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Government Notice

MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION

No. 61

2002

MERCHANT SHIPPING ACT, 1951 (ACT NO. 57 OF 1951): CONSTRUCTION AND EQUIPMENT REGULATIONS FOR FISHING VESSELS

The Minister of Works, Transport and Communication has under section 356 of the Merchant Shipping Act, 1951 -

- (a) made the Regulations set out in the Schedule; and
- (b) repealed the Regulations Promulgated by Government Notice No. 79 of 19 January 1968, in so far as they apply to fishing vessels.

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**CHAPTER 1
PRELIMINARY**

Definitions

1. In these Regulations, any expression to which a meaning has been assigned in the Merchant Shipping Act, 1951 (Act No. 57 of 1951), has that meaning and, unless the context otherwise indicates -

“approved” means approved by the Permanent Secretary;

“Convention Regulations” means the Consolidated text of the Regulations for the Construction and Equipment of Fishing Vessels annexed to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977, as modified by the Torremolinos Protocol of 1993 relating thereto;

“Directorate” means the Directorate of Maritime Affairs in the Ministry responsible for transport and communication;

“fishing vessel” means any sea-going vessel used to catch or harvest any living resource from the sea;

“Namibian fishing vessel” means a fishing vessel registered in Namibia;

“new Namibian fishing vessel” means a new fishing vessel which is a Namibian fishing vessel;

“Organization” means the International Maritime Organization;

“owner, in relation to a ship, means the person registered as owner of the ship, and includes any other organisation or person such as the manager, or the bareboat charterer, who has assumed responsibility for the operation of the ship from the owner of the ship;

“Permanent Secretary” means the Permanent Secretary of the Ministry responsible for transport and communication;

“port limits” means the limits of the Lüderitz port or the Walvis Bay port as described in the First Schedule to the Namibia Ports Authority Act, 1994 (Act No. 2 of 1994) or any other port of which the management and control has been entrusted to Namport under section 12 of that Act, and includes the water and land comprising Namport’s area of jurisdiction in respect of that port;

“the Act” means the Merchant Shipping Act, 1951 (Act No. 57 of 1951).

Application of Regulations

2. (1) Unless provided otherwise, these Regulations apply to -

- (a) new Namibian fishing vessels of 15 metres in length and over;
- (b) within six months after the date of promulgation of these Regulations, to existing Namibian fishing vessels of 15 metres in length and over that were built within a period of five years immediately preceding the date of such promulgation; and
- (c) within twelve months after the date of promulgation of these Regulations, to existing Namibian fishing vessels of 15 metres in length and over that were built more than five years before the date of such promulgation.

(2) Every fishing vessel required to hold a certificate in accordance with these Regulations is subject to control and certification by officers duly authorized by the Directorate.

(3) The certificate referred to in subregulation (2), if valid, must be accepted unless there are clear grounds for believing that the condition of the fishing vessel or of its equipment does not correspond substantially with the particulars of that certificate or that the fishing vessel and its equipment are not in compliance with these Regulations.

(4) In the circumstances given in subregulation (3), or where a certificate has expired or ceases to be valid, the officer carrying out the control must take steps to ensure that the fishing vessel does not proceed to sea.

(5) When exercising control over a fishing vessel, all possible efforts must be made to avoid a fishing vessel being unduly detained or delayed, and any fishing vessel unduly detained or delayed, is entitled to compensation for any loss or damage suffered.

Exemption from Regulations

3. The Permanent Secretary may exempt fishing vessels from the application of these Regulations only in accordance with regulation 6.

CHAPTER 2 GENERAL PROVISIONS

Application

4. Unless expressly provided otherwise, these Regulations apply to new fishing vessels of 15 metres in length and over.

Definitions

5. For the purposes of this Chapter -

“amidships” means the mid-length of L measured from the forward perpendicular;

“approved” means approved by the Directorate;

“baseline” means the horizontal line intersecting at amidships the keel line;

“breadth (B)” means the maximum breadth of the fishing vessel, measured amidships to the moulded line of the frame in a fishing vessel with a metal shell and to the outer surface of the hull in a fishing vessel with a shell of any other material;

“collision bulkhead” means a watertight bulkhead up to the working deck in the forepart of the fishing vessel in which the bulkhead is located at a distance from the forward perpendicular -

- (a) not less than 0.05L and not more than 0.08L for fishing vessels of 45 metres in length and over;
- (b) not less than 0.05L and not more than 0.05L plus 1.35 metres for fishing vessels of less than 45 metres in length, except as may be allowed by the Directorate; and
- (c) in no case, less than 2.0 metres.

