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STATUTORY INSTRUMENTS

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**1998 No. 2515**

**MERCHANT SHIPPING  
SAFETY**

**The Merchant Shipping (Passenger Ship Construction:  
Ships of Classes III to VI(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 the powers conferred by section 85(1)(a) and (b), (3), (5) to (7) and section 86(1) and of all other powers enabling him in that behalf, hereby makes the following Regulations:

**PART I  
PRELIMINARY**

**Citation and commencement**

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

**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, except in the case of a ship the keel of which was laid or which was at a similar state 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 of which such conversion commences;

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(1) 1995 c. 21; sections 85 and 86 were amended by the Merchant Shipping and Maritime Securities Act 1977 (c. 28), section 8.  
[DOT 11928]

- (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 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 such sub-heading in that regulation) shall (unless the context otherwise requires) relate only to such ships.
- (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. M.1645, 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;
  - “buoyancy test” means a test carried out in accordance with Schedule 2 Section 4 in Merchant Shipping Notice MSN 1699(M);
  - “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 of the Merchant Shipping Act 1995;
  - “dangerous goods” means goods defined as such in the Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997<sup>(2)</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;
  - “deadweight” means the difference in tonnes between the displacement of a ship in water of a specific gravity of 1.025 and the lightweight of the ship;
  - “draught” means the vertical distance from the moulded base line to a subdivision load waterline;
  - “EEA Agreement” means the Agreement on the European Economic Area signed at Oporto on 2nd May 1992<sup>(3)</sup> as adjusted by the Protocol signed at Brussels on 17th May 1993;
  - “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;

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(2) S.I.1997/2367.

(3) Cm. 2073.

“emergency source of electrical power” means a source of electric 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;

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;

“every other ship” means a ship which requires a heeling test or buoyancy test given in column 4 of the tables in section 1 of Schedule 2 in Merchant Shipping Notice MSN 1699(M);

“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 1699(M), as applied to that ship or portion as the case may be;

“favourable weather” means fine, clear settled weather with a sea state such as to cause only moderate rolling and/or pitching;

“freeboard deck” has the same meaning as in the Merchant Shipping (Load Line) Rules 1998(4);

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

“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;

“heeling test” means a test carried out in accordance with Schedule 2 Section 3 in Merchant Shipping Notice MSN 1699(M);

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

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

where:

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

“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;

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

“machinery space” means any space extending from the moulded base line of the ship to the margin line 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 373 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 1,852 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;

“open ro-ro cargo spaces” means ro-ro cargo spaces either 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;

“open ship” means a ship in which all the passenger accommodation is completely open to the elements and is not fitted with a weathertight or watertight deck or structure above the waterline;

“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;

“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;

“stability information” means the information required to be provided in compliance with regulation 31;

“steering gear control system” means the equipment by which orders are transmitted from the navigating bridge to the steering gear power units. Steering gear control systems comprise transmitters, receivers, hydraulic control pumps and their associated motors, motor controllers, piping and cables;

“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;

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

“voyage” includes an excursion;

“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 margin line;

“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; or
- (c) any other specified code 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 it is to come into force and the conditions (if any) on which it is given.

- (a) (i) Subject to subparagraph (ii) below, for the purposes of these Regulations passenger ships shall be arranged in Classes as follows:—

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*Class III*

Ships engaged only on voyages in the course of which they are at no time more than 70 miles by sea from their point of departure and not more than 18 miles from

	the coast of the United Kingdom, and which are at sea only in favourable weather and during restricted periods;
<i>Class IV</i>	Ships engaged only on voyages in Category A, B, C or D waters;
<i>Class V</i>	Ships engaged only on voyages in Category A, B, or C waters;
<i>Class VI</i>	Ships engaged only on voyages with not more than 250 passengers on board, to sea, or in Category A, B, C or D waters, in all cases in favourable weather and during restricted periods, in the course of which the ships are at no time more than 15 miles, exclusive of any Category A, B, C, or D waters, from their point of departure nor more than 3 miles from land;
<i>Class VI(A)</i>	Ships carrying not more than 50 passengers for a distance of not more than 6 miles on voyages to or from isolated communities on the islands or coast of the United Kingdom and which do not proceed for a distance of more than 3 miles from land; subject to any conditions which the Secretary of State may impose.

