DEPARTMENT OF TRANSPORT

MERCHANT SHIPPING ACT, 1951 (ACT NO. 57 OF 1951)

THE DRAFT CONSTRUCTION AMENDMENT REGULATIONS, 2021

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(The English Text is the official text of the Regulations)

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I, Fikile April Mbalula, Minister of Transport hereby, in terms of section 356 of the Merchant Shipping Act, 1951 (Act No. 57 of 1951), make the Regulations set out in the Schedule hereunder.

Mr FA Mbalula, MP
Minister of Transport

Date:

SCHEDULE

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GENERAL EXPLANATORY NOTE:

[ ] Words in bold type in square brackets indicate omissions from existing regulations.

_____ Words underlined with a solid line indicate insertions in existing regulations.

Definition

1. In this Schedule "the Regulations" means the Construction Regulations, 1968 published in Government Gazette No. 1955 by Government Notice No. R. 79 dated 19 January 1968, as amended.

Amendment of Part I of the Regulations

2. Part I is hereby amended by the substitution in the Arrangement of Regulations (table of contents) of the following table:

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Amendment of regulation 2 of the Regulations

3. Regulation 2 of the Regulations is hereby amended by—

(a) the substitution for the introductory paragraph of the following paragraph:

"In this **[part]**Part the expression "the Act" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951), and unless the context otherwise indicates, any expression used in this Part **[o]**to which a meaning has been assigned in the Act, bears the meaning so assigned, and—";

(b) the substitution for the definition of "A" Class division" of the following definition:

"**""A" Class division"** means a bulkhead or part of a deck, in either case complying with such of the requirements of regulation 51 as are expressed to apply to "A" Class divisions;";

(c) the substitution for the definition of "accommodation space" of the following definition:

"**"accommodation space"** includes any—
(a) passenger **[spaces,]**space;
(b) crew **[spaces,]**space;
(c) **[offices,]**office;
(d) **[pantries,]**pantry; and
(e) space similar to any of the foregoing, not being a service **[spaces]**space or open **[spaces]**space on deck**[,]**;";

(d) the substitution for the definition of "Authority" of the following definition:

"**"Authority"** means the **[Minister in respect of a ship of Class I or II and the Secretary in respect of a ship of Class IIA, V or VI]**South African Maritime Safety Authority established by section 2 of the South African Maritime Safety Authority Act, 1998 (Act No. 5 of 1998);";

(e) the substitution for the definition of "'B" Class division" of the following definition:

"**['] "B" Class division**" means a bulkhead complying with such of the requirements of regulation 51 as are expressed to apply to "B" Class divisions;";

(f) the substitution for the definition of "control station" of the following definition:

"**"control station"** includes any—

(a) radiotelegraph room;

(b) **[any]** other enclosed space which houses—

(i) a compass, direction-finder, radar equipment, a steering wheel, or other similar equipment used in navigation;

(ii) a central indicator connected with a system for the detection of fire or smoke; or

(iii) an emergency generator;";

(g) the substitution for the definition of "criterion numeral" of the following definition:

"**"criterion numeral"** in relation to any ship means the criterion numeral of the ship determined in accordance with such of the provisions of Annex 2 as **[apply]**it applies to that ship**[.]**;";

(h) the substitution for the definition of "factor of subdivision" of the following definition:

"**"factor of subdivision"** in relation to any ship or portion thereof means the factor of subdivision determined in accordance with such of the provisions of Annex 2 as **[apply]**it applies to that ship or portion as the case may be;";

(i) the substitution for the definition of "incombustible material" of the following definition:

"**"incombustible material"** means material which when heated to a temperature of 1382º F. (750º C.) neither burns nor gives off inflammable vapours in sufficient quantity to ignite at a pilot-flame nor raises the temperature of the test furnace 90º F. (50ºC.) or more above 1382º F. (750º C.) when tested in accordance with British Standard Specification 476: Part 1: 1953 and the expression "combustible material" shall be construed accordingly**[.,]**;";

(j) the substitution for the definition of "machinery space" of the following definition:

"**"machinery space"** in every Chapter, other than Chapters V, V (A) and V (B), means any space extending from the moulded baseline of the ship to the margin line and between the extreme transverse watertight bulkheads bounding the spaces containing the main and auxiliary propelling machinery, boilers serving

the need**[;]** of propulsion, when installed, and the permanent coal bunkers, if any;";

(k) the substitution for the definition of "machinery space" of the following definition:

"**"machinery space"** in Chapters V, V (A) and V (B), means any space used for propelling**[,]** auxiliary or refrigerating machinery, **[boilers, pumps, engineers' workshops, generators]**a boiler, pump, engineers' workshop, generator, ventilation or air conditioning machinery, an oil filling **[stations]**station and similar **[spaces]**space and **[trunkways]**trunkway to such **[spaces]**a space;";

(l) the substitution for the definition of "margin line" of the following definition:

"**"margin line"** means a line drawn at least **[3 inches]** 7.62 centimetres below the upper surface of the bulkhead deck at the side of ship and assumed for the purpose of determining the floodable length of the ship;";

(m) the substitution for the definition of "mile" of the following definition:

"**"mile"** means a nautical mile of 6,080 feet, the equivalent of 1,852 meters;";

(n) the substitution for the definition of "oil fuel unit" of the following definition:

"**"oil fuel unit"** means the equipment used for the preparation of oil fuel for delivery to the oil burners of an oil-fired boiler and includes **[the]**any associated oil pressure **[pumps, filters]**pump, filter and **[heaters]**heater;";

(o) the substitution for the definition of "passenger space" of the following definition:

"**"passenger space"** means any space provided for the use of a passenger;";

(p) the substitution for the definition of "public rooms" of the following definition:

"**"public room"** means includes **[halls, dining rooms, bars, smoke rooms, lounges, recreation rooms, nurseries and libraries]**a hall, dining room, bar, smoke room, lounge, recreation room, nursery or library;";

(q) the substitution for the definition of "service space" of the following definition:

"**"service space"** includes **[galleys, main pantries, laundries, store rooms, paint rooms, baggage rooms, mail rooms, bullion rooms, carpenters' and plumbers' workshops, and trunkways]**a galley, main pantry, laundry, store room, paint room, baggage room, mail room, bullion room, carpenters' and plumbers' workshop, and trunkway leading to such **[spaces]**a space;";

(r) the substitution for the definition of "settling tank" of the following definition:

"**"settling tank"** means an oil storage tank having a heating surface of not less than **[2 square feet]**60.96 centimetres per ton of oil capacity;";

(s) the substitution for the definition of "standard fire test" of the following definition:

"**"standard fire test"** means a test in which **[specimens]**a specimen of the relevant **[bulkheads or decks]**bulkhead or deck having a surface area of not less than **[50 square feet]**15.24 centimetres and a height of **[8 feet]**2.43 meters, resembling as closely as possible the intended construction and including where appropriate at least one joint, **[are]**is exposed in a test furnace to a series of time temperature relationships, approximately as follows:-
At the end of the first 5 minutes-1,000º F. (538º C.);
At the end of the first 10 minutes-1,300º F. (704ºC.);
At the end of the first 30 minutes-1,550º F. (843º C.); and
At the end of the first 60 minutes-1,700º F. (927º C.);";

(t) the substitution for the definition of "steering gear power unit" of the following definition:

"**"steering gear power unit"** means:-
(a) in the case of electric steering gear, the electric motor and its associated electrical equipment; **[or]**
(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;";

(u) the substitution for the definition of "steering gear power unit" of the following definition:

"**"subdivision load water line"** means the water line assumed in determining the subdivision of the ship in accordance with this Part of the regulations;";

(v) the substitution for the definition of "suitable" of the following definition:

"**"suitable"** in relation to material means approved by the **[Secretary]**Authority as suitable for the purpose for which it is used;";

(w) the substitution for the definition of "surface spread of flame" of the following definition:

"**"surface spread of flame"** for the purpose of Chapter V, means the surface spread of flame classified as Class 1 **[o r]**or Class 2 within the meaning of Section 2 of British Standard Specification 476: Part I: 1953;"; and

(x) the substitution for the definition of "watertight" of the following definition:

"**"watertight"** in relation to a structure, means its capability of preventing the passage of water through the structure in any direction under a head of water up to the ship's margin line; and".

Substitution of regulation 3 of the Regulations

4. The following regulation is hereby substituted for regulation 3 of the Regulations:

"**3. Application of this Part**
This **[part]**Part applies to **[every]**a passenger ship registered or licensed in the Republic or which is, in terms of the Act, required to be so registered or licensed, and to **[every]**a passenger ship **[which is]** registered in a country other than the Republic.".

Substitution of regulation 4 of the Regulations

5. The following regulation is hereby substituted for regulation 4 of the Regulations:

"**4. Classification of ships**
(1) The ships to which this Part applies are divided into the following classes: -
Class I-A ship engaged on voyages any of which are international voyages other than short international voyages**[.]**;
Class II-A ship, other than a ship of Class I engaged **[or]**on voyages any of which are short international voyages**[.]**;

Class IIA-A ship of **[70 feet]**21.3 meters in length or over, other than a ship of Class V or V1, engaged on voyages of any kind other than international voyages**[.]**;
Class III-Not yet allocated**[.]**;
Class IV-Not yet allocated**[.]**;
Class V-A ship of **[50 feet]**15.24 meters in length or over engaged only on voyages to sea in fine weather with not more than 40 persons on board, in the course of which voyages the ship is at no time more than 40 miles from the point of departure nor more than 15 miles from land**[.]**; and
Class VI-A ship which operates at a port or is engaged on voyages to sea in fine weather with not more than 250 persons on board, in the course of which voyages the ship is at no time more than 15 miles **[fro m]**from the point of departure nor more than 5 miles from land.

(2) For the purposes of **[paragraph]**subregulation (1), "voyage" includes an excursion.".

Substitution of regulation 5 of the Regulations

6. The following regulation is hereby substituted for regulation 5 of the Regulations:

"**5. Structural Strength**
[The]A builder or owner of a ship shall ensure that a ship is constructed to ensure that its structural strength **[of every ship shall be]**is sufficient for the service for which the ship is intended.".

Substitution of regulation 6 of the Regulations

7. The following regulation is hereby substituted for regulation 6 of the Regulations:

"**6. Submission of Plans**
Before the construction of **[any]**a ship is commenced, **[or at an any stage thereafter, the]**a builder or owner thereof shall submit in duplicate to the Authority the plans particular set forth in Annex 1 for approval.".

Substitution of regulation 7 of the Regulations

8. The following regulation is hereby substituted for regulation 7 of the Regulations:

"**7. Application of Chapter II**

Unless otherwise indicated in this Chapter, this Chapter applies to **[every ship of]**a Class I, II, IIA, V or VI ship except an open or partially decked **[ship of]** Class V ship or a **[ship of]** Class VI ship carrying fewer than 151 passengers, and a "Chapter I ship" means a ship to which this Chapter applies.".

Substitution of regulation 8 of the Regulations

9. The following regulation is hereby substituted for regulation 8 of the Regulations:

"**8. Watertight subdivisions**

[Every Chapter II 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 Annex 2 as apply to the 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.]

(1) A Chapter II 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 Annex 2 as it applies to the ship.

(2) Every other portion of the internal structure which affects the efficiency of the subdivision of the ship in subregulation (1) shall be watertight and shall be of a design which will maintain the integrity of the subdivision.".

Amendment of regulation 9 of the Regulations

10. Regulation 9 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 9 of the following heading:

"**9. Peak and machinery space bulkheads, shaft tunnels[, etc.]**";

(b) the substitution for subregulations (1) to (3) of the following subregulations:

"**[(1) Every Chapter II ship shall be provided with a collision bulkhead which shall be watertight up to the bulkhead deck and shall be fitted at a distance from the ship's forward perpendicular of not less than 5 per cent of the length of the ship and not more than 10 feet plus 5 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 5 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. The plating and stiffeners of such extension shall be constructed in accordance with the provisions of Annex 4 as if the extension formed part of a bulkhead immediately below the bulkhead deck.

(2) Every Chapter II ship shall be provided with a watertight afterpeak bulkhead and with watertight bulkheads dividing the space appropriated to the main and auxiliary propelling. machinery, boilers, if any, and the permanent coal bunkers, 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 is not thereby impaired.

(3) The stern gland of every Chapter II 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. The stern tube shall be enclosed in a watertight compartment, the volume of which shall be the smallest compatible with the proper design of the ship.]

(1) A Chapter II ship shall be provided with a collision bulkhead which shall—

(a) be watertight up to the bulkhead deck;

(b) be fitted at a distance from the ship's forward perpendicular of not less than 5 per cent of the length of the ship and not more than 10 feet plus 5 per cent of such length; and

(c) if the ship has a forward superstructure, be extended weathertight to the deck next above the bulkhead deck and shall not be required to be fitted directly over the bulkhead below: Provided that:

(i) it is at least 5 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; and

(ii) the plating and stiffeners of such extension shall be constructed in accordance with the provisions of Annex 4 as if the extension formed part of a bulkhead immediately below the bulkhead deck.

(2) A Chapter II ship shall be provided with a watertight afterpeak bulkhead and with watertight bulkheads dividing the space appropriated to the main and auxiliary propelling machinery, boilers, if any, and the permanent coal bunkers, if any, from other spaces and 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 is not thereby impaired.

(3) The stern gland of any Chapter II 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."; and

(c) the insertion after subregulation (3) of the following subregulation:

"(4) The stern tube in subregulation (3) shall be enclosed in a watertight compartment, the volume of which shall be the smallest compatible with the proper design of the ship.".

Amendment of regulation 10 of the Regulations

11. Regulation 10 of the Regulations is hereby amended by–

(a) the substitution for subregulation (1) of the following subregulation:

"(1) Subject to the provisions of this regulation, **[every ship of]**a Class I, II or IIA ship shall be fitted with a watertight double bottom which shall be at least of the following extent-

(a) in a ship of **[165 feet]**50.292 meters or over but less than **[200 feet]**60.96 meters in length, from the machinery space to the collision bulkhead or as near to that bulkhead as is practicable;

(b) in a ship of **[200 feet]**60.96 meters or over but less than **[249 feet]**75.85 meters in length, from the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable, but not necessarily in the machinery space; or

(c) in a ship of **[249 feet]**75.85 meters or over in length, from the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) **[When a double bottom is required by this regulation to be fitted in a ship, its moulded depth in inches measured at the centre line shall be not less than 16 inches plus one-twentieth of the length of the ship in feet and the inner bottom shall be continued out to the ship's sides in such a manner as to protect the bottom to the turn of the bilge the inner bottom shall be deemed to be adequate for this purpose if the line of intersection of the outer edge of the margin plate with the bilge plating is not lower at any point than a horizontal plane passing through the point of intersection with the frame line amidships of a transverse diagonal line inclined at 25 degrees to the base line and cutting it at a point one-half of the ship's moulded breadth from the centre line.]**When a double bottom is required by this regulation to be fitted in a ship—

(a) its moulded depth in inches measured at the centre line shall be not less than 40.64 centimetres plus one-twentieth of the length of the ship in meters;

(b) the inner bottom shall be continued out to the ship's sides in such a manner as to protect the bottom to the turn of the bilge; and

(c) the inner bottom shall be deemed to be adequate for this purpose if the line of intersection of the outer edge of the margin plate with the bilge plating is not lower at any point than a horizontal plane passing through the point of intersection with the frame line amidships of a transverse diagonal line inclined at 25 degrees to the base line and cutting it at a point one-half of the ship's moulded breadth from the centre line.";

(c) the substitution for subregulation (3) of the following subregulation:

"(3) **[Wells constructed in the double bottom for the purpose of drainage shall not be larger nor extend downwards more than is necessary for such purpose.]**The depth of **[the]**a well shall in no case be more than the depth of the double bottom at the centre line, less **[18 inches]**45.72 centimetres, nor shall the well extend below the horizontal plane referred to in **[sub-regulation]**subregulation (2), provided that a well extending to the outer bottom may be constructed at the after end of a shaft tunnel.

(d) the substitution for subregulation (4) of the following subregulation:

"(4) **[Wells]**A well shall not be constructed in the double bottom for **[purposes]**any purpose other than drainage **[shall not be constructed in the double bottom]**."; and

(e) the substitution for subregulation (5) of the following subregulation:

"(5) **[Nothing in this regulation shall require a]**A double bottom is not required to be fitted in way of watertight compartments of moderate size used exclusively for the carriage of liquids, if the safety of the ship will not be impaired in the event of bottom or side damage **[by reason of]**due to the absence of a double bottom in that position.".

Amendment of regulation 11 of the Regulations

12. Regulation 11 of the Regulations is hereby amended by–

(a) the substitution for subregulation (1) of the following subregulation:

"**[(1) (a) Every Chapter II ship shall be so constructed as to provide sufficient intact stability in all service conditions to enable the ship to withstand the final flooding of any one of the main compartments into which the ship is subdivided in accordance with the provisions of regulation 8. If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 6 (3) (a) of Annex 2, the intact stability shall be adequate to withstand the final flooding of those two adjacent main compartments.**

(b) Where in any Chapter II ship the factor of subdivision required under paragraph 4 or paragraph 9 of Annex 2 is .50 or less but more than .33, intact stability shall be adequate to withstand the final flooding of any two adjacent main compartments.

(c) Where in any Chapter II ship the factor of subdivision required under paragraph 4 of Annex 2 is .33 or less, the intact stability shall be adequate to withstand the final flooding of any three adjacent main compartments.]

(1) (a) A Chapter II ship shall be so constructed—

(i) as to provide sufficient intact stability in all service conditions to enable the ship to withstand the final flooding of any one of the main compartments into which the ship

is subdivided in accordance with the provisions of regulation 8; and

(ii) if two of the main compartments of the ship, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 6 (3) (a) of Annex 2, the intact stability of the ship shall be adequate to withstand the final flooding of those two adjacent main compartments;

(b) Where in a Chapter II ship the factor of subdivision required under paragraph 4 or paragraph 9 of Annex 2 is .50 or less but more than .33, intact stability shall be adequate to withstand the final flooding of any two adjacent main compartments; and

(c) Where in a Chapter II ship the factor of subdivision required under paragraph 4 of Annex 2 is .33 or less, the intact stability shall be adequate to withstand the final flooding of any three adjacent main compartments.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) For the purposes of this regulation, the sufficiency of the intact stability of **[every]**a Chapter II ship shall be determined in accordance with the provisions of Annex 3.";

(c) the substitution in subregulation (3) for paragraph (a) of the following paragraph:

"**[(a) Every Chapter II ship shall be so constructed as to keep unsymmetrical flooding when the ship is in a damaged condition, at the minimum consistent with efficient arrangements. If cross-flooding fittings are provided in any such ship the fittings shall, where practicable, be self-acting, but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from an accessible position above the bulkhead deck. Such fittings together with their controls as well as the maximum heel before equalization, shall be such as will not endanger the safety of the ship. The cross-flooding fittings shall be capable of reducing the heel within 15 minutes, sufficiently to meet the requirements of paragraph 3 (b) and (c) of Annex 3.]**

(a) A Chapter II ship shall be so constructed—

(i) as to keep unsymmetrical flooding when the ship is in a

damaged condition, at the minimum consistent with efficient arrangements;

(ii) to ensure that if cross-flooding fittings are provided in any such ship, the fittings shall, where practicable, be self-acting, but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from an accessible position above the bulkhead deck;

(iii) such that the fittings in subparagraph (ii), together with their controls as well as the maximum heel before equalization, shall be such as will not endanger the safety of the ship; and

(iv) that the ship's cross-flooding fittings shall be capable of reducing the heel within 15 minutes, sufficiently to meet the requirements of paragraph 3 (b) and (c) of Annex 3."; and

(d) the substitution for subregulation (4) of the following subregulation:

"(4) (a) **[There shall be provided in every]**A Chapter II ship shall be provided with a document for the use of the master of the ship containing information as to the use of any cross-flooding fittings provided in the ship.

(b) **[There shall be provided in every ship of]**A Class I, II or IIA ship shall be provided with a document for the use of the master of the ship containing **[the following additional information]**-

(i) information necessary for the maintenance of sufficient intact stability under service conditions to enable the ship to withstand damage to the extent referred to in Annex 3; and

(ii) information as to the conditions of stability on which the calculations of heel have been based, together with a warning that excessive heeling might result should the ship sustain damage when in **[a]** less favourable **[condition]** conditions.".

Substitution of regulation 12 of the Regulations

13. The following regulation is hereby substituted for regulation 12 of the Regulations:

"**12. Ballasting**

(1) In **[every]**a Chapter II ship, when ballasting with water is necessary, the water ballast shall not in general be carried in tanks intended for oil fuel.

(2) In a ship in which it is not practicable to avoid putting water in oil fuel tanks, oily-water separator equipment to the satisfaction of the Authority shall be fitted, or an alternative means acceptable to the Authority shall be provided for disposing of the oily-water ballast.".

Amendment of regulation 13 of the Regulations

14. Regulation 13 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 13 of the following heading:

"**13. Construction of watertight bulkheads[, etc.]**"; and

(b) the substitution for subregulations (1) and (2) of the following subregulations:

"(1) In **[every]**a Chapter II ship, every portion of the ship required by this Part to be watertight, shall be constructed in accordance with such of the requirements of Annex 4 as apply to it.

(2) In **[every]**a Chapter II ship, 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.".

Amendment of regulation 14 of the Regulations

15. Regulation 14 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 14 of the following heading:

"**14. Openings in watertight bulkheads[, etc.]**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every ship of]**a Class I, II or IIA ship–";

(c) the substitution in subregulation (1) for paragraph (c) of the following paragraph:

"(c) (i) **[every]**a tunnel above the double bottom, if any, whether for access from the crew space to the machinery space, for piping or for any other purpose, which passes through such a bulkhead, shall be watertight**[.]**;

(ii) **[The]**the means of access to at least one end of such tunnel, if it may be used as a passage at sea, shall be through a trunkway extending watertight to a height sufficient to permit access above the margin line**[.]**;

(iii) **[The]**the means of access to the other end of the tunnel shall be through a watertight door**[.]**; and

(iv) **[No]**a tunnel shall not extend through the first subdivision bulkhead abaft the collision bulkhead;";

(d) the substitution in subregulation (1) for paragraph (d) of the following paragraph:

"(d) (i) within spaces containing the main and auxiliary propelling machinery including boilers serving the needs of propulsion and all permanent bunkers, not more than one doorway, apart from the doorways to bunkers and shaft tunnels, may be fitted in each main transverse bulkhead**[.]**;

(ii) **[Where]**where two or more shafts are fitted, the tunnels shall be connected by an intercommunicating passage**[.]**;

(iii) **[There]**there shall be only one doorway between the machinery space and the tunnel spaces where one or two shafts are fitted and only two doorways where there are more than two shafts**[.]**; and

(iv) **[All]**any such **[doorways]**doorway shall be located so as to have **[their]**its sills as high as practicable;";

(e) the substitution in subregulation (1) for paragraph (e) of the following paragraph:

"(e) **[doorways, manholes and access openings,]**a doorway, manhole or access opening shall not be fitted in the collision bulkhead below

the margin line of the ship or in any other bulkhead which is required by this Part to be watertight and which divides a cargo space from another cargo space or from a permanent or reserve bunker: Provided that the **[authority]**Authority may permit any ship to be fitted with **[doorways in bulkheads]**a doorway in a bulkhead dividing two between deck cargo spaces, if **[he]**the Authority is satisfied that-

(i) the **[doorways are]**doorway is necessary for the proper working of the ship;

(ii) the number of such doorways in the ship is the minimum compatible with the design and proper working of the ship, and **[they]**such doorways are fitted **[it]**at the highest practicable level; and

(iii) the outboard vertical edges of any such **[doorways]**doorway are situated at a distance as far as practicable from the ship's shell plating and in no case less than one-fifth of the breadth of the ship, such distance being measured at right angles to the centre line of the ship at the level of the deepest subdivision load water line."; and

(f) the substitution for subregulations (2) to (4) of the following subregulations:

"(2) In **[every ship of]**a Class I, II or IIA ship, **[bulkheads]**a bulkhead outside **[the spaces]**any space containing machinery which **[are]**is required by this Part to be watertight, shall not be pierced by openings which are capable of being closed only by portable bolted plates.

(3) In **[every]**a Chapter II **[ship of]** Class V or VI ship, **[bulkheads]**a bulkhead required by this Part to be watertight, shall not be pierced by **[doorways, ventilation trunks,]**a doorway, ventilation trunk or other similar **[openings]**opening.

(4) In **[every]**a Chapter II ship-

(a) (i) **[valves and cocks]**a valve or a cock not forming part of a pipe system, shall not be fitted in any bulkhead required by this Part to be watertight;

(ii) if any such bulkhead is pierced by **[pipes, scuppers, electric cables]**a pipe, scupper, electric cable or other similar **[fittings]**fitting, provision shall be made which will

ensure that the watertightness of the bulkhead is not thereby impaired;

(iii) lead or other heat sensitive **[materials]**material shall not be used in **[systems]**any system which **[penetrate]**penetrates a watertight subdivision **[bulkheads]**bulkhead, where deterioration of such **[systems]**a system in the event of fire would impair the watertight integrity of the **[bulkheads]**bulkhead; and

(b) (i) the collision bulkhead of the ship shall not be pierced below the margin line by more than one pipe: Provided that if the forepeak in the ship is divided to hold two different kinds of liquids, the collision bulkhead may be pierced below the margin line by not more than two pipes**[.]**; and

(ii) **[Any]**any pipe which pierces the collision bulkhead of the ship shall be fitted with a screwdown valve capable of being operated from above the bulkhead deck, the valve chest being secured to the forward side of the collision bulkhead.".

Amendment of regulation 15 of the Regulations

16. Regulation 15 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 15 of the following heading:

"**15. Means of closing openings in watertight bulkheads[, etc.]**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every slip of]**a Class I, II or IIA ship, efficient means shall be provided for closing and making watertight **[all openings]**any opening in **[bulkheads and]**any bulkhead or other **[structures]**structure required by this Part to be watertight.";

(c) the substitution for subregulation (2) of the following subregulation:

"(2) **[Every]**A door fitted to any opening referred to in subregulation (1), shall be a sliding watertight door: Provided that, in a **[ship of]** Class I ship or in any **[ship of]** Class II or IIA ship which is not required to be subdivided in

accordance with Part III of Annex 2, a hinged watertight **[doors]**door may be fitted in any of the following positions-";

(d) the substitution in subregulation (2) for paragraph (a) of the following paragraph:

"(a) in a passenger, crew **[and]**or working **[spaces]**space above any deck the underside of which at its lowest point is at least **[7 feet]**2.13 meters above the deepest subdivision load water line; **[and]**or";

(e) the substitution for subregulation (3) of the following subregulation:

"(3) **[Sliding]**A sliding watertight **[doors]**door may have horizontal or vertical motion and shall be either–"; and

(f) the substitution for subregulations (4) to (7) of the following subregulations:

"(4) **[Hinged]**A hinged watertight **[doors]**door fitted in accordance with **[sub-regulation]**subregulation (2) (a) shall be fitted with catches, or similar quick action closing devices, capable of being worked from each side of the bulkhead in which the door is fitted.

(5) Where a sliding watertight **[doors are]**door is fitted in the position referred to in **[sub-regulation]**subregulation (2) (b), such **[doors]**a door shall not be fitted with a remote control **[devices]**device, and **[every]**any watertight door which is fitted in such a position and which is accessible while the ship is at sea, shall be fitted with efficient locking arrangements.

(6) **[Every]**A door required by this Part to be watertight, shall be capable of being secured by means other than bolts and of being closed by means other than by gravity.

(7) In **[every ship of]**a Class I, II or IIA ship, **[watertight doors]**a watertight door fitted in **[bulkheads]**a bulkhead between permanent and reserve bunked, other than the **[doors]**door referred to in regulation 16 (4), shall always be accessible.".

Amendment of regulation 16 of the Regulations

17. Regulation 16 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 16 of the following heading:

"**16. Means of operating a sliding watertight [doors]door**"; and

(b) the substitution for subregulations (1) to (13) of the following subregulations:

"(1) In **[any ship of]**a Class I, II or IIA ship which is not required to be subdivided in accordance with Part III of Annex 2, any sliding watertight door fitted in a bulkhead is in a position which may require it to be opened at sea and the sill thereof is below the deepest subdivision load water line, the following provisions shall apply**[-]**:

(a) when the number of such **[doors (excluding doors at entrances to shaft tunnels)]**doors, excluding doors at entrances to shaft tunnels exceeds five, all such and those at the entrances to shaft tunnels, ventilation, forced draught or similar ducts, shall be power operated and shall be capable of being simultaneously closed from a single position situated on the navigating bridge;

(b) when the number of such doors **[(excluding doors at entrances to shaft tunnels)]**excluding doors at entrances to shaft tunnels is greater than one, but does not exceed five**[,]**-

(i) where the ship has no passenger spaces below the bulkhead deck, all such doors may be hand operated; and

(ii) where the ship has passenger spaces below the bulkhead deck, all such doors and those at the entrances to shaft tunnels, ventilation or forced draught or similar ducts, shall be power operated and shall be capable of being simultaneously closed from a single position situated on the navigating bridge; and

(c) in **[any]**a ship where there are only two such doors and they lead into or are within the space containing machinery, the Authority may permit them to be hand operated only.

(2) **[Watertight doors,]**A watertight door, the sills of which are above the deepest subdivision load water line and below the line specified in regulation 15 (2) (a), shall be sliding doors and may be hand operated, except in a ship to which subregulation (3) applies.

(3) In **[every ship of]**a Class II or IIA ship which is subdivided in accordance with Part III of Annex 2, all sliding watertight doors shall be operated by power and shall be capable of being simultaneously closed from a single position situated on the navigating bridge: Provided that, if in any such ship there is only one such door and it is in the space containing machinery, it shall not be required, to be operated by power.

(4) If, in **[any ship of]**a Class I, II or IIA**[, any]** ship, a sliding watertight **[doors]**door which may be opened at sea, for the purpose of trimming coal **[are]**is fitted between bunkers in the between decks below the bulkhead deck, such **[doors]**a door shall be operated by power.

(5) If, in **[any ship of]**a Class I, II or IIA ship, a trunkway, being part of a refrigeration, ventilation or forced draught system, is carried through more than one transverse watertight bulkhead and the sills of the openings of such **[trunkways]**a trunkway are less than **[7 feet]**2.13 meters above the deepest subdivision load water line, the sliding watertight doors at such openings shall be operated by power.