“crew” means the skipper and all persons employed or engaged in any capacity on board a fishing vessel on the business of that fishing vessel;

“deepest operating waterline” means the waterline related to the maximum permissible operating draught;

“depth (D)” means the moulded depth amidships;

“enclosed superstructure” means a superstructure with -

- (a) enclosing bulkheads of efficient construction;
- (b) access openings, if any, in the bulkheads referred to in paragraph (a) fitted with permanently attached weathertight doors of a strength equivalent to the unpierced structure which can be operated from each side; and
- (c) other openings in sides or ends of the superstructure fitted with efficient weathertight means of closing,

but does not include a bridge or poop, unless access is provided for the crew to reach machinery and other working spaces inside a bridge or poop by alternative means which are available at all times when bulkhead openings are closed;

“existing fishing vessel” means a fishing vessel which is not a new fishing vessel;

“forward and after perpendiculars” means perpendiculars taken at the forward and after ends of the length (L), with the forward perpendicular being coincident with the foreside of the stem on the waterline on which the length is measured;

“height of a superstructure or other erection” means the least vertical distance measured at side from the top of the deck beams of a superstructure or an erection to the top of the working deck beams;

“keel line” means the line parallel to the slope of keel passing amidships through -

- (a) the top of the keel or line of intersection of the inside of shell plating with the keel where a bar keel extends above that line of a fishing vessel with a metal shell;
- (b) the rabbet lower line of the keel of a fishing vessel with a shell of wood or a composite fishing vessel; or
- (c) the intersection of fair extension of the outside of the shell contour at the bottom with the centreline of a fishing vessel with a shell of material other than wood and metal;

“length (L)” means -

- (a) 96% of the total length of a waterline at 85% of the least moulded depth measured from the keel line; or
- (b) the length from the foreside of the stem to the axis of the rudder stock on the waterline referred to in paragraph (a), if that is greater, and, in fishing vessels designed with rake of keel, the length from the foreside of the stem to the axis of the rudder stock on the waterline parallel to the designed waterline;

“midship section” means that section of the hull defined by the intersection of the moulded surface of the hull with a vertical plane perpendicular to the waterline and centreline planes passing through amidships;

“moulded depth” means the vertical distance -

- (a) measured from the keel line to the top of the working deck beam at side;
- (b) in fishing vessels having rounded gunwales, measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwale were of angular design; and
- (c) where the working deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be determined, measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part;

“new fishing vessel” means a vessel for which -

- (a) on or after the date of entry into force of these Regulations, the building or major conversion contract is placed;
- (b) the building or major conversion contract has been placed before the date of entry into force of these Regulations, and which is delivered three years or more after the date of entry into force; or
- (c) in the absence of a building contract -
 - (i) the keel is laid;
 - (ii) construction identifiable with a specific fishing vessel begins; or
 - (iii) assembly has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the lesser;

“skipper”, in relation to a fishing vessel, means a person (other than a pilot) having charge or command of that vessel;

“superstructure” means the decked structure on the working deck extending from side to side of the fishing vessel or with the side plating not being inboard of the shell plating more than 0.04B;

“superstructure deck” means the complete or partial deck forming the top of a superstructure, deckhouse or other erection situated at a height of not less than 1.8 metres above the working deck, and where this height is less than 1.8 metres above the working deck, the complete or partial deck forming the top of a superstructure, deckhouse or other erection;

“watertight” means capable of preventing the passage of water through the structure in any direction under a head of water for which the surrounding structure is designed;

“watertight” means capable of preventing the passage of water through the structure in any direction under a head of water for which the surrounding structure is designed;

“weathertight” means that in any sea conditions water will not penetrate into the fishing vessel;

“working deck” means -

- (a) generally the lowest complete deck above the deepest operating waterline from which fishing is undertaken; and
- (b) in fishing vessels fitting with two or more complete decks, a lower deck situated above the deepest operating waterline, as the Directorate may accept.