- (ii) The above Classes of ships do not include ships engaged on international voyages.
- (b) For the purposes of this regulation the following expressions have the following meanings respectively—
- “Category A, B, C or D waters” means the waters specified as such in Merchant Shipping Notice No. M.1504; and cognate expressions shall be construed accordingly;
- “restricted period” means a period falling wholly within the following limits—
- (i) from the 1st April to 31st October, both dates inclusive; and
  - (ii) between one hour before sunrise and one hour after sunset in the case of ships fitted with navigation lights conforming to the collision regulations and between sunrise and sunset in the case of any other ships;
- “sea” does not include any waters of Category A, B, C or D.

### Application

3. These Regulations apply to passenger ships of Classes III, IV, V, VI and VI(A) except that these Regulations shall not apply to high speed craft to which the Merchant Shipping (High-Speed Craft) Regulations 1996<sup>(5)</sup> apply.

### Exemptions for certain Classes of ships and individual ships

4. The Secretary of State may exempt certain Classes of ships or individual ships from the provisions of any of the regulations contained in these Regulations, subject to such conditions as he

(5) S.I. 1996/3188.

may specify, and may 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, not being a ship converted on or after 25th May 1980 to the extent that compliance therewith is unreasonable or impractical in the circumstances;
- (b) any ship which embodies features of a novel kind, if the application might, in his opinion, seriously impede research into the development of such features and their incorporation in ships. 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; and
- (c) either absolutely, or subject to such conditions as he thinks fit, any ship constructed before the requirement first came in force, if he is satisfied that compliance with that requirement is either impractical or unreasonable in the case of that ship.

#### **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**

#### **Structural strength**

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

#### **Construction of watertight bulkheads**

7.—(1) Every portion of the ship required by these Regulations to be watertight shall be constructed in accordance with such of the requirements of Schedule 4 in Merchant Shipping Notice MSN 1699(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.

#### **Watertight subdivision**

8. Every subdivided 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 Section 2 of Schedule 2 in Merchant Shipping Notice MSN 1699(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.



### **Peak and machinery space bulkheads, shaft tunnels**

9.—(1) Every subdivided 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 five per cent of the length of the ship and not more than three metres plus five per cent of such length. If the ship has a forward superstructure, the collision bulkhead shall be extended weathertight to the deck next above the bulkhead deck. The extension shall not be required to be fitted directly over the bulkhead below, provided that it is at least five per cent of the length of the ship from the forward perpendicular and the part of the bulkhead deck which forms the step is made effectively weathertight. A collision bulkhead need not be provided if the design of the ship, its service or its operation makes its fitting unnecessary.

(2) Every such ship shall be provided with a watertight afterpeak bulkhead and with watertight bulkheads, dividing the space appropriate 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 stopped below the bulkhead deck if the safety of the ship as regards subdivision is not thereby impaired.

(3) The stern gland of every such 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 margin line will not be submerged.

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

(4) Where bow doors are fitted and a sloping loading ramp forms part of the extension of the collision bulkhead above the bulkhead deck, any part of the ramp structure which is more than 2.3 metres above the bulkhead deck may extend forward of the limit specified in paragraph (1). The ramp shall form a complete weathertight closure of the collision bulkhead extension above the bulkhead deck.

### **Weatherdeck**

10. On a subdivided ship 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.

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

11. On subdivided ships 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**

12. Bulkheads required by these Regulations to be watertight shall not be pierced by doorways, ventilation trunks or other similar openings, unless such openings are essential for the proper working of the ship and do not impair the ship's survivability standard.

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

13.—(1) In every subdivided ship the number of sidescuttles, scuppers, sanitary discharges and other openings in the shell below the bulkhead deck shall be the minimum compatible with the design and proper working of the ship. Every such sidescuttle shall be a non-opening type and shall be fitted with efficient hinged deadlights permanently attached so that it can be readily and effectively closed and secured watertight.

(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) In every subdivided ship the design and operation of openings in the shell plating below the bulkhead deck shall take into account the specifications set out in Schedule 10 in Merchant Shipping Notice MSN 1699(M).

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

14.—(1) In every subdivided ship, 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 manufactured to standards recognised by the Certifying Authority.

(2) In every subdivided ship 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 and, in the case of a ship which is marked with a summer load line, to all sidescuttles in an enclosed superstructure.

(3) In every subdivided ship which is marked with a summer load line, each discharge led through the shell above the margin line 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 take into account the requirements of paragraph 2(2) of Schedule 10 in Merchant Shipping Notice MSN 1699(M) with efficient means for preventing water from passing inboard.

## PART III

### CLOSING OF OPENINGS IN HULLS AND WATERTIGHT BULKHEADSBELOW THE BULKHEAD DECK

**Interpretations**

15. In this Part “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.

**Closure of hull openings and openings in watertight bulkheads**

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

- (a) sidescuttles which can be opened and which are situated below the bulkhead deck;
- (b) deadlights of any sidescuttles which are situated below the bulkhead deck 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

- (c) gangway and cargo-loading doors below the bulkhead deck.

