal operation.

(2) All gearing and every shaft and coupling used for transmission of power for the propulsion and safety of the ship or for the safety of persons on board shall be so designed and constructed that they will withstand the maximum working stresses to which they will be subjected in all service conditions taking into account the type of engines by which these components are driven or of which they form part.



(3) Every main propulsion turbine and, where applicable main internal combustion propulsion machinery and auxiliary machinery shall be provided with automatic shut-off arrangements that will operate in the case of failures, such as lubricating oil supply failure, which could lead rapidly to complete breakdown, serious damage or explosion, provided that arrangements may be permitted to over-ride the automatic shut-off devices.

*Additional requirements for ships constructed on or after 1st September 1984*

(4) In every ship each internal combustion engine having a cylinder diameter of 200 millimetres or greater, or a crankcase volume of 0.6 cubic metres or greater, shall be provided with crankcase explosion relief valves of a suitable type having sufficient area to relieve abnormal pressure in the crankcase. Each explosion relief valve shall be arranged or provided with means to ensure that any discharge from it is so directed as to minimise the possibility of injury to personnel.

**Means of manoeuvring and going astern**

**64.**—(1) Every ship shall have sufficient power for going astern to secure proper control of the ship in all normal circumstances. The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time, and so bring the ship to rest from maximum ahead service speed shall be demonstrated and recorded.

*Additional requirements for ships constructed on or after 1st September 1984*

(2) The effectiveness of any supplementary means of stopping or manoeuvring the ship shall be demonstrated and recorded.

(3) Every ship with multiple propellers shall undergo trials to determine the ability of the ship to manoeuvre with one or more propellers inoperative. The results of such trials shall be recorded.

(4) The stopping times, ship headings and distances recorded on trials, including the records required by paragraphs (1), (2) and (3) shall be available on the ship.

**Boilers and other pressure vessels**

**65.**—(1) Every boiler or other pressure vessel and its respective mountings, shall, before being put into service for the first time, be subjected to a hydraulic test complying with the applicable test requirements of regulation 62(5).

(2) Means shall be provided which will prevent overpressure in any part of boilers and other pressure vessels, and in particular every boiler and every unfired steam generator shall be provided with not less than two safety valves, provided that, having regard to the output or any other feature of any boiler or unfired steam generator, only one safety valve may be fitted if adequate protection against overpressure is provided.

(3) Where oil-fired water tube boilers are fitted, an automatic boiler water low level alarm and an automatic boiler water low level shut-off valve in the fuel supply pipe to the furnace fronts shall be provided.

*Additional requirements for ships constructed on or after 1st September 1984*

(4) Every oil fired boiler which is not continuously attended shall be provided with arrangements to shut off the fuel supply and give an alarm at an attended location in the event of low boiler water level, combustion air supply failure or flame failure.

(5) Every boiler designed to contain water at a specific level shall be provided with at least two means for indicating the water level, at least one of which shall be a direct reading gauge glass.

(6) Every water tube boiler serving turbine machinery shall be fitted with a high water level alarm.

(7) Means shall be provided to test and control the quality of water in the boiler.

### **Boiler feed systems**

66.—(1) Every boiler shall be provided with not less than two efficient and separate feed water systems so arranged that either of such systems may be opened for inspection or overhaul without affecting the efficiency of the other. Means shall be provided which will prevent overpressure in any part of the systems.

(2) Every ship in which boilers are fitted shall be provided with not less than two feed pumps and when the boilers are operating under full load conditions, there shall be at least one feed pump available for stand-by duties.

(3) If it is possible for oil to enter the feed water system of a boiler, the arrangements for supplying boiler feed water shall provide for the interception of oil in the feed water.

- (a) (4) (a) Every feed check valve, fitting or pipe through which feed water passes from a pump to such boilers shall be designed and constructed to withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to the material of which it is constructed and the working conditions under which it will be used;
- (b) Every such valve, fitting, or pipe shall, before being put into service for the first time, be subjected to a hydraulic test suitably in excess of the maximum working pressure of the boiler to which it is connected or of the maximum working pressure to which the feed line may be subjected, whichever shall be the greater, and shall be maintained in an efficient condition;
- (c) The feed pipes shall be adequately supported.