(6) (a) If a sliding watertight door is required by this Part to be operated by power from a single position on the navigating bridge[,]–

(i) the power system shall be so arranged that the door can also be operated by power at the door itself**[.]**;

(ii) **[The]**the arrangement in subparagraph (i) shall be such that the door will close automatically if opened at the door itself after being closed from the single position on the navigating bridge, and will be capable of being kept closed at the door itself notwithstanding that an attempt may be made to open it from such single position**[.]**; and

(iii) **[Handles]**handles for controlling the power system shall be provided at both sides of the bulkhead in which the door is situated and shall be so arranged that any person passing through the doorway is able to hold both handles in the open position simultaneously without being able to set the closing mechanism in operation accidentally.

(b) **[Watertight doors]**A watertight door shall be capable of closing as expeditiously as possible, but the rate of closing shall not be so rapid as to be a danger to persons passing through the opening.

(7) (a) (i) In **[every ship of]**a Class I, II or IIA ship, there shall be at least two independent sources of power for opening and closing all sliding watertight doors which are required by this Part to be operated by power, and each power unit shall be sufficient to operate simultaneously all such doors in the ship.

(ii) The power in subparagraph (i) shall be controlled from a single position on the navigating bridge, and there shall be provided at such position suitable indicators for checking that each of the two sources of power is capable of giving the required service satisfactorily.

(b) (i) Where the sources of power are hydraulic, there shall be two pumps each of which shall be capable of closing all watertight doors in not more than 60 seconds.

(ii) In addition, there shall be for the whole installation, hydraulic accumulators of sufficient capacity to operate all such doors at least three times, that is to say from the open to the closed position, from the closed to the open position and from the open to the closed position.

(iii) The fluid used shall be one which does not freeze at any temperature liable to be encountered by the ship during its service.

(8) In **[every ship of]**a Class I, II or IIA ship, every sliding watertight door which is operated by power, shall be provided with efficient hand-operating gear having an **[all round]**all-round crank motion, or some other movement providing the same guarantee of safety, capable of being operated on each side of the door itself and at an accessible position above the bulkhead deck.

(9) In **[every ship of]**a Class I, II or IIA ship, if a sliding watertight door is not required to be operated by power, it shall be provided with efficient hand-operating gear having an all-round crank motion, or some other movement providing the same guarantee of safety, capable of being operated on each side of the door itself and at an accessible position above the bulkhead deck.

(10) Where hand-operating gear is fitted in accordance with **[sub-regulations]**subregulations (8) and (9), the Authority may permit any door

to be operated on one side only, if the requirements of the said subregulations cannot be met owing to the layout of the spaces.

(11) (a) In **[every ship of]**a Class I, II or IIA**[,]** ship-

(i) the time necessary for the complete closure of any door by means of hand-operating gear with the ship upright shall not exceed 90 seconds**[.]**; and

[(b)] (ii) **[The]**the hand-operating gear shall be of such a design that the doors can be closed and opened from each of the required operating positions.

(12) In **[every ship of]**a Class I, II or IIA ship, the hand-operating gear for operating the sliding watertight doors in the machinery space from above the bulkhead deck shall be placed outside the machinery space unless such a position is inconsistent with the efficient arrangement of the necessary gearing.

(13) In **[every ship of]**a Class I, II or IIA ship, the means of operation of any watertight door, whether power operated or not, shall be capable of closing the door when the ship is listed to 15 degrees either way.".

Amendment of regulation 17 of the Regulations

18. Regulation 17 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 17 of the following heading:

"**17. Watertight [doors-signals]door-signals and communications**"; and

(b) the substitution for subregulations (1) to (2) of the following subregulations:

"(1) **[Every]**A sliding watertight door fitted in a **[ship of]** Class I, II or IIA ship, shall be connected with an indicator at each position from which the door may be closed, other than at the door itself, showing when the door is open and when it is closed.

(2) (a) There shall be provided in connection with every door referred to in **[sub-regulation]**subregulation (1) which is operated by power, a

means of giving an audible warning at the door itself when the door is about to be closed.

(b) (i) The arrangement of the door in paragraph (a) shall be such that one movement of the operating handle at the position from which the door is about to be closed will be sufficient to sound the signal and to close the door, the signal preceding the movement of the door by an interval sufficient to allow the movement of person and articles away from the door.

(ii) The signal in subparagraph(i) shall continue to sound until the door is completely closed.".

Substitution of regulation 18 of the Regulations

19. The following regulation is hereby substituted for regulation 12 of the Regulations:

"**18. Construction of watertight doors**

(1) **[Every]**A door required by this Part to be watertight shall-

(a) be of such design, material and construction as will maintain the integrity of the watertight bulkhead in which it is fitted**[.]**;

(b) **[Any]** if such a door **[giving]**gives direct access to any space which may contain bunker coal **[shall]**, together with its frame, be made of cast or mild steel**[.]**; and

(c) **[Any]**if such a door is in any other position **[shall]**, together with its frame, be made of cast or mild steel or cast iron.

(2) **[Every]**A sliding watertight door shall be fitted with rubbing faces of brass or similar material which may be fitted either on the door itself or on the door frame, and which, if they are of less than **[one inch]**2.54 centimetres in width, shall be fitted in recesses.

(3) If screw gear is used for operating **[the]**a watertight door, the screw shall work in a nut of suitable metal which is resistant to corrosion.

(4) (a) The frame of **[every]**a vertically sliding watertight door shall have no groove at the bottom thereof in which dirt may lodge.

(b) The bottom of **[such a]**the frame**[.]**in paragraph (a), if it is of skeleton form, shall be so arranged that dirt cannot lodge therein.

(c) The bottom edge of **[every such]**the door in paragraph (a) shall be tapered or levelled.

(5) **[Every]**A vertically sliding watertight door which is operated by power, shall be so designed and fitted that if the power supply ceases, there shall be no danger of the door dropping.

(6) **[Every]**A horizontally sliding watertight door shall be so installed to prevent its moving if the ship rolls, and if necessary a clip or other suitable device shall be provided for that purpose**[. The]**, which device shall not interfere with the closing of the door when the door is required to be closed.

(7) The frame of **[every]**a watertight door shall be properly fitted to the bulkhead in which the door is situated, and the jointing material between the frame and the bulkhead shall be of a type which will not deteriorate or be injured by heat.

(8) **[Every]**A watertight door, being a coal-bunker door, shall be provided with screens or other devices to prevent coal from interfering with its closing.".

Amendment of regulation 19 of the Regulations

20. Regulation 19 of the Regulations is hereby amended by–

(a) the substitution for subregulations (1) to (7) of the following subregulations:

"(1) In **[every]**a Chapter II ship, the number of side scuttles, scupper, sanitary discharges and other openings in the shell plating below the margin line,

shall be the minimum compatible with the design and proper working of the ship.

(2) The arrangements for closing each opening below the margin line referred to in **[sub-regulation]**subregulation (1), shall be consistent with its intended purpose and shall be such as will ensure watertightness.

(3) (a) In **[every ship of]**a Class I, II or IIA ship, the number of side scuttles below the margin line which are capable of being opened, shall be the minimum compatible with the requirements of the proper operation of the ship.

(b) (i) If in a between decks of the ship, the sills of any side scuttles are below a line drawn parallel to the bulkhead deck at side and having its lowest point 2½ per cent of the breadth of the ship above the deepest subdivision load water line, every side scuttle in that between decks shall be of a non-opening type.

(ii) If in a between decks of the ship, all the sills of the side scuttles are above the aforesaid line, every side scuttle in that between decks shall be either of a non-opening type or incapable of being opened except by a person authorized to do so by the master of the ship.

(iii) **[No]**A side scuttle shall not be so fitted that its sill is below the deepest subdivision load water line.

(4) In **[every]**a Chapter II **[ship of]**, Class V or VI ship, all side scuttles below the margin line shall be of a non-opening type.

(5) In **[every]**a Chapter II ship, **[every]**a side scuttle below the margin line shall be fitted with an efficient hinged deadlight permanently attached so that it can be readily and effectively closed and secured watertight: Provided that abaft a point one-eighth of the length of the ship from the forward perpendicular and above a line drawn parallel to the bulkhead deck at side and having its lowest point at a height of **[12 feet]**6 meters plus 2½ per cent of the breadth of the ship above the ship's deepest subdivision load water line, deadlights may for the purposes of this Part be portable in crew spaces and in passenger spaces.

(6) (a) **[Side scuttles]**A side scuttle shall not be fitted below the margin line in any space in a Chapter II ship which is appropriated solely to the carriage of cargo or coal.

(b) If a side [scuttles are]is fitted in **[spaces]**a space below the margin line which may be appropriated to the carriage either of cargo or of passengers, such a side **[scuttles]**scuttle and **[their]**its deadlights shall be so constructed as to be incapable of being opened except by a person **[authorized]**authorised to do so by the master of the ship.

(7) [Automatic]An automatic ventilating side **[scuttles]**scuttle shall not be fitted below the margin line in the shell plating of any Chapter II ship.";

(b) the substitution in subregulation (8) for paragraph (a) of the following paragraph:

"(8) (a) In **[every]**a Chapter II ship**[,]**-

(i) each inlet and discharge led through the shell plating below the margin line, shall be fitted with efficient and readily accessible means for preventing the accidental admission of water into the ship**[.]**; and

(ii) **[Lead]**lead or other heat sensitive **[materials]**material shall not be used for **[pipes]**a pipe fitted outboard of shell valves in **[inlets]**an inlet or **[discharges]**a discharge, or in any other place where the deterioration of such **[pipes]**a pipe in the event of fire would give rise to danger of flooding.";

(c) the substitution in subregulation (8) for paragraph (b) of the following paragraph:

"(b) **[Without prejudice to the generality of]**Subject to paragraph (a), each discharge led through the shell plating from **[spaces]**a space below the margin line, not being a discharge in connection with machinery, shall be provided with either-"; and

(d) the substitution in subregulation (8) for paragraphs (d) to (j) of the following paragraphs:

"(d) **[All cocks and valves]**A cock or valve attached to **[inlets]**an inlet or **[discharges]**a discharge, other than **[inlets]**an inlet or **[discharges]**a

discharge connected with machinery, being **[cocks or valves]**a cock or valve fitted below the margin line or the failure of which may affect the subdivision of the ship, shall be made of steel, bronze, or other equally efficient material.

(e) (i) **[Main and auxiliary inlets and discharges]**A main or auxiliary inlet or discharge connected with machinery, shall be fitted with a readily accessible **[cocks]**cock or **[valves]**valve between the pipes and the ship's shell plating or between the pipes and a fabricated box attached to the shell plating.

(ii) **[All such cocks]**A cock or **[valves]**valve attached to such **[inlets]**an inlet or **[discharges]**a discharge and **[all fittings]**any fitting outboard thereof, shall be made of steel, bronze or other suitable ductile material.

(iii) If made of steel, **[such cocks and valves]**the cock or valve in subparagraph (ii) shall be protected against corrosion.

(f) **[Discharge pipes]**A discharge pipe led through the shell plating below the margin line of **[any ship of]**a Class I, II or IIA ship, shall not be fitted in a direct line between the outboard opening and the connection with the deck, water closet or other similar fitting, but shall be arranged with bends or elbows of substantial metal other than cast iron or lead.

(g) **[All]**A discharge **[pipes]**pipe led through the shell plating below the margin line in a Chapter II ship and **[the valves]**any valve relating thereto, shall be protected from damage.

(h) **[All bolts]**A bolt connecting **[cocks, valves, discharge pipes and]**a cock, valve, discharge pipe or other similar equipment to the shell plating of a Chapter II ship below the margin line, shall have **[their heads]**its head outside the shell plating, and shall be either countersunk or cupheaded.

(i) Efficient means shall be provided for the drainage of **[all]**a watertight **[decks]**deck below the margin line in a Chapter II ship, and any drainage **[pipes]**pipe shall be so fitted with **[valves]**a valve or otherwise arranged as to avoid the danger of water passing from a damaged to an undamaged compartment.

(j) (i) The inboard opening of **[every]**an ash-shoot, a rubbish-shoot **[and]**or other similar shoot in a Chapter II ship, shall be fitted with an efficient watertight cover, and, if such opening is below the margin line, it shall also be fitted with an automatic non-return

valve in the shoot in a readily accessible position above the ship's deepest subdivision load water line.

(ii) The valve in subparagraph (i) shall be of the horizontal balanced type, normally closed and provided with local means for securing it in a closed position.

(iii) The requirements of this paragraph shall not apply to an ash **[ejectors and expellers]**ejector or expeller the inboard openings of which are in the ship's stokehold and necessarily below the deepest subdivision load water line.

(iv) Such **[ejectors and expellers]**an ejector or expeller shall be fitted with means which will prevent water entering the ship.".

Substitution of regulation 20 of the Regulations

21. The following regulation is hereby substituted for regulation 20 of the Regulations:

"**20. Side and other openings above the margin line**

(1) In **[every]**a Chapter II ship, **[side scuttles, windows, gangway doors, cargo ports, bunkering ports, and other openings]**a side scuttle, window, gangway door, cargo port, bunkering port, or any other opening in the shell plating above the margin line and **[their]**its means of closing, shall be of efficient design and construction and of sufficient strength having regard to the **[spaces it]**space in which **[they are]**it is fitted and **[their positions]**its position relative to the deepest subdivision load water line and to the intended service of the ship.

(2) In **[every]**a Chapter II ship, efficient inside deadlights, which can be easily closed and secured watertight, shall be provided for **[all]**a side **[scuttles]**scuttle to **[spaces]**a space below the first deck above the bulkhead deck.".

Substitution of regulation 21 of the Regulations

22. The following regulation is hereby substituted for regulation 21 of the Regulations:

"**21. Weather deck**

(1) In **[every]**a Chapter II ship**[,]** —

(a) the bulkhead deck or a deck above the bulkhead deck shall be weathertight**[.]**;

(b) **[All openings]**an opening 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]**such opening weathertight**[.]**; and

(c) **[Freeing ports, open rails and scuppers]**a freeing port, open rail or supper, shall be fitted as necessary for rapidly clearing the weather deck of water under all weather conditions.".

Substitution of regulation 22 of the Regulations

23. The following regulation is hereby substituted for regulation 22 of the Regulations:

"**22. Part, subdivision above the margin line**

(1) In **[every]**a Chapter II ship**[,]** —

(a) all reasonable and practicable **[measure]**measures, shall be taken to limit where necessary the entry and spread of water above the bulkhead deck, which measures may include a partial **[bulkheads]**bulkhead or **[webs.]web**;

(b) **[Where]**where such a partial watertight **[bulkheads and webs are]**bulkhead or web is fitted on **[the]**a bulkhead **[decks]**deck, above or in the immediate vicinity of a main subdivision **[bulkheads]**bulkhead, **[they]**the partial watertight bulkhead or web shall have a watertight shell and bulkhead deck **[connections]**connection so as to restrict the flow of water along the deck when the ship is heeled in a damaged condition**[.]**; and

(c) **[Where]**where such a partial watertight **[bulkheads do]**bulkhead does not coincide with **[the bulkheads]**a bulkhead below, the bulkhead deck between shall be made effectively watertight.".

Substitution of regulation 23 of the Regulations

24. The following regulation is hereby substituted for regulation 23 of the Regulations:

"23. Subdivision load lines

(1) (a) [Every]A Chapter II ship shall be marked on its sides amidships with the subdivision load lines assigned to it by the Minister in the case of an international load line ship or the **[Secretary]**Authority in the case of a local load line ship.

(b) The marks in paragraph (a) shall consist of horizontal lines one inch in breadth, and nine inches in length in the case of a ship which is a load line ship for the purposes of the Act and **[12 inches]**30.48 centimetres in length in the case of any other ship.

(c) The marks in paragraph (a) shall be painted white or yellow on a dark ground or in black on a light ground, and shall also be cut in or centre punched or indicated by welded bead on iron or steel ships, and cut into the planking on wood ships.

(2) The subdivision load lines in subregulation (1) shall be identified with the letter C, and, in the case of a **[ship of]** Class I or II ship, with consecutive numbers beginning from the deepest subdivision lead line which shall be marked C.

(3) In the case of a Chapter II **[ship of]** Class IIA, V or VI ship-

(a) if there is only one subdivision load line, it shall be identified with the letter C**[,]**; and

(b) if there is more than one subdivision load line, the subdivision load lines shall be identified with the letter C and with consecutive letters beginning from the deepest subdivision load line, which shall be marked CA.

(4) The identifying letters and numerals shall in every case be painted and cut or centre punched or indicated by welded bead, as the case may be, on the sides of the ship in the same manner as the lines to which they relate.".

Substitution of regulation 24 of the Regulations

25. The following regulation is hereby substituted for regulation 24 of the Regulations:

"**24. Exhibition of damage control plans**

(1) In **[every]**a Chapter II ship, there shall be permanently exhibited for the information of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the

openings therein, that means of closing such openings, the position of the controls and the arrangements for the correction of any list due to flooding.

(2) In addition to the plans referred to in subregulation (1), booklets containing such information shall be available for the use of the officers of the ship.".

Amendment of Chapter II of the Regulations

26. Chapter II is hereby amended by the substitution for the heading of Chapter IIA of the following heading:

"**[CHAPTER II (REQUIREMENTS FOR SHIPS NOT REQUIRED TO COMPLY WITH CHAPTER II]**
CHAPTER II A REQUIREMENTS FOR SHIPS NOT REQUIRED TO COMPLY WITH CHAPTER II".

Substitution of regulation 25 of the Regulations

27. The following regulation is hereby substituted for regulation 25 of the Regulations:

"**25. Application of Chapter II (A)**
This Chapter applies to **[every]**an open or a partially decked **[ship of]** Class V ship and **[to every ship of]**a Class VI ship carrying fewer than 151 passengers, and a "**[Chapter II (A)]**Chapter IIA ship" means a ship to which this Chapter applies.".

Substitution of regulation 26 of the Regulations

28. The following regulation is hereby substituted for regulation 26 of the Regulations:

"**26. Openings in the sides of the ship**
(1) Effective means shall be provided **[for preventing the]**to prevent accidental admission of water into **[any Chapter II (A)]**a Chapter II A ship through any openings in the sides of the ship.

(2) **[Every]**A side scuttle fitted in a **[chapter II (A)]**Chapter IIA ship, shall be of the non-opening type and shall be watertight and of sufficient strength having regard to its position in the ship.".

Substitution of regulation 27 of the Regulations

29. The following regulation is hereby substituted for regulation 27 of the Regulations:

"**27. Application of Chapter III**
Unless otherwise indicated in this Chapter, this Chapter applies to **[every ship of]**a Class I, II, **[IIA]**II (A), V or VI ship, and a "Chapter III ship" means a ship to which this Chapter applies.".

Substitution of regulation 28 of the Regulations

30. The following regulation is hereby substituted for regulation 28 of the Regulations:

"**28. General**
(1) Except in the case of an open **[ship of]** Class VI ship not exceeding **[40 feet]**12.19 meters in length, and not proceeding on voyages to a point more than 5 miles from the starting point, **[every]**a Chapter III ship shall be provided with—
(a) 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**[.]**;
(b) **[Wing]**wing suctions **[shall be provided]** if necessary, for **[that purpose.]**the purposes of paragraph (a);
(c) **[Efficient]**efficient arrangements **[shall be provided]** whereby water in any watertight compartment may find its way to the suction pipes**[.]**;
(d) **[Efficient]**efficient means [shall be provided] for draining water from all insulated hulls and insulated between decks in the ship**[.]**: Provided that the Authority may allow the provision for drainage to be omitted in a particular compartment if **[he]**the Authority is satisfied**[:]**—

[(a)] (i) that having regard to the calculations made in accordance with the conditions set out in Annex 3, the safety of the ship will not thereby be impaired; and

[(b)] (ii) that the provision of drainage would otherwise be undesirable.".

Amendment of regulation 29 of the Regulations

31. Regulation 29 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 29 of the following heading:

"**29. Number and type of bilge pumps: [ships of] Classes I and II ships**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) **[Every Ship of]**A Class I or II ship shall be provided with pumps connected to the bilge main in accordance with the following table—

Criterion numeral	Less than 30	30 and over
Main engine pump **[(]**which may be replaced by one independent pump**[)]**	1	1
Independent pump	2	2

"; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) The pumps referred to in **[sub-regulation]**subregulation (1) shall be arranged as follows —

(a) (i) one of the pumps shall be an efficient emergency pump of a submersible type having its source of power and the necessary controls situated above the ship's bulkhead deck**[.]**; and

(ii) **[Such]**such a pump and its source of power shall not be installed forward of the collision bulkhead or nearer to the side of the ship than one-fifth of the breadth of the ship measured at right angles to the centre line of the ship at the level of the deepest subdivision load line; or

(b) the power pumps in the ship and their sources of power shall be so disposed throughout the ship's length that under any condition of flooding which the ship is required to withstand, at least one such pump in an undamaged watertight compartment will be available.".

Amendment of regulation 30 of the Regulations

32. Regulation 30 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 30 of the following heading:

"**30. Number and type of bilge pumps: [ships of] Class II (A)ships**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) **[Every ship of]**A Class **[IIA]**II (A) ship shall be provided with bilge pumps in accordance with item (c), (d) or (e), whichever is appropriate, of the following table-

Length of Ship in **[feet]**meters	Number of Pumps		
	Main Engine Pump*	Independent Power Pumps	Hand Pumps†
(a) Under **[50]**15	1	-	One of the lever type for each watertight compartment, or one of the crank type.
(b) **[50 feet]**15 meters and under **[70]**21.3	1	1	One of the lever type for each watertight compartment, or one of the crank type
(c) **[70]**30 and under **[100]**30	1	1	One of the lever type for each watertight compartment, or one of the crank type.
(d) **[100]**30 and under **[250]**76.3	1	1	One of the crank type
(e) **[250]** and over	1	2	--

* The main engine pump may be replaced by one independent power pump.
† The handpumps specified in this column may be replaced by one independent power pump."; and

(c) the substitution for subregulation (1) of the following subregulation:

"(2) In **[every ship of]**a Class **[IIA]**II (A) ship of **[250 feet]**76.2 meters in length or over and in every such ship of under **[250 feet]** 76.2 meters in length in

which a hand pump is replaced by an independent power pump, regulation 29 (2) apply to such a ship as it applies to a ship of Class I or II.".

Amendment of regulation 31 of the Regulations

33. Regulation 31 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 31 of the following heading:

"**31. Number and type of bilge pumps[, etc.]: [ships of] Classes V and VI ships**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) **[Every ship of]**A Class V ship shall be provided with bilge pumps in accordance with item (b), (c), (d) or (e), whichever is appropriate, of the table set forth in regulation 30(1)."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) **[Every ship of]**A Class VI ship shall be provided with bilge pumps **[m]**in accordance with the appropriate item of the table set forth in regulation 30 (1).".

Substitution of regulation 32 of the Regulations

34. The following regulation is hereby substituted for regulation 32 of the Regulations:

"**32. Requirements for bilge pumps and bilge suctions**

(1) Power bilge pumps fitted in **[any]**a Chapter III ship, shall, where practicable, be placed in separate watertight compartments so arranged or situated as not to be readily flooded by the same damage, and if the ship's engines and boilers are in two or more watertight compartments, the bilge pumps there available shall be distributed through such compartments as far as possible.

(2) **[Every]**A bilge pump provided in a Chapter III ship in compliance with this Part shall be self-priming unless efficient means of priming are provided**[. Every]**: Provided such a pump, other than a hand pump of the lever type and a pump provided for peak compartments only, shall, whether operated

by hand or by power, be so arranged as to be capable of drawing water from any space required by regulation 28 to be drained.

(3) (a) **[Every]**A power bilge pump in a Chapter III ship, shall be capable of giving a speed of water of not less than **[400 feet]**121 meters per minute through the ship's main bilge pipe when its diameter is that determined by regulation 34 (1).

(b) **[Every such]**The pump in paragraph (a) shall have a direct suction from the space in which it is situated, provided that not more than two direct suctions shall be required in any one space.

(c) Every such suction in paragraph (b) shall be of a diameter not less than that of the ship's main bilge pipe.

(d) The direct suctions in the ship's machinery space shall be so arranged that water may be pumped from each side of the space through direct suctions to independent bilge pumps.

(4) (a) There shall be provided in the stokehold of **[every]**a Chapter III ship, being a coal burning ship, a flexible suction hose of sufficient length to reach from a fitting on an independent power bilge pump in the ship to each side of the stokehold bilges.

(b) The hose in paragraph (a) shall be in addition to the other bilge suctions required by this regulation, and shall have an internal diameter of **[4 inches]**10 centimetres, or **[½ inch]**1.2 centimetres larger than that of the largest branch bilge suction required by regulation 34, whichever is the less.

(5) (a) One of the sea water pumps circulating each main engine in a Chapter III ship, shall be fitted with direct suction convections, which shall be provided with **[non return]**non-return valves, to the lowest drainage level in the ship's machinery space, or as near thereto as will satisfy the Authority.

(b) (i) **[Such]**The connections in paragraph (a) in a steamship shall be of a diameter at least two-thirds of that of the ship's main sea inlet, and in a motor ship of the same diameter as the pump inlet.

(ii) Where in the opinion of the Authority, any main circulating pump is not suitable for this purpose, a direct emergency bilge suction shall be led from the largest available independent power driven pump to the drainage level of the machinery space; the suction shall be of the same diameter as the main inlet of the pump used.

(iii) The capacity of the pump so connected, shall exceed that of a required bilge pump by an amount satisfactory to the Authority.

(iv) The open end of such suctions or the strainer, if any, attached thereto shall be accessible for clearing.

(v) If the boiler fuel may be coal and there is no watertight bulkhead between the ship's engines and boilers, a direct discharge overboard shall be fitted from at least one of the aforesaid pumps unless a by-pass is fitted to the circulating discharge thereof.

(vi) The spindles of the ship's main sea inlet and of the direct suction valves, shall extend well above the engine room platform.

(6) **[The]**A hand bilge **[pumps]**pump in a Chapter III ship shall be workable from above the ship's bulkhead deck, if any, and shall be so arranged that the bucket and tail valve can be withdrawn for examination and overhaul under flooding conditions.".

Substitution of regulation 33 of the Regulations

35. The following regulation is hereby substituted for regulation 33 of the Regulations:

"**33. Arrangement of bilge pipes**

(1) In [every]a Chapter III ship, [all pipes]a pipe from **[the pumps]**a pump for draining a cargo **[spaces]**space or any part of the machinery space, shall be distinct from **[pipes]**a pipe which may be used for filling or emptying **[spaces]**a space in which water or oil is carried.

(2) **[All]**A bilge **[pipes]**pipe used in or under a coal **[bunkers or]**bunker, a fuel storage **[tanks or]**tank, in a boiler or machinery **[spaces]**space, including **[spaces]**a space in which an oil-settling **[tanks]**tank or oil fuel pumping **[units are]**unit is situated, shall be of steel or other suitable material.

(3) (a) **[Bilge]**A bilge suction **[pipes]**pipe in a Chapter III ship shall not be led through an oil **[tanks]**tank, unless the **[pipes are]**pipe is enclosed in an oil-tight trunkway.

(b) [**Such pipes]**The pipe in paragraph (a) shall not be led through a double bottom **[tanks]**tank.

(4) (a) **[Bilge]**A bilge suction **[pipes]**pipe shall be made with flanged joints and shall be thoroughly secured in position and protected where necessary against the risk of damage.

(b) Efficient expansion joints or bends shall be provided in each line or pipe, and where a connection is made at a bulkhead or elsewhere with a lead bend, the radius of each bend and the distance between the axes of the straight parts of the pipes shall be not less than three times the diameter of the pipe, and the length of any bend shall be not less than eight times that diameter.".

Substitution of regulation 34 of the Regulations

36. The following regulation is hereby substituted for regulation 34 of the Regulations:

"**34. Diameter of bilge suction pipes**

(1) Subject to the provisions of subregulations (2) and (3), in **[every]**a Chapter III ship the internal diameter of main and branch bilge suction pipes shall be determined to the nearest **[¼ inch]**6.35 millimetres calculated according to the following formulae: **[-]**

(2) **[No]**A main bilge suction pipe in a ship of Class I, II or IIA, shall not be less than **[2½ inches]** 6.35 centimetres in bore, and no branch suction pipe shall be less than **[2 inches]**5 centimetres or need be more than **[4 inches]**10 centimetres in bore.

(3) **[No]**A bilge suction pipe in a ship of Class V or VI shall not be less than **[1¼ inches]**3 centimetres in bore.".

Substitution of regulation 35 of the Regulations

37. The following regulation is hereby substituted for regulation 35 of the Regulations:

"**35. Precautions against flooding through bilge pipes**

(1) In **[every]**a ship to which Chapter II applies[,]—

(a) the bilge and ballast pumping systems shall be so arranged as to prevent water passing from the sea or from water ballast spaces into

the ship's cargo spaces or into any part of the machinery space or from one watertight compartment in the ship to another**[.]**;

(b) **[The]**the bilge connection to any pump which effects suction from the sea or from water ballast spaces, shall be made by means of either a non-return valve or a cock which cannot be opened at the same time to the bilges and to the sea or to the bilges and the water ballast spaces**[.]**;

(c) **[Valves]**a valve in a bilge distribution **[boxes]**box shall be of a non-return type**[.]**; and

(d) **[An]**an arrangement of lockup valves or of blank flanges shall be provided to prevent any deep tank in such a ship being inadvertently run up from the sea when it contains cargo or pumped out through a bilge pipe when it contains water ballast, and instructions for the working of such arrangement shall be conspicuously displayed nearby.

(2) In **[every]**a ship to which Chapter II applies**[,]** —

(a) provision shall be made to prevent the flooding of any watertight compartment served by a bilge suction pipe in the event of the pipe being severed or otherwise damaged in any other watertight compartment through collision or grounding**[.]**; and

(b) **[Where]**where any part of such a pipe is situated nearer to the side of the ship than one-fifth of the mid-ship breadth of the ship measured at the level of the deepest subdivision load water line or in any duct keel, a non-return valve shall be fitted to the pipe in the watertight compartment containing the open end of the pipe.