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

(3) 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.

(4) Both the watertight cover and the automatic non-return valve of any overboard discharge having its inboard opening below the margin line shall be kept closed and secured when such device is not in use.

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

**17.** All doors, valves and mechanisms 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**

**18.—(1)** All deadlights which are accessible, all watertight doors, all valves and closing mechanisms of scuppers and the devices referred to in regulation 16(4) 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 more than seven days.

(2) All closing appliances and devices referred to in regulation 16(1) and (4) shall be inspected by a person appointed by the master for that purpose before the ship proceeds on any voyage.

(3) 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 valves, the closing of which is necessary to make watertight any compartment below the margin line; and
- (b) all valves, the operation of which is necessary for the efficient operation of damage-control cross-connections.

#### **Notices**

**19.** Suitable notices and signs shall be provided on, or in the vicinity of, all the closing appliances referred to in regulation 16 to indicate, as necessary, the procedures for operating the appliances, the purpose of the controls and any precautions to be observed.

#### **Entries to be recorded**

**20.** Entries shall be made in a book retained on board to record the following—

- (1) the times of the last closing, before the ship proceeds on any voyage, of the closing appliances referred to in regulation 16(1) and of the next opening of such closing appliances;
- (2) the times when the portable plates referred to in regulation 16(3) are fitted in place and the times of any removal and replacement of such plates whilst the ship is on any voyage; and
- (3) 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.

## PART IV

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

#### **Application and interpretation**

**21.**—(1) This Part applies to—

- (a) United Kingdom ro-ro passenger ships; and
- (b) non-United Kingdom ro-ro passenger ships with the exception of—
  - (i) regulation 24(2) and (3);
  - (ii) regulation 26(2) to the extent that it relates to regulation 24(2);
  - (iii) regulation 27(1) and (2) to the extent that it relates to any berth which is not situated within a port in the United Kingdom; and
  - (iv) regulation 28(2).

(2) In this Part the following expressions have the following meanings—

“doors” includes bow visors and appliances described in regulation 22(1)(c);

“length” means the ship’s overall length; and

“loading doors” means the doors described in regulation 22(1)(a) to (d) inclusive.

(3) A door shall be deemed to be above the bulkhead deck if the sill of the opening with which it is associated is above that deck.

#### **Closure of main loading doors**

**22.**—(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.

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

**23.**—(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 22(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 weathertight doors in bulkheads**

**24.**—(1) Weathertight doors above the bulkhead deck (except doors fitted in collision bulkheads to which regulation 22 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) Weathertight doors above the bulkhead deck fitted in the shell or in bulkheads which are required to be watertight or weathertight, other than those doors described in regulations 22(1) and 24(1), shall be kept closed whilst the ship is on any voyage except when opened on the express authority of the master.

(3) Any 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.

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

**25.** Notwithstanding the provisions of regulations 22(1) and 24(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 a record book**

**26.** Entries shall be made in a book retained on board for recording the following—

- (1) the times of the last closing, in accordance with regulations 22(1) and 24(1), of the weathertight doors referred to in those regulations and of the next opening of such doors; and
- (2) the times of the opening and closing of any weathertight door pursuant to regulations 24(2) and 25.

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

**27.**—(1) The owner of the 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 22(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 22(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 opening of weathertight doors**

**28.**—(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.

#### **Compliance with written instructions**

**29.** No door shall be opened or closed except in compliance with the written instructions provided in accordance with regulation 28.

## **PART V**

### **STABILITY, SURVIVABILITY AND SHIPSIDE MARKINGS**

#### **Intact stability standard**

**30.** After correcting for the effect of free surface of liquids in tanks every subdivided ship shall, in all probable loading conditions, satisfy the stability criteria set out in Schedule 1 in Merchant Shipping Notice MSN 1699(M).

#### **Inclining and stability information**

**31.**—(1) Every subdivided ship on completion shall be inclined and the elements of her stability determined and every other ship shall undergo the heeling test or buoyancy test specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) respectively. The master shall be supplied by the owner with approved information relating to the stability of the ship in accordance with the following provisions of this regulation.

- (i) In each period of five years every subdivided ship shall have a lightweight survey, to verify any changes in lightship displacement and longitudinal centre of gravity; and every other ship shall undergo the heeling test or buoyancy tests specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) respectively, to verify any changes in the heeling or buoyancy characteristics.
- (ii) Such periods shall commence on the date of issue of either a Passenger Certificate or from a previous inclining or lightweight survey, whichever date is earliest.
- (iii) 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.