(5) In every ship in which boilers are fitted provision shall be made to ensure that a supply of suitable reserve feed water is available, having regard to the nature and intended duration of the voyage.

*Additional requirements for ships constructed on or after 1st September 1984*

- (6) Means shall be provided to test and control the quality of the feed water to the boilers.

### **Steam pipe systems**

67.—(1) Every steam pipe and every fitting connected thereto through which steam may pass shall be so designed and constructed as to withstand the maximum working stresses to which it may be subjected.

(2) Efficient means shall be provided for draining every steam pipe so as to ensure that the interior of the pipe is kept free of water and that water hammer action will not occur under any condition likely to arise in the course of the intended service of the ship.

(3) If any steam pipe can receive steam from any source at a higher pressure than it can otherwise withstand with an adequate factor of safety, an efficient reducing valve, relief valve and pressure gauge shall be fitted to such pipe.

### **Air pressure systems**

68.—(1) In every ship in which machinery essential for the propulsion and safety of the ship or of persons on board is required to be started, operated or controlled solely by compressed air, there shall be provided at least two independently driven air compressors each of which shall be of efficient design and of sufficient strength and capacity for the service for which it is intended.

(2) Every ship which is propelled by compression ignition engines designed to start by compressed air shall be provided with at least two air receivers.

(3) Every air receiver and air bottle shall be fitted with means of access for purposes of inspection and shall be provided with efficient drains for the removal of oil and water and with efficient relief valves to prevent overpressure. If the air receiver or air bottle can be isolated from the relief valve, it shall be fitted with one or more fusible plugs so as to discharge its contents in the event of fire.

(4) The main air starting arrangements for main propulsion internal combustion engines shall be adequately protected against the effects of internal explosions and backfiring in the starting air pipes.

(5) Where an emergency air compressor is included and essential in the dead start arrangements, it is to be subject to regular inspection and testing.

### **Cooling systems**

**69.** In every ship where machinery essential for the propulsion or safety of the ship or of persons on board is dependent for its operation on an efficient cooling water system there shall be provided at least one circulating pump and, except in the case of an emergency generator, an alternative pump shall be available should that pump fail. These pumps shall be capable of supplying adequate cooling water to such machinery, oil coolers, fresh water coolers or condensers fitted thereto.

### **Oil fuel installations**

**70.** The arrangements for the storage, distribution and utilisation of the fuel oil shall be such as to ensure the safety of the ship and persons on board and shall comply, as a minimum, with the provisions set out in Schedule 8 in Merchant Shipping Notice MSN 1698 (M).

### **Oil systems for lubricating, heating, cooling and control**

**71.—(1)** In every ship in which oil is circulated under pressure for lubrication, heating or cooling or as the sole means of control of machinery essential for the propulsion or safety of the ship or persons on board, at least two pumps shall be provided each of which shall be adequate for circulating such oil.

#### *Additional requirements for ships constructed on or after 25th May 1980*

(2) The arrangements for the storage and distribution of flammable oils used in pressure systems in machinery spaces shall comply with the requirements of paragraphs 3, 4, 5, 9 and 10 of Schedule 8 in Merchant Shipping Notice MSN 1698 (M) as they apply to oil fuel installations except that sight flow glasses having an acceptable degree of fire resistance may be permitted. Alternative arrangements may be permitted in machinery spaces, other than those of Category A, provided the safety of the ship is not impaired.

### **Machinery controls**

**72.—(1)** Effective means shall be provided for the operation and control of main and auxiliary machinery essential for the propulsion and safety of the ship.