(3) In **[every ship of]**a Class I, II or IIA ship, the bilge main shall not be situated nearer to the ship's side than one fifth of the breadth of the ship measured at right angles to the centre line of the ship at the level of the deepest subdivision **[1oad]**load water line, and where any bilge pump or its pipe connecting it to the bilge main is not so situated, the arrangements shall be such that damage to the ship's side penetrating to the extent of one-fifth of the ship's breadth measured as described in this paragraph, shall not put the other bilge pumping arrangements out of action.".

Amendment of regulation 36 of the Regulations

38. Regulations 36 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 36 of the following heading:

"**36. Bilge valves, cocks[, etc.]**"; and

(b) the substitution for subregulations (1) to (3) of the following subregulations:

"(1) In **[every]**a ship to which Chapter II applies[,]—

(a) all distribution boxes, valves and cocks fitted in connection with the bilge pumping arrangements shall be in positions which are accessible at all times in ordinary circumstances and shall be so arranged that in the event of flooding, one of the bilge pumps may operate on any watertight compartment in the ship**[.]**;

(b) **[If in any such ship]**where there is only one system of pipes common to all such pumps, the necessary valves or cocks for controlling the bilge suctions shall be capable of being operated from above the ship's bulkhead deck**[.]**;

(c) **[If]**where an emergency bilge pumping system is provided in addition to the main bilge pumping system, **[it]**the emergency bilge pumping system shall be independent of the main system and shall be so arranged that a pump is capable of being operated on any watertight compartment under flooding conditions**[;]** in **[that]**which case the cocks and valves necessary for the operation of the emergency system shall be capable of being operated from above the bulkhead deck**[.]**: Provided that in any ship of Class IIA of under **[100 feet]**30 meters in length provided with a hand pump of the lever type for each watertight compartment in accordance with the provisions of regulation 30 (1), the valves and cocks on the bilge main for controlling the bilge suctions shall not be required to be capable of being operated from above the ship's bulkhead deck if they are in the same compartment as a power pump.

(2) In **[every]**a ship to which Chapter II applies**[,]**—

(a) **[every]**a operating rod for bilge suction valves or cocks shall be led as directly as possible**[.]**; and

(b) **[Every such]**if the rod **[passing]**in paragraph (a) passes through a cargo or coal bunker space, such rod shall be protected against damage in such spaces.

(3) In **[every]**a ship to which Chapter II applies, every valve or cock which is required by this regulation to be operated from above the bulkhead deck, shall have its control at its place of operation clearly marked to show the purpose it serves and how it may be opened and closed and shall be provided with a means to indicate when it is open and when it is closed.".

Substitution of regulation 37 of the Regulations

39. The following regulation is hereby substituted for regulation 37 of the Regulations:

"**37. Bilge mud boxes and strum boxes**

(1) **[Bilge suctions]**A bilge suction in the machinery space of **[every]**a Chapter III ship shall be led from readily accessible mud boxes placed wherever practicable above the level of the working floor of such a space.

(2) The boxes in subregulation (1) shall have straight tailpipes of the bilges and covers secured in such a manner as will permit **[them]**the boxes to be readily opened and closed.

(3) The suction ends in hold spaces and tunnel wells shall be enclosed in strum boxes having perforations approximately **[3/8 inch]**9.5 millimetres in diameter, and the combined area of such perforations shall be not less than twice that of the end of the suction pipe.

(4) **[Strum boxes]**A strum box shall be so constructed that **[they]**it can be cleared without breaking any joint of the suction pipe.".

Substitution of regulation 38 of the Regulations

40. The following regulation is hereby substituted for regulation 38 of the Regulations:

"**38. Sounding pipes**

(1) In **[every]**a ship to which Chapter II applies**[,]**—

(a) 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**[.]**;

(b) **[Where such]**where the arrangements in paragraph (a) consist of sounding pipes, a thick steel doubling plate shall be securely fixed below each sounding pipe for the sounding rod to strike upon**[.]**;

(c) **[All such]**a sounding **[pipes]**pipe shall extend to **[positions]**a position above the ship's bulkhead deck which shall at all times be readily accessible**[.]**;

(d) **[Sounding pipes for bilges, cofferdams and double bottom tanks, being bilges, cofferdams and tanks]**a sounding pipe for a bilge, cofferdam or double bottom tank, being a bilge, cofferdam or tank situated in the machinery space, shall so extend as prescribed in paragraph (c), unless the upper **[ends]**end of the **[pipes are]**pipe is accessible in ordinary circumstances and **[are]**is furnished with **[cocks]**a cock having parallel plugs with permanently secured handles so loaded that on being released, **[they]**the plugs automatically **[close]**closes the cocks**[.]**; and

(e) **[Sounding pipes]**a sounding pipe for the bilges of insulated holds shall be insulated and not less than **[2½ inches]**6.35 centimetres in diameter.".

Substitution of regulation 39 of the Regulations

41. The following regulation is hereby substituted for regulation 39 of the Regulations:

"**39. Application of Chapter IV**

Unless otherwise indicated in this Chapter, this Chapter applies to **[every ship of]**a Class I, II, IIA, V or VI ship, and a "Chapter IV ship" means a ship to which this Chapter applies.".

Substitution of regulation 40 of the Regulations

42. The following regulation is hereby substituted for regulation 40 of the Regulations:

"**40. General**

(1) In **[every]**a Chapter IV ship, the electrical equipment and installations, other than the electrical means of propulsion, if any, shall be such that the electrically operated services essential for the safety of the ship and of persons on board can be maintained under emergency conditions.

(2) In **[every]**a Chapter IV ship, the electrical equipment and installations, including electrical means of propulsion if any, shall be such that the ship and all persons on board are protected against electrical hazards.".

Amendment of regulation 41 of the Regulations

43. Regulations 41 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 41 of the following heading:

"**41. Main generating sets: [Ships of Classes] Class I, II and [IIA]II (A) ships**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) (a) **[Every ship of]**A Class I, II or **[IIA]**II (A) ship, being a ship in which electrical power is the only power for maintaining the auxiliary services essential for the propulsion or safety of the ship, shall be provided with two or more main generating sets of such power that the aforesaid services can be operated when any one of the sets is out of service.

(b) Arrangements shall be made which will safeguard **[such]**the generating sets referred to in paragraph (a) 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."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) In **[every ship of]**a Class I, II or **[IIA,]**II (A) ship—

(a) where there is only one main generating station, such main generating station and the main switchboard shall be situated in the same main fire zone**[.]**; and

(b) **[Where]**where there is more than one main generating station, and only one main switchboard, such switchboard shall be situated in the same main fire zone as one of the generating stations.".

Amendment of regulation 42 of the Regulations

44. Regulation 42 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 42 of the following heading:

"**42. Emergency source of electric power: [Ships of Classes]Class I, II and [IIA]II (A) ships**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every ship of]**a Class I, II or **[IIA,]**II (A) ship—

(a) there shall be provided in a position above the bulkhead deck not forward of the collision bulkhead and outside the machinery casings, a self-contained emergency source of electric power[.]; and

(b) **[The]**the location of **[this]**the self-contained emergency source referred to in paragraph (a), in relation to the main source or sources of electric power, shall be such as to ensure that a fire or other casualty to the machinery space will not interfere with the supply or distribution of emergency power.";

(c) the substitution in subregulation (2) for paragraph (e) of the following paragraph:

"(e) all communication equipment, fire detecting systems and signals which may be required in an emergency, if they are electrically operated from the ship's main generating sets**[,]**;";

(d) the substitution for subregulation (3) of the following subregulation:

"(3) The emergency source of electric power shall be either an accumulator **[(storage)]**or storage battery capable of complying with subregulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110º F. (43º C.).";

(e) the substitution in subregulation (5) for paragraph (a) of the following paragraph:

"(5) (a) If **[he]**the emergency source of electric power is an accumulator **[(storage)]**or storage battery, the arrangements shall be such that the ship's emergency lighting system will come into operation automatically in the event of the failure of the main scarce of power for the ship's main lighting system.";

(f) the substitution in subregulation (5) for paragraph (b) of the following paragraph:

"(b) If the emergency source of electric power is a generator, an accumulator **[(storage)]**or storage battery shall be provided as a temporary source of electric power, so arranged as to come into operation automatically in the event of a failure of the main or emergency source of electric power, and of sufficient capacity to operate the ship's emergency lighting system continuously for half an hour and with such lighting system is in operation**[:]** —"; and

(g) the substitution in subregulation (5) for paragraph (d) of the following paragraph:

"(d) An indicator shall be provided in the machinery space, on the main switchboard or at some other suitable position, to show when an accumulator **[(storage)]**or storage battery fitted in accordance with this regulation, is being discharged.".

Substitution of regulation 43 of the Regulations

45. The following regulation is hereby substituted for regulation 43 of the Regulations:

"**43. Emergency switchboards**

In **[every ship of]**a Class I, II or IIA ship in which the provision of an emergency source of electric power is required by this Part—

(a) the emergency switchboard shall be situated as near as practicable to the emergency source of power;

(b) if the emergency source of power is a generator, the emergency switchboard shall be situated in the same space as the generator, unless the operation of the switchboard would thereby be impaired;

(c) if the emergency source of power is a generator, an interconnecting feeder, adequately protected at each end, connecting the main and emergency switchboards shall be fitted;

(d) no accumulator **[(storage)]**or storage battery fitted in accordance with regulation 42, shall be situated in the same space as the emergency switchboard.".

Amendment of regulation 44 of the Regulations

46. Regulation 44 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every]**a Chapter IV ship[,]—

(a) every main and emergency switchboard shall be so arranged as to give easy access to the back and the front thereof without danger to any person, and shall be suitably guarded**[.]**;

(b) **[A]**a non-conducting mat or grating shall be provided at the back and front where necessary**[.]**; and

(c) **[No]**an exposed **[parts]**part which may have a voltage between conductors or to earth exceeding 250 volts direct current or 55 volts alternating current, shall not be installed on the face of any switchboard or control panel.";

(b) the substitution for subregulation (4) of the following subregulation:

"(4) (a) In **[every]**a Chapter IV ship**[,]**—

(i) electric and electro-hydraulic steering gear shall be served by two circuits fed from the main switchboard, one of which may pass through the emergency switchboard, if one is provided**[.]**;

(ii) **[Each]**each circuit shall have adequate capacity for supplying all the motors which are normally connected to it and which operate simultaneously, and if transfer arrangements are provided in the steering gear room to permit either circuit to supply any motor or combination of motors, the capacity of each circuit shall be adequate for the most severe load condition**[.]**; and

(iii) **[The]**the circuits in subparagraph (ii) shall be separated as widely as is practicable throughout their length.

(b) Short circuit protection only shall be provided for such circuits and motors.

(c) **[Every]**A Chapter IV ship which is fitted with electric or electro-hydraulic steering gear, shall be provided with indicators which—

(i) will show when the power units of such steering gear are running**[.]**; and

(ii) **[These indicators]**shall be situated in suitable positions on the navigating bridge and in the machinery space or the machinery control room.";

(c) the substitution for subregulation (5) of the following subregulation:

"(5) If, in **[any]**a Chapter IV ship**[,]**—

(a) the power supply for an automatic sprinkler system, requiring not less than two sources of power supply for sea-water pumps, air compressors and automatic alarms, is electrical, such power supplies shall be taken from the main generating sets and from an emergency source of electric power**[.]**;

(b) **[One]**one supply shall be taken from the main switchboard and another from the emergency switchboard, by separate feeders reserved solely for that purpose**[.]**;

(c) **[Such]**the feeders referred to in paragraph (b) 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**[.]**;. and

(d) **[The changeover]**the change-over switch in paragraph (c) shall be clearly labelled, and no other switch shall be permitted in these feeders.";

(d) the substitution for subregulation (7) of the following subregulation:

"(7) In **[every]**a Chapter IV ship**[,]**—

(a) 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**[,]**; and

(b) **[Main]**main and emergency feeders passing through any main fire zone, shall be separated as widely as is practicable both horizontally and vertically."; and

(e) the substitution for subregulation (8) of the following subregulation:

"(8) **[Wiring systems]**A wiring system for interior communications essential for safety and for emergency alarm systems shall be arranged to avoid [galleys, machinery spaces and other enclosed spaces]any galley, machinery space or other enclosed space having a high risk of fire except in so far as it is necessary to provide communication or to give alarm within those spaces: Provided that in the case of a ship the construction and small size of which do not permit of compliance with this requirement, measures satisfactory to the Authority shall be taken to ensure efficient protection for a wiring **[systems]**system where [they pass]such a wiring system passes

through **[galleys, machinery spaces and other enclosed spaces]**a galley, machinery space or other enclosed space having a high risk of fire.".

Amendment of regulation 45 of the Regulations

47. Regulation 45 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) (a) In **[every]**a Chapter IV ship**[,]**—

(i) all electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner**[.]**; and

(ii) **[Subject]**subject to the provisions of paragraph (b), where electrical equipment supplied as ship's equipment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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**[.]**; and

(b) (i) **[Exposed]**any exposed metal **[parts]**part of portable electric **[lamps, tools and]**lamp, or similar apparatus, supplied as ship's equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided**[.]**; and

(ii) **[When]**when an electric **[lamps, tools]**lamp, tool or other apparatus **[are]**is used in a damp **[spaces]**space, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) **[Every electric cable in]**In a Chapter IV ship**[,]**—

(a) an electric cable shall be of a flame retarding type**[.]**;

(b) **[All]**a metal **[sheaths and]**sheath or metal armour of any electrical cable in use in the ship, shall be electrically continuous and shall be earthed**[.]**; and

(c) **[Every]**an electric cable which is neither metal sheathed nor armoured shall, if installed where its failure might cause a fire or explosion, be otherwise effectively protected.".

(c) the substitution for subregulation (3) of the following subregulation:

"(3) Wiring in **[every]**a Chapter IV ship shall be supported in such a manner as to avoid chafing and other injury.";

(d) the substitution for subregulation (4) of the following subregulation:

"(4) In **[every]**a Chapter IV ship**[,]**—

(a) the joints in all electrical conductors shall be made only in junction or outlet boxes except in the case of low voltage communication circuits**[.]**; and

(b) **[All such]**the junctions or outlet boxes in paragraph (a) shall be so constructed as to prevent the spread of fire therefrom.";

(e) the substitution for subregulation (5) of the following subregulation:

"(5) In **[every]**a Chapter IV ship, lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in surrounding material.";

(f) the substitution for subregulation (6) of the following subregulation:

"(6) **[Every]**An electric space-heater forming part of the equipment of a Chapter IV ship, shall—

(a) be fixed in position and shall be so constructed as to reduce the risk of fire to a minimum**[.]**; and

(b) **[No such heater shall]**be constructed with an element so exposed that clothing, curtains, or other similar material, can be scorched or set on fire by heat from the element.";

(g) the substitution for subregulation (7) of the following subregulation:

"(7) In **[every]**a Chapter IV ship**[,]**—

(a) every separate electrical circuit, other than a circuit which operates the ship's steering gear, shall be protected against overload and short circuit**[.]**; and

(b) **[There]**there shall be clearly and permanently indicated on or near each over-load protective device, the current carrying capacity of the circuit which it protects and the rating or setting of the device.";

(h) the substitution for subregulation (8) of the following subregulation:

"(8) In **[every]**a Chapter IV ship, **[all]**an accumulator **[(storage) batteries]**or storage battery shall be housed in **[boxes]**a box or **[compartments]** compartment which **[are]**is so constructed as to protect the **[batteries]** battery from damage and **[are]**is so ventilated as to **[minimize]**minimise the accumulation of explosive gas.";

(i) the substitution for subregulation (9) of the following subregulation:

"(9) **[In spaces where inflammable mixtures are liable to collect, no electrical]**Electrical equipment shall not be installed in a space where inflammable mixtures are liable to collect, unless **[it]**the electrical equipment is of a type which will not ignite the mixture concerned."; and

(j) the substitution for subregulation (10) of the following subregulation:

"(10) In **[every]**a Chapter IV ship, **[every]**a lighting circuit in a bunker or hold shall be provided with an isolating switch outside the space.".

Substitution of regulation 46 of the Regulations

48. The following regulation is hereby substituted for regulation 46 of the Regulations:

"**46. Spare parts and tools**

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

Amendment of Chapter V of the Regulations

49. Chapter V is hereby amended by the substitution for the heading of Chapter V of the following heading:

"**CHAPTER V - FIRE PROTECTION: [SHIPS OF CLASSES]CLASS I, II AND [IIA]II (A) SHIPS**".

Substitution of regulation 47 of the Regulations

50. The following regulation is hereby substituted for regulation 47 of the Regulations:

"**47. Application of Chapter V**
This Chapter applies to **[every ship of]**a Class I, II or IIA ship carrying more than 36 passengers, and a "Chapter V ship" means a ship to which this Chapter applies.".

Substitution of regulation 48 of the Regulations

51. The following regulation is hereby substituted for regulation 48 of the Regulations:

"**48. Methods of fire protection**
(1) **[The]**An accommodation **[spaces and]**space or service **[spaces]**space in **[every]**a Chapter V ship, shall be constructed in accordance with any one of the following methods of fire protection, or a combination thereof, and shall comply with such of the following requirements of this Chapter as are applicable to the method or methods adopted**[:-]**—
(a) Method I: The construction in **[the]**an accommodation **[spaces and]**space or service **[spaces]**space of a system of internal bulkheading consisting of "B" Class divisions, together with an automatic fire alarm and fire detection system in **[these spaces.]**any such a space;
(b) Method II: The fitting of an automatic sprinkler, fire detection and fire alarm system in the accommodation **[spaces and]**space or service **[spaces.]**space; or
(c) Method III: The subdivision of **[the]**an accommodation **[spaces and]**space or service **[spaces]**space by "A" Class and "B" Class divisions, together with the fitting of an automatic fire alarm and fire detection system in **[all]**any accommodation **[spaces and]**space or

service **[spaces]**space and a restriction of the provision of combustible material in **[these spaces]**any such a space.".

Substitution of regulation 49 of the Regulations

52. The following regulation is hereby substituted for regulation 49 of the Regulations:

"**49. Methods I, II and III**

(1) **[Every]**A Chapter V ship shall be constructed in accordance with one of the following methods of fire protection or a combination of two or more of such methods**[.]**:

[(2)] (a) Method I:

[(a)] (i) The hull, superstructure, structural **[bulkheads decks and deckhouses]**bulkhead deck or deckhouse shall be constructed of steel or other equivalent material**[.]**; and

[(b)] (ii) **[Crowns and casings]**A crown or casing of a boiler **[and]**or machinery **[spaces]**space shall be of steel construction, adequately insulated, and **[the openings]**any opening therein, **[if any,]** shall be suitably arranged and protected to prevent spread of fire.

[(3)] (b) Method II:

[(a)] (i) The hull, superstructure, structural **[bulkheads, decks and deckhouses]**bulkhead deck or deckhouse shall be constructed of steel or other equivalent **[material. The]**material and the use of combustible materials of all kinds shall be reduced as far as s reasonable and practicable**[.]**; and

[(b)] (ii) Where the superstructure is constructed of aluminium alloy—

[(i)] (aa) the temperature rise of the metallic cores of the "A" Class divisions, when exposed to a standard fire test of 60 minutes duration, shall have regard to the mechanical properties of the material**[.,]**;

[(ii)] (bb) an automatic sprinkler system complying with the requirements of regulation 57 (2) shall be installed;

[(iii)] (cc) adequate provision shall be made to ensure that in the event of fire, arrangements for the stowage and launching of and the embarkation into survival craft remain as effective as if the superstructure were constructed of steel; and

[(iv)] (dd) **[crowns and casings]**a crown or casing of a boiler **[and]**or machinery **[spaces]**space shall be of steel construction adequately insulated and **[the openings]**any opening therein, **[if any,]** shall be suitably arranged and protected to prevent spread of fire.

[(4)] (d) Method III:

[(a)] (i) The hull, superstructure, structural **[bulkheads, decks and deckhouses,]**bulkhead, deck or deckhouse shall be constructed of steel or other equivalent material**[.]**; and

[(b)] (ii) Where the superstructure is constructed of aluminium alloy—

[(i)] (aa) the temperature rise of the metallic cores oil the "A" Class divisions, when exposed to a standard fire test of 60 minutes duration, shall have regard to the mechanical properties of the material;

[(ii)] (bb) ceilings shall be of incombustible material**[,]**;

[(iii)] (cc) adequate provision shall be made to ensure that in the event of fire, arrangements for the stowage and launching of and embarkation into survival craft remain as effective as if the superstructure were constructed of steel; and

[(iv)] (dd) **[crowns and casings]**a crown or casing of a boiler **[and]**or machinery **[spaces]**space shall be of steel construction adequately insulated and **[the openings]**any opening therein, if any, shall be suitably arranged and protected to prevent spread of fire.

[(5)] (2) Where **[the]**an accommodation **[and]**or service **[spaces]**space in the ship **[are]**is constructed in accordance with a combination of any of the foregoing methods, the requirements as to the structure of any part of the ship shall be those appropriate to the method of fire protection adopted in that part of the ship.".

Substitution of regulation 50 of the Regulations

53. The following regulation is hereby substituted for regulation 50 of the Regulations:

"**50. Main vertical zones**

(1) In a Chapter V ship—

(a) **[The]**the hull, superstructure **[and deckhouses of every Chapter V ship]**or deckhouse shall be subdivided by bulkheads consisting of "A" Class divisions into main vertical zones**[.]**;

(b) **[The]**the mean length of each zone, above the bulkhead deck, shall not exceed **[131 feet.]**40 meters; and

(c) **[Steps]**steps and recesses shall be kept to a minimum, but any which are necessary shall consist of "A" Class divisions**[.]**: Provided that in the case of a ship in which Method III of fire protection has been adopted, additional "A" Class divisions shall be provided within the accommodation spaces in order to reduce in these spaces the mean length of the main vertical zones to about **[65.5 feet]**19 meters.

(2) Any **[portions]**portion of the divisions referred to in subregulation (1) which **[extend]**extends above the bulkhead deck shall, whenever possible, be in line with watertight subdivision **[bulkheads]bulkhead** situated immediately below the bulkhead deck and shall extend from deck to deck and to the ship's shell plating and, in the case of a deckhouse, to the external plating thereof.".

Substitution of regulation 51 of the Regulations

54. The following regulation is hereby substituted for regulation 51 of the Regulations:

"**51. "A" and "B" Class divisions**

(1) **[Every]**An "A" Class division required by this Part shall—

(a) be constructed of steel or other equivalent material, in either case stiffened so as to be capable of preventing the passage of smoke and flame throughout a standard fire test of 60 minutes duration**[.]**;

(b) **[The division shall]**have an adequate insulating value having regard to the nature of the spaces adjacent thereto**[,]**; and

(c) if the division is between spaces either of which contains adjacent combustible material, **[it shall]** be so insulated that if either face of the division is exposed to a standard fire test of 60 minutes duration, the average temperature on the unexposed face of the division will not increase at any time during the test by more than 250 F. (139º C.) above the initial temperature on that face nor shall the temperature at any point on the face, including any joint, rise more than 325º F. (180º C.) above the initial temperature.

(2) **[Every]**A "B" Class division required by this Part shall—

(a) be capable of preventing the passage of flame throughout a standard fire test of 30 minutes duration**[.]**;

(b) **[Every such division shall]**have an adequate insulating value having regard to the nature of the spaces adjacent thereto**[.]**; and

(c) **[The division shall]**be so constructed that if either face thereof is exposed to a standard fire test of 30 minutes duration, the average temperature on the unexposed face of the division will not increase at any time during the first 15 minutes of the test in the case of an incombustible division or the duration of the test in the case of a combustible division by more than 250º F. (139º C.) above the initial temperature on that face, nor shall the temperature at any one point thereon, including any joint, increase by more than 405º' F. (225º C.) above the initial temperature.".

Substitution of regulation 52 of the Regulations

55. The following regulation is hereby substituted for regulation 52 of the Regulations:

"**52. Openings in "A" Class divisions**

(1) If, in **[any]**a Chapter V ship, **[any]**a "A" Class division is pierced for the passage of an electric **[cables, pipes, trunkways, girders or beams,]**cable, a pipe, trunkway, girder or beam, or for other purposes, the **[arrangements]**arrangement shall be such that the effectiveness of the division in resisting fire is not thereby impaired.

(2) Where of necessity, a duct passes through a main vertical zone bulkhead, a fail-safe automatic closing fire damper shall be fitted adjacent to the bulkhead**[.]** which shall comply with the following:

(a) The damper shall also be capable of being manually closed from both sides of the bulkhead**[.]**;

(b) The operating position shall be readily accessible and be marked in red light-reflecting colour**[.]**;

(c) The duct between the bulkhead and the damper shall be of steel or other equivalent material and, if necessary, to an insulating standard such as to comply with **[sub-regulation]**subregulation (1)**[.]**; and

(d) The damper shall be fitted on at least one side of the bulkhead with a visible indicator showing if the damper is in the open position**[.]**:

Provided that, in the case of ventilation trunks and ducts having a cross-sectional area of **[31 square inches]**78 square centimetres or more which pass through main zone divisions, the following additional provisions shall apply—

[(a)] (i) for trunks and ducts having cross-sectional areas between **[31 square inches]**78 square centimetres and **[116 square inches]**294 square centimetres inclusive, fire dampers shall be of a fail-safe automatic closing type, or such trunks and ducts shall be insulated for at least **[18 inches]**45 centimetres on each side of the division to meet the applicable bulkhead requirements; and

[(b)] (ii) for trunks and ducts having a cross-sectional area exceeding **[116 square inches]**294 square centimetres, fire dampers shall be of a fail-safe automatic closing type.

(3) (a) Except for tonnage openings and for hatches between cargo, store and baggage spaces, and between such spaces and the weather decks, all openings shall be provided with permanently attached means of closing which shall be, as far as practicable, of equal fire resistance to the divisions in which they are fitted.

(b) Where "A" Class divisions are pierced by tonnage openings, the means of closure shall be by steel plates.

(c) Fire doors shall be constructed of steel or equivalent material with or without incombustible insulation.

(4) [The construction of all doors and door frames in]In "A" Class divisions, **[with]** the construction of a door or a door frame which has means of securing **[them]** when closed, shall provide resistance to fire as well as to the passage of smoke and flame as far as practicable equivalent to that of the **[bulkheads]**bulkhead in which the **[doors are]**door is situated**[.]**: Provided that a watertight door shall not be required to be insulated.

(5) **[Any]**A door in an "A" Class division shall be so constructed that it can be opened and closed by one person from either side of the division.

(6) (a) **[Fire doors]**A fire door in a main vertical zone **[bulkheads and]**bulkhead or stairway **[enclosures]**enclosure, other than a power operated watertight **[doors and those]**door or that which **[are]**is normally locked, shall be of the self-closing type capable of closing against an inclination of 3½ degrees opposing closure.

(b) All [such] the doors in paragraph (a), except those which are normally closed, shall be capable of release from a control station, either simultaneously or in groups, and also individually from a position at the door.

(c) The release mechanism the doors in paragraph (a), shall be so designed that the door will automatically close in the event of disruption of the control system: Provided that—

(i) approved power operated watertight doors shall be considered acceptable for this purpose**[.]**;

(ii) **[Hold-back]**hold-back hooks, not subject to control station release, shall not be permitted**[.]**; and

(iii) **[When]**when double swing doors are permitted, **[they]**such doors shall have a latch arrangement which is automatically engaged by the operation of the door release system.".

Substitution of regulation 53 of the Regulations

56. The following regulation is hereby substituted for regulation 53 of the Regulations:

"**53. Openings in "B" Class divisions: Methods I and III**

(1) If in **[any]**a Chapter V ship, other than a ship in which Method II of fire protection has been adopted, any "B" Class division is pierced for the passage of an electric **[cables, pipes, trunkways, girders or beams,]**cable, a pipe, trunkway, girder or beam, or for other purposes, the **[arrangements]**arrangement shall be such that the effectiveness of the division in resisting fire is not thereby impaired.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), **[any]**a doorway or similar opening in a "B" Class division shall have a permanently attached door which shall provide resistance to fire equivalent to that of the division itself.

(3) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), **[the number of]** ventilation openings in such divisions shall—

(a) be kept to a minimum **[. Such openings shall,]**in number; and

(b) so far as is reasonably practicable, be provided only in or under doors and where such an opening is cut in a door, it shall be in the lower

part of the door and shall be fitted with a grille constructed of incombustible material.”.

Substitution of regulation 54 of the Regulations

57. The following regulation is hereby substituted for regulation 54 of the Regulations:

“**54. Bulkheads within main vertical zones: Methods I and III**

(1) *Method I:*

(a) **[Every]**A bulkhead within **[the]**an accommodation **[spaces]**space or a service **[spaces]**space of a Chapter V ship in which Method I of fire protection has been adopted, not being a bulkhead required by this Part to consist of “A” Class divisions, shall consist of “B” Class divisions which shall be constructed of incombustible material but may, subject to the provisions of regulation 55 (1) (b) and (c), be faced with combustible material.

(b) **[Every]**The bulkhead referred to in paragraph (a) shall extend from deck to deck**[.]**: Provided that a bulkhead, other than a corridor bulkhead, may terminate at a ceiling consisting of incombustible material such as to maintain the integrity of the bulkhead.

(c) (i) Where the ship’s shell plating forms the boundary of an accommodation space or a service space, the adjacent transverse bulkheads shall extend to the shell plating.

(ii) Where the external plating of a deckhouse forms the boundary of an accommodation space or service space, the adjacent transverse and longitudinal bulkheads shall extend to the external plating**[.]**: Provided that any such bulkhead, other than a corridor bulkhead, may terminate at a lining consisting of incombustible material such as to maintain the integrity of the bulkhead.

(2) *Method III*:

(a) **[Enclosure bulkheads]**An enclosure bulkhead within [the]an accommodation **[spaces and service spaces]**space or a service space of **[every]**a Chapter V ship in which Method III of fire protection has been adopted, not being **[bulkheads]**a bulkhead required by this Part to consist of “A” Class divisions, shall be constructed of “B” Class divisions which shall—

(i) be of incombustible material but may, subject to the provisions of regulation 55 (2) (a) and (b), be faced with combustible material**[.The "B" Class divisions shall]**;

(ii) be arranged so as to form a continuous network of such divisions or, together with such bulkheads as are constructed of "A" Class divisions, a continuous network of "A" and "B" Class division**[.** The**]**; and

(iii) have an area of any one compartment formed by such network shall not exceed **[1,600 square feet]**487 square meters and shall wherever practicable not exceed **[1,300square feet]**396 square meters.