- (iv) Every inclining or lightweight survey or tests made for this purpose or for the purpose of this regulation shall be carried out in the presence of a nominated surveyor.
- (v) The interval between the lightweight surveys or tests 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 or test is not necessary at the required interval.

(3) An approved report of each inclining or lightweight survey or test carried out in accordance with this regulation and of the calculation therefrom of the lightship condition, or heeling or buoyancy particulars, as applicable, 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 or test carried out in accordance with the requirements of paragraph (3), 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.

(6) For subdivided ships stability information provided pursuant to paragraphs (1), (3), (4) and (5) shall be furnished in the form of a book (the stability information book) which shall be kept on board the ship at all times in the custody of the master. The information shall include particulars appropriate to the ship and shall be in a form acceptable to the certifying authority.

(7) Ships required to comply with the heeling test or buoyancy test specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) shall be furnished with stability information in the form of a written record setting out the principal particulars.

### **Standard of survivability**

**32.**—(1) Every ship shall comply with the appropriate standard of survivability in accordance with column 4 of either Table 1 or Table 2 (as appropriate) in Schedule 2 in Merchant Shipping Notice MSN 1699(M) as determined by the description of ships given in columns 1 to 3 of the Tables.

(2) Every subdivided 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 section 2 of Schedule 2 in Merchant Shipping Notice MSN 1699(M). 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.

### **Stability in the damaged condition**

**33.**—(1) This regulation applies to all subdivided ships constructed before 29th April 1990.

- (a) (i) In addition to the requirements of regulation 30 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 requirements of regulation 32.
- (ii) If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 4(3)(a) of Section 2 of Schedule 2 in Merchant Shipping Notice MSN 1699(M), the intact stability shall be adequate to withstand the flooding of those two adjacent main compartments.
- (b) Where in any ship in relation to which the factor of subdivision required by regulation 32 is 0.50, the intact stability shall be adequate to withstand the flooding of any two adjacent main compartments.

- (a) (3) (a) For the purposes of this regulation the sufficiency of the intact stability shall be determined in accordance with the provisions of sections 1 and 2 in Schedule 3 in Merchant Shipping Notice MSN 1699(M).
- (b) (i) The intact stability of every ro-ro passenger ship shall be re-examined in accordance with the provisions of sections 2 or 3 of Schedule 3 as appropriate in Merchant Shipping Notice MSN 1699(M) in order to establish the sufficiency of positive stability provided as required by sub-paragraphs (2)(a) and (3)(a) whenever considered necessary in connection with amended stability information prepared in accordance with regulation 31(4) and (5).
  - (ii) 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 1699(M).
- (a) (i) Every ship shall be so constructed as to keep asymmetrical flooding, when the ship is in a damaged condition, at the minimum consistent with efficient arrangements.
  - (ii) If cross-flooding fittings are provided in any such ship the fitting 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 an accessible position above the bulkhead deck.
  - (iii) Such fittings together with their controls as well as the maximum heel before equalisation shall be such as will not endanger the safety of the ship.
  - (iv) The cross-flooding fittings shall be capable of reducing the heel within 15 minutes sufficiently to meet the requirements of sub-paragraph 2(b)(iii) of sections 2 or 3 of Schedule 3 as appropriate in Merchant Shipping Notice MSN 1699(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 1699(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 during any stage of such flooding will not be such as will endanger the safety of the ship; and
  - (ii) that the margin line will not be submerged in the final stage of flooding.

*Requirements for subdivided ships constructed on or after 29th April 1990*

- (5) Every ship shall comply with the provisions of paragraphs (1) to (4) except that—
  - (a) for the purpose of paragraph (3)(a) the sufficiency of intact stability shall be calculated in accordance with section 1 and 3 of Schedule 3 in Merchant Shipping Notice MSN 1699(M); and
  - (b) the heel referred to in paragraph (4)(a) shall not exceed 15 degrees and the cross-flooding fittings shall be capable of meeting the requirements of section 3(2)(c) of Schedule 3 in Merchant Shipping Notice MSN 1699.

**Loading and stability assessment of ro-ro passenger ships of Classes III, IV and V**

- 34.—**(1) This regulation applies to ro-ro passenger ships of Classes III, IV and V.
  - (a) (2) (a) The owner shall ensure that the master is provided with information relating to the ship's stability during the process of loading and unloading. This information shall be included in the ship's stability information.
  - (b) Where any alterations are made or changes occur to the ship so as materially to affect information supplied to the master in accordance with sub-paragraph (a), amended information shall be provided.