(2) In every ship provided with remote control of the propulsion machinery from the navigating bridge and in which the machinery spaces are intended to be manned the following provisions shall apply—

- (a) the speed, direction of thrust and, if variable, the pitch of the propeller shall be fully controllable from the navigating bridge under any sailing condition including manoeuvring;
- (b) the remote control from the navigating bridge shall be performed by a single control device for each independent propeller; where necessary each such device shall be provided

with means of preventing overload of the propulsion machinery: provided that multiple propeller installations may be controlled by a single control device;

- (c) propulsion machinery movements selected at the navigating bridge shall be indicated in the main machinery control room or at the manoeuvring platform as appropriate;
- (d) the main propulsion machinery shall be provided with an emergency stopping device, located on the navigating bridge, which shall be independent of the controls otherwise required by this regulation;
- (e) remote control of the propulsion machinery shall be possible from only one location at a time. Inter-connected control units may be permitted at such locations. There shall be provided at each location an indicator showing which location is in control of the propulsion machinery. Transfer of control between the navigating bridge and the machinery spaces shall only be possible from the machinery space or the main machinery control room. The control system shall be arranged so that the propeller thrust does not alter significantly when control is transferred from one station to another;
- (f) means shall be provided to control the propulsion machinery locally in the event of failure of the remote control system;
- (g) the design of the propulsion machinery remote control system shall be such that in the event of its failure an alarm will be given and the pre-set speed and direction of thrust maintained until local control is in operation. This requirement need not be met if other essential features of the system design render compliance impracticable;
- (h) indication shall be given on the navigating bridge of—
  - (i) propeller speed and direction of rotation in the case of fixed pitch propellers;
  - (ii) propeller speed and pitch position in the case of controllable pitch propellers;
- (i) the number of automatic and consecutive attempts which fail to start any internal combustion propulsion engine shall be limited so as to maintain sufficient air pressure for further attempts under local control; and
- (j) an alarm shall be provided on the navigating bridge and in the machinery space to indicate low starting pressure at a level which still permits further main propulsion machinery starting operations.

(3) Every ship provided with remote or automatic control of the main propulsion and its associated machinery, including the sources of main electric supply, enabling that machinery to be operated and supervised from a control room shall be as safe as if the machinery is under direct supervision.

(4) Any automatic starting, operating or control systems shall include provisions for manually overriding the automatic controls and shall be so designed that the failure of any part of such systems shall not prevent their operation manually.

### **Steering gear**

**73.—(1)** Every ship shall be provided with an efficient main steering gear and, subject to paragraph 5 of Schedule 9 in Merchant Shipping Notice MSN 1698 (M), an efficient auxiliary steering gear. The main steering gear and the auxiliary steering gear shall be arranged so that the failure of one of them will not render the other one inoperative.

(2) The design and operation of main and auxiliary steering gears shall be in accordance with the specifications set out in Schedule 9 in Merchant Shipping Notice MSN 1698 (M).

### **Ventilating systems in machinery spaces** *Requirements for ships constructed on or after 1st September 1984*

74. Machinery spaces of Category A shall be ventilated so that an adequate supply of air is maintained for the safety and well-being of personnel and the operations of machinery, including boilers, at full power in all weather conditions. Any other machinery space shall be adequately ventilated having regard in particular to the prevention of an accumulation of oil vapour under all normal conditions.

### **Protection against noise** *Requirements for ships constructed on or after 1st September 1984*

75.—(1) In every ship measures shall be taken to reduce noise levels in machinery spaces as far as is reasonable and practicable. On completion of a ship, noise levels in machinery spaces shall be measured when the largest number of machines that operate simultaneously in service are working at their normal service loads. Measurements taken during sea trials at the maximum ahead service speed of the ship can be used to provide the necessary information.

(2) The equipment and procedures for measuring and recording noise levels in machinery spaces shall be generally in accordance with the provisions of the publication. “The Code of Practice for Noise Levels in Ships” published by Her Majesty’s Stationery Office (published 1978).

(3) Noise levels in machinery spaces shall not exceed 110 dB(A) provided that the Secretary of State may, under such conditions as he may specify, permit higher noise levels having regard to the size of ship and the type of machinery installed.

(4) Any machinery space in which the noise level exceeds 90 dB(A) and which is required to be manned shall be provided with a designated refuge from noise.

(5) Every entrance to a machinery space in which the noise level exceeds 85 dB(A) shall be provided with a warning notice comprising a symbol complying with British Standards Institution specification number BS 5378: 1980 and supplementary sign stating “High Noise Levels. Use Ear Protectors”. Sufficient ear protectors shall be provided for use in such spaces.