(b) In **[every]**a ship referred to in paragraph (a), **[every]**a public room being a space larger than **[1,600 square feet]**487 square meters in area shall, except at the shell plating of the ship or the external plating of a deckhouse, be bounded by bulkheads consisting of incombustible "B" Class divisions, unless the bulkheads enclosing the room are required by this Part to consist of "A" Class divisions.

(c) (i) In **[every]**a ship referred to in paragraph (a), **[every]**a corridor bulkhead shall consist of "B" Class divisions unless it is required by this Part to consist of "A" Class divisions, and shall extend from deck to deck.

(ii) Where such "B" Class divisions are not of the incombustible type, they shall have incombustible cores or shall be of an assembled type having internal layers of sheet asbestos or similar incombustible material.

(iii) Ceilings, if fitted, shall be of incombustible material.

(d) In **[every]**a ship referred to in paragraph (a), **[every]**a "B" Class bulkhead, other than a corridor bulkhead, shall extend from deck to deck**[ ]**:Provided that any such bulkhead may terminate at a ceiling consisting of incombustible material such as to maintain the integrity of the bulkhead.

(e) (i) In **[every]**a ship referred to in paragraph (a), where the ship's shell plating forms the boundary of an accommodation space or a service space, any "B" Class bulkhead adjacent thereto shall extend to the shell plating.

(ii) Where the external plating of the deckhouse forms the boundary of an accommodation space or service space, any adjacent transverse or longitudinal "B" Class bulkhead shall extend to the external plating**[.]**: Provided that any such bulkhead, other than a corridor bulkhead, may terminate at a lining consisting of

incombustible material such as to maintain the integrity of the Bulkhead.

(f) In **[every]**a ship referred to in paragraph (a), the insulation of "A" Class and "B" Class divisions, except those constituting the separation of the main vertical zones, the control stations, the stairway enclosures and the corridors, may be omitted where the divisions form the outside part of the ship or where the adjoining compartment does not contain a fire hazard.".

Amendment of regulation 55 of the Regulations

58. Regulation 55 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 55 of the following heading:

"**55. Restriction of combustible material[, etc.]: Methods I and III**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) *Method I:*

(a) In [every]a Chapter V ship in which Method I of fire protection has been adopted, **[all linings, grounds, ceilings and]**a lining, ground, ceiling, or an insulation, shall consist of incombustible material except in a cargo **[spaces]**space, mail **[rooms]**room, bullion **[rooms]**room, baggage **[rooms and]**room or refrigerated store **[rooms]**room.

(b) In **[every]**a ship referred to in paragraph (a), the total volume of combustible materials installed as facings, mouldings, decorations or veneers in any accommodation space or service space, shall not exceed a volume equal to that of a veneer of one-tenth of an inch on the combined area of the walls and ceiling of such space.

(c) In **[every]**a ship referred to in paragraph (a) all exposed surfaces in corridors and stairway enclosures, shall be such that the surface spread of flame will not be exceeded."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) *Method III*:

(a) (i) In **[every]**a Chapter V ship in which Method III of fire protection has been adopted, the provision of combustible materials for

linings, grounds, ceilings, fittings and furnishings in any space in the accommodation spaces or service spaces, shall be restricted to the minimum compatible with the use for which that space is appropriated.

(ii) In the public rooms in such a ship, the grounds and supports for the linings and ceilings shall be constructed of steel or other material equally effective in restricting fire.

(b) In **[every]**a ship referred to in paragraph (a)**[,]**—

(i) an exposed **[surfaces]**surface and **[their coatings]**its coating, or corridor and cabin **[bulkheads]**bulkhead in an accommodation **[spaces]**space shall be of limited flame-spreading power**[.]**; and

(ii) **[All]**any other exposed surfaces in corridors and stairway enclosures shall be such that the surface spread of flame will not be exceeded.".

Substitution of regulation 56 of the Regulations

59. The following regulation is hereby substituted for regulation 56 of the Regulations:

"**56. Automatic fire alarm and fire detection systems: Methods I and III**

(1) In **[every]**a Chapter V ship in which Method I or Method III of fire protection has been adopted, a fire alarm and fire detection system shall be installed which will detect the presence or the signs of a fire and its location in any accommodation space or service space.

(2) **[Every]**A fire detection system fitted in compliance with this Part, shall be capable of automatically indicating on the navigating bridge or at other control stations which are provided with direct communication with the navigating bridge, the presence or the signs of a fire and its location: Provided that the Authority may in any Chapter V ship permit the indicators to be distributed among several stations if he is satisfied that such arrangements are at least as effective as if the indicators were so **[centralized]**centralised.

(3) Electrical equipment used in the operation of any fire detection system fitted in compliance with this Part, shall be capable of being supplied from two sources of electric power one of which shall be the emergency source of power required by regulation 42.

(4) The indicating system of any fire detection system fitted in compliance with this Part shall operate both audible and visible alarms at the stations referred to in **[sub-regulation]**subregulation (2).".

Substitution of regulation 57 of the Regulations

60. The following regulation is hereby substituted for regulation 57 of the Regulations:

"**57. Automatic sprinkler, fire alarm and fire detection systems: Method II**

(1) In **[every]**a Chapter V ship in which Method II of fire protection has been adopted, an automatic sprinkler and fire alarm and fire detection system complying with the requirements specified in Annex 5 shall be installed and so arranged as to protect all accommodation spaces and service spaces in the ship.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the superstructure of which is wholly or partly constructed of aluminium alloy, the whole unit including the sprinkler pump, tank and air compressor shall be situated to the satisfaction of the Authority in a position reasonably remote from the boiler and machinery spaces.".

Substitution of regulation 58 of the Regulations

61. The following regulation is hereby substituted for regulation 58 of the Regulations:

"**58. Protection of stairways**

(1) **[***Method's***]***Methods I and III:*

(a) In **[every]**a Chapter V ship in which Method I or III has been adopted, **[every]**a stairway within an accommodation space or service space shall be of steel frame construction: Provided that the Authority may permit in lieu of steel, the use of other material considered equivalent to steel by virtue of insulation **[. Every]**and such stairway shall lie within an enclosure constructed of "A" Class divisions except that—

(i) a stairway serving only two decks shall not be required to be enclosed by "A" Class divisions at more than one deck; and

(ii) a stairway in a public room shall not be required to be so enclosed if it lies wholly within the room.

(b) **[Every]**An opening in a stairway enclosure shall be provided with a means of closure which shall be permanently attached thereto**[. The means of closure]** which shall be, as far as practicable equivalent in resisting fire to the division in which it is fitted and shall, unless it is a watertight door, be self-closing.

(c) **[Every]**A stairway enclosure in a ship referred to in paragraph (a), shall—

(i) communicate directly with the corridors adjacent thereto and shall be of sufficient area to prevent congestion, having regard to the number of persons likely to use the stairway in an emergency**[. Every such enclosure]**; and

(ii) shall contain as little accommodation space or service space as is practicable in the circumstances.

(2) *Method II*:

(a) In **[every]**a Chapter V ship in which Method II has been adopted, **[every]**a stairway within an accommodation space or service space shall be of steel frame construction: Provided that the Authority may permit in lieu of steel the use of other suitable material or condition that additional fire extinguishing or fire protection arrangements to the satisfaction of the Authority are provided**[. Every]** and such stairway shall lie within an enclosure constructed of "A" Class divisions except that—

(i) a stairway serving only two decks shall not be required to be enclosed by "A" Class divisions at more than one deck; and

(ii) a stairway in a public room shall not be required to be so enclosed if it lies wholly within the room.

(b) **[Every]**An opening in a stairway enclosure shall be provided with a means of closure which shall be permanently attached thereto**[. The means of closure shall be,]**and as far as practicable, equivalent in resisting fire to the division in which it is fitted and shall, unless it is a watertight door, be self-closing.

(c) **[Every]**A stairway enclosure in a ship referred to in paragraph (a), shall—

(i) communicate directly with the corridors adjacent thereto and shall be of sufficient area to prevent congestion, having regard to the number of persons likely to use the stairway in an emergency**[.** Every such enclosure shall**]**; and

(ii) contain as little accommodation space or service space as is practicable in the circumstances.”.

Substitution of regulation 59 of the Regulations

62. The following regulation is hereby substituted for regulation 59 of the Regulations:

“**59. Separation of accommodation spaces from other enclosed spaces**
In **[every]**a Chapter V ship, **[the bulkheads and decks]**a bulkhead or deck separating an accommodation **[spaces]**space from **[other]**another enclosed **[spaces]**space shall consist of “A” Class divisions.”.

Substitution of regulation 60 of the Regulations

63. The following regulation is hereby substituted for regulation 60 of the Regulations:

“**60. Protection of lifts and vertical trunks for light and air**

(1) In **[every]**a Chapter V ship, **[every]**a lift trunk, **[and every]** light-and-air **[and]**or similar trunk in an accommodation space or service space, shall be constructed of “A” Class divisions: Provided that a lift trunk within a stairway enclosure shall not be required to be insulated**[. Every]** and any door in such a trunk shall be constructed of steel or other equivalent material and shall be as effective as the trunk in resisting fire.

(2) **[Every]**A lift trunk in a Chapter V ship shall be so fitted as to prevent the passage of smoke and flame from one between decks to another and shall be provided with means of closure which will enable draught and smoke to be controlled.

(3) If in a Chapter V ship, a light-and-air or similar trunk communicates with more than one between deck space and smoke and flame may be conducted from one between decks to another, smoke shutters shall be fitted so as to enable each such space to be isolated in the event of fire.

(4) **[Every other]**A trunk in a Chapter V ship shall be so constructed as not to afford a passage for fire from one between decks or compartment to another.”.

Substitution of regulation 61 of the Regulations

64. The following regulation is hereby substituted for regulation 61 of the Regulations:

"**61. Protection of control stations**

(1) **[Every]**A control station in **[every]**a Chapter V ship shall be separated from the rest of the ship by bulkheads and decks consisting of "A" Class divisions.

(2) **[The]**A radiotelegraph room in a Chapter V ship shall not be situated directly above any stairway.".

Amendment of regulation 62 of the Regulations

65. Regulation 62 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 62 of the following heading:

"**62. Protection of store rooms[, etc.]**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every]**a Chapter V ship, the boundary bulkheads separating a galley, baggage room, mail room, store room, paint room, lamp room, or any similar space from any other space, shall consist of "A" Class divisions."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) **[Spaces]**A space appropriated for the storage of highly inflammable stores shall be so constructed and situated as to **[minimize]**minimise the danger to persons on board in the event of fire.".

Substitution of regulation 63 of the Regulations

66. The following regulation is hereby substituted for regulation 63 of the Regulations:

"**63. Ventilation systems**

(1) The main inlets of **[every]**an air supply system and the main outlets of **[every]**an air exhaust system in **[every]**an Chapter V ship shall be capable of being closed from external positions**[. Wherever]** and wherever practicable, the system of ducts leading from each ventilating fan shall be within one main vertical zone.

(2) (a) **[Every]**A Chapter V ship shall be equipped with two master controls situated as far apart as is practicable, either of which shall be capable of stopping all the fans in the power ventilation systems of the ship, other than the ventilation systems in the machinery space, cargo spaces and any alternative systems required by **[sub-regulation]**subregulation (4).

(b) **[Every]**If the power ventilation system in paragraph (a) is serving the machinery space, such system shall have two master controls, one of which shall be capable of being operated from outside such space.

(3) In **[every]**a Chapter V ship**[, any]**—

(a) an exhaust **[ducts]**duct from a galley **[ranges]**range shall be constructed of "A" Class divisions which shall be insulated where the **[ducts pass]**duct passes through an accommodation, service or machinery **[spaces]**space, or a control **[stations. Means]** station; and

(b) means of access shall be provided for cleaning purposes.

(4) In **[every]**a Chapter V ship**[,]**—

(a) there shall be provided for every control station situated below deck, other than a control station situated in the machinery space, means to ensure ventilation, visibility and freedom from smoke within it so that in the event of fire in the ship, the equipment it contains may be operated effectively**[. Unless]**; and

(b) unless the control station in paragraph (a) is situated on, and has access to, an open deck, or is provided with local closing arrangements equally effective to maintain ventilation, visibility and freedom from smoke in the event of fire in the ship, there shall be provided at least two entirely separate means of supplying air to such control stations, and the air inlets to these sources of supply shall be

so situated that the risk of both drawing in smoke simultaneously is as far as practicable eliminated.".

Substitution of regulation 64 of the Regulations

67. The following regulation is hereby substituted for regulation 64 of the Regulations:

"**64. Miscellaneous items of fire protection**

(1) The following provisions shall apply to all parts of any Chapter V ship**[-]**:

(a) paints, varnishes or similar preparations shall not be used if they contain a nitro-cellulose or other highly inflammable base, and fabrics containing nitro-cellulose shall not be fitted**[,]**;

(b) **[any]**a pipe which penetrates an "A" Class or "B" Class division, shall be of suitable material and shall have regard to the temperature such divisions are required to withstand;

(c) **[pipes]**a pipe intended for oil or other inflammable liquids, shall be of suitable material having regard to the risk of fire; and

(d) an overboard **[scuppers]**scupper, sanitary **[discharges]**discharge or other **[outlets]**outlet close to the waterline, shall not be of a material likely to fail in the event of fire and thereby give rise to a danger of flooding.

(2) The following provisions shall apply to **[the]**an accommodation and a service **[spaces]**space of any Chapter V ship**[-]**:

(a) **[every]**an air space enclosed behind a ceiling, panel or lining in **[the]**an accommodation **[spaces]**space or service **[spaces]**space, shall be divided by close fitting draught-stops spaced not more than 45 feet apart and which shall be closed at each deck;

(b) **[every]**a ceiling, panel and lining referred to in paragraph (a), shall be so constructed as to enable a fire patrol to detect any smoke originating in a concealed or inaccessible space, without impairing the efficiency of the fire protection of the ship;

(c) the concealed surfaces of **[every]**a bulkhead, lining, panel, stairway, wood ground and other structure in an accommodation **[spaces and]**space or service **[spaces]**space, shall be such that the surface spread of flame is not exceeded;

(d) the use of wood for the construction and equipment of **[galleys, bakeries and main pantries]**a galley, bakery or main pantry shall be restricted so far as is practicable;

(e) (i) **[every]**a window **[and]**or side scuttle in the ship's side in **[bulkheads]**a bulkhead protecting an accommodation **[spaces]** space from the weather, shall—

(aa) be constructed with **[frames]**a frame of steel or other suitable material and the glass therein shall be retained by a metal glazing bead**[. If]**; and

(bb) if the window or side scuttle in item (aa) is in a position in which the fusion of the frame, ring or bead may give rise to danger of flooding, the frame, ring or bead, as the case may be, shall consist of metal which is not likely to fuse in the event of fire; and

(ii) **[every]**a window and side scuttle in **[bulkheads]**a bulkhead within an accommodation **[spaces]**space, shall be constructed so as to preserve the integrity requirements of the type of bulkhead in which it is fitted;

(f) **[any]**a permanent deck sheathing within an accommodation space, service space, control station, stairway or corridor, shall be of a type which will not readily ignite; and

(g) cellulose-nitrate-based film shall not be used in a cinematograph **[installations]**installations.

(3) The following provisions shall apply to [the]a machinery **[spaces]**space of **[any]**a Chapter V ship**[-]**:

(a) **[the skylights]**a skylight to **[spaces]**a space containing main propulsion machinery or an oil-fired **[boilers]**boiler or auxiliary internal combustion type machinery of a total horse power of 1,000 or over, shall be capable of being closed and opened from outside the space in the event of fire and, where they contain glass panels, such panels shall be of fire resisting construction fitted with wire reinforced glass and shall have external permanently attached shutters of steel or other equivalent material; and

(b) (i) **[windows]**a window shall not be fitted in an engine **[casings]**casing except where the Authority is satisfied that **[they are]**it is necessary and will not constitute a fire hazard.

(ii) **[Where]**where such **[windows are]**a window is fitted, **[they]**it shall be of a non-opening type and shall be of fire resisting construction fitted with wire reinforced glass and shall have external permanently attached shutters of steel or other equivalent material.".

Amendment of Chapter V(A) of the Regulations

68. Chapter V(A) is hereby amended by the substitution for the heading of Chapter V(A) of the following heading:

"**CHAPTER V(A) - FIRE PROTECTION: [SHIPS OF CLASSES]CLASS I, II AND [IIA]II (A) SHIPS**".

Substitution of regulation 65 of the Regulations

69. The following regulation is hereby substituted for regulation 65 of the Regulations:

"**65. Application of Chapter V(A)**
This Chapter applies to **[every ship of]**a Class I, II or IIA ship carrying not more than 36 passengers, and a "Chapter V (A) ship" means a ship to which this Chapter applies.".

Substitution of regulation 66 of the Regulations

70. The following regulation is hereby substituted for regulation 66 of the Regulations:

"**66. General**

(1) **[Every]**A Chapter V(A) ship, shall comply with regulations 49 to 52 **[inclusive]**, regulations 59, 60 (1), 61, 62, 64 (1) (a), (b), (c) and (d) and regulation 64 (2) (c), (d), (e), (f) and (g).

(2) In **[any]**a Chapter V(A) ship, the Authority may permit smaller amounts of insulation to be fitted than are required by regulation 51 (1), and the following additional provisions shall apply to such ship—

(a) **[all stairways]**a stairway and means of escape in an accommodation **[and]**or a service **[spaces]**space shall be of steel or other equivalent material**[..]**;

(b) power ventilation of a machinery space shall be capable of being stopped from an easily accessible position outside the space; and

(c) except where all bulkheads in accommodation spaces conform with the requirements of regulation, 54 (1) and 55 (1), the ship shall be

provided with an automatic fire detection system conforming with regulation 56, and in accommodation spaces the corridor bulkheads shall be of steel or shall be incombustible “B” Class divisions.”.

Amendment of Chapter V(B) of the Regulations

71. Chapter V(B) is hereby amended by the substitution for the heading of Chapter V(B) of the following heading:

“**CHAPTER V(B): FIRE PROTECTION: [SHIPS OF CLASSES]CLASS V AND VI SHIPS**”.

Substitution of regulation 67 of the Regulations

72. The following regulation is hereby substituted for regulation 67 of the Regulations:

“**67. Application of Chapter V(B)**
This Chapter applies to **[every]**a ship of Class V or VI.”.

Substitution of regulation 68 of the Regulations

73. The following regulation is hereby substituted for regulation 68 of the Regulations:

“**68. Structure of the ship**
The hull, superstructure, structural **[bulkheads, decks and]**bulkhead, deck or deck **[houses]**house of **[every ship of]**a Class V or VI ship shall be constructed of steel.”.

Substitution of regulation 69 of the Regulations

74. The following regulation is hereby substituted for regulation 69 of the Regulations:

“**69. Divisions**

In **[every ship of]**a Class V or VI ship being a ship fitted with internal combustion propelling machinery or oil-fired boilers, the accommodation spaces shall be separated from machinery spaces by “A” Class divisions.”.

Substitution of regulation 70 of the Regulations

75. The following regulation is hereby substituted for regulation 70 of the Regulations:

“**CHAPTER VI: BOILERS AND MACHINERY**

70. Application of Chapter VI

Unless otherwise indicated in this Chapter, this Chapter applies to **[every ship of]**a Class I, II, IIA, V or VI ship, and a “Chapter VI ship” means a ship to which this Chapter applies.”.

Substitution of regulation 71 of the Regulations

76. The following regulation is hereby substituted for regulation 71 of the Regulations:

“**71. General**

(1) In **[every]**a Chapter VI ship, the machinery, boilers and other pressure vessels 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 **[minimize]**minimise any danger to persons on board.

(2) **[Without prejudice to the generality of the foregoing, means]**Means shall be provided which shall prevent overpressure in any part of such machinery 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 the Authority may, having regard to the output or any other features of any boiler or unfired output or steam generator, permit only one safety valve to be fitted if he is satisfied that adequate protection against overpressure is thereby provided.”.

Substitution of regulation 72 of the Regulations

77. The following regulation is hereby substituted for regulation 72 of the Regulations:

"**72. Boilers and other pressure vessels**

(1) In **[every]**a Chapter VI ship, **[every]**a 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 intended service, having regard to-

(a) the design and 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 shall at any time thereafter be capable of withstanding such a test.

(2) Provision shall be made which will facilitate the cleaning and inspection of every pressure vessel.".

Substitution of regulation 73 of the Regulations

78. The following regulation is hereby substituted for regulation 73 of the Regulations:

"**73. Machinery**

(1) In **[every]**a Chapter VI ship, main and auxiliary machinery necessary 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.

(2) In **[every]**a Chapter VI ship, where risk from overspeeding of machinery exists, means shall be provided to ensure that the safe speed is not exceeded, and in particular a governor shall be provided for any turbine or set of turbines which drives a single gear wheel forming part of the main propelling machinery so as to shut off the steam automatically in the event of overspeed**[. A]** and a hand trip gear shall also be provided for that purpose.

(3) In **[every]**a Chapter VI ship, means shall be provided which will shut off automatically the steam from any ahead turbine and any other machinery

served by the same lubricating oil system as the turbine in the event of any failure of that system.

(4) In **[every]**a Chapter VI ship 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 at any time thereafter be capable of withstanding such a test.".

Substitution of regulation 74 of the Regulations

79. The following regulation is hereby substituted for regulation 74 of the Regulations:

"**74. Power for going astern**

(1) **[Every]**A Chapter VI ship shall have sufficient power for going astern to secure control of the ship in all normal circumstances.

(2) The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time, under normal manoeuvring conditions, and so to bring the ship to rest from maximum ahead service speed, shall be demonstrated at the first survey of the ship.".

Substitution of regulation 75 of the Regulations

80. The following regulation is hereby substituted for regulation 75 of the Regulations:

"**75. Shafts**

In **[every]**a Chapter VI ship, **[every]**a shaft shall be so designed and constructed that it will 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;

(b) the service for which it is intended**[,]**; and

(c) the type of the engines by which it is driven or of which it forms a part.".

Substitution of regulation 76 of the Regulations

81. The following regulation is hereby substituted for regulation 76 of the Regulations:

"**76. Boiler feed systems**

(1) In **[every]**a Chapter VI ship, **[every]**a boiler fitted shall be provided with not less than two efficient and separated feed systems so arranged that either of such systems may be opened up for inspection or overhaul without affecting the efficiency of the other**[. Means]**and means shall be provided which will prevent overpressure in any part of the systems.

(2) In **[every]**a Chapter VI ship in which boilers are fitted, there shall be provided 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) In **[every]**a Chapter VI 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.

(4) If it is possible for oil to enter the feed water system in **[any]**a Chapter VI ship, the arrangements for supplying boiler feed water shall provide for the interception of oil in the feed water.

(5) (a) **[Every]**A feed check valve, fitting or pipe through which feed later passes from a pump to **[the boilers]**a boiler in **[an]**a Chapter VI ship, 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]**A valve, fitting or pipe referred to in paragraph (a) 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 at any time thereafter be capable of withstanding such a test.

(6) In **[every]**a Chapter VI ship where **[oil fired]**an oil-fired water tube **[boilers are]**boiler is fitted, an automatic boiler water low level alarm and an automatic boiler water low level shut-off valve in the fuel supply pipe to the furnace fronts shall be provided.".

Substitution of regulation 77 of the Regulations

82. The following regulation is hereby substituted for regulation 77 of the Regulations:

"**77. Steam pipe systems**

(1) In **[every]**a Chapter VI ship, **[every]**a steam pipe and 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 will be used.

(2) **[Without prejudice to the generality of sub-regulation (1), every]**A steam pipe or fitting referred to in subregulation (1) 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 requirements of **[sub-regulation]**subregulation (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]**A steam pipe shall be adequately supported.

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

(5) Efficient means shall be provided for draining **[every]**a 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 conditions likely to arise in the course of the intended service of the ship.

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

Substitution of regulation 78 of the Regulations

83. The following regulation is hereby substituted for regulation 78 of the Regulations:

"**78. Air pressure systems**

(1) In **[every]**a Chapter VI ship, being a ship in which machinery essential for the propulsion and safety of the ship or of persons on board is required to be started, operated or controlled solely by compressed air, there shall be provided at least two air compressors each of which shall be of efficient design and of sufficient strength and capacity for the service for which it is intended: Provided that in a **[ship of]** Class V or VI ship only one such compressor shall be required.

(2) **[Every]**A Chapter VI ship, being a ship propelled by compression ignition engines designed to start by compressed air, shall be provided with at least two air receivers, which shall be of such aggregate capacity that, when they are filled with compressed air, the air contained therein will be sufficient to start each of the ship's main engines twelve time if such engines are reversible, and six times if such engines are non-reversible: Provided that in a [ship of Class V or VI ship, only one such air receiver shall be required.

(3) **[Every]**An air receiver **[and]**or air bottle provided in **[any]**a Chapter VI ship, shall—

(a) 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]**; and

(b) if it can be isolated from the relief valve, **[it shall]** be fitted with one or more fusible plugs so as to discharge its contents in the event of fire.

(4) (a) **[Every]**An air pressure pipe provided in **[any]**a Chapter VI ship **[an every]**and a fitting connected to such pipe, shall be capable of withstanding the maximum working stresses to which it may be subjected with a factor of safety which is adequate having regard to—

(i) the material of which it is constructed; and

(ii) the working conditions under which it is intended to be used.

(b) **[Without prejudice to the generality of paragraph (a), every]**A pipe and fitting referred to therein, other than a pipe or fitting in a pneumatic control system, shall before being put into service for the first time, be subjected to a test by hydraulic pressure to twice its maximum working

pressure and shall at any time thereafter be capable of withstanding such a test.

(5) (a) **[Every]**The pipe referred to in **[sub-regulation]**subregulation (4) shall be properly supported**[. Provision]** and provision shall be made which will keep the interior of the pipe free from oil and either will prevent the passage of flame from the cylinders of the engine to the pipe, or will protect the pipe from the effects of an internal explosion.

(b) In **[every]**a Chapter VI ship, **[all]**a discharge **[pipes]**pipe from a starting air **[compressors]**compressor shall lead directly to **[the]**a starting air **[receivers]**receiver, and **[all]**a starting air **[pipes]**pipe from **[the]**an air **[receivers]**receiver to a main or auxiliary **[engines]**engine shall be kept entirely separate from the compressor discharge pipe system.

(6) (a) Means shall be provided in **[any]**a Chapter VI ship to prevent overpressure in any part of any compressed air system, and where water jackets or casings of air compressors and coolers might be subjected to dangerous overpressure due to leakage into them from air pressure parts, suitable pressure relief arrangements shall be provided.

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

Substitution of regulation 79 of the Regulations

84. The following regulation is hereby substituted for regulation 79 of the Regulations:

"**79. Cooling systems**

(1) (a) In **[every]**a Chapter VI ship, where machinery essential for the propulsion or safety of the ship or of persons on board is dependent for its operation on an efficient cooling water system, there shall be provided at least one circulating pump and, except in the case of any emergency generator and in a ship of Class V or VI, provision shall be made so that in the event of the failure of such pump, an alternative pump is available for the same duty.

(b) **[Such pumps]**The pump referred to in paragraph (a) shall be capable of supplying adequate cooling water to such machinery, oil coolers, fresh water coolers or condensers fitted thereto, as the case may be.

(2) If direct sea water cooling is used for essential internal combustion machinery, the sea water suctions shall be provided with strainers which can be cleaned without interruption of the supply of water.

(3) Means shall be provided for ascertaining whether **[the]**a cooling **[systems are]**system is working properly and for preventing overpressure in any part thereof.

(4) **[The]**An exhaust **[pipes and silencers]**pipe or silencer of **[every]**an internal combustion engine provided in **[every]**a Chapter VI ship, shall be efficiently cooled or lagged.".

Substitution of regulation 80 of the Regulations

85. The following regulation is hereby substituted for regulation 80 of the Regulations:

"**80. Oil systems for lubricating, cooling and control**

(1) In **[every]**a Chapter VI ship, being a ship in which oil is circulated under pressure for the lubrication or cooling or as the sole means of control of machinery essential for the propulsion or safety of the ship or persons on board, at least two pumps shall be provided each of which shall be adequate for circulating such oil: Provided that in a ship of Class V or VI and in the case of any emergency generator in any ship, only one such pump shall be required.

(2) (a) In **[every ship of]**a Class I, II or **[IIA]**II (A) ship propelled by turbine machinery, or having turbo-electric propelling machinery, the lubricating oil arrangements shall be such that an emergency supply of oil is available sufficient to maintain after a power failure an adequate supply of lubricating oil for at least three minutes or for such time as may be required for unloaded turbo-electric propelling machinery to come to rest from the maximum running speed.

(b) **[Such]**The emergency supply referred to in paragraph (a) shall automatically come into use on failure of the pressure supply of lubricating oil from the pump or pumps.

(3) Strainers shall be provided for straining the lubricating oil, and, except in a **[ship of]** Class V or VI ship, where lubricating oil shall be capable of being cleaned without interrupting the supply of such oil.

(4) Means shall be provided for ascertaining whether the lubricating system is working properly and for preventing overpressure in any part of the system**[. If]** and if the means of preventing overpressure is a relief valve, it shall be in close circuit.".

Substitution of regulation 81 of the Regulations

86. The following regulation is hereby substituted for regulation 81 of the Regulations:

"**81. Oil fuel installations (boilers and machinery)**

(1) (a) For the purposes of this regulation, the expression "oil fuel tank" includes an oil fuel storage tank, an oil fuel settling tank, an oil fuel service tank and an oil fuel overflow tank.

(b) In **[every]**a Chapter VI ship, **[any]** oil fuel used in **[boilers]**a boiler or machinery shall, except as allowed by regulation 42 (3), have a flash point of not less than 150º F. or 65^0 C. (Closed test.).

(2) In **[every]**a Chapter VI ship, being a ship propelled by means of oil-fired boilers or internal combustion machinery, every double bottom compartment appropriated for the storage of oil fuel, not being a compartment situated at the extreme forward or after end of the ship, shall be fitted with a watertight centre division**[,]**.

(3) (a) **[Every]**An oil fuel tank in a Chapter VI ship shall be properly constructed and shall, where necessary, be provided with save-alls or gutters which will catch any oil which may leak from the tank.

(b) **[No such]**The tank referred to in paragraph (a) shall not be situated directly above **[boilers]**a boiler or other heated **[surfaces. Without prejudice to the generality of the foregoing, every such tank]**surface.