- (c) The information provided pursuant to sub-paragraphs (a) and (b) shall be kept on board the ship at all times in the custody of the master.
- (3) The master shall use the information provided in accordance with paragraph (2) and, when necessary, make calculations or cause calculations to be made in order to ensure that during loading and unloading the ship has adequate stability and the freeboard at any door giving access to the hull or to an enclosed superstructure is sufficient to prevent the entry of water.
  - (a) (4) (a) On completion of the loading and before it proceeds on a voyage the master or an officer appointed for the purpose shall ascertain—
    - (i) the ship's draught at the bow and at the stern;
    - (ii) the trim of the ship by the bow or the stern; and
    - (iii) the vertical distance from the waterline to the appropriate subdivision load line mark on each side of the ship.
  - (b) The draughts, trim and the vertical distances ascertained in accordance with paragraph (a) shall be recorded in a book retained on board for that purpose.
- (5) Subject to paragraph (6), before proceeding on a voyage the master shall—
  - (a) cause the maximum permissible vertical position of the ship's centre of gravity relative to its keel (KG) or the minimum permissible transverse metacentric height (GM) whichever is appropriate to the ship, to be determined and recorded in a book retained on board for that purpose; and
  - (b) ensure that the condition of loading of the ship as recorded in accordance with sub-paragraph (5)(a) is within the permissible standard of stability determined in accordance with sub-paragraph (4)(b) and satisfies all the relevant requirements prescribed in the stability information book.
- (a) (6) (a) Where a ship regularly plies to and from the same place in conditions of loading which correspond closely to conditions of loading which are clearly specified in the stability information book and such specified conditions of loading allow a sufficient margin of stability beyond the minimum required for safety purposes to allow for small variations which might occur between a specified condition of loading and the actual loading of the ship, the Secretary of State may approve the conditions of loading so specified.
- (b) When conditions of loading have been approved in accordance with sub-paragraph (a) before the ship proceeds on a voyage the master shall—
  - (i) ensure that the actual condition of loading of the ship corresponds closely to one of the specified conditions of loading so approved; and
  - (ii) record the specified condition of loading so approved to which the actual condition corresponds, in a book specially retained on board for that purpose.
- (7) A copy of the information required by sub-paragraph (6)(b)(ii) shall be forwarded, as soon as is practicable, to a person nominated by the owner as being responsible and retained in his custody for a period of at least one calendar month.

### **Draught marks**

- 35.** Every subdivided ship shall have scale of draughts marked clearly at the bow and stern.

### **Subdivision load lines**

- 36.** Every subdivided 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 1699(M).

**Freeboard marking**

37. Passenger ships which are not required to be subdivided shall be marked on the side amidships with the freeboard assigned in accordance with paragraph 2 of Section 3 of Schedule 2 in Merchant Shipping Notice MSN (1699(M). The mark shall consist of a horizontal line 25 millimetres in breadth and 300 millimetres in length. The colour and method of marking shall be in accordance with regulation 36.

**Exhibition of damage control plans**

38. In every subdivided ship there shall be permanently exhibited, 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.

**Sounding pipes**

39. In every ship 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.

## PART VI

### BILGE PUMPING ARRANGEMENTS

**General**

40.—(1) 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. Wing suction shall be provided if necessary. Efficient arrangements shall be provided whereby water in any watertight compartment may find its way to the suction pipes.

(2) Sanitary, ballast and general service pumps having a suitable capacity in accordance with paragraph 4(3) of Schedule 6 in Merchant Shipping Notice MSN 1699(M) may be accepted as independent power pumps if fitted with necessary connections to the bilge pump systems.

**Number and type of bilge pumps**

41. Every ship shall be provided with bilge pumps in accordance with tables set out in Schedule 6 in Merchant Shipping Notice MSN 1699(M).

**Requirements for bilge pumps and bilge suction**

42. Bilge pumps and bilge piping provided in any ship to meet the requirements of these Regulations shall as far as practicable meet the conditions and specifications set out in Schedule 6 in Merchant Shipping Notice MSN 1699(M).

## PART VII

### ELECTRICAL EQUIPMENT AND INSTALLATIONS

#### General

**43.—**(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 2 of Merchant Shipping Notice MSN 1666.
- (3) The electrical equipment and installations in every ship shall be such that—
- (a) 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; and
  - (b) the electrical services essential for safety will be ensured under emergency conditions.