### **Communication between navigating bridge and machinery space**

76.—(1) Subject to paragraph (2) every ship shall be provided with two independent means for communicating orders from the navigating bridge to the position in the machinery space or machinery control room from which the main engines are normally controlled. One of the means shall be an engine room telegraph which provides visual indication of the orders and responses both in the machinery space and on the navigating bridge. Means of communication shall also be provided to any other position from which the main propulsion machinery may be controlled.

(2) On ships constructed on or after 1st October 1994 at least two independent means shall be provided for communicating orders from the navigation bridge to the position in the machinery space or in the control room from which the speed and direction of thrust of the propellers are normally controlled; one of these shall be an engine room telegraph which provides visual indication of the orders and responses both in the machinery spaces and on the navigation bridge. Appropriate means of communication shall be provided from the navigation bridge and the engine room to another position from which the speed or direction of thrust of the propellers may be controlled.

### **Engineers' alarm**

77. Every ship shall be provided with an engineers' alarm which shall be clearly audible in the engineer's accommodation when operated from a position in the machinery space or machinery control room from which the engines are normally controlled.

**Spare gear**

78. Every ship shall be provided with sufficient spare gear relating to the boilers and machinery referred to in this Part having regard to the intended service of the ship.

**PART IX****MISCELLANEOUS REQUIREMENTS****Application**

79. This Part applies to all ships, except for regulations 83 and 84 which apply only to ships constructed on or after 1st September 1984.

**Guard rails, stanchions and bulwarks**

80. In every ship bulwarks or guard rails shall be provided on every exposed deck to which any passenger or vehicles may have access. Such bulwarks or guard rails, together with stanchions supporting the guard rails shall be so placed, designed and constructed, and in particular shall be of such a height above deck as to prevent any passenger who may have access to that deck or any vehicle from accidentally falling therefrom. Any freeing ports fitted in such a bulwark shall be covered by a grid or bars which will prevent any person from falling through the port.

**Anchor handling equipment, anchors and chain cables**

81. Every ship shall be provided with anchor handling equipment together with such anchors and chain cables as are sufficient in number, weight and strength, having regard to the size of the ship. This equipment shall be tested and certificated to the satisfaction of the Certifying Authority.

**Hawsers and warps**

82. Every ship shall be provided with such hawsers and warps as are sufficient in number and strength, having regard to the size and intended service of the ship.

**Gas welding, flame cutting and domestic fuel installations**

83. In every ship gas welding, flame cutting or domestic gaseous fuel installation shall be designed, constructed and installed so that the safety of the ship and of the persons on board is not impaired.

**The use of asbestos**

84. In every such ship asbestos or any material containing asbestos shall not be installed in any part of a ship.

## PART X

### MISCELLANEOUS REQUIREMENTS FOR SHIPS WITH SPECIAL CATEGORY OR RO-RO CARGO SPACES

#### **Application**

**85.** This Part applies to ro-ro passenger ships.

#### **Access opening indicator lights and alarms**

- (a) **86.** (1) (a) Indicators shall be provided for all shell doors, loading doors and other closing appliances fitted to openings which if left open or not properly secured could lead to major flooding of a special category space or ro-ro cargo space. The indicator system shall be a panel at the navigating bridge consisting of a green indicator light and a red indicator light for each access opening connected to suitable switches at the opening so that the green light will be illuminated on the panel for a particular opening only when the door or other closing appliance is both closed and secured.
- (b) All switches or relays shall be connected so that if the door or appliance is not fully closed or properly secured the red light on the panel will illuminate.
- (c) The power supply for the indicator system shall be independent of the power supply for operating and securing the doors or closing appliances.

(2) Ships constructed on or after 1st July 1997 shall also be fitted with an audible fail safe alarm system, arranged to sound should the ship leave harbour with any of the doors or closing appliances open or their locking arrangements insecure, or if any of the doors or closing appliances become open or their locking arrangements insecure during the voyage.