(c) The tank referred to in paragraph (a) shall before being put into service for the first time, be subjected to a test by hydraulic pressure in the case of **[ea]**a storage tank, settling tank or service tank, equal to that of a head of water one foot greater than the greatest head to

which the tank may be subject when in service, but in the case of a settling tank, to not less than **[15 lb.]**6.8 kg per square **[inch]**centimetre, and **[every]** such tank shall at any time thereafter be capable of withstanding such a test.

(4) (a) The oil fuel carried in a Chapter VI ship, shall be effectively isolated from water ballast which may be carried therein.

(b) The pumping arrangements shall be such as will permit the oil fuel to be transferred from any storage tank or settling tank appropriated for oil fuel into another storage tank or settling tank so appropriated.

(c) Provision shall be made to prevent the accidental discharge or overflow of oil overboard.

(d) If fresh water is stored in a tank adjacent to a tank appropriated for the storage of oil fuel, a cofferdam shall be provided which will prevent contamination of the fresh water by the oil.

(5) In **[every]**a Chapter VI ship, efficient means shall be provided for sounding every oil fuel tank therein and to prevent overpressure in such tank.

(6) (a) In **[every]**a Chapter VI ship, an air pipe shall be led from every oil fuel tank to the open air, and the outlet thereof shall be in such a position that there will be no danger of fire or explosion resulting from the emergence of oil vapour from the pipe when the tank is being filled.

(b) **[Every such]**The air pipe referred to in paragraph (a) shall be fitted with a detachable wire gauze diaphragm**[. If]** and if such pipe also serves as an overflow pipe, provision shall be made which will prevent the overflow from running into or near a boiler room, galley or other place in which it might be ignited.

(7) **[Every]**A drain provided in a Chapter VI ship for the purpose of removing water from oil fuel in storage or settling tanks or in separators, shall be of the self-closing type.

(8) **[The]**An oil fuel filling **[stations]**station in **[every]**a Chapter VI ship shall be isolated from other spaces in the ship and shall be efficiently drained and ventilated**[. Provision]** and provision shall be made which will prevent overpressure in any oil-filling pipe lines.

(9) In **[every]**a Chapter V1 ship**[, every]**—

(a) an oil pressure pipe shall be made of seamless steel or other suitable material and, if used for conveying heated oil, shall be situated in a conspicuous position above the platforms in well-lighted parts of the boiler room or engine room**[. Every such]**; and

(b) the pipe and joint **[therein]** and every fitting connected to such pipe referred to in paragraph (a), shall before being put into service for the first time, be subjected to a test by hydraulic pressure to **[400 lb. per square inch]**181 kg per square centimetre or to twice its maximum working pressure, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test.

(10) In **[every]**a Chapter VI ship**[, every]**—

(a) an oil pipe, not being an oil pressure pipe, shall be made of steel or other suitable material and shall be led at such a height above the ship's inner bottom, if any, as will facilitate the inspection and repair of the pipe**[. Every such]**; and

(b) the pipe and joint **[therein,]** and every fitting connected to such pipe referred to in paragraph (a), shall before being put into service for the first time, be subjected to a test by hydraulic pressure to **[50 lb. per square inch]**22kg per square centimetre or to twice its maximum working pressure, whichever shall be the greater, and shall at any time thereafter he capable of withstanding such a test.

(11) In **[every]**a Chapter VI ship, **[every]**a steam heating pipe which may be in contact with oil shall be made of steel and, together with its joints, shall before being put into service for the first time, be subjected to a test by hydraulic pressure to twice its maximum working pressure, and shall at any time thereafter be capable of withstanding such a test.

(12) In **[every]**a Chapter VI ship**[, every]**—

(a) a suction pipe from any oil fuel tank situated above an inner bottom and every oil fuel levelling pipe within a boiler room or engine room shall be fitted with a valve or cock secured to each tank to which the pipe is connected**[. Every such]**;

(b) a valve or cock fitted to an oil fuel suction pipe, shall be so arranged that it may be closed both from the compartment in which it is situated and from a readily accessible position outside such compartment and not likely to be cut off in the event of fire in that compartment**[. Every such]**;

(c) a valve or cock fitted to an oil fuel levelling pipe, shall be so arranged that it can be closed or opened from a readily accessible position above the bulkhead deck and not likely to be cut off by flooding or by fire in the compartment in which the pipe is situated**[. If any]**; and

(d) an oil tank filling pipe is not connected to an oil fuel tank at or near the top of the tank, it shall be fitted with a non-return valve or with a valve or cock secured to the tank to which it is connected and so arranged that it may be closed both from the compartment in which it is situated and from a readily accessible position outside such compartment and not likely to be cut off in the event of fire in that compartment.

(13) In **[every]**a Chapter VI ship**[, every]**—

(a) a master valve at the furnace fronts which controls the supply of oil fuel to sets of burners, shall be of a quick-closing type, and fitted in a conspicuous position and readily accessible**[. Provision]**; and

(b) provision shall be made to prevent oil from being turned on to any burner unless such burner has been correctly coupled up to the oil supply line.

(14) In **[every]**a Chapter VI ship, **[every]**a valve used in connection with the oil fuel installation, shall be so designed and constructed as to prevent the cover of the valve chest being slackened back or loosened when the valve is operated.

(15) In **[every]**a Chapter VI ship**[, every]**—

(a) a pump provided for use in connection with the oil fuel system, shall be separate from the ship's feed pumps, bilge pumps and ballast pumps, and the connections of any such pumps shall be provided with an efficient relief valve which shall be in close circuit**[. Provision]**; and

(b) provision shall be made by which every oil fuel pressure pump and transfer pump may be stopped from a position outside the compartment in which such pump is situated.

(16) (a) **[Every]**A Chapter VI ship shall be provided with not less than two oil fuel units, each comprising a pressure pump, filters and a heater**[. Such pump, filters and heater, shall be]** of efficient design and substantial construction.

(b) Provision shall be made which will prevent overpressure in any part of the oil fuel units.

(c) The parts of such oil fuel units which are subject to oil pressure, and the joints thereof, shall before being put into service for the first time, be subjected to a test by hydraulic pressure to **[400 lb. per square inch]**181kg per square centimetre or twice their maximum working pressure, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test.

(d) Any relief valves fitted to prevent overpressure in the oil fuel heater shall be in close circuit.

(e) If steam is used for heating oil fuel in bunkers, tanks, heaters or separators in any such ship, exhaust drains shall be provided to discharge the water of condensation into an observation tank.

(17) In **[every]**a Chapter VI ship**[,]**—

(a) save-alls or gutters shall be provided under every oil fuel pump, filter and heater, to catch any oil which may leak or be spilled therefrom**[. Save-alls]**;

(b) save-alls or gutters shall be provided in way of the furnace mouths to catch oil which may escape from the burners**[. Provision]**; and

(c) provision shall be made which will prevent oil which may escape from any oil fuel pump, filter or heater from coming into contact with boilers or other heated surfaces.

(18) **[Every]**An oil fuel separator in a Chapter VI ship shall be of efficient design and substantial construction**[. Provision]** and provision shall be made which will prevent overpressure in any part thereof and which will prevent the discharge of oil vapour therefrom into confined spaces.

(19) If **[any]**a Chapter VI ship being a ship propelled by means of oil-fired boilers, dampers are fitted to the funnels or boilers, provision shall be made for securing the dampers in the open position, and an indicator shall be provided to show whether the dampers are open or shut.

[(20) For the purposes of this regulation the expression "oil fuel tank" includes an oil fuel storage tank, an oil fuel settling tank, an oil fuel service tank and an oil fuel overflow tank.]".

Substitution of regulation 82 of the Regulations

87. The following regulation is hereby substituted for regulation 82 of the Regulations:

"**82. Oil fuel installations (cooking ranges and other heating appliances)**

(1) (a) If, in **[any]**a Chapter VI ship, a cooking range or other heating appliance is supplied with fuel from an oil tank, the tank shall not be situated in a galley, and the supply of oil to the burners shall be capable of being controlled from a position outside the galley.

(b) **[No]**A range or burner **[shall be fitted]** which is designed to be operated by means of oil fuel having a flash point of less than 150º F. (65.6º C.) shall not be fitted.

(2) **[The]**A tank shall be provided with an air pipe leading to the open air**[. The pipe]**which shall—

(a) be in such a position that there will be no danger of fire or explosion resulting from the emergence of oil vapour from the pipe when the tank is being filled**[. The pipe shall]**; and

(b) be fitted with a detachable wire gauze diaphragm.

(3) Safe and efficient means shall be provided for filling **[every]**a tank referred to in **[sub-regulation]**subregulation (1) and for preventing overpressure therein.".

Substitution of regulation 83 of the Regulations

88. The following regulation is hereby substituted for regulation 83 of the Regulations:

"**83. Ventilation**

In **[every]**a Chapter VI ship, **[every]**a space in which an oil fuel tank or any part of an oil fuel installation is situated, shall be adequately ventilated.".

Substitution of regulation 84 of the Regulations

89. The following regulation is hereby substituted for regulation 84 of the Regulations:

"**84. Communication between bridge and engine room**

[Every ship of]A Class I, II or IIA ship shall be provided with two means of communicating orders from the navigating bridge to the engine room control platform**[. One of the]**, one of which means shall be an engine room telegraph.".

Substitution of regulation 85 of the Regulations

90. The following regulation is hereby substituted for regulation 85 of the Regulations:

"**85. Steering gear**

(1) **[Every]**A Chapter VI ship shall be provided with efficient main and auxiliary steering gear: Provided that if main steering gear power units and their connections are fitted in duplicate to the satisfaction of the Authority and each power unit enables the steering gear to meet the requirements of **[sub-regulation]**subregulation (2) (b), no auxiliary steering gear shall be required.

(2) In **[every]**a Chapter VI ship—

(a) (i) the main steering gear shall be of adequate strength and sufficient to steer the ship at maximum service speed**[. The]**; and

(ii) the main steering gear, including the rudder and associated fittings, and rudder stock, shall be so designed that they are not damaged at maximum astern speed;

(b) (i) the main steering gear shall be capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the ship running ahead at maximum service speed**[. The]**; and

(ii) the rudder shall be capable of being put over from 35 degrees on either side to 30 degrees on the other side in 28 seconds at maximum service speed; and

(c) the auxiliary steering gear shall be capable of being rapidly brought into action and shall be of adequate length and of sufficient power to enable the ship to be steered at navigable speed, and in any ship in which a rudder stock of over **[9 inches]**22 centimetres diameter in way of the tiller is required to comply with paragraph (a), the auxiliary steering gear shall be operated by power.

(3) (a) (i) In **[every]**a Chapter VI ship in which a rudder stock of over **[9 inches]**22 centimetres is required to comply with subregulation (2) (a), there shall be provided a suitably located alternative steering station.

(ii) In **[every]**a other Chapter VI ship, means shall be provided by which the ship can be steered from a position aft.

(b) In **[every]**a Chapter VI ship**[,]**—

(i) the remote steering control systems from the principal and alternative steering stations shall be so arranged that failure of either system will not result in inability to steer the ship by means of the other systems**[. Means]**; and

(ii) means of communication shall be provided to enable orders to be transmitted from the bridge to the alternative steering station.

(4) In **[every]**a Chapter VI ship which is fitted with power operated steering gear, the position of the rudder shall be indicated at the principal steering station.".

Substitution of regulation 86 of the Regulations

91. The following regulation is hereby substituted for regulation 86 of the Regulations:

"**86. Spare gear**
[Every ship of]A Class I, II or IIA ship shall be provided with sufficient spare gear having regard to the intended service of the ship.".

Substitution of regulation 87 of the Regulations

92. The following regulation is hereby substituted for regulation 87 of the Regulations:

"**CHAPTER VII: MISCELLANEOUS**

87. Application of Chapter VII
Unless otherwise indicated in this Chapter, this Chapter applies to **[every ship of]**a Class I, II, IIA, V or VI ship, and a "Chapter VII ship" means a ship to which this Chapter applies.".

Substitution of regulation 88 of the Regulations

93. The following regulation is hereby substituted for regulation 88 of the Regulations:

"**88. Anchors and chain cables**
[Every]A Chapter VII ship shall be provided with such anchors and chain cables as are sufficient in number, weight and strength, having regard to the size and intended service of the ship.".

Substitution of regulation 89 of the Regulations

94. The following regulation is hereby substituted for regulation 89 of the Regulations:

"**89. Hawsers and warps**
[Every]A Chapter VII 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.".

Substitution of regulation 90 of the Regulations

95. The following regulation is hereby substituted for regulation 90 of the Regulations:

"**90. Means of escape**
(1) (a) **[Every]**A Chapter VII ship, not being an open or partially-decked **[ship of]**a Class V or VI ship, shall be provided with such doorways, stairways, ladderways and other means of escape as will provide readily accessible means of escape for all persons in the ship.
(b) The means of escape shall be so designed and constructed as to be capable of being easily used by the persons for whom they are intended.
(c) The number and width of such means of escape shall be sufficient, having regard to the number of persons by whom they may be used.

(2) In **[every ship of]**a Class I, II or IIA ship, there shall be provided below the bulkhead deck at least two means of escape from each compartment bounded by watertight bulkheads or from each similarly restricted space or group of spaces, and at least one of the means of escape provided from each such compartment or from each such space or group of spaces shall be independent of watertight doors.

(3) In **[every ship of]**a Class I, II or IIA ship, there shall be provide above the bulkhead deck at least two means of escape from each space bounded by main vertical zone bulkheads or from each similarly restricted space or group of spaces, and one of the means of escape provided from each space or group of spaces shall give access to the lifeboat or liferaft embarkation deck or decks or to a stairway leading to such decks.

(4) In **[every ship of]**a Class I, II or IIA ship, at least one of the means of escape so provided shall be enclosed, so as to afford, as far as practicable, continuous fire shelter from the level of its origin to the lifeboat and liferaft embarkation deck or decks.

(5) In **[every ship of]**a Class V or VI ship, not being an open or partially-decked ship, the means of escape shall lead to an open deck of sufficient area, having regard to the number of person; which the ship may carry.

(6) **[Every ship of]**A Class V or VI, being an open or partially-decked ship, shall be provided with readily accessible means of escape from all enclosed spaces in the ship. Such means of escape shall be sufficient in number and width, having regard to the number of persons who may be in the said spaces.

(7) (a) In the machinery spaces in **[every]**a Chapter VII ship, not being a ship, undecked in way of the machinery space, there shall be provided from each engine room, shaft tunnel **[and]**or boiler room two means of escape as widely separated as practicable, one of which may be a watertight door if such a door is available as a means of escape.

(b) Where **[no such]**the watertight door referred to in paragraph (a) is not available, the two means of escape shall consist of two sets of steel ladders leading to separate doors in the casing or elsewhere from which there is access to the lifeboat or liferaft embarkation deck or decks.

(8) (a) In **[every ship of]**a Class I ship, suitable signs shall be displayed in corridors and stairways indicating the direction of escape routes to passenger muster stations.

(b) **[Such]**The signs referred to in paragraph (a) shall—

(i) be continuously illuminated **[and shall]**

(ii) be adequate in number and distribution**[. They shall]**; and

(iii) be capable of being illuminated by the ship's emergency lighting system.

(9) (a) In **[every]**a Chapter VII ship, the means of escape from any public room which may be used for the purpose of concerts, cinema shows or similar forms of entertainment, shall be adequate having regard to the number of persons who may be in the audience, and the seating shall be arranged in rows to ensure free access to the exists.

(b) Where in any **[such public rooms]**public room referred to in paragraph (a) subdued lighting is used, the exits shall be clearly marked with illuminated signs, and any doors shall be constructed to open outwards.".

Amendment of regulation 91 of the Regulations

96. Regulation 91 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 91 of the following heading:

"**91. Guard rails, [stanchion's]stanchions and bulwarks**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) (a) In **[every]**a Chapter VII ship, bulwarks or guard rails shall be provided on every exposed deck to which any persons or vehicles may have access.

(b) **[Such]**The bulwarks or guard rails referred to in paragraph (a), 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 person who may have access to that deck or any vehicle from accidentally falling therefrom.

(c) 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."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) In **[every]** an open or a partially-decked **[ship of Class V or VI, every]**Class V or VI ship, a washstrake, covering board **[and]**or coaming, shall be so placed, designed and constructed and in particular shall be of such a height above the floorboards as to prevent any person from accidentally falling overboard.".

Substitution of regulation 92 of the Regulations

97. The following regulation is hereby substituted for regulation 92 of the Regulations:

"**CHAPTER VIII: EQUIVALENTS AND EXEMPTIONS**

92. Equivalents

Where this Part requires that the hull or machinery of a ship shall be constructed in a particular manner, or that particular equipment shall be provided, or that particular provision shall be made, the Authority may allow 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]**the Authority is satisfied that such other construction equipment or provision is at least as effective as that required by this Part.".

Substitution of regulation 93 of the Regulations

98. The following regulation is hereby substituted for regulation 93 of the Regulations:

"**93. General exemption**

The Authority may exempt **[any]**a ship which was constructed before the date of coming into operation of this Part, not being a ship converted on or after that date for service as a passenger ship, from the requirements of this Part to the extent to which **[he]**the Authority is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.".

Substitution of regulation 94 of the Regulations

99. The following regulation is hereby substituted for regulation 94 of the Regulations:

"**94. Exemption for certain ships on limited service**

The Authority may exempt any ship of Class II or IIA which does not proceed more than 20 miles from the nearest land from the requirements of this Part to the extent that **[he]**the Authority is satisfied that compliance therewith is

unreasonable or impracticable by reason of the sheltered nature and conditions of the intended service of the ship.".

Substitution of regulation 95 of the Regulations

100. The following regulation is hereby substituted for regulation 95 of the Regulations:

"**95. Exemption in respect of double bottoms**

(1) The Authority may exempt **[any ship of]**a Class I, II or IIA ship from the requirements of regulation 10 (4) in respect of any well which **[he]**the Authority is satisfied will not diminish the protection given by the double bottom.

(2) The Authority may exempt **[any ship of]**a Class II or IIA ship from the requirements or regulation 10 in respect of a double bottom in any portion of the ship which is subdivided by application of a factor of subdivision not exceeding 0.5, if **[he]**the Authority is satisfied that the fitting of a double bottom in that portion of the ship would not be compatible with the design and proper working of the ship.".

Substitution of regulation 96 of the Regulations

101. The following regulation is hereby substituted for regulation 96 of the Regulations:

"**96. Exemption in respect of openings in the shell plating below the margin line**

The Authority may exempt **[any]**a Chapter II **[ship of]** Class V or VI ship from the requirements of regulation 19 (8) to the extent to which **[he]**the Authority is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.".

Substitution of regulation 97 of the Regulations

102. The following regulation is hereby substituted for regulation 97 of the Regulations:

"**97. Exemption in respect of methods of fire protection**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 50 to the extent that **[he]**the Authority is satisfied that compliance therewith is incompatible with the purpose for which the ship is designed and that other equally effective methods of fire protection have been adopted in the ship.".

Substitution of regulation 98 of the Regulations

103. The following regulation is hereby substituted for regulation 98 of the Regulations:

"**98. Exemption in respect of "A" and "B" Class divisions**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 51 relating to insulation, to the extent that **[he]**the Authority is satisfied that compliance therewith is unnecessary, having regard to the degree of fire hazard present.".

Substitution of regulation 99 of the Regulations

104. The following regulation is hereby substituted for regulation 99 of the Regulations:

"**99. Exemption in respect of automatic fire alarm and fire detection systems: Methods I and III**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 56 to the extent that **[he]**the Authority is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk.".

Substitution of regulation 100 of the Regulations

105. The following regulation is hereby substituted for regulation 100 of the Regulations:

"**100.Exemption in respect of automatic sprinkler, fire alarm and fire detection systems**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 57 (1): -

(a) to the extent that **[he]**the Authority is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk; and

(b) in respect of any baggage room or store room which **[he]**the Authority is satisfied is provided with adequate arrangements for the detection of fire or for the smothering of fire by gas or other suitable means.".

Substitution of regulation 101 of the Regulations

106. The following regulation is hereby substituted for regulation 101 of the Regulations:

"**101. Exemption in respect of protection of stairways**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 58 (2) in relation to any stairway which **[he]**the Authority is satisfied is an auxiliary stairway adequately protected by sprinklers.".

Substitution of regulation 102 of the Regulations

107. The following regulation is hereby substituted for regulation 102 of the Regulations:

"**102. Exemption in respect of miscellaneous items of fire protection**
The Authority may exempt **[any]**a Chapter V **[ship of]** Class I, II or IIA ship from the requirements of regulation 64 (2) (b) if **[he]**the Authority is satisfied that there is no risk of fire originating in the spaces mentioned in that regulation.".

Substitution of regulation 103 of the Regulations

108. The following regulation is hereby substituted for regulation 103 of the Regulations:

"**103. Exemption in respect of structure of Class V or VI ship**
The Authority may exempt **[any ship of]**a Class V or VI ship wholly or in part from the requirements of regulation 68.".

Substitution of regulation 104 of the Regulations

109. The following regulation is hereby substituted for regulation 104 of the Regulations:

"**104. Exemption in respect of means of escape**
The Authority may exempt **[any ship of]**a Class I, II, IIA, V or VI ship, being a ship of less than 2,000 tons, from the requirements of regulation 90 (7).".

Amendment of Part II of the Regulations

110. Part II is hereby amended by the substitution in the Arrangement of Regulations (table of contents) of the following table:

"**PART II**

(Cargo ships.)

CHAPTER I - GENERAL

105. Interpretation.
106. Application of Part II.

CHAPTER II - CONSTRUCTION

107. Structural strength.
108. Submission and approval of plans.
109. Watertight doors.
110. Bilge pumping arrangements.
111. Electrical equipment and installation-general.
112. Emergency source of electric power: Ships of 5,000 tons or over.
113. Emergency source of electric power: Ships of 1,600 tons or over but under 5,000 tons.
114. Emergency source of electric power: Ships of under 1,600 tons.
115. Electric and electro-hydraulic steering gear.
116. Precautions against shock, fire and other hazards of electrical origin.
117. Fire protection: Ships of 4,000 tons or over.
118. Fire protection: General.
119. Boilers and machinery: General.
120. Boilers and other pressure vessels.
121. Machinery.
122. Means for going astern.
123. Shafts.

124. Boiler feed systems.
125. Steam pipe systems.
126. Air pressure systems.
127. Cooling water system.
128. Lubricating and other oil systems.
129. Oil and gaseous fuel installations.
130. Communication between bridge and engine room.
131. Steering gear.
132. Spare gear.
133. Anchors and chain cables.
134. Means of escape.
135. Means for stopping machinery, shutting off fuel suction pipes and closing of openings.

CHAPTER III - SURVEY PRIOR TO THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE, AND APPLICATION FOR THE ISSUE OF THE CERTIFICATE

136. Application for survey prior to the issue of a cargo ship safety construction certificate.
137. Survey of a ship prior to the issue of a cargo **[shiip]**ship safety construction certificate.
138. Application for the issue of a cargo ship safety construction certificate.

CHAPTER IV - INTERMEDIATE SURVEYS

139. General.
140. Additional surveys.

CHAPTER V - EQUIVALENTS AND EXEMPTIONS

141. Equivalents.
142. Exemption in respect of precautions against shock, fire and other hazards of electrical origin.
143. Exemption in respect of means of escape.
144. General exemption.”.

Amendment of regulation 105 of the Regulations

111. Regulation 105 of the Regulations is hereby amended by–

(a) the substitution for the definition of “accommodation spaces” of the following definition:

"**"accommodation spaces"** means a passenger **[spaces, corridors, lavatories, cabins, offices,]**space, corridor, lavatory, cabin, office, crew **[spaces]**space, barber **[shops]**shop, isolated **[pantries and lockers and]**pantry or locker or similar **[spaces]**space;";

(b) the substitution for the definition of "Authority" of the following definition:

"**"Authority"** means **[any person or body of persons approved by the Minister]**South African Maritime Safety Authority established by section 2 of the South African Maritime Safety Authority Act, 1998 (Act No. 5 of 1998);";

(c) the substitution for the definition of "control stations" of the following definition:

"**"control stations"** means **[spaces]**a space in which radio, main navigating or central fire-recording equipment, or the emergency generator, **[are]**is located;";

(d) the substitution for the definition of "gross tonnage" of the following definition:

"**"gross tonnage"** in the case of a ship having dual tonnage, means the larger of the two gross tonnage figures**[,]**;";

(e) the substitution for the definition of "machinery space" of the following definition:

"**"machinery space"** means **[any]**a space used for propelling, auxiliary or refrigerating machinery, **[boilers, pumps, engines, workshops, generators]**a boiler, pump, engine, workshop generator, ventilation or air conditioning machinery, an oil filling **[stations and]**station or similar **[spaces and trunkways]**space or trunkway to such **[spaces]**a space;";

(f) the substitution for the definition of "settling tank" of the following definition:

"**"settling tank"** means an oil storage tank having a heating surface of not less than **[2 square feet]**60 centimetres per ton of oil capacity**[.]**;";

(g) the substitution for the definition of "standard fire test" of the following definition:

"**"standard fire test"** means a test in which a specimen of the material to be tested has a surface area of not less than **[50]**15 square **[feet]**meters and a

height of **[8 feet]**2,5 meters and is exposed in a test furnace to a series of time temperature relationships approximately as follows:

(a) at the end of the first 5 minutes-1,000º F. (538º C.);

(b) at the end of the first 10 minutes-1,300º F. (704º C.); and

(c) at the end of the first 30 minutes-1,550º F. (843º C.);";

(h) the substitution for the definition of "suitable" of the following definition:

"**"suitable"** in relation to materials, means approved by the Minister as suitable for the purpose for which it is used**[,]**;"; and

(i) the substitution for the definition of "tanker" of the following definition:

"**"tanker"** means a ship, other than a passenger ship, constructed or adapted for the carriage in bulk of liquid cargos of an inflammable nature; and".

Amendment of regulation 106 of the Regulations

112. Regulation 106 of the Regulations is hereby amended by the substation for subregulation (1) of the following subregulation:

"(1) Subject to the provisions of **[sub-regulation]**subregulation (2), this Part applies to–

(a) **[every]**a ship of 500 tons or over which is registered in the republic or which is, in terms of the Act, required to be so registered, and

(b) **[every]**a ship of 500 tons or over which is registered in a country other than the Republic, and which plies or is intended to ply on international voyages, not being a passenger ship, fishing boat, sealing boat, whaling boat, pleasure yacht or a ship which is not propelled by mechanical means.".

Substitution of regulation 107 of the Regulations

113. The following regulation is hereby substituted for regulation 107 of the Regulations:

"**107. Structural strength**

The structural strength of **[every]**a ship and the number and disposition of transverse watertight bulkheads, shall be adequate for the service for which the ship is intended.”.

Substitution of regulation 109 of the Regulations

114. The following regulation is hereby substituted for regulation 109 of the Regulations:

“**109. Watertight doors**

(1) In **[every]**a ship in which a watertight door is provided to maintain the watertight integrity of a bulkhead, every such watertight door shall be made of suitable material and shall be efficiently constructed for its intended duty.

(2) In **[every]**a ship to which this **[sub-regulation]**subregulation applies–

(a) **[every]**a watertight door of the sliding type, shall be capable of being operated by efficient hand operated gear both at the door itself and from an accessible position above the bulkhead deck; and

(b) the operating gear for operating from above the bulkhead deck any sliding watertight door fitted in the bulkhead of a machinery space, shall be situated outside the machinery space, unless such a position is inconsistent with the efficient arrangement of the necessary gearing.

(3) In **[every]**a ship to which this **[sub-regulation]**subregulation applies, where there is access from the lower part of the machinery space to a watertight shaft tunnel, the access opening shall be provided with a sliding watertight door which shall be capable of being operated locally on both sides of tie door.

(4) In **[every]**a ship to which this **[sub-regulation]**subregulation applies, means shall be provided at remote operating positions to indicate when a sliding door is closed.

(5) In **[every]**a ship to which this **[sub-regulation]**subregulation applies, a watertight **[doors]**door shall be capable of being operated when the ship is listed up to 15 degrees either way.”.

Substitution of regulation 110 of the Regulations

115. The following regulation is hereby substituted for regulation 110 of the Regulations:

"**110. Bilge pumping arrangements**

(1) **[Every]**A ship shall be provided with efficient bilge pumping plant and means for drainage so arranged that water entering any part of the hull, other than a space permanently appropriated for the carriage of fresh water, water ballast, oil fuel or liquid cargo and for which other efficient means of pumping or drainage are provided, can be pumped out through at least one suction pipe when the ship is on even keel or is listed not more than 5 degrees either way**[. Wing]**and wing suction shall be provided where necessary for this purpose.

(2) Efficient means shall be provided whereby water may easily flow to the suction pipes. Provided that the Minister may allow the means of pumping or drainage to be dispensed with in particular compartments of any ship or class of ships, if he is satisfied that the safety of the ship is not thereby impaired.".

Substitution of regulation 111 of the Regulations

116. The following regulation is hereby substituted for regulation 111 of the Regulations:

"**111. Electrical equipment and installations - general**

(1) In **[every]**a ship to which this regulation applies, 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.

(2) **[Every]**A ship to which this regulation applies, being a ship in which electric power is the only power for maintaining auxiliary services essential for the propulsion or safety of the ship, shall be provided with two or more generating sets of such power that the aforesaid services can be operated when any one of the sets is out of service.

(3) In **[every]**a ship to which this regulation applies, where there electrical load includes services essential for the propulsion or safety of the ship and the normal sea load is such that two or more generators are required to operate

in parallel, arrangements shall be made to trip automatically sufficient non-essential load when the total current exceeds the connected generator capacity.".

Substitution of regulation 112 of the Regulations

117. The following regulation is hereby substituted for regulation 112 of the Regulations:

"**112. Emergency source of electric power: ships of 5,000 tons or over**

(1) In **[every]**a ship to which this regulation applies being a ship of 5,000 tons or over, there shall be provided in a position above the uppermost continuous deck and outside the machinery casings, a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of fire or other casualty causing failure of the main electrical installation.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the emergency source of electric power required by that **[sub-regulation]**subregulation shall be capable of operating simultaneously for a period of at least 6 hours the following services**[–]**:

(a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulation, 1968;

(b) an emergency lighting system which shall be provided in the main machinery space, the space containing the ship's main electrical generating plant, on the navigating bridge and in the chartroom;

(c) the general alarm, if electrically operated;

(d) the ship's navigation lights, if solely electric; and

(e) the daylight signalling lamp, if it is operated by the ship's main source of electric power.