#### Main source of electrical power and main switchboards: ships of Class III

- (i) In every ship of Class III a main source of electrical power shall be provided of sufficient capacity to supply all the services referred to in regulation 43(3)(a) and (b).
  - (ii) The main source of electrical power shall be arranged so that such services can be maintained regardless of the speed and direction of rotation of the propulsion machinery or shafting.
  - (iii) The main source of electrical power shall consist of at least two generating sets, such that auxiliary services essential for the propulsion and safety of the ship can be operated when any one of the sets is out of service.
  - (iv) Arrangements shall be made which will safeguard such sets from being rendered inoperative in the event of the partial flooding of the ship's machinery space through leakage from a damaged compartment or otherwise.
- (2) In any ship with only one main generating station, the main switchboard shall be located in the same space as the main generating sets. 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. Where other essential features of the ship render the application of these requirements impracticable the provision of equivalent arrangements may be permitted. For the purpose of this paragraph an environmental enclosure for the main switchboard, such as a machinery

control room fitted within the main boundary of the space, does not provide separation between the generating sets and switchboards.

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

- (a) (3) (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.
- (c) 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.
- (4) The arrangement of the generating sets required by paragraph (1) shall be such 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.

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

**45.**—(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 source of electrical power and emergency switchboards: ships of Class III**

**46.**—(1) In a ship of Class III which is provided with an emergency bilge pump in compliance with Schedule 6 in Merchant Shipping Notice MSN 1699(M), or an emergency fire pump, being an electrically operated pump, there shall be provided, in a position above the bulkhead deck outside of the machinery casings, a self-contained emergency source of electrical power, capable of operating the pump for a period of 24 hours.

(2) The emergency source of electrical power shall be either an accumulator (storage) battery capable of complying with the requirement of paragraph (1), without being recharged, whilst maintaining the voltage of the battery throughout the required discharge period within 12 per cent of the normal voltage, or a generator driven by internal combustion machinery with an individual fuel supply and with efficient starting arrangements and the fuel provided shall have a flashpoint of not less than 43°C.

(3) The emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed to 22.5 degrees and when the trim of the ship is 10 degrees from an even keel.

(4) The emergency switchboard shall be situated as near as practicable to the emergency source of emergency electrical power. If the emergency source of electrical power is a generating set—

- (a) the emergency switchboard shall be situated in the same space as the generator unless the operation of the emergency switchboard would be thereby impaired; and
- (b) an interconnecting feeder, adequately protected at each end, connecting the main and emergency switchboards shall be fitted.

For the purposes of this paragraph an environmental enclosure within the main boundaries of the space does not provide separation between the emergency generator and the emergency switchboard.

(5) Any accumulator battery required by this regulation shall not be installed in the same space as the emergency switchboard.

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

(5) The emergency source of electrical power and its associated equipment shall be in accordance with the relevant conditions and specifications set out in Schedule 7 in Merchant Shipping Notice MSN 1699(M).

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

**47.—**(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 55 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 electric 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 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) Subject to paragraph (6) the hull-return system shall not be used in any such ship for power, heat and light distribution systems.

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

(9) 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.

(10) 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.

(11) 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 48(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.

(12) 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.

(13) 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. The Certifying Authority may permit installation of cables which do not comply with the foregoing for particular purposes, such as radio frequency cables, where compliance would be impracticable.

(14) 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 the Certifying Authority may permit such earthing to be omitted for particular purposes.

(15) 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 fire 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 fire resistant type where they pass through high fire risk areas.

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

(16) 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.

(17) 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.

(18) 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.

**Electrical equipment in hazardous areas and spaces**

**48.—**(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 provided that in such spaces above the bulkhead deck, electrical equipment that is enclosed and protected to prevent discharge of sparks may be installed more than 450 millimetres above any deck on which vapours may accumulate if the atmosphere within the special category space is changed at least ten times per hour based upon the gross volume of the space.

(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.

- (a) (6) (a) 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.
- (b) If permitted, any electrical equipment installed in such spaces shall be certified for, and cables shall be appropriate for, use with flammable dusts, gases or vapours to which it may be exposed.
- (c) Cable penetrations of the decks and bulkheads of such spaces shall be sealed against the passage of gas or vapour.
- (d) The Secretary of State may permit the installation of electrical equipment and cables which do not comply with the foregoing for particular applications provided such equipment and cables are capable of being electrically isolated by the removal of links or the operation of lockable switches.

## PART VIII

### BOILERS AND MACHINERY

#### General

49.—(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, 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 a separate source of propulsion power may be required to give the ship a navigable speed.

(3) The main and auxiliary machinery essential for the propulsion and safety of the ship shall be provided with effective means of control and the machinery shall be capable of being brought into operation when initially no power is available in the ship.