(2) Where any part of the underwater body of a fishing vessel extends forward of the forward perpendicular, for example, a bulbous bow, the distance stipulated in the definition of “collision bulkhead” must be measured from a point at mid-length of the extension forward of the forward perpendicular or from a point 0.015L forward of the forward perpendicular, whichever is the lesser.

(3) The bulkhead may have steps or recesses, provided they are within the limits prescribed in the definition of “collision bulkhead”.

Exemptions

6. (1) The Permanent Secretary may exempt any fishing vessel which embodies features of a novel kind from any of the requirements of Chapters 3, 4, 5, 6, 7 and 8, the application of which might seriously impede research into the development of such features and their incorporation in fishing vessels, provided any such fishing vessel complies with safety requirements which, in the opinion of the Directorate are adequate for the service of which it is intended and are such as to ensure the overall safety of the fishing vessel.

(2) The Permanent Secretary may exempt any fishing vessel engaged solely in fishing within fifty nautical miles from the coast of Namibia from any of the requirements of these Regulations if he or she considers that the application of the requirements is impracticable and unreasonable in view of the distance of the fishing vessel's operating area from its base port in Namibia, the type of fishing vessel, the weather conditions, and the absence of general navigational hazards, provided the fishing vessel complies with safety requirements which, in the opinion of the Permanent Secretary are adequate for the service for which it is intended and are such as to ensure the overall safety of the fishing vessel.

(3) If the Permanent Secretary allows any exemption under this regulation he or she must communicate to the Organization particulars of the exemption to the extent necessary to confirm that the level of safety is adequately maintained.

Equivalents

7. (1) Where these Regulations require that a particular fitting, material, appliance or apparatus, or type thereof, must be fitted or carried in a fishing vessel, or that any particular provision must be made, the Directorate may allow any other fitting, material, appliance or apparatus, or type thereof, to be fitted or carried, or any other provision to be made in that fishing vessel, if it is satisfied by trial thereof or otherwise that the fitting, material, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by these Regulations.

(2) If the Directorate allows, in substitution, any other fitting, material, appliance or apparatus or type thereof, to be fitted or carried, or any other provision to be made in a fishing vessel in terms of subregulation, (1), he or she must communicate to the Organization particulars thereof together with a report on any trials made.

Repairs, alterations and modifications

8. A fishing vessel which undergoes repairs, alterations, modifications and outfitting related thereto must -

- (a) continue to comply with at least the requirements previously applicable to the fishing vessel; and
- (b) meet the requirements for a new fishing vessel only to the extent of such repairs, alterations and modifications and only in so far as the Directorate thinks practicable and reasonable.

Surveys

9. (1) Every fishing vessel must be subject to the surveys specified below:

(a) An initial survey before the fishing vessel is put into service or before the certificate required under regulation 10(1) and (4) is issued for the first time, which must include a complete survey of its structure, stability, machinery, arrangements and material, including the outside of the fishing vessel's hull and the inside and outside of the boilers and equipment in so far as the fishing vessel is covered by this regulation, provided this survey is such as to ensure that the -

(i) arrangements, material, and scantlings of the structure, boilers, and other pressure fishing vessels and their appurtenances, main and auxiliary machinery, electrical installations, radio installations, including those used in life-saving appliances, fire protection, fire safety systems and appliances, life-saving appliances and arrangements, shipborne navigational equipment, nautical publications and other equipment fully comply with the requirements of these Regulations; and

(ii) the workmanship of all parts of the fishing vessel and its equipment is in all respects satisfactory and that the fishing vessel is provided with Regulations and the International Regulations for Preventing Collisions at Sea;

(b) where pilot transfer arrangements are carried, a survey of the arrangements referred to in subparagraph (i) of paragraph (a) must be made to ensure that they are in a safe working condition and comply with the relevant requirements of the International convention for the Safety of Life at Sea, 1974;