(3) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1)–

(a) the emergency source of electric power shall be either accumulator **[(storage)]**or storage batteries capable of complying with the requirements of **[sub-regulation]**subregulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110º F. (43º C.);

(b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel; and

(c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.".

Substitution of regulation 113 of the Regulations

118. The following regulation is hereby substituted for regulation 113 of the Regulations:

"**113. Emergency source of electric power: ships of 1,600 tons or over but under 5,000 tons**

(1) In **[every]**a ship to which this regulation applies being a ship of 1,500 tons or over but under 5,000 tons, there shall be provided in a position above the uppermost continuous deck or raised quarterdeck and outside machinery casings, a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of fire or other casualty causing failure of the main electrical installation.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the emergency source of electric power required by that subregulation shall be capable of operating simultaneously for a period of at least 3 hours the following services**[-]**:

(a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulation, 1968;

(b) the general alarm, if electrically operated**[.,]**; and

(c) the ship's navigation lights, if solely electric.

(3) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1)–

(a) the emergency source of electric power shall be either accumulator **[(storage)]**or storage batteries capable of complying with the requirements of **[sub-regulation]**subregulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110º F. (43º C.);

(b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel; and

(c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.".

Substitution of regulation 114 of the Regulations

119. The following regulation is hereby substituted for regulation 114 of the Regulations:

"**114. Emergency source of electric power: ships of under 1,600 tons**

(1) In **[every]**a ship to which this regulation applies being a ship of under 1,600 tons not having its main source of electric power situated above the uppermost continuous deck or raised quarter-deck and outside the machinery casings, there shall be provided in a position above the uppermost continuous deck or raised quarter deck and outside the machinery casings, a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of fire or other casualty causing failure, of the main electrical installation.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the emergency source of electric power required by that subregulation shall be capable of operating simultaneously for a period of at least 3 hours the following services**[–]**:

(a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulations, 1968;

(b) the general alarm, if electrically operated; and

(c) the ship's navigation lights, if solely electric.

(3) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1)–

(a) the emergency source of electric power shall be either accumulator **[(storage)]**or storage batteries capable of complying with the requirements of **[sub-regulation]**subregulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangement and the fuel provided for such machinery shall have a flash point of not less than 110º F. (43º C.);

(b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel**[,]**; and

(c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.".

Substitution of regulation 115 of the Regulations

120. The following regulation is hereby substituted for regulation 115 of the Regulations:

"**115. Electric and electro-hydraulic steering gear**

(1) **[Every]**A ship to which this regulation applies which is fitted with electric or electro-hydraulic steering gear, shall be provided with indicators which will show when the power units of such steering gear are running**[. These]** which indicators shall be situated in the machinery space, preferably in the control room if any, and on the navigating bridge.

(2) In **[every]**a ship to which this regulation applies being a ship of 5,000 tons or over, the following provisions shall apply**[. -]**:

(a) (i) electric and electro-hydraulic steering gear shall be served by two circuits fed from the main switchboard, one of which may pass through the emergency switchboard, if one is provided**[. Each]**;

(ii) each circuit shall have adequate capacity for supplying all the motors which are normally connected to it and which operate simultaneously, and if transfer arrangements are provided in the steering gear room to permit either circuit to supply any motor or combination of motors, the capacity of each circuit shall be adequate for the most severe load condition**[. The]**; and

(iv) the circuits shall be separated as widely as practicable throughout their length; and

(b) short circuit protection only shall be provided for the circuits and motors.

(3) (a) In **[every]**a ship to which this regulation applies being a ship of under 5,000 tons in which electric power is the sole source of power for both main and auxiliary steering gear, the arrangements shall comply with the requirements of **[sub-regulation]**subregulation (2) except that if

the auxiliary steering gear is powered by a motor primarily intended for other services, suitable overload protection may be fitted.

(b) Short circuit protection only shall be provided for motors and power circuits of electrically or electro-hydraulically operated main steering gear fitted in any ship of less than 5,000 tons.".

Substitution of regulation 116 of the Regulations

121. The following regulation is hereby substituted for regulation 116 of the Regulations:

"**116. Precautions against shock, fire and other hazards of electrical origin**

(1) In **[every]**a ship to which this regulation applies**[,]**–

(a) all electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner**[. Subject]**; and

(b) subject to the provisions of **[sub-regulation]**subregulation (2), where electrical equipment supplied as ships' equipment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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.

(2) In **[every]**a ship to which this regulation applies**[,]**–

(a) exposed metal parts of a portable electric **[lamps, tools and]**lamp, tool or similar apparatus, supplied as ships' equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of a double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided**[. When]**; and

(b) when an electric **[lamps, tools and]**lamp, tool or other apparatus **[are]**is used in a damp **[spaces]**space, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.

(3) In **[every]**a ship to which this regulation applies**[,]**–

(a) every main and emergency switchboard shall be so arranged as to give easy access to the back and front thereof without danger to any person**[. Every such]**;

(b) the switchboard referred to in paragraph (a) shall be suitably guarded, and a non-conducting mat or grating shall be provided at the back and the front where necessary**[. No]**; and

(c) exposed parts which may have a voltage between conductors or to earth exceeding 250 volts direct current or 55 volts alternating current, shall not be installed on the face of any switchboard or control panel.

(4) The hull return system of distribution shall not be used in any ship to which this regulation applies.

(5) In **[every]**a ship to which this regulation applies**[,]**–

(a) **[every]**an electric cable shall, at every position at which an electrical fault may cause a fire, be flame-retardant sheathed or armoured or otherwise equally effectively protected**[. All]**; and

(b) metal sheaths and metal armour of electrical cables in every such ship shall be electrically continuous and shall be earthed.

(6) In **[every]**a ship to which this regulation applies, lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in the surrounding material.

(7) In **[every]**a ship to which this regulation applies wiring shall be supported in such a manner as to avoid chafing and other injury.

(8) In **[every]**a ship to which this regulation applies, every separate electrical circuit shall be protected against short circuit.

(9) In **[every]**a ship to which this regulation applies**[,]**–

(a) each separate electrical circuit, other than a circuit which operates the ship's steering gear or any other circuit in respect of which the Minister grants an exemption, shall be protected against overload**[. There]**; and

(b) there shall be clearly and permanently or 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) In **[every]**a ship to which this regulation applies**[, all]**–

(a) accumulator **[(storage)]**or storage batteries shall be housed in boxes or compartments which are constructed to protect the batteries from

damage and are ventilated to **[minimize]**minimise the accumulation of explosive gas**[. Devices]**; and

(b) a device liable to arc shall not be installed in **[any]**a compartment assigned principally to accumulator batteries.

(11) (a) **[Every]**An electric space-heater forming part of the equipment of a ship to which this regulation applies, shall be fixed in position and shall be so constructed as to reduce the risk of fire to a minimum.

(b) **[No such]**The heater referred to in paragraph (a) 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.".

Substitution of regulation 117 of the Regulations

122. The following regulation is hereby substituted for regulation 117 of the Regulations:

"**117. Fire protection: ships of 4,000 tons or over**

(1) (a) In **[every]**a ship to which this regulation applies being a ship of 4,000 tons or over, where a bulkhead is required by this Part to be constructed of "B" Class panels, such panels shall be capable of preventing the passage of flame throughout a standard fire test of 30 minutes duration.

(b) **[Every]**A "B" Class panel shall be such that if either face thereof is exposed to a standard fire test of 30 minutes duration, the average temperature on the unexposed face of the panel will not increase at any time during the first 15 minutes of the test in the case of an incombustible panel or the duration of the test in the case of a combustible panel by more than 250º F. (139º C.) above the initial temperature on that face, nor shall the temperature at any one point thereon increase by more than 405º F. (225º C.) above the initial temperature.

(2) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the hull, including the superstructure, structural bulkheads, decks and deckhouses, shall be constructed of steel or of such other suitable materials as the Minister may permit in special cases, having regard to the risk of fire.

(3) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), **[the]**a corridor **[bulkheads]**bulkhead serving an accommodation **[spaces**

and]space or control **[stations]**station, shall be constructed of steel or of incombustible “B” Class panels, except that combustible “B” Class panels may be fitted–

(a) in any portion of a corridor bulkhead which abuts on spaces containing no significant fire load; and

(b) where a corridor is provided with two or more exits through doors leading directly to an open deck on the same level, in the end portions of the corridor bulkheads over a distance not exceeding **[20 feet]**6 meters measured from any such exit.

(4) In **[ever]**a ship referred to in **[sub-regulation]**subregulation (1), **[doorways and]**a doorway or similar **[openings]**opening in a corridor **[bulkheads]**bulkhead, shall be capable of being closed by a permanently attached **[doors]**door or by **[shutters]**a shutter.

(5) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the number of**[,]** ventilation openings in the corridor bulkheads shall be kept to a minimum**[. Such openings]**and shall, so far as is reasonably practicable, be provided only in or under doors and shall, wherever practicable, be in the lower part of **[the]**a door.

(6) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), interior stairways, ladders and crew lift trunks within accommodation spaces, shall be constructed of steel or other equivalent material.**[.]**

(7) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), the boundary bulkheads of any emergency generator room and the bulkheads separating a galley, paint-room, lamproom or boatswain’s store from an accommodation space, shall be constructed of steel or other equivalent material.

(8) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), a deck **[coverings]**covering within an accommodation **[spaces]**space **[and]**or control **[stations]**station on the deck forming the crown of a machinery **[and]**or cargo **[spaces]**space, shall be of a type which will not readily ignite.

(9) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), **[paints, varnishes and]**paint, varnish or other surface **[materials]**material having a nitrocellulose or other highly inflammable base, shall not be used in an

accommodation **[spaces,]**space, a machinery **[spaces and]**space or control **[stations]**station.

(10) In **[every]**a ship referred to in, **[sub-regulation]**subregulation (1), **[pipes]**a pipe intended to convey oil or other combustible liquids, shall be of a material acceptable to the Minister **[of]**or Authority having regard to the risk of fire.

(11) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), an overboard **[scuppers,]**scupper, a sanitary **[discharges]**discharge or other **[outlets]**outlet close to the waterline, shall not be of a material likely to fail in the event of fire and thereby give rise to a danger of flooding.

(12) In **[every]**a ship referred to in **[sub-regulation]**subregulation (1), cellulose nitrate-based film shall not be used in cinematograph installations.".

Substitution of regulation 118 of the Regulations

123. The following regulation is hereby substituted for regulation 118 of the Regulations:

"**118. Fire protection: general**

(1) In **[every]**a ship to which this regulation applies, the skylights to spaces containing main propulsion machinery or oil-fired boilers or auxiliary internal combustion type machinery of a total horsepower of 1,000 or over, shall be capable of being closed and, where practicable, opened from outside the space in the event of fire and, where **[they]**the skylights contain glass panels, such panels shall be of fire resisting construction fitted with wire reinforced glass and shall have external, permanently attached shutters of steel or other equivalent material.

(2) In **[every]**a ship to which this regulation applies**[, windows]**–

(a) a window shall not be fitted in an engine **[casings]**casing except where the **[Minister]**Authority is satisfied that **[they are]**the window is necessary and will not constitute a fire hazard[. Where such windows are]; and

(b) where the window referred to in paragraph (a) is fitted, **[they]**the window shall be of a non-opening type and shall be of a fire resisting construction fitted with wire reinforced glass and shall have external, permanently attached shutters of steel or other equivalent material.".

Substitution of regulation 119 of the Regulations

124. The following regulation is hereby substituted for regulation 119 of the Regulations:

"**119. Boilers and machinery: general**

(1) In **[every]**a ship, **[the]** machinery, **[boilers and]**a boiler or other pressure **[vessels]**vessel shall be of a design and construction adequate for the service for which **[they are]**it is intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board.

(2) **[Without prejudice to the generality of sub-regulation (1), means]**Means shall be provided in **[every]**a ship to which this **[sub-regulation]**subregulation applies which will prevent overpressure in any part of the machinery, 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 the **[Minister]**Authority may, having regard to the output or any other features of any boiler or unfired steam generator, permit only one safety valve to be fitted if he is satisfied that adequate protection against overpressure is provided.".

Substitution of regulation 120 of the Regulations

125. The following regulation is hereby substituted for regulation 120 of the Regulations:

"**120. Boilers and other pressure vessels**

(1) In **[every]**a ship, **[every]**a boiler or other pressure vessel and in 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 shall 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 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 be maintained in an efficient condition.

(2) In **[every]**a ship, provision shall be made which will facilitate the cleaning and inspection of every pressure vessel.".

Substitution of regulation 121 of the Regulations

126. The following regulation is hereby substituted for regulation 121 of the Regulations:

"**121. Machinery**

(1) In **[every]**a ship, 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 initial no power is available in the ship.

(2) In **[every]**a ship where risk from over-speeding of machinery exists, means shall be provided to ensure that the safe speed is not exceeded.

(3) In **[every]**a ship 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.".

Substitution of regulation 122 of the Regulations

127. The following regulation is hereby substituted for regulation 122 of the Regulations:

"**122. Means for going astern**

[Every]A ship shall have sufficient power for going astern to secure proper control of the ship in all normal circumstances.".

Substitution of regulation 123 of the Regulations

128. The following regulation is hereby substituted for regulation 123 of the Regulations:

"**123. Shafts**

In **[every]**a ship, **[every]**a shaft shall be so designed and constructed **[that it will]**to withstand the maximum working stresses **[i o]**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;

(b) the service for which it is intended; and

(c) the type of engines by which it is driven or of which it forms a part.".

Substitution of regulation 124 of the Regulations

129. The following regulation is hereby substituted for regulation 124 of the Regulations:

"**124. Boiler feed systems**

(1) In **[every]**a ship, **[every]**a boiler which provides **[services]**a service essential for the safety of the ship and which could be rendered dangerous by the failure of its feed water supply, 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]** and shall be provided which will prevent overpressure in any part of the systems.

(2) If, in **[any]**a ship to which this **[sub-regulation]**subregulation applies, 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.

(3) (a) **[Every]**A feed cheek valve, fitting, or pipe through which feed water passes from a pump to the boilers in any ship, 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]**The valve, fitting, or pipe referred to in paragraph (a), 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]**pipe referred to in paragraph (a) shall be adequately supported.".

Substitution of regulation 125 of the Regulations

130. The following regulation is hereby substituted for regulation 125 of the Regulations:

"**125. Steam pipe systems**

(1) In **[every]**a ship, 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 will be used.

(2) **[Without prejudice to the generality of sub-regulation (1), every]**A steam pipe or fitting in every ship shall before being put into service for the first time, be subjected to a test by hydraulic pressure to a pressure suitably in excess of the working pressure to be determined having regard to the requirements of **[sub-regulation]**subregulation (1) (a) and (b), and **[every]** such steam pipe or fitting shall be maintained in an efficient condition.

(3) In **[every]**a ship, a steam **[pipes]**pipe shall be adequately supported.

(4) In **[every]**a ship, provision shall be made which will avoid excessive stress likely to lead to the failure of any steam pipe **[pr]**or fitting, whether by reason of variation in temperature, vibration or otherwise.

(5) In **[every]**a ship, 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 conditions likely to arise in the course of the intended service of the ship.

(6) If, in **[any]**a ship, a steam pipe may receive steam from any source at a higher pressure than it can withstand with an adequate factor of safety, an efficient reducing valve, relief valve and pressure gauge shall be fitted to such pipe.".

Substitution of regulation 126 of the Regulations

131. The following regulation is hereby substituted for regulation 126 of the Regulations:

"**126. Air pressure systems**

(1) In **[every]**a ship being a 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 an efficient air system which shall include a sufficient number of air compressors and compressed air storage vessels to ensure that an adequate supply of compressed air is available under all conditions likely to be met in service.

(2) (a) In **[every]**a ship, the parts of the compressed air system, other than a pneumatic control system, which are subjected to air pressure, shall be designed and constructed to withstand, with an adequate factor of safety, the maximum working stresses to which they may be subjected and every air pressure pipe or fitting in such system shall, before being put into service for the first time be subjected to a hydraulic test to twice its maximum working pressure and be maintained in an efficient condition.

(b) Means shall be provided in every ship to prevent over-pressure in any part of the compressed air system and, where water jackets or casings of air compressors and coolers might be subjected to dangerous over-pressure due to leakage into them from air pressure parts, suitable pressure relief arrangements shall be provided.

(c) In **[every]**a ship to which this paragraph applies, provision shall be made to reduce to a minimum entry of oil into the air pressure system and to drain the system**[. Provision]** and provision shall also be made to protect the system from the effects of internal explosion.

(d) In **[every]**a ship to which this paragraph applies, all discharge pipes from starting air compressors shall lead directly to the starting air receivers, and all starting air pipes from the air receivers to main or auxiliary engines shall be entirely separate from the compressor discharge pipe system.".

Substitution of regulation 127 of the Regulations

132. The following regulation is hereby substituted for regulation 127 of the Regulations:

"**127. Cooling water system**
In **[every]**a ship in which cooling water services are essential for the running of the propelling machinery, there there shall be at least two means of operating such water services.".

Substitution of regulation 128 of the Regulations

133. The following regulation is hereby substituted for regulation 128 of the Regulations:

"**128. Lubricating and other oil systems**
In **[every]**a ship in which oil for lubrication, cooling or operation of the main propelling machinery and its ancillary services is circulated under pressure, provision shall be made so that in the event of the failure of a pump, an alternative means of circulating such oil is available.".

Substitution of regulation 129 of the Regulations

134. The following regulation is hereby substituted for regulation 129 of the Regulations:

"**129. Oil and gaseous fuel installations**
(1) In **[every]**a ship, oil fuel provided for use in boilers or machinery, shall have a flash point of not less than 150ºF. (65.5ºC.) (closed test): Provided that the **[Minister]**Authority may, subject to such conditions as he may impose-
(a) permit any ship to use oil fuel having a flash point of not less than 130º F. (54ºC.) in boilers, or oil fuel having a flash point of not less than 110º F. (43ºC.) in internal combustion type machinery; and
(b) permit the use of gaseous fuel in a ship designed for the carriage of liquefied gas if such fuel results solely from evaporation of cargo carried**[. Nothing]**: Provided that nothing in this **[sub-regulation]**subregulation shall apply to fuel provided for machinery permitted by regulation 112 (3) (a), 113 (3) (a) or 114 (3) (a).

(2) In **[every]**a ship being a ship in which oil or gaseous fuel is used, the arrangements for the storage, distribution and **[utilization]**utilisation of the fuel shall be such that, having regard to the hazards of fire and explosion which the use of such fuel may entail, the safety of the ship and of persons on board is preserved.

(3) In **[every]**a ship being a ship in which oil or gaseous fuel is used in engines or boilers for the propulsion or safety of the ship, the arrangements for the storage, distribution and **[utilization]**utilisation of the fuel, shall be such that the effective use of the engines can be maintained under all conditions likely to be met by the ship in service.

(4) In **[every]**a ship, **[every]**an oil fuel installation which serves a boiler supplying steam for the propulsion of the ship, shall include not less than two oil fuel units.".

Substitution of regulation 130 of the Regulations

135. The following regulation is hereby substituted for regulation 130 of the Regulations:

"**130. Communication between bridge and engine room**
[Every]A ship to which this regulation applies, shall be provided with two means of communicating orders from the navigating bridge to the engine room control platform**[. One]** where one of the means shall be an engine room telegraph.".

Substitution of regulation 131 of the Regulations

136. The following regulation is hereby substituted for regulation 131 of the Regulations:

"**131. Steering gear**
(1) **[Every]**A ship shall be provided with efficient main and auxiliary steering gear: Provided that, if duplicate steering gear power units and their connections are fitted and each power unit complies with the requirements of **[sub-regulation]**subregulation (2) (c) and the duplicate units and connections operating operating together comply with the requirements of subregulation (2) (b), no auxiliary steering gear shall be required.

(2) In **[every]**A ship to which this **[sub-regulation]**subregulation applies–

(a) (i) the main steering gear, including the rudder and associated fittings, shall be of adequate strength and sufficient to steer the ship at maximum service speed**[. The]**; and

(ii) the main steering gear and rudder stock shall be so designed that they are not damaged at maximum astern speed;

(b) (i) the main steering gear shall be capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the ship running ahead at maximum service speed**[. The]**; and

(ii) the rudder shall be capable of being put over from 35 degrees on either side to 30 degrees on the other side in 28 seconds at maximum service speed; and

(c) the auxiliary steering gear shall be capable of being brought rapidly into action and shall be of adequate strength and of sufficient power to enable the ship to be steered at navigable speed, and in any ship in which a rudder stock of over **[14 inches]**35 centimetres diameter in way of the tiller is required to comply with the requirements of paragraph (a), the auxiliary steering gear shall be operated by power.

(3) In **[every]**a ship to which this **[sub-regulation]**subregulation applies which is fitted with power operated steering gear, the position of the rudder shall be indicated at the principal steering station.".

Substitution of regulation 132 of the Regulations

137. The following regulation is hereby substituted for regulation 132 of the Regulations:

"**132. Spare gear**
[Every]A ship shall be provided with sufficient spare gear having regard to the intended service of the ship.".

Substitution of regulation 133 of the Regulations

138. The following regulation is hereby substituted for regulation 133 of the Regulations:

"**133. Anchors and chain cables**

[Every]A ship shall be provided with such anchors and chain cables as are sufficient in number, weight and strength, having regard to the size and intended service of the ship.".

Substitution of regulation 134 of the Regulations

139. The following regulation is hereby substituted for regulation 134 of the Regulations:

"**134. Means of escape**

(1) In **[every]**a ship, stairways and ladderways shall be arranged so as to provide ready means of escape to the lifeboat embarkation deck from all crew spaces, passenger spaces and other spaces in which the crew are normally employed.

(2) (a) In **[every]**a ship to which this **[sub-regulation]**subregulation applies, there shall be provided from each engine room, shaft tunnel and boiler room two means of escape as widely separated as practicable, one of which may be a watertight door if such a door is available as a means of escape.

(b) Where **[no such]**the watertight door referred to in paragraph (a) is available, the two means of escape shall consist of two sets of steel ladders leading to separate doors in the casing or elsewhere from which there is access to the lifeboat or liferaft embarkation deck or decks.".

Substitution of regulation 135 of the Regulations

140. The following regulation is hereby substituted for regulation 135 of the Regulations:

"**135. Means for stopping machinery, shutting off fuel suction pipes and closing of openings**

(1) (a) In **[every]**a ship, there shall be provided means for stopping ventilating fans serving machinery, accommodation and cargo spaces.

(b) For machinery and cargo spaces, there shall be provided means for closing all skylights, doorways, ventilators, annular spaces around funnels and other openings to such spaces**[. Such]** which means shall

be capable of being operated from positions outside the said spaces which would not be made inaccessible by a fire within such spaces.

(2) (a) In **[every]**a ship, machinery driving forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps and other similar fuel pumps, shall be fitted with remote controls situated outside the spaces in which such machinery or pumps are situated.

(b) **[Such]**The controls referred to in paragraph (a) shall be capable of stopping such machinery or pumps in the event of fire in the said spaces.

(3) (a) In **[every]**a ship, **[every]**a pipe connected to any oil fuel storage, sealing, or daily service tank, not being a double bottom tank, which if damaged would permit discharge of the contents so as to cause a fire hazard, shall be fitted with a valve or cock which shall be secured to the tank to which it is connected and be capable of being closed from a readily accessible position outside the space in which the tank is situated: Provided that in the case of any inlet pipe to such a tank, a nonreturn valve similarly secured to the tank may be substituted.

(b) In the case of an oil fuel deep tank traversed by any shaft or pipe tunnel, in addition to the valve which shall be fitted on the tank, a valve or valves may be fitted on the pipe line or lines outside the tunnel or tunnels to enable control to be exercised in the event of fire.".

Substitution of regulation 136 of the Regulations

141. The following regulation is hereby substituted for regulation 136 of the Regulations:

"**CHAPTER III - SURVEY PRIOR TO THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE, AND APPLICATION FOR THE ISSUE OF THE CERTIFICATE**

136. Application for survey prior to the issue of a cargo ship safety construction certificate

[Every]An application for the survey of a ship prior to the issue of a cargo ship safety construction certificate shall be made to the Authority or proper officer and shall be accompanied by such information relating to the ship as the Authority or proper officer may require.".

Amendment of regulation 137 of the Regulations

142. Regulation 137 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 137 of the following heading:

"**137. Survey of a ship prior to the issue of a cargo [shiip]ship safety construction certificate**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) The Authority or proper officer, as the case may be, shall upon receipt of **[the]**an application for survey, cause the ship to be surveyed by a qualified surveyor."; and

(c) the substitution for subregulation (2) of the following subregulation:

"(2) The surveyor referred to in subregulation (1) shall survey the ship and shall **[satisfy himself]**be satisfied that the arrangements, materials and scantlings of the structure, boilers and other pressure vessels and their **[appurtenances (other]**appurtenances, other than domestic boilers having a heating surface of **[50 square feet]**15 square meters or less and a working pressure of **[50 lb. per square inch]**22 kg per square centimetre or less and other domestic pressure vessels having such a working **[pressure)]**pressure, main and auxiliary machinery, electrical installations and other equipment comply with the requirements of Chapter II and are in all respects satisfactory for the service for which the ship is intended, having regard to the period for which the cargo ship safety construction certificate in respect oil the ship is to be issued.".

Substitution of regulation 138 of the Regulations

143. The following regulation is hereby substituted for regulation 138 of the Regulations:

"**138. Application for the issue of a cargo ship safety construction certificate**

Application for the issue of a cargo ship safety construction certificate shall be made to the proper officer at the port of registry of the ship concerned or to the Authority.".

Substitution of regulation 139 of the Regulations

144. The following regulation is hereby substituted for regulation 139 of the Regulations:

"**CHAPTER IV - INTERMEDIATE SURVEYS**

139. General

(1) The owner of **[every]**a ship in respect of which a cargo ship safety construction certificate has been issued shall, so long as the certificate remains in force, cause the ship to be surveyed in the manner and at the intervals specified in **[sub-regulation]**subregulation (3) for the purpose of seeing whether the certificate should remain in force.

(2) (a) **[Every]**An application for the survey of a ship in accordance with this regulation shall be made to the Authority who issued the cargo ship safety construction certificate in respect of the ship concerned or to the proper officer.

(b) Upon receipt of the application, the Authority or proper officer as the case may be, shall cause the ship to be surveyed by a qualified surveyor.

(3) The **[surveys]**survey to be carried out under **[sub-regulation]**subregulation (1) shall be as follows unless the **[Minister]**Authority decides otherwise**[—]**:

(a) the hull and the ship's side fastenings shall be examined in dry dock every two years and the ship side fittings shall be thoroughly examined every four years;

(b) **[all]** boilers, including exhaust gas or steam heated steam generators, economizers, and domestic **[boilers (other]**boilers, other than domestic boilers having a heating surface of **[50 square feet]** or less and a working pressure of **[50 lb. per square inch]** or **[less)]**less, shall be examined internally and externally every two years until they are eight years old and thereafter annually;

(c) screw shafts and tube shafts fitted with continuous liner; or running in oil shall be withdrawn and surveyed every three years, and other screw and tube shafts shall be withdrawn and surveyed every two year; and

(d) pressure **[vessels (other]**vessels, other than domestic pressure vessels having a working pressure of **[50 lb. per square inch]** or **[less)]**less, shall be examined internally every five years: Provided that small vessels which are inaccessible may be tested to a pressure equal to twice the working pressure in lieu of internal examination.

(4) The surveyor referred to in subregulation (2) shall survey the ship with a view to **[satisfying himself]**being satisfied—

(a) that such of the parts of the ship and its equipment specified in sub-regulation (3) as are the subject of the application for survey remain efficient; and

(b) so far as practicable, that no material alterations have been made in the hull, machinery or equipment of the ship to which the cargo ship safety construction certificate relates without the approval of the Minister or Authority.".

Substitution of regulation 140 of the Regulations

145. The following regulation is hereby substituted for regulation 140 of the Regulations:

"**140. Additional surveys**

Notwithstanding the provisions of regulation 139, the Minister or Authority may require **[any]**a ship to undergo such additional surveys as he may deem necessary.".

Substitution of regulation 141 of the Regulations

146. The following regulation is hereby substituted for regulation 141 of the Regulations:

"**CHAPTER V-EQUIVALENTS AND EXEMPTIONS**

141. Equivalents

Where **[his]**this Part requires that the hull or machinery of a ship shall be constructed in a particular manner, or that particular equipment shall be provided, or that particular provision shall be made, the **[Minister]**Authority may allow 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]**the Authority

is satisfied that such other construction, equipment or provision is at least as effective as that required by this Part.".

Substitution of regulation 142 of the Regulations

147. The following regulation is hereby substituted for regulation 142 of the Regulations:

"**142. Exemption in respect of precautions against shock, fire and other hazards of electrical origin**

The **[Minister]**Authority may exempt any ship, other than a tanker, from the requirements of regulation 116 (4).".

Substitution of regulation 143 of the Regulations

148. The following regulation is hereby substituted for regulation 143 of the Regulations:

"**143. Exemption in respect of means of escape**

The **[Minister]**Authority may exempt any ship of less than 2,000 tons from the requirements of regulation 134 (2).".

Substitution of regulation 144 of the Regulations

149. The following regulation is hereby substituted for regulation 144 of the Regulations:

"**144. General exemption**

The **[Minister]**Authority may exempt any ship which is not normally engaged on international voyages but which in exceptional circumstances, is required to undertake a single international voyage, from any of the requirements of this Part on condition that it complies with safety requirements which are adequate in the opinion of the **[Minister]**Authority for the voyage which is to be undertaken by the ship.".

Amendment of Part III of the Regulations

150. Part III is hereby amended by the substitution in the Arrangement of Regulations (table of contents) of the following table:

"**PART III**

(Boats.)

CHAPTER I - GENERAL

145. Interpretation.
146. Application of Part III.
147. Structural strength.

CHAPTER II - CONSTRUCTION OF BOATS OTHER THAN SKI AND SURF BOATS AND DINGHIES, AND GENERAL SURVEYS

148. Application of Chapter II.
149. Submission and approval of plans.
150. Inspection and tests during construction.
151. Survey of new construction.
152. Hydraulic testing of boilers**[, etc.]**.
153. Safety valves.
154. Feed pumps.
155. Main engines.
156. Bilge pumping arrangements.
157. Fuel tanks.
158. Underwater fittings.
159. Galleys.
160. Refrigerating systems.
161. Bulkheads.
162. Hatches.
163. Doors, sills, side scuttles and escape hatches.
164. Bulwarks.
165. Ventilation.
166. Stern bearings.
167. Testing of watertight compartments.
168. Anchors and cables.
169. Steering gear.
170 General electrical precautions.