(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 a single means of limiting the speed of machinery may be permitted where it can be shown that the safety of the ship will not be impaired.

(5) Where main or auxiliary machinery or any parts of such machinery are subject to internal pressure, those parts shall, before being put into service for the first time, be subjected to a hydraulic test to a pressure suitably in excess of the working pressure having regard to—

- (a) the design and the material of which they 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.

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

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

(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 and 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 propeller; 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 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. A reduction in these angles taking into consideration the type, size and service conditions of the ship may be permitted by the Certifying Authority.

## **Machinery**

**50.**—(1) All gearing and every shaft and coupling used for transmission of power essential 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.

(2) 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 that over-ride the automatic shut-off devices may be permitted.

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

(3) The propulsion machinery systems shall be designed, constructed and installed so that undue stress due to vibration is not induced during normal operation.

(4) Every 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**

**51.**—(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 to 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 propeller inoperative.

## **Boilers and other pressure vessels**

**52.**—(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 to a pressure suitably in excess of the working pressure which will ensure that the boiler or other pressure vessel and its mountings are adequate in strength and design for the service for which it is intended and having regard to—

- (a) the design and the material of which it is constructed;
- (b) the purpose for which it is intended to be used; and
- (c) the working conditions under which it is intended to be used;

and every such boiler or other pressure vessel and its respective mountings shall at any time thereafter be capable of withstanding such a test and shall be maintained in an efficient condition.

(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 it can be shown that adequate protection against overpressure is provided.

(3) In every ship where oil fired water tube boilers are fitted, an automatic boiler water low level alarm and an automatic boiler water 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 water tube boiler serving turbine machinery shall be fitted with a high water level alarm.

(5) 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.

(6) 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.

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

**Boiler feed systems**

**53.**—(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**

**54.**—(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, with a factor of safety which is adequate having regard to—

- (a) the material of which it is constructed; and
- (b) the working conditions under which it is intended to be used.

(2) Without prejudice to the generality of the foregoing, every such steam pipe or fitting shall, before being put into service for the first time, be subjected to a test to a hydraulic pressure to be determined having regard to the matters referred to in sub-paragraphs (1)(a) and (b) but in no case to less than twice the working pressure to which it may be subjected and shall at any time thereafter be capable of withstanding such a test.

(3) Steam pipes shall be adequately supported.

(4) Provision shall be made which will avoid excessive stress likely to lead to the failure of any such steam pipe or fitting, whether by reason of variation in temperature, vibration or otherwise.

(5) 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.

(6) 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 a pipe.

### **Air pressure systems**

**55.**—(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 one independently driven air compressor 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 one air receiver, which shall be of such capacity that, when filled with compressed air, the air contained therein will be sufficient to start each of the ship's main engines 12 times if such engines are reversible, and six times if such engines are non-reversible.

(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.

### **Cooling systems**

**56.** 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. Such a pump shall be capable of supplying adequate cooling water to such machinery, oil coolers, fresh water coolers or condensers fitted thereto.

### **Oil fuel installations**

**57.** The arrangements for the storage, distribution and utilisation of the oil fuel shall be such as to ensure the safety of the ship and persons on board and shall take into account the provisions and specifications set out in Schedule 8 in Merchant Shipping Notice MSN 1699(M).

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

**58.**—(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 one pump shall be provided which shall be adequate for circulating such oil.

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

(2) Subject to paragraph (3) arrangements for the storage and distribution of flammable oils used in pressure systems in machinery spaces shall comply with paragraphs 3, 4, 5, 9 and 10 of Schedule 8 in Merchant Shipping Notice MSN 1699(M) as they apply to oil fuel installations except that sight flow glasses having an acceptable degree of fire resistance may be permitted.

(3) Alternative arrangements to those specified in paragraph (2) may be permitted in machinery spaces, other than those of Category A, where it is clear that the safety of the ship is not impaired.

**Machinery controls** *Requirements for ships constructed on or after 1st September 1984*

**59.**—(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 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, and 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 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 be so designed that the failure of any part of such systems shall not prevent their operation manually.

### **Steering gear**

**60.** Every ship shall be provided with an efficient main and auxiliary steering gear in accordance with the specifications set out in Schedule 9 in Merchant Shipping Notice MSN 1699(M). If the size of the vessel or the complexity of the steering machinery warrants, the design of the steering gear should take into account, where practicable, the requirements of paragraph 10 to 15 and paragraph 17 of Schedule 9.