#### **Supplementary emergency lighting**

**87.**—(1) In addition to the emergency lighting required by Part VII, all passenger spaces, public spaces and alleyways shall be provided with supplementary electric lighting that can operate independently of the main and emergency and transitional sources of electric power for at least three hours when the ship is listed up to 90 degrees. The illumination provided shall be such that the approach to the means of escape from the space can be seen. The source of electric power for the lighting shall be accumulator batteries located within the lighting unit that are continuously charged, where practicable, from the emergency switchboard whilst the ship is in service. The lighting shall be of the maintained type so that any failure of the lamp will be immediately apparent. The accumulator batteries shall be replaced in accordance with the service life established by the manufacturer having regard to the ambient temperature to which they are subject in service.

(2) A portable rechargeable battery operated hand lamp shall be provided in every crew space, alleyway, recreational space and every working space which is normally occupied unless supplementary emergency lighting as required by paragraph (1) is provided.

#### **Access to ro-ro decks**

**88.** In all ro-ro passenger ships, the master or a designated officer shall ensure that, without the express consent of the master or the designated officer, no passengers are allowed access to the ro-ro decks when the ship is underway.

**Television surveillance and leak detection requirements**

**89.**—(1) A television system shall be installed which shall be capable of transmitting reliable information to the navigating bridge on the condition (including position) of bow doors, stern doors or any other cargo or vehicle loading doors which if left open or not properly secured could lead to major flooding of a special category space or ro-ro cargo space. Special category spaces and ro-ro cargo spaces shall be continuously patrolled or shall be monitored by a television surveillance system during any voyage so that movement of vehicles in adverse weather or unauthorised entry by passengers can be observed. The system monitors shall be placed at a location that is continuously manned whilst the ship is underway.

- (a) (2) (a) Ships constructed on or after 1st July 1997 shall also be fitted with a leakage detection system in way of the inner and outer bow doors, stern doors and any other shell doors leading directly to ro-ro spaces. Monitors for the television surveillance and leakage detection systems shall be provided in the engine control room as well as the navigation bridge; and
- (b) ships constructed before 1st July 1997 shall comply with sub-paragraph (a) by the date of the first periodic survey following 1st July 1997 or the date on which these Regulations come into force, whichever is later.

**PART XI****EQUIVALENTS, PENALTIES, DETENTION  
AND INVALID STABILITY INFORMATION****Alternative construction, equipment and machinery**

**90.**—(1) Where these Regulations require that the hull or machinery of a ship shall be constructed in a particular manner, or that particular equipment shall be provided, or particular provision shall be made, the Secretary of State may approve the hull or machinery of the ship to be constructed in any other manner or any other equipment to be provided or other provision made, if he is satisfied by trial thereof or otherwise that other construction or equipment or other provision is at least as effective as that required by these Regulations.

(2) For the purposes of these Regulations, the results of a verification or test shall be accepted if the verification or test is carried out—

- (a) in accordance with these Regulations, or with a Standard, Code of Practice, Specification or technical description of an EEA State other than the United Kingdom offering equivalent levels of safety, suitability and fitness for purpose; and
- (b) by a body or laboratory of an EEA State other than the United Kingdom offering suitable and satisfactory guarantees of technical and professional competence and independence.

**Penalties**

**91.**—(1) Any contravention of these Regulations, other than of a regulation, or paragraph of a regulation, mentioned in paragraphs (2) to (6), shall be an offence on the part of both the owner and master, punishable on summary conviction by a fine not exceeding the statutory maximum or on conviction on indictment by imprisonment for a term not exceeding two years, or a fine, or both.

(2) Any contravention of regulation 35(1), (2) or (3), 36 or 41(1) or (2) shall be an offence on the part of the owner punishable on summary conviction by a fine not exceeding the statutory maximum or on conviction on indictment by imprisonment for a term not exceeding two years, or a fine, or both.



(3) Any contravention of regulation 42 or 43(1), (2), or (3) shall be an offence on the part of the master punishable on summary conviction by a fine not exceeding the statutory maximum or on conviction or indictment by imprisonment for a term not exceeding two years, or a fine, or both.

(4) Any person who fails to carry out an inspection which he has been appointed by the master to carry out under regulation 24(3) or (4) shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 2 on the standard scale.

(5) If any officer appointed in accordance with regulation 30(1) reports a door to be closed and locked when it is not in fact closed and locked he shall be guilty of an offence, punishable on summary conviction by a fine not exceeding level 5 or, on conviction or indictment, to imprisonment for a term not exceeding two years and a fine.