CHAPTER III - PERIODIC SURVEYS: BOATS OTHER THAN SKI BOATS, SURF BOATS AND DINGHIES

171. Application of Chapter III.
172. General.
173. Boilers which permit of a full internal examination.
174. Boilers which do not permit of a full internal examination.
175. Steam pipes.
176. Steam propulsion engines and auxiliaries.
177. Main and auxiliary machinery of a boat not exceeding **[80 feet]**24 meters in length
178. Main and auxiliary machinery of a boat exceeding **[80 feet]**24 meters in length.
179. Air receivers.
180. Electrical equipment.
181. Steel hulls - dry docking.
182. Wooden hulls - dry docking.
183. Reinforced plastic hulls - dry docking.
184. Propeller shafts.
185. Sea connections.
186. Rudders.
187. Anchors, cables and steering chains.
188. Steering gear and emergency arrangements.
189. Alterations to hull.

CHAPTER IV - SKI BOATS, SURF BOATS AND DINGHIES

190.-194 …….
[Deleted by GN R1023/86]

CHAPTER V - ADDITIONAL SURVEYS, EQUIVALENTS AND EXEMPTIONS

195. Additional surveys.
196. Equivalents.
197. Exemption of boats constructed before a certain date.
198. General exemption.
Annex. 1: Construction of Passenger Ships: Plans and particulars.
Annex. 2 : Calculation of maximum length of watertight compartments.
Annex. 3 : Stability in damaged condition.
Annex. 4: Construction of watertight bulkheads, etc.
Annex. 5 Automatic sprinkler, fire alarm and fire detection system.
Annex. 6 Construction of boats: Plans and particulars.
Annex. 7 Construction of boats: Wood watertight bulkheads.
Annex. 8 Construction of boats: Hatches.
Annex. 9 Steering chains and anchor chains of boats.”.

Amendment of regulation 145 of the Regulations

151. Regulation 145 of the Regulations is hereby amended by—

(a) the substitution for the introductory paragraph of regulation 145 of the following paragraph:

"In this Part the expression "the Act" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951), and unless the context otherwise indicates, any expression used in this **[Par]**Part: to which a meaning has been assigned in the Act, bears the meaning so assigned, and—"; and

(b) the substitution for the definition of "sister boat" of the following definition:

"**"sister boat"** means a boat exactly similar in design to one already dealt with under this Part; and".

Substitution of regulation 146 of the Regulations

152. The following regulation is hereby substituted for regulation 146 of the Regulations:

"**146. Application of Part III**

(1) This **[part shall apply]**Part applies to **[every]**a boat of 25 or more gross tons.

(2) This Part does not apply to—

(a) commercial vessels 25 Gross Tonnes;

(b) pleasure vessels of 100 Gross Tonnes; and

(c) Fishing vessels.".

Substitution of regulation 147 of the Regulations

153. The following regulation is hereby substituted for regulation 147 of the Regulations:

"**147. Structural strength**

The structural strength of **[every]**a boat shall be sufficient for the service for which the boat is intended.”.

Substitution of regulation 148 of the Regulations

154. The following regulation is hereby substituted for regulation 148 of the Regulations:

“**CHAPTER II -CONSTRUCTION OF BOATS, OTHER THAN SKI AND SURF BOATS AND DINGHIES, AND GENERAL SURVEYS**

148. Application of Chapter II
This Chapter applies to **[every]**a boat other than a ski or surf boat or dinghy, and a “Chapter II boat” means a boat to which this Chapter applies.”.

Substitution of regulation 149 of the Regulations

155. The following regulation is hereby substituted for regulation 149 of the Regulations:

“**149. Submission and approval of plans**
(1) Subject to the provisions of **[sub-regulation]**subregulation (2), before the construction of **[any]**a Chapter II boat of **[30 feet]**9 meters or over in length is commenced, or at an early stage thereafter, the builder or owner thereof shall submit in duplicate to the proper officer the plans and particulars set forth in Annex 6 for approval by the **[Secretary]**Authority.

(2) In the case of a Chapter II boat which is a sister boat, the builder or owner shall furnish to the proper officer particulars of the specification and plans previously approved by the **[Secretary]**Authority.

(3) Any subsequent modifications or additions to the scantlings, arrangements or equipment shown on approved plans shall be submitted to the proper officer.

(4) The **[Secretary]**Authority may, **[in his discretion,]** call for the submission of additional or more detailed plans or particulars, and may also waive the requirement that certain of these plans be submitted.

(5) In the case of a Chapter II boat of under **[30 feet]**9meters in length, the proper officer may request the builder or owner **[them of]**thereof to submit to **[him]**the proper officer such plans and specifications as **[he]**the proper officer may specify, and upon such request being made, the said builder or owner shall comply therewith.".

Substitution of regulation 150 of the Regulations

156. The following regulation is hereby substituted for regulation 150 of the Regulations:

"**150. Inspection and tests duping construction**
During the construction of a Chapter II boat, inspections and tests shall be conducted by **[the]**a surveyor".

Substitution of regulation 151 of the Regulations

157. The following regulation is hereby substituted for regulation 151 of the Regulations:

"**151. Survey of new construction**
(1) **[The]**A builder or owner of a Chapter II boat of **[30 feet]**9 meters or over in length, shall notify the surveyor at least one week in advance of—
(a) the commencement of framing;
(b) the commencement of planking, plating or laminating;
(c) the completion of the fitting of **[all]** underwater fittings, rudder, stern tube, shaft and propeller;
(d) the launching; and
(e) the dock and sea trials.

(2) (a) Dock and sea trials shall be carried out in the presence of **[the]**a surveyor, at which times the pumping arrangement, steering gear and main and auxiliary machinery shall be tested to the satisfaction of the surveyor.
(b) Any such further tests shall be made as the surveyor considers necessary to **[satisfy himself]**the satisfaction of the surveyor that the boat is safe and suitable for the purpose for which it is intended.".

Amendment of regulation 152 of the Regulations

158. Regulation 152 of the Regulations is hereby amended by—

(a) the substitution for the heading of regulation 152 of the following heading:

"**152. Hydraulic testing of boilers[, etc.]**";

(b) the substitution for subregulation (1) of the following subregulation:

"(1) **[The]**A surveyor shall be satisfied by such examination and calculation as may be necessary that all pressure parts are capable of withstanding the working pressures to which they may be subjected, and **[he]** shall ensure that all hydraulic testing is satisfactorily carried out.";

(c) the substitution for subregulation (2) of the following subregulation:

"(2) **[Boilers]**A boiler shall be hydraulically tested in accordance with the following pressures:

(a) For a new **[boilers]**boiler-
test pressure = 1½ x W.P. + **[50 lb. per square inch]**22 kg. per square centimetre for W.P.s in excess of **[100 lb. per square inch]**45 kg. per square centimetre and = 2 X W.P. for W.P.s of **[100 lb. per square inch]**45 kg. per square centimetre and less.

(b) for **[boilers]**a boiler which **[are]**is not new –
test pressure = 1½ x W.P.";

(d) the substitution for subregulation (3) of the following subregulation:

"(3) When **[the]**a survey of a new boiler is completed, it shall, in a position which will be clearly visible at all times, be stamped as follows:

STAMP OF TESTING AUTHORITY
W.P . …….
Tested to ……..**[lb.]**kg.
W.P ……..**[lb.]**kg.
Date . …….
Surveyor's initials ……"; and

(e) the substitution for subregulation (4) of the following subregulation:

"(4) Pressure parts, other than boilers, when new shall be hydraulically tested in accordance with the following pressures:

Boiler mountings.

Feed check valves ... ... 2½ x W.P.

Other mountings ... ... 2 x W.P.

Steam pipes ... ... 2 x W.P.

Feed pipes ... ... 2½ x W.P.

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Feed heaters ... ... 2½ x W.P. (bodies, tubes or coils).

[Oil fuel pipes, heaters, coils or tubes: 400 lb. per square inch]An oil pipe, heater, coil or tube: 181 kg. per square centimetre or twice the maximum working pressure to which they are subjected, whichever is greater.

Evaporator bodies: Twice the maximum working pressure of the evaporator.

Evaporator coils or tubes: Twice the maximum working pressure to which they may be subjected.

Air receivers : As for boilers.".

Amendment of regulation 153 of the Regulations

159. Regulation 153 of the Regulations is hereby amended by the substitution for subregulation (1) of the following subregulation:

"(1) **[Every]**A boiler shall be provided with at least two safety valves.".

Substitution of regulation 154 of the Regulations

160. The following regulation is hereby substituted for regulation 154 of the Regulations:

"**154. Feed pumps**

(1) (a) **[Every]**A Chapter II boat propelled by steam shall be provided with not less than two entirely separate power feed pumps.

(b) One of **[these]**the feed pumps referred to in paragraph (a) may be operated from the main engines, and the other shall be an independent power pump.".

Amendment of regulation 155 of the Regulations

161. Regulation 155 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) (a) The **[man]**main engine, shafting and propeller shall be of proved commercial marine design and quality and of a power suitable for the purpose for which the Chapter II boat is designed.

(b) The main engine shall be installed to the satisfaction of **[the]**a surveyor.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) In the case of a Chapter II boat propelled by an engine depending on compressed air for starting, **[the]**a surveyor shall be satisfied by such examination and calculation as may be necessary that—

(a) air receivers and other pressure vessels are capable of withstanding the pressure assigned to them;

(b) the capacity of such air receivers is sufficient to provide the main engine with 12 consecutive starts if it is a reversible engine or six consecutive starts if it is a non-reversible engine, without replenishing the air in the receivers.**[,]**";

(c) the substitution for subregulation (5) of the following subregulation:

"(5) Where main engines depend upon means other than those mentioned in **[sub-regulations]**subregulations (2), (3) and (4) for starting, **[the]**a surveyor shall be satisfied that such means are ample for all circumstances.";

(d) the substitution for subregulation (7) of the following subregulation:

"(7) (a) The main and auxiliary engines, other than steam engines, of a Chapter II boat shall be fitted with suitable silencers to the satisfaction of the surveyor.

(b) The silencers and exhaust pipes shall be efficiently water-cooled, lagged or installed in such a manner that they will create no fire risk, and they shall be so arranged that there is no danger of water entering the engines or of exhaust fumes or water passing back into the boat."; and

(e) the substitution for subregulation (8) of the following subregulation:

"(8) (a) Every possible precaution shall be taken to avoid fuel and lubricating oil running into the bilges.

(b) Metal or lead-lined trays with proper means of drainage shall be provided under fuel tanks and, where possible, under engines.".

Amendment of regulation 156 of the Regulations

162. Regulation 156 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) **[Every]**A Chapter II boat shall be fitted with bilge pumps and piping in accordance with the following table:

Length of Boat in **[Feet.]**Meters.		Minimum Number of Pumps (c)	Minimum Capacity of Pumps in **[Gallons]**Liters per Minute (d)	Minimum Internal Diameter of Bilge Main and Direct Bilge Piping (e)	Minimum Internal Diameter of Bilge Branch, Piping (f)
Boats Designed for Catching Pilchards, Maasbankers and Mackerel. (a)	Other Boats. (b)				
—	**[30]**9 and under	1 power driven or hand operated	**[15]**56	**[2"]**5	**[1½]**3.81
[30]9 and under	Over **[30]**9 to **[65]**19	2 (1 power driven + 1 power driven or hand operated)	**[30]**113 total	**[2"]**5	**[1½]**3.81
Over **[30]**9 to **[65]**19	Over **[65]**19 to **[80]**24	2 (1 power driven + 1 power driven or hand operated)	**[60]**227 total	**[2"]**5	**[2"]**5
Over **[65]**19 to **[80]**24	Over **[80]**24 to **[100]**30	2 power driven (1 may be driven by main engine)	**[100]**378 total	**[2"]**5	**[2"]**5

Over **[80]**24 to **[100]**30	Over **[100]**30 to **[150]**45	2 power driven (1 may be driven by main engine)	**[170]**643 total	**[2½]**6.35	**[2"]**5
Over **[100]**30	Over **[150]**45	2 power driven (1 may be driven by main engine)	**[220]**832 total	**[3"]**7.62	**[2½]**6.35

";

(b) the substitution for subregulation (5) of the following subregulation:

"(5) Subject to the provisions of **[sub-regulation]**subregulation (8), bilge suctions, piping and means for drainage shall be so arranged that any water which may enter a main compartment can be pumped out through at least one bilge suction situated in such compartment, and all compartments within each main division shall be so arranged to drain to that bilge suction, when the boat is on an even keel and is either upright or has a list of not more than 5 degrees.";

(c) the substitution for subregulation (6) of the following subregulation:

"(6) (a) **[Every]**An independent power pump shall have a direct suction from the space in which it is situated, provided that not more than two direct suctions shall be required in any one space.

(b) **[Every such]**The suction referred to in paragraph (a) shall be of a diameter not less than that of the Chapter II boat's main bilge pipe.

(c) The direct suctions in the boat's machinery space shall be so arranged that water may be pumped from each side of the space through direct suction to independent bilge pumps.";

(d) the substitution for subregulation (8) of the following subregulation:

"(8) In a Chapter II boat exceeding **[80 feet]**24 meters in length, the following compartments, if not used for carrying water ballast, may be provided with bilge drainage arrangements as follows: forward of—

(a) in the case of compartments situated the collision bulkhead, with a manual pump**[.,]**;

(b) in the case of compartments situated forward of the collision bulkhead on a boat which has a watertight bulkhead between the collision and

machinery space bulkheads, with a manual pump or with a drain cock secured to the collision bulkhead operated from above the main deck;

(c) in the case of watertight compartments which overhang the thrust shaft recess, with a manual pump or with a self-closing drain cock operated from the engine-room; and

(d) in the case of compartments situated aft of the after peak bulkhead, with a manual pump or with a self-closing drain cock operated from the engine room or from above the main deck.";

(e) the substitution for subregulation (9) of the following subregulation:

"(9) (a) Manual pumps provided in accordance with subregulation (8), shall have a capacity of at least **[15 gallons]**56 litres per minute and shall be fitted with suction piping having an internal diameter of not less than **[2 inches. Such]**5 centimetres.

(b) The manual pumps referred to in paragraph (a) shall be capable of being operated from a position above the bulkhead deck.";

(f) the substitution for subregulation (11) of the following subregulation:

"(11) Drain cocks provided in accordance with subregulation (8), shall have an internal diameter of not less than **[1½ inches]**3.81 centimetres and shall be accessible at all times.";

(g) the substitution for subregulation (16) of the following subregulation:

"(16) (a) Where holds are provided with cement filling, the cement level shall be to the top of the floors and a well or dill of not less than **[4 cubic feet]**0.11 cubic meters capacity shall be situated at the after end of the hold.

(b) A suitable strainer shall be placed over the well and the bilge suction shall be fitted with a suitable strainer, the area of the openings in which shall be at least three times the cross-sectional area of the bilge suction pipe.";

(h) the substitution for subregulation (18) of the following subregulation:

"(18) **[All]**A bilge discharge **[pipes]**pipe shall be fitted with valves or cocks attached to the hull in the manner prescribed in regulation 158 or by other

equally efficient means approved by the **[Secretary]**Authority after full particulars have been submitted to him.";

(i) the substitution for subregulation (19) of the following subregulation:

"(19) (a) Bilge piping shall be of seamless Schedule 40 steel pipe or other material considered by the surveyor to be suitable for the purpose, but short lengths of rubber or plastic hose, clearly visible at all times, may be fitted where deemed necessary by the surveyor to reduce the effects of vibration**[; any hose so]**.

(b) Bilge piping shall be joined by either welding or flanges.";

(j) the substitution for subregulation (20) of the following subregulation:

"(20) (a) In a coal-fired Chapter II boat, a length of flexible suction hose, with suitable screwed connection to the machinery space bilge line, shall be supplied, in order that the engine and boiler space bilges may be pumped in the event of the suction strainer becoming choked.

(b) The connection on the bilge line referred to in paragraph (a) shall be fitted with a jointed metal cap."; and

(k) the substitution for subregulation (21) of the following subregulation:

"(21) **[Every]**A Chapter II boat in which the machinery space is not continuously manned and in which the bilges cannot be monitored from the conning position shall be fitted with a bilge high level alarm; any such alarm shall be audible and visible in the machinery space and at the conning position.".

Amendment of regulation 157 of the Regulations

163. Regulation 157 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) In a Chapter II boat, a fuel tank which is separate from the hull shall **[comply with the following requirements:]**—

(a) **[it shall]** be constructed of steel or other material which, in the opinion of the surveyor, is suitable for the purpose**[.]**;

(b) **[If]**if constructed of steel, the minimum thickness shall be as follows:

Capacity of Tank in **[Gallons]**Litres	Minimum Thickness in **[Inches]**Centimetres
Over **[25]**94 but not over **[300]**1135	**[1/8"]**0.3175
Over **[300]**1135 but not over **[1000]**3785	**[3/16"]**4.7625
Over **[1000]**3785	**[¼"]**0.635

(c) Where the capacity of the fuel tank is not over **[25 gallons]**94 litres, the material may be less than **[1/8- inch]**0.3175 centimetres in thickness: Provided that if such a tank is to be used for petrol and is of material less than **[1/8- inch]**0.3175 centimetres in thickness and is not corrosion-resistant, it shall be galvanized inside and outside by the hot dipped process after construction is completed.

(d) Tanks of capacity in excess is **[25 gallons]**94 litres shall be fitted with stiffeners as follows:

Thickness of Tank Plating in **[Inches.]**Centimeters.	Maximum Unsupported Flat Surface Area in Square **[Feet.]**Meters
[1/8"]0.3175	**[3]**0.9144
[3/16"]4.7625	**[6]**1.8
[¼"]0.635	**[9]**2.7
[5/16"]7,9375 mm	**[12]**3.6576

For other thicknesses of plating, the unsupported flat surface allowed shall be obtained by interpolation.

(e) In the, case of fuel tanks constructed of materials other than steel, the scantlings shall be such as to provide strength equivalent to that of steel.

(f) If the surveyor considers it necessary, baffle plates shall be fitted inside tanks.

(g) A fuel tank having a capacity of more than **[300 gallons]**1135 but not more than **[1,000 gallons]**3785, shall be fitted with a suitable door for purposes of cleaning. For tanks having a capacity of more than **[1,000 gallons]**3785, a manhole door shall be fitted.

(h) Metal tank seams shall be welded, brazed or double riveted, but soldered seams may be used for a tank having a capacity of not more

than **[25 gallons]**94 litres if the solder has a melting point of not less than **[800º F.]**426º C..

(i) (i) **[All tanks]**A tank shall on completion be tested by hydraulic pressure to a head not less than the maximum head to which the tank can be subjected, or 8 feet above the top of the tank, whichever is the greater.

(ii) **[Such]**The tests referred to in subparagraph (i) shall be witnessed by the surveyor, but, in the case of any tank having a capacity of not more than **[300 gallons]**1135, the surveyor may, when it is not possible for him to witness the test, accept a written statement from the manufacturer certifying that the hydraulic pressure test described in this paragraph has been carried out and that no defects were revealed.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) Where the capacity of a fuel tank exceeds **[25 gallons]**94 litres, it shall be provided with the following:

(a) a filling pipe that—

(i) is at least **[1½ inches]**3.81 centimetres in internal diameter;

(ii) leads from the top of the tank to the weatherdeck, the connection through the deck being watertight;

(iii) is fitted with a screwed brass plug or cap; and

(iv) is made sufficiently flexible to absorb any vibration or sinkage of the tank; and

(b) a vent pipe of at least the same internal diameter as the filling pipe leading from the top of the tank to a safe height and location above the weatherdeck through a watertight deck connection and clear of all openings into the hull or deck-house**[. The]** which shall comply with the following requirements:

(i) the end of the vent pipe shall be covered with gauze and turned down through an angle of 180 degrees**[. Two]**;

(ii) two or more vent pipes may be branched off from the pipe leading to the deck, provided the deck pipe is increased in diameter to maintain the required cross-sectional area**[. The]**; and

(iii) the gauze shall be made of incorrodible material and shall be so fitted that it can readily be removed for cleaning or renewal.";

(c) the substitution for subregulation (3) of the following subregulation:

"(3) (a) (i) **[Every]**A fuel tank shall be provided with a suitable means for ascertaining the level of the fuel.

(ii) If sounding pipes are fitted, **[they]**the pipes shall be led to an accessible position above the bulkhead deck.

(iii) Where **[this]**the arrangement in subparagraph (ii) is not practicable, short sounding pipes may be fitted in the machinery spaces if they are led to readily accessible positions above the platforms and fitted with self-closing cocks or valves.

(iv) Striking plates shall be fitted under all sounding pipes.

(b) Glass or plastic tubing may be used as level gauges only under the following circumstances:

(i) on a tank of under **[25 gallons]**94 litres capacity containing fuel having a close test flash point of over **[125º F.]**51ºC.; **[and]**

(ii) on a tank of **[25 gallons]**94 litres capacity or over, containing fuel having a close test flash point of over **[125º F.]**51ºC. with gauges fitted with self-closing valves or cocks top and bottom; and

(iii) if the tubing is suitably protected against impact.";

(d) the substitution for subregulation (5) of the following subregulation:

"(5) **[All]**An outlet **[pipes]**pipe from a fuel tank shall at such tank be fitted with cocks or valves which are readily accessible at all times and are capable of being operated from outside the compartment in which the tank is situated.";

(e) the substitution for subregulation (6) of the following subregulation:

"(6) **[Every]**A fuel tank shall be fitted in a position remote from heated surfaces."; and

(f) the substitution for subregulation (7) of the following subregulation:

"(7) **[Fuel tanks]**A fuel tank which **[are]**is not separate from the hull shall be considered as part of the hull, taking into consideration the strength requirements of the Chapter II boat and the possibility of contamination of oil fuel with water, but the standards of construction and testing shall not be less than those required for **[tanks]**a tank which **[are]**is separate from the hull.".

Amendment of regulation 158 of the Regulations

164. Regulation 158 of the Regulations is hereby amended by the substitution for subregulation (1) of the following subregulation:

"(1) Valves or cocks shall be fitted to all suction and discharge pipes which pass through the hull below the weatherdeck, provided that this paragraph shall not apply to—

(a) pump discharges of **[1½"]**3.81 centimetres internal diameter or less, which are situated above the load water line;

(b) keel cooling systems; or

(c) scuppers which pass from the weatherdeck to the Chapter II boat's side above the load water line**[. Valves]**: Provided valves or cocks shall be fitted as close to the hull as possible.".

Amendment of regulation 159 of the Regulations

165. Regulation 159 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) In a Chapter II boat, the heating and cooking arrangements may be by means of coal, oil or electricity**[. Liquid]** and liquid petroleum gas may be permitted, but only under the following conditions**[-]**:

(a) the installation shall be as approved by **[the]**a surveyor;

(b) **[no]**the installation, or any part **[of the installation]**thereof shall not be situated in a machinery **[spaces.,]**space;

(c) the liquid petroleum gas cylinders, regulators and low pressure safety devices, shall be placed above deck in a suitable, well ventilated metal cabinet separated from living spaces **[end]**and other closed spaces by a gas tight partition and removed from sources of heat, electric cable, etc., and shall be effectively earthed;

(d) the cylinders shall be secured in an upright position, and the operating equipment shall at all times be readily accessible;

(e) approved safety devices shall be provided to protect the low pressure stages of the apparatus from high pressure, and any leak off from

such a device shall be conducted to the open air remote from any source of heat;

(f) the installation shall be provided with a stop valve immediately inside the compartment containing the cooking or heating appliances in addition to a valve of each appliance, provided that, if there is only one appliance connected by a short low pressure lead, it will be sufficient to have one valve only where the lead enters the compartment in which the appliance is situated;

(g) (i) the low pressure leads shall be of seamless steel or copper and suitably protected from damage and the effects of vibration, expansion and contraction.

(ii) The use of a short length of high pressure hose may be permitted on a low pressure lead, provided the arrangement is to the satisfaction of the surveyor;

(h) all appliances shall be provided with equipment by means of which the gas supply is completely cut off when the flame, through whatever cause, is extinguished; and

(i) the high, medium and low pressure leads shall be tested during the installation and at four yearly intervals thereafter, in the presence of the surveyor as follows**[—]**:

(i) high and medium pressure leads to a pressure of **[425 lb./in.^{2}]**192 kg/cm^2;

(ii) low pressure leads to a pressure of **[5 lb. /in.^{2}]**2.2 kg/cm^2;

(iii) the pressures mentioned in **[sub-paragraphs]**subparagraphs (i) and (ii) shall be maintained for not less than 15 minutes, during which period no drop in pressure shall be recorded on an accurate manometer or pressure gauge; and

(iii) the flexible portions of copper leads shall be pressure tested and re-annealed.

(b) the substitution for subregulation (2) of the following subregulation:

"(2) After installation is complete, the whole installation shall be tested for leaks by the use of soapy water or liquid detergent or by some other method approved by the **[Secretary]**Authority."; and

(c) the substitution for subregulation (4) of the following subregulation:

"(4) In **[every]**a wooden Chapter II boat**[,]**—

(a) the galley stove shall be secured to a pad of concrete or other suitable material at least **[2 inches]**5 centimetres thick**[. Bulkheads]**; and

(b) bulkheads in the way of the stove shall be lined with asbestos covered with sheet steel, and the galley funnel shall be effectively insulated where it passes through the deck head.".

Amendment of regulation 160 of the Regulations

166. Regulation 160 of the Regulations is hereby amended by the substitution for subregulation (1) of the following subregulation:

"(1) Full particulars of refrigeration installations**[(other]**, other than domestic **[refrigerators)]**refrigerators, shall be submitted to the **[Secretary]**Authority for approval.".

Substitution of regulation 161 of the Regulations

167. The following regulation is hereby substituted for regulation 161 of the Regulations:

"**Bulkheads**

(1) (a) **[Every]**A decked or partially decked Chapter II boat over **[30 feet]**9 meters but not exceeding **[80 feet]**24 meters in length, shall be fitted with not less than two suitably spaced watertight **[bulkhead]**bulkheads.

(b) The spacing of **[these]**the bulkheads referred to in paragraph (a) shall be subject, to approval by **[the]**a surveyor, having regard to the type of construction of the boat and to the duties for which it is intended.

(2) (a) **[Every]**A Chapter II boat exceeding **[80 feet]** 24 meters in length shall be fitted with not less than three suitably spaced watertight bulkheads extending from the keel or horn timber to the weatherdeck.

(b) The forward bulkhead shall be located at a reasonable distance from the bow of the boat subject to a minimum of one-twentieth of the length.

(c) The positions of the bulkheads shall be in accordance with the plan; submitted and approved in terms of regulation 149.

(3) (a) **[Openings]**An opening in a watertight **[bulkheads]**bulkhead shall have a suitable watertight **[doors]**door or other means of closing which can at all times be readily and quickly applied.

(b) **[Such]**The closing appliances referred to in paragraph (a) shall be of ample strength and shall be close-fitting to the satisfaction of **[the]**a surveyor.

(4) **[Wood,]**A wood, steel and reinforced plastic watertight **[bulkheads]**bulkhead shall be constructed and stiffened in accordance with plans approved by the **[Secretary. Wood watertight bulkheads]**Authority and may consist of either-

(a) double diagonal sheathing or planking with painted or treated fabric between the layers and stiffeners on one side;

(b) two thicknesses of tongued and grooved planking containing stiffeners and insulation; or

(c) single sheathing or planking suitably stiffened and caulked and the scantlings shall be determined by the table in Annex 7.

(5) In a Chapter II boat exceeding **[50 feet]**15 meters in length, the bulkhead between the engine room and fish hold shall be constructed in the manner prescribed in **[sub-regulation]**subregulation (4) (a) and (b).

(6) (a) In the case of a Chapter II boat designed for pelagic shoal fishing, the fish hold shall be divided by either one longitudinal bulkhead situated not more than 5 per cent of the registered breadth or the boat from the centre line or two longitudinal bulkheads if the distance between them does not exceed 60 per cent of the registered breadth of the boat.

(b) **[Such]**The bulkheads referred to in paragraph (a) shall be permanent and shall be constructed and stiffened to the satisfaction of the surveyor: Provided that, in way of the hatch, close-fitting shifting boards may be allowed if, in the opinion of the surveyor, the efficiency of the bulkhead or bulkheads will not be impaired.”.

Amendment of regulation 163 of the Regulations

168. Regulation 163 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every]**a Chapter II boat, the sills of doors giving access to the main hull shall have a minimum height of **[12 inches]**30 centimetres, but doors situated on top of any superstructure deck house, or raised forecastle, may have sills of not less than **[6 inches]**15 centimetres in height.";

(b) the substitution for subregulation (3) of the following subregulation:

"(3) (a) Solid toughened glass of not less than **[one-quarter of an inch]**6,35 millimetres thick, shall be fitted to wheelhouse windows of up to **[30 inches]**76 centimetres square clear light size.

(b) For window sizes greater than **[30 inches]**76 centimetres square, the minimum thickness of glass shall be **[three-eighths of an inch]**9.5 millimetres.";

(c) the substitution for subregulation (4) of the following subregulation:

"(4) When laminated toughened glass is fitted to wheelhouse windows, the thickness shall be increased by **[one-sixteenth inch]** over the thicknesses indicated in **[sub-regulation]**subregulation (3).";

(d) the substitution for subregulation (5) of the following subregulation:

"(5) Where, in an existing Chapter II boat, replacements to wheelhouse windows become necessary, the thicknesses of glass specified in **[sub-regulations]**subregulations (3) and (4) shall apply.";

(e) the substitution for subregulation (6) of the following subregulation:

"(6) **[Doors]**A door giving access to the main hull shall be strongly constructed and hung on substantial hinges, and locking arrangements shall be such that a door can be opened from either side.";

(f) the substitution for subregulation (8) of the following subregulation:

"(8) Two engine room entrances, providing easy access and exit, each measuring at least **[22 inches]**55 centimetres square, shall be provided in **[every]**a Chapter II boat of 25 gross register tons or over. **[Every]**A decked Chapter II boat of less than 25 gross register tons, shall have two entrances measuring **[22 inches]**55 centimetres square or one entrance measuring

not less than **[36 inches]**91 centimetres by **[24 inches]**60 centimetres."; and

(g) the substitution for subregulation (9) of the following subregulation:

"(9) Where more than 10 men are berthed in a crew space, an entrance of ample size shall be fitted as near as practicable to the centre line**[. A]** and a separate escape hatch shall also be provided.".