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

**61.** 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 operation 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*

- (a) **62.** (1) (a) Measures shall be taken to reduce noise levels in machinery spaces as far as is reasonable and practicable.
  - (b) 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.
  - (c) Measurements taken during sea trials at the maximum ahead service speed of the ship will be acceptable as providing the necessary figures.
  - (d) The equipment and procedures for measuring and recording noise levels in machinery spaces shall generally be 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).
- (2) Noise levels in machinery spaces shall not exceed 110 dB(A) provided that under such conditions as may be specified, higher noise levels may be permitted, having regard to the size of ship and the type of machinery installed.
- (3) 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.
- (4) 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 a supplementary sign stating “High Noise Levels—Use Ear Protectors.” Sufficient ear protectors shall be provided for use in such spaces.

## PART IX

### MISCELLANEOUS REQUIREMENTS

#### **Guardrails and stanchions**

**63.**—(1) 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 the 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.

(2) In every open ship of Class V, VI or VI(A) every wash strake, covering board and coaming shall be so placed, designed and constructed and shall be of such a height above the floorboards as to prevent any person from accidentally falling overboard.

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

**64.** 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 size and intended service to the ship. This equipment shall be tested and certified by the Certifying Authority.

#### **Hawsers and warps**

**65.** 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**

**66.** In every ship constructed on or after 1st September 1984 every 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**

**67.** In every ship constructed on or after 1st September 1984 asbestos or any material containing asbestos shall not be installed in any part of the ship.

## PART X

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

#### **Application**

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

### **Access opening indicator lights**

- (a) (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.
- (b) 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;
- (c) 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;
- (d) The power supply for the indicator system shall be independent of the power supply for operating and securing the doors or closing appliances.

### **Supplementary emergency lighting**

- (a) **70.** (1) (a) In addition to the emergency lighting required by Part VII of these Regulations, all passenger 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.
  - (b) The illumination provided shall be such that the approach to the means of escape from the space can be seen.
  - (c) 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.
  - (d) The lighting shall be of the maintained type so that any failure of the lamp will be immediately apparent.
  - (e) 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.

### **Television surveillance**

**71.** 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.

## PART XI

### EQUIVALENTS, PENALTIES, DETENTION AND INVALID STABILITY INFORMATION

#### **Alternative construction, equipment and machinery**

**72.**—(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**

**73.**—(1) If a ship proceeds or attempts to proceed on any voyage without complying with the requirements of these Regulations other than the requirement of regulations 18(2) and (3), 20 and 25, the owner and master of the ship shall each be guilty of an offence for each case of non-compliance and liable on summary conviction to a fine not exceeding the statutory minimum or, on conviction on indictment, to imprisonment for a term not exceeding two years or a fine, or both.

(2) Any contravention of regulation 20 or 34(2) shall be an offence on the part of the owner and any contravention of regulation 34(3), (4), (5) or (6)(b) shall be an offence on the part of the master. Any such offence shall be 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 34(4)(a) by an officer appointed in accordance with that regulation shall be an offence punishable on summary conviction by a fine not exceeding level three on the standard scale or on conviction on indictment by a fine.

(4) Any person who fails to carry out an inspection which he has been appointed by the master to carry out under regulation 18(2) or (3) shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 2 on the standard scale.

(5) 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**

**74.** 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 of 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 III to VI(A)) Regulations 1998.”



### **Invalid stability information**

**75.**—(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 Certificate has been issued, the Secretary of State may cancel such certificate if the ship has not carried out a survey as specified in regulation 31(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 replace the Merchant Shipping (Passenger Ship Construction) Regulations 1980 and the Merchant Shipping (Passenger Ship Construction and Survey) Regulations 1984, and their amendments, so far as they related to ships of Classes III to VI(A). They also replace a number of other Regulations relating to the Construction of Passenger Ships. They implement in part EC Directive [94/57/EC](#) (common rules and standards for ship inspection and survey organisation and for the relevant activities of maritime administrations (*regulation 5*)).

2. The Regulations contain requirements for ships of Classes III to VI(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 previous Regulations are—

- (a) (i) revised requirements as to sounding pipes and gauges to tanks containing petrol, lubricating oil and some inflammable oil; and
- (ii) the scanning of high pressure fuel delivery lines;
- (b) implementation in part of EC Directive [94/57/EC](#) with respect to approved standards (*regulation 5*).

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, the Imber Court Business Park, Orchard Lane, East Molesey, Surrey KT8 0BN (Telephone number 0181 957 5028). British or International Standards are obtainable from the British Standards Institution, 389 Chiswick High Road, London W4 4AL and the Institute of Electrical Engineers Regulations from the Institute at Savoy Place, London WC2.