(6) Any contravention of regulation 42(1) by an officer appointed in accordance with that regulation shall be an offence punishable on summary conviction by a fine not exceeding level 3 on the standard scale or on conviction on indictment by a fine.

(7) It shall be a defence to a charge under these Regulations to prove that the person charged took all reasonable steps to avoid commission of the offence.

#### **Power to detain**

**92.** In any case where a ship does not comply with the requirements of these Regulations, the ship shall be liable to be detained and section 284 in the Merchant Shipping Act 1995 (which relates to the detention of a ship) shall have effect in relation to the ship, subject to the modification that as if for the words “this Act” wherever they appear, there were substituted “the Merchant Shipping (Passenger Ship Construction: Classes I, II and II(A)) Regulations 1998”.

#### **Invalid stability information**

**93.**—(1) After any survey required by these Regulations of any [new or existing] United Kingdom passenger ship to which these Regulations apply has been completed and a Passenger Ship Safety Certificate or a Passenger Certificate has been issued, the Secretary of State may cancel such certificate if the ship has not carried out a lightweight survey as specified in regulation 38(2).

(2) If at any time the stability information supplied to the master is found to be invalid the Secretary of State may withdraw such certificate until new and valid stability information is supplied.

Signed by the authority of the Secretary of State

*Glenda Jackson*  
Parliamentary Under Secretary of State,  
Department of the Environment, Transport and  
the Regions

8th October 1998

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## EXPLANATORY NOTE

*(This note is not part of the Regulations)*

1. These Regulations revoke and replace the Merchant Shipping (Passenger Ship Construction) Regulations 1980 and the Merchant Shipping (Passenger Ship Construction and Survey) Regulations 1984, and their amendments which implemented in part the Safety of Life at Sea Convention 1974 (SOLAS) as amended, and modified by its Protocol. They also replace a number of other Regulations relating to the construction of Passenger Ships. In addition they implement certain recent amendments to SOLAS. They also implement part of EC Directive [94/57/EC](#) with respect to approved standards (*regulation 5*).

2. The Regulations contain requirements for ships of Classes I, II and II(A) of all dates of construction. A number of details of technical requirements are now contained in a Merchant Shipping Notice.

3. The principal changes from the previous Regulations are—

- (a) a number of requirements on United Kingdom ships which went beyond existing SOLAS requirements are omitted; and
- (b) the new SOLAS amendments implemented are—
  - (i) amendments made by Resolution MSC 13(57) including, among other matters, revised requirements as to sounding pipes and gauges to tanks containing petrol, lubricating oil and some flammable oil;
  - (ii) amendments made by Resolution MSC 31(63) relating to the screening of high pressure fuel delivery lines;
  - (iii) amendments made by Resolution 1 of the Conference on Global Maritime Distress and Safety Systems; and
  - (iv) amendments made by Resolution MSC.27(61) relating to earthing systems and means of communication between the bridge and the engine room.

4. The Regulations enable the Secretary of State to authorise persons to act as Certifying Authorities for the purpose of the Regulations. Currently so authorised are Lloyd's Register of Shipping, the British Committee of Bureau Veritas, the British Committee of Det Norske Veritas, the British Committee of Germanischer Lloyd, the British Committee of Registro Italiano Navale and the British Technical Committee of the American Bureau of Shipping.

5. A compliance cost assessment has been prepared and copies can be obtained from the Maritime and Coastguard Agency, Spring Place, 105 Commercial Road, Southampton SO15 1EG. A copy has been placed in the library of each House of Parliament.

6. Merchant Shipping Notices are obtainable from EROS Marketing Support Services, Delta House, Imber Court Business Park, Orchard Lane, East Molesey, Surrey KT8 0BN. (Telephone number: 0181 957 5028). The SOLAS Convention, its Protocol and amendments and the Codes and Guidelines referred to in the Regulations are obtainable from the International Maritime Organisation, 4 Albert Embankment, London SE1 7SR. British or International Standards are obtainable from the British Standards Institution, 389 Chiswick High Road, London W4 4AL and the Institution of Electrical Engineers Regulations from the Institution at Savoy Place, London WC2.