Substitution of regulation 164 of the Regulations

169. The following regulation is hereby substituted for regulation 164 of the Regulations:

"**164. Bulwarks**

(1) (a) Subject to the provisions of **[sub-regulation]**subregulation (2) and (3), bulwarks, rails, chains, wire ropes, or any combination thereof, shall be fitted around the weather deck of **[every]**a Chapter II boat, at least **[30 inches]**76 centimetres in height above that deck.

(b) If solid bulwarks are fitted, the maximum height shall be **[39 inches]**99 centimetres.

(2) If **[the]**a surveyor considers that permanent bulwarks, rails, chains and wire ropes mentioned in subregulation (1) would interfere with the fishing operations of the boat, he may allow them to be dispensed with at places where interference would occur: Provided that portable bulwarks, rails, chains or wire ropes shall be fitted at such places.

(3) The bulwarks, rails, chains and wire ropes mentioned in **[sub-regulation]**subregulation (1), may be less than **[30 inches]**76 centimetres in height in way of deckhouses if suitable handrails are fitted on the sides of such deckhouses.

(4) (a) Freeing ports shall be sufficient for the purpose of efficient drainage of water on deck, and shall be suitably situated.

(b) The area of freeing ports shall be at least **[one square foot per 6 feet]** length of bulwarks which are **[30 inches]**76 centimetres high for greater heights the area shall be increased in direct proportion.".

Amendment of regulation 165 of the Regulations

170. Regulation 165 of the Regulations is hereby amended by—

(a) the substitution for subregulation (1) of the following subregulation:

"(1) In **[every]**a Chapter II boat, ventilators shall be sufficient in number and size to provide adequate ventilation for all spaces which, in the opinion of the surveyor, require ventilation.";

(b) the substitution for subregulation (2) of the following subregulation:

"(2) Crew sleeping spaces on a Chapter II boat shall be provided with inlet and exhaust ventilators sufficient to provide **[3 square inches]**7 square centimetres inlet area and **[3 square inches]**7 square centimetres outlet area for each member of the crew using those spaces for sleeping purposes, subject to a minimum of **[12 square inches]**30 square centimetres for any one space.";

(c) the substitution for subregulation (3) of the following subregulation:

"(3) (a) At least two ventilators, each not less than **[6 inches]**15 centimetres in diameter, shall be provided to the engine room of a Chapter II boat where the horse power of the main engine is 100 or less.

(b) For a main engine of over 100 horse power, the diameter of the ventilators shall be increased by **[1 inch]**2.5 centimetres for every additional 50 horse power or part thereof."; and

(d) the substitution for subregulation (4) of the following subregulation:

"(4) (a) The coaming of any ventilator up to **[6 inches]**15 centimetres in diameter fitted on the main deck shall be not less than **[12 inches]**30 centimetres in height and not less than **[¼ inch]**6.35 millimetres in thickness if made of steel.

(b) The thickness of the coaming of any ventilator over **[6 inches]**15 centimetres in diameter shall not be less than **[$^{5}/_{16}$ inch]**7,9 millimetres if made of steel.".

Substitution of regulation 166 of the Regulations

171. The following regulation is hereby substituted for regulation 166 of the Regulations:

"**166. Stern bearings**

[Stern]A stern bearing **[assemblies]**assembly in a Chapter II boat shall consist of either-

(a) (i) a stern bearing of not less than three and one half shaft diameters in length**[,]**;

(ii) a gland situated inside the vessel; and

(iii) a watertight tube fitted between the bearing and the gland**[,]**; or

(b) any other type approved by **[the]**a surveyor.".

Substitution of regulation 167 of the Regulations

172. The following regulation is hereby substituted for regulation 167 of the Regulations:

"**167. Testing of watertight compartments**

(1) **[The bulkheads]Bulkheads** of a wooden or reinforced plastic Chapter II boat shall before the boat is launched, be tested to the satisfaction of **[the]**a surveyor, by hose pressure or other suitable means: Provided that this requirement shall apply only to bulkheads which are intended to be watertight.

(2) Before a steel Chapter II boat is launched, the compartments within the main hull shall, before any cementing is commenced, be subjected to hose or pressure tests as follows—

(a) a double **[bottoms]**bottom which **[are]**is not to be used for the carrying of oil, shall be tested to a head of water equal to the maximum head which can be expected in service;

(b) a deep **[tanks and]**tanks or peak **[tanks]**tank used for carrying water, and deep tanks **[and]**or double bottom **[tanks]**tank arranged for carrying oil fuel, shall be tested to a head of water equal to the maximum head to which the **[tanks]**tank can be subjected in service, but not less than **[8 feet]**2.4 meters above the **[crowns]**crown of the **[tanks]**tank where the moulded depth to the strength deck exceeds **[16 feet]**4.8 meters, and **[3 feet]**91 centimetres where the moulded depth does not exceed **[10 feet. Intermediate]**3 meters and intermediate heads may be obtained by interpolation;

(c) a peak **[bulkheads]**bulkhead which **[do]**does not form **[the boundaries of tanks]**a boundary of a tank, shall be tested by filling the **[peaks]**peak with water;

(d) watertight bulkheads, including recesses and watertight flats, watertight tunnels, weather decks and waterways, shall be hose tested using a nozzle not greater than **[½ inch]**12,7 millimetres diameter; the pressure of water in the hose shall be not less than **[30 lb. per square inch]**13 kg per square centimetre; and

(e) a watertight **[doors]**door shall be tried under working conditions and hose tested in the manner described in paragraph (d).".

Substitution of regulation 168 of the Regulations

173. The following regulation is hereby substituted for regulation 168 of the Regulations:

"**168. Anchors and cables**

(1) (a) **[Every]**A Chapter II boat of under 25 gross register tons shall carry an anchor weighing 15 lb. for every 10 feet or part of 10 feet of overall length.

(b) The anchor referred to in paragraph (a) shall be attached to a chain cable or wire, manila or nylon rope of such a size as shall be to the satisfaction of the surveyor.

(c) The length of the cable, wire or rope referred to in paragraph (b) shall not be less than three times the length of the boat.

(2) **[Every]**A Chapter II boat of 25 gross register tons or over but not over 100 gross register tons, shall carry anchors and cables in accordance with the requirements of the following table: -

Gross Register Tons.	Bow Anchors.		Chain Cable.	
	Number.	Min. Weight in **[Lbs.]**Kgs.	No. of 15 Fathom Lengths.	Diameter **[Inches.]** Centimetres
25 or over but under 40	1	**[100]**45	2	**[$^{3}/_{8}$]**9.5mm
40 or over but under 60	2	**[120 and 80]**54 and 36	3	**[$^{7}/_{16}$]**11 mm
60 or over but under 80	2	**[180 and 100]**81 and 45	4	**[$^{1}/_{2}$]**12.7 mm

80 or over but under 90	2	**[180 and 120]**81 and 54	4	**[5/8]**15.8 mm
90 or over but not over 100	2	**[240 and 160]**108 and 72	4	**[5/8]**15.8 mm

(3) **[Every]**A Chapter II boat of over 100 gross registered tons shall carry at least two anchors, one of a weight not less than that derived from the following formula, and one of a weight not less than two-thirds of that derived from the following formula: -

W = 0.15 (L x (B + D)) + 100

where W = weight of anchor in **[lb.]**kg.

L = registered length of boat in **[feet]**meters.

B = greatest breadth of boat in feet, measured to the inside of planking or plating.

D = depth of boat in feet, measured at amidships from the top of the keel to the top of the deck beam at side; where a raised deck aft extends forward of amidships, the depth shall be measured to the line of the upper deck.

(4) For **[every]**a Chapter II boat of over 100 gross registered tons, the diameter and length of stud link or open link chain anchor cable to be supplied, shall be in accordance with the requirements of the following table:-

Weight of Main Anchor in **[LB.]**Kg.	Minimum Size of Chain in **[Inches.]**Centimetres	Total Number of 15 Fathom Lenghts
Over [300 to 400]136 to 181	**[5/8]**15 mm	4
Over [400 to 500]181 to 226	**[1 1/16]** 26.9 mm	4
Over [500 to 600]226 to 272	**[1 3/16]**30 mm	4
Over [600 to 700]272 to 317	**[1 5/16]**33 mm	5
Over [700 to 800]317 to 362	**[1]**25 mm	7
Over [800 to 900]362 to 408	**[1 1/16]**26.9 mm	8
Over [900 to 1,000]408 to 453	**[1 1/8]**28 mm	8
Over [1,000 to 1,100]453 to 498	**[1 3/16]**30 mm	9
Over [1,100 to 1,200]498 to 544	**[1 1/4]**31 mm	9
Over [1,200 to 1,300]544 to 589	**[1 1/4]**31 mm	10
Over [1,300 to 1,400]589 to 635	**[1 1/4]**31 mm	9

Over [1,400 to 1,500]635 to 680	**[1 1/4]**31 mm	10

(5) The heads of stockless anchors including pins and fittings, shall be not less than 60 per cent of the total weight of the anchor.

(6) When anchors with stocks are provided, the weights shall be not less than those derived from subregulations (1), (2) and (3) and the weight of the stock shall be 25 per cent of the total weight of the anchor including shackle but excluding stock.

(7) The **[Secretary]**Authority may approve anchors of special design having weights of not less than 75 per cent of those prescribed n this regulation, but the size and length of cable in such cases shall be as prescribed in this regulation.

(8) Mechanical means for working **[the]**an anchor shall be provided on **[any]**a Chapter II boat which is required to carry an anchor of more than **[150 lb.]**68 kg. in weight**[;]** and if a winch normally used for fishing or other purposes can be used, such winch may be accepted for the purpose of working the anchor.

(9) (a) **[Anchors]**An anchor shall be of approved design and shall be manufactured from forged wrought iron, forged open hearth ingot steel or cast steel.

(b) A test certificate shall be produced to **[the]**a surveyor for **[every]**an anchor of more than **[168 lb.]**76 kg. in weight and for every chain cable of **[½ inch]**12 mm or more in diameter.".

Substitution of regulation 169 of the Regulations

174. The following regulation is hereby substituted for regulation 169 of the Regulations:

"**169. Steering gear**

(1) Particulars of steering arrangements, including rudder and stock, for **[every]**a Chapter II boat other than a boat requiring hand tiller steering only or a boat which is under **[3 feet]**91 centimetres in length, shall be submitted to the **[Secretary]**Authority.

(2) (a) **[Every]**A Chapter II boat of **[30 feet]**9 meters or over in length shall be provided with alternative means of steering suitable to its size and the type of steering used.

(b) In a boat not exceeding **[120 feet]**36 meters in length, the alternative steering arrangements may consist of an extension to the rudder stock with a square end, in conjunction with a spare tiller.

(c) The deck connection shall be made watertight.

(3) (a) The main steering gear of **[every]**a Chapter II boat of over **[150 feet]**45 meters in length shall be operated by power.

(b) An efficient locking or braking arrangement shall be fitted to the boat in paragraph (a) to keep the rudder steady when a change of gear is required.".

Substitution of regulation 170 of the Regulations

175. The following regulation is hereby substituted for regulation 170 of the Regulations:

"**170. General electrical precautions**

(1) (a) (i) In **[every]**a Chapter II boat, **[all]** electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner.

(ii) Subject to the provisions of paragraph (b), where electrical equipment supplied as boat's equipment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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.

(b) (i) Exposed metal parts of portable electric lamps, tools and similar apparatus, supplied as boat's equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided.

(ii) When electric lamps, tools or other apparatus are used in damp spaces, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.

(2) (a) **[Every]**An electric cable in a Chapter II boat, shall be of a flame retarding type.

(b) **[All metal]**Metal sheaths and metal armour of any electrical cable in use in the boat, shall be electrically continuous and shall be earthed.

(c) **[Every]**An electric cable which is neither metal sheathed nor armoured shall, if installed where its failure might cause a fire or explosion, be otherwise effectively protected.

(3) Wiring in **[every]**a Chapter II boat shall be supported in such a manner as to avoid chafing and other injury.

(4) (a) In **[every]**a Chapter II boat, the joints in all electrical conductors shall be made only in junction or outlet boxes except in the case of low voltage communication circuits.

(b) **[All such]**The junctions or outlet boxes referred to in paragraph (a) shall be so constructed as to prevent the spread of fire therefrom.

(5) In **[every]**a Chapter II boat, lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in surrounding material.

(6) (a) **[Every]**An electric space-heater forming part of the equipment of a Chapter II boat, shall be fixed in position and shall be so constructed as to reduce the risk of fire to a minimum.

(b) **[No such]**The heater referred to in paragraph (a) shall not be constructed with an element so exposed that clothing, curtains, or other similar material, can be scorched or set on fire by beat from the element.

(7) (a) In **[every]**a Chapter II boat, **[every]**a separate electrical circuit, other than a circuit which operates the boat's steering gear, shall be protected against overload and short circuit.

(b) There shall be clearly and permanently indicated on or near each over-load protective device, the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(8) In **[every]**a Chapter II boat, **[all]**an accumulator **[(storage) batteries]**or storage battery shall be housed in **[boxes]**a box or **[compartments]**compartment which **[are]**is so constructed as to protect

the **[batteries]**battery from damage and **[are]**is so ventilated as to **[minimize]**minimise the accumulation of explosive gas.

(9) In **[spaces]**a space where inflammable mixtures are liable to collect, **[no]** electrical equipment shall not be installed unless it is of a type which will not ignite the mixture concerned.

(10) In **[every]**a Chapter II boat, **[every]** lighting circuit in a bunker or hold shall be provided with an isolating switch outside the space.".

Substitution of regulation 171 of the Regulations

176. The following regulation is hereby substituted for regulation 171 of the Regulations:

"**CHAPTER III - PERIODIC SURVEYS: BOATS OTHER THAN SKI BOATS, SURF BOATS AND DINGHIES**

171. Application of Chapter III
This Chapter applies to **[every]**a boat other than a ski or surf boat or dinghy, and a "Chapter III boat" means a boat to which this Chapter applies.".

Substitution of regulation 173 of the Regulations

177. The following regulation is hereby substituted for regulation 173 of the Regulations:

"**173. Boilers which permit of a full internal examination**
(1) (a) A boiler which permits of a full internal examination shall be surveyed every 12 months and shall before survey commences, be completely opened out for survey, and all parts shall be thoroughly cleaned to the satisfaction of the surveyor.
(b) Boiler mountings shall be opened out and cleaned and all valves ground in, as may be necessary.
(c) Any part which prevents proper examination of **[the]**a boiler, shall be removed, and the boiler shall be lifted if **[the]**a surveyor considers a further examination of the underside thereof necessary.
(d) Lagging shall be removed if **[the]**a surveyor considers it necessary.

(2) **[The]**A boiler shall every four years be hydraulically tested to 1½ times working pressure: Provided that if major repairs are effected to the boiler, it shall be so tested immediately upon completion of such repairs.

(3) (a) When steam is raised in a boiler after survey, the safety valves shall in the presence of the surveyor, be set to the assigned pressure, and the surveyor shall ensure that means are provided to prevent subsequent tampering with the adjustment of the valves.

(b) The assigned pressure shall be decided by **[the]**a surveyor who shall bear the designed pressure and the general condition of the boiler in mind.

(c) If **[the]**a surveyor requires it, any repairs shall be completed before the pressure is assigned.".

Substitution of regulation 174 of the Regulations

178. The following regulation is hereby substituted for regulation 174 of the Regulations:

"**174. Boilers which do not permit of a full internal examination**

[Boilers]A boiler which **[do]**does not permit of a full internal examination, shall be dealt with in accordance with the provisions of regulation 173: Provided that such **[boilers]**a boiler shall every 12 months and in the presence of **[the]**a surveyor, be hydraulically tested to 1½ times working pressure.".

Substitution of regulation 175 of the Regulations

179. The following regulation is hereby substituted for regulation 175 of the Regulations:

"**175. Steam pipes**

(1) Subject to the provisions of **[sub-regulations]**subregulation (2) and (3), a main steam **[pipes and]**pipe or auxiliary steam **[pipes]**pipe with an internal diameter of over [three inches]seven centimetres, shall in the presence of **[the]**a surveyor, be tested by hydraulic pressure to twice the working pressure at the following intervals**[—]**:

(a) **[pipes]**a pipe of iron, steel, or solid drawn copper - every six years**[.,]**; and

(b) a copper **[pipes]**pipe having brazed longitudinal seams - every four years.

(2) At the time of the tests prescribed in **[sub-regulations]**subregulation (1) or at any other time if it is deemed necessary, **[the]**a surveyor shall examine the pipes thoroughly, and any pipe shall be removed and hydraulically tested at any time if there is reason to believe that its condition is unsatisfactory.

(3) If **[the]**a surveyor considers it necessary, a copper **[pipes]**pipe shall be annealed, and this shall generally be done at the time of the hydraulic test.".

Substitution of regulation 176 of the Regulations

180. The following regulation is hereby substituted for regulation 176 of the Regulations:

"**176. Steam propulsion engines and auxiliaries**

(1) (a) **[Steam]**A steam propulsion **[engines]**engine and auxiliaries shall every four years be completely opened up for survey.

(b) **[All]**The pistons, cylinders, slide valves, bearings and shafts**[,]** of the engine referred to in paragraph (a) shall be available for examination, and if considered necessary by **[the]**a surveyor, the covers of pumps, valve chests, condensers, evaporators, feed heaters, filters, fuel tanks, and other valves, shall be removed.

(2) Every twelve months, a running trial shall be held on **[all]** main and auxiliary machinery essential to the safe operation of **[the]**a Chapter III boat, and shall be witnessed by **[the]**a surveyor, who shall decide whether the machinery and boilers are in a satisfactory condition.".

Amendment of regulation 177 of the Regulations

181. Regulation 177 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 177 of the following heading:

"**177. Main and auxiliary machinery of a boat not exceeding [80 feet]24 meters in length**"; and

(b) the substitution for subregulations (1) and (2) of the following subregulations:

"(1) (a) A running trial of the main and auxiliary machinery of a Chapter III boat not exceeding **[80 feet]**24 meters in length and propelled by internal combustion engines, shall be held every twelve months and shall be witnessed by the surveyor.

(b) If the machinery referred to in paragraph (a) is found to be not in good operating condition, **[the]**a surveyor may require that the machinery or any part thereof, be opened up for his inspection, and any adjustments or repairs which are found by him to be necessary, shall be effected.

(2) Air compressor and air receiver relief valves shall every twelve months and in the presence of **[the]**a surveyor, be adjusted to operate at their designed working pressure.".

Amendment of regulation 178 of the Regulations

182. Regulation 178 of the Regulations is hereby amended by–

(a) the substitution for the heading of regulation 178 of the following heading:

"**178. Main and auxiliary machinery of a boat exceeding [80 feet]24 meters in length**"; and

(b) the substitution for subregulations (1) to (3) of the following subregulations:

"(1) (a) The main and auxiliary machinery of a Chapter III boat exceeding **[80 feet]**24 meters in length and propelled by internal combustion engines, shall be completely opened up for inspection by the surveyor every four years.

(b) Arrangements may be made to open up the various parts of the machinery referred to in paragraph (a) in regular rotation from time to time, so that the surveyor may inspect the whole of the machinery every four years, and the owner of the boat shall furnish the means hereby such inspections can be recorded and kept on board.

(2) (a) A running trial of the main and auxiliary machinery shall be held every twelve months and shall be witnessed by the surveyor.

(b) If the machinery referred to in paragraph (a) is found to be not in good operating condition, **[the]**a surveyor may require that the machinery or any part of it, be opened up for his inspection, and any adjustments or repairs which are found by him to be necessary, shall be effected.

(3) Air compressor, air receiver, and other pressure vessel relief valves shall, every twelve months and in the presence of **[the]**a surveyor, be adjusted to operate at their designed working pressure or to such lower pressure as the surveyor may assign.".

Substitution of regulation 179 of the Regulations

183. The following regulation is hereby substituted for regulation 179 of the Regulations:

"**179. Air receivers**

(1) **[Air receivers]**An air receiver which **[do]**does not permit of a thorough internal examination, shall every four years **[by]**be hydraulically tested to a pressure of one and a half times the working pressure.

(2) **[Air receivers]**An air receiver which can be thoroughly examined internally, shall be opened up for survey after the first four years' service and thereafter every two years.

(3) **[All mountings, valves]**A mounting, valve and safety **[devices]**device shall be opened up and cleaned for inspection at least once in every four years.".

Substitution of regulation 180 of the Regulations

184. The following regulation is hereby substituted for regulation 180 of the Regulations:

"**180. Electrical equipment**

(1) **[The electrical]**Electrical equipment of a Chapter III boat shall be examined by **[the]**a surveyor every four years.

(2) An insulation test shall be made in the presence of **[the]**a surveyor of all circuits, and the resistance between all insulated circuits and earth shall be not less than 100,000 ohms.

(3) **[The generator]**Generator circuit breakers, overcurrent protective devices and fuses shall be examined by **[the]**a surveyor to verify that they will operate satisfactorily.".

Substitution of regulation 181 of the Regulations

185. The following regulation is hereby substituted for regulation 181 of the Regulations:

"**181. Steel hulls: dry docking**

(1) **[Every]**A steel Chapter III boat shall every twelve months be placed in dry dock or on a slipway for inspection by **[the]**a surveyor.

(2) The hull of **[every]**a steel Chapter III boat shall be inspected as follows**[:-]**:

(a) **[the]**a surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which **[he]**the surveyor may require to be removed in order that **[he]**the surveyor may ascertain the condition of plating, frames, floors, etc., shall be removed;

(b) drill testing of plating shall be carried out where and as considered necessary by **[the]**a surveyor;

(c) **[all]** closing appliances for deck openings, and all coamings, ventilators, air pipes and deckhouses, shall be thoroughly examined by the surveyor; **[and]**

(d) where considered necessary by **[the]**a surveyor, double bottom tanks shall be tested by a head of water to a height of **[eight feet]**2.5 meters above the inner bottom or to the light water line, whichever is the greater, and peak tanks or other deep tanks used for water ballasting shall be tested by a head of water to a height of eight feet above the crown of the tank**[. All]**; and

(e) repairs and renewals required by **[the]**a surveyor shall be carried out to **[his]**the satisfaction of the surveyor.".

Substitution of regulation 182 of the Regulations

186. The following regulation is hereby substituted for regulation 182 of the Regulations:

"**182. Wooden hulls: dry docking**

(1) (a) **[Every]**A wooden Chapter III boat of **[30 feet]**9 meters or over in length shall every twelve months be placed in dry dock or on a slip way, or suitably supported on blocks for examination by **[the]**a surveyor.

(b) A boat of under **[30 feet]**9 meters in length may be beached for examination at the discretion of **[the]**a surveyor.

(2) The hull of **[every]**a wooden Chapter III boat shall be inspected as follows**[:-]**:

(a) **[the]**a surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which he may require to be removed in order that **[he]**the surveyor may ascertain the condition of the hull, frames, bulkheads, beams, floors, etc., shall be removed;

(b) bore testing of hull and deck planking shall be carried out where and as considered necessary by **[the]**a surveyor; **[and]**

(c) **[all]** closing appliances for deck openings, and all coamings, ventilators, air pipes and deckhouses shall be thoroughly examined by **[the]**a surveyor**[. All]**; and

(d) repairs and renewals required by **[the]**a surveyor shall be carried out to **[his]**the satisfaction of the surveyor.".

Substitution of regulation 183 of the Regulations

187. The following regulation is hereby substituted for regulation 183 of the Regulations:

"**183. Reinforced plastic hulls: dry docking**

(1) (a) **[Every]**A reinforced plastic Chapter III boat of **[30 feet]**9 meters or over in length shall every twelve months be placed in dry dock or on a slipway, or suitably supported on blocks for examination by **[the]**a surveyor.

(b) A boat of under **[30 feet]**9 meters in length may be beached for examination at the discretion of **[the]**a surveyor.

(2) The hull of **[every]**a reinforced plastic Chapter III boat shall be inspected as follows:

(a) **[the]**a surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which **[he]**the surveyor may require to be removed in order that **[he]**the surveyor may ascertain the condition of the hull, frames, bulkheads, beams, floors, etc., shall be removed;

(b) **[the]**a surveyor shall examine all parts of the hull for signs of abrasion, delamination or star cracking and particular care shall be taken in examining hull fastenings; and

(c) [all] closing appliances for deck openings and **[all]** coamings, ventilators, air pipes and deckhouses shall be thoroughly examined by **[the]**a surveyor**[. All]**; and

(d) repairs and renewals required by **[the]**a surveyor shall be carried out to **[his]**the satisfaction of the surveyor.".

Substitution of regulation 184 of the Regulations

188. The following regulation is hereby substituted for regulation 184 of the Regulations:

"**184. Propeller shafts**

Propeller shafts of a Chapter III boat shall be withdrawn and propellers removed once every two years for inspection by **[the]**a surveyor, except that shafts of the following types need be withdrawn only once every three years in the case of a single screw boat and once every four years in the case of a boat having two or more screws**[:-]**:

(a) shafts fitted with continuous liners in way of the stern tubes and in way of the outside bearings if fitted;

(b) shafts fitted with approved glands at the after end to permit of them being efficiently lubricated; and

(c) shafts of bronze, monel metal or other approved non-corrosive material.".

Substitution of regulation 185 of the Regulations

189. The following regulation is hereby substituted for regulation 185 of the Regulations:

"**185. Sea connections**

(1) **[All sea]**Sea suction and discharge valves and cocks in a Chapter III boat shall every two years be opened up for inspection by **[the]**a surveyor while the hull is being surveyed externally.

(2) Every twelve months, during an external hull survey, **[the]**a surveyor shall examine **[all]** sea connection fastenings and, if considered necessary, **[he]**the surveyor may require any valve or cock to be opened up for inspection.".

Substitution of regulation 186 of the Regulations

190. The following regulation is hereby substituted for regulation 186 of the Regulations:

"**186. Rudders**
The rudder of **[every]**a Chapter III boat shall be lifted at the time of the annual survey of the hull externally, if **[the]**a surveyor considers it necessary, and any repairs or renewals which **[he]**the surveyor considers necessary shall be effected.".

Substitution of regulation 187 of the Regulations

191. The following regulation is hereby substituted for regulation 187 of the Regulations:

"**187. Anchors, cables and steering chains**
(1) Every twelve months, the anchors and cables, windlass and steering chains **[(if any)]**if any, of a Chapter III boat, shall be given a general examination by **[the]**a surveyor, who may request any opening up which **[he]** the surveyor deems necessary.

(2) Anchor cables shall be ranged for inspection by **[the]**a surveyor eight years after construction of **[the]**a Chapter III boat and thereafter at intervals of four years.

(3) Where anchor cables or steering chains are worn to such an extent that the mean diameter of any part is reduced to the minimum size shown in Annex 9 as requiring renewal, such part shall be renewed.".

Substitution of regulation 188 of the Regulations

192. The following regulation is hereby substituted for regulation 188 of the Regulations:

"**188. Steering gear and emergency arrangements**

(1) The steering gear and emergency arrangements of a Chapter III boat shall be thoroughly examined by **[the]**a surveyor every twelve months, and any parts shall be opened up if he considers it necessary.

(2) The main and emergency steering arrangements referred to in subregulation (1) shall be tried at every such survey.".

Substitution of regulation 189 of the Regulations

193. The following regulation is hereby substituted for regulation 189 of the Regulations:

"**189. Alterations to hull**

Any alterations affecting the seaworthiness or tonnage of a Chapter III boat, shall have the prior approval of **[the]**a surveyor, and shall be carried out to **[his]**the satisfaction of the surveyor.".

Substitution of regulation 195 of the Regulations

194. The following regulation is hereby substituted for regulation 195 of the Regulations:

"**CHAPTER V-ADDITIONAL SURVEYS, EQUIVALENTS AND EXEMPTIONS**

195. Additional surveys

(1) Notwithstanding the requirements of the preceding Chapters of this Part, **[any]**a boat may be called upon at any time by the **[Secretary]**Authority, proper officer or surveyor to undergo such additional surveys as are deemed necessary for any reason.

(2) **[Further, at]**At the time of an annual survey, or at the time of any additional surveys required by this regulation, **[the]**a surveyor may require any part to be opened up at **[his]**the surveyor's discretion, and may require any

renewals of parts or fittings, or the fitting of any additional part or parts considered necessary for the safety and seaworthiness of the boat.

(3) **[The]**A surveyor may board any boat at any time, and shall be allowed by the owner or master to carry out any examination **[he]**the surveyor considers necessary.".

Substitution of regulation 196 of the Regulations

195. The following regulation is hereby substituted for regulation 196 of the Regulations:

"**196. Equivalents**
Where this Part requires that the hull or machinery of a boat shall be constructed in a particular manner, or that particular equipment shall be provided or that particular provision shall be made, the **[Secretary]**Authority may allow the hull or machinery of the boat to be constructed in any other manner, or any other equipment to be provided or other provision made, if **[he]**the Authority is satisfied that such other construction, equipment or provision is at least as effective as that required by this Part.".

Substitution of regulation 197 of the Regulations

196. The following regulation is hereby substituted for regulation 197 of the Regulations:

"**197. Exemption of boats constructed before a certain date**
The **[Secretary]**Authority may on such conditions as **[he]**the Authority thinks fit, exempt any boat which was constructed before the date of coming into force of this [part]Part, not being a ship converted on or after that date as a boat, from any of the requirements of this Part, if **[he]**the Authority is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.".

Substitution of regulation 198 of the Regulations

197. The following regulation is hereby substituted for regulation 198 of the Regulations:

"**198. General exemption**

The **[Secretary]** the Authority may on such conditions as **[he]**the Authority thinks fit, exempt any boat from **[an]**any of the requirements of this Part, if **[he]**the Authority considers such requirements to be unreasonable or impracticable in the circumstances.".

Short title and commencement

198. These regulations are called The Construction Amendment Regulations, 2021 and shall come into operation on the date of publication thereof in the Government *Gazette*.