- (c) periodical surveys at intervals specified below:
- (i) Four years with regard to the structure, including the outside of the fishing vessel's hull, and machinery of the fishing vessel referred to in Chapters 3 to 7, but in terms of regulation 14(1), the period may be extended for one year, subject to the fishing vessel being surveyed internally or externally as far as it is practicable and reasonable;
 - (ii) one year with regard to the equipment of the vessel referred to in Chapters 3, 4, 5, 6, 8, and 10; and
 - (iii) one year with regard to the radio installations, including those used in life-saving appliances:

Provided that -

- (aa) periodical surveys must be such as to ensure that the appropriate items referred to in paragraphs (a) and (b) fully comply with the applicable requirements of these Regulations, that the equipment is in good working order and that the stability information is readily available on board; and
 - (bb) when the duration of the certificate issued under regulation 10 is extended as specified in regulation 14(1), the intervals of the surveys may be extended correspondingly;
- (d) in addition to the periodical survey required by subparagraph (i) of paragraph (c), intermediate surveys with regard to the structure and machinery of the fishing vessel at intervals specified by the Directorate, and the survey must be such as to ensure that alterations which would adversely affect the safety of the fishing vessel or the crew have not been made;
- (e) periodical surveys, as specified in subparagraphs (ii) and (iii) of paragraph (c) must be endorsed on the certificate referred to in regulation 10, and such endorsement shall be in Form 1 set out in the Appendix;
- (f) intermediate surveys, as specified in paragraph (d), must be endorsed on the certificate referred to in regulation 10, and such endorsement shall be in Form 2 set out in the Appendix; and
- (g) in the case of fishing vessels not holding a valid hull classification certificate from a recognised classification society, annual drydock surveys, unless an extension is granted by the Directorate: Provided that such an extension may not exceed 12 months.

(2) The inspection and survey of fishing vessels must, so far as the enforcement of these Regulations and the granting of exemptions therefrom are concerned, be carried out by officers of the Directorate, or the Directorate may entrust the inspections and surveys either to surveyors or to organizations recognized by it.

(3) The Directorate must, as a minimum, empower any recognised surveyor or organization -

- (a) to require repairs to a fishing vessel; and
- (b) to carry out inspections and surveys of a fishing vessel if requested by the appropriate authority.

(4) When the surveyor or the organization referred to in subregulation (3) determines that the condition of the fishing vessel or its equipment does not correspond substantially with the particulars of the certificate or is such that the fishing vessel is not fit to proceed to sea without danger to the fishing vessel or persons on board, that surveyor or organization must immediately ensure that corrective action is taken by the owner or master of the fishing vessel and must, in due course, notify the Directorate.

(5) If the corrective action referred to in subregulation (4) is not taken, the surveyor or the organisation referred to in subregulation (3) must withdraw the relevant certificate and must immediately notify the Directorate, and if the fishing vessel is in the port of another Party, must also immediately notify the appropriate authorities of the port State.

(6) When the surveyor or the organisation referred to in subregulation (3) has notified the appropriate authorities of the port State, that surveyor or organisation may request the Government of the State concerned to give that surveyor or organization any necessary assistance.

(7) When applicable, the Directorate must request the Government of the port State concerned to ensure that the fishing vessel does not sail until it can proceed to sea, or leave port for the purpose of proceeding to the appropriate repair yard, without danger to the fishing vessel or persons on board the fishing vessel.

(8) In every case, the Directorate must fully guarantee the completeness and efficiency of the inspection and survey, and must undertake to ensure the necessary arrangements to satisfy this obligation.

(9) Every owner and skipper of a ship must ensure that the condition of the fishing vessel and its equipment is maintained in conformity with these Regulations to ensure that the fishing vessel in all respects remains fit to proceed to sea without danger to the fishing vessel or persons on board the fishing vessel.

(10) After any survey of the fishing vessel under this regulation has been completed, no change must be made in the structural arrangements, machinery, equipment and other items covered by the survey, without permission from the Directorate.

(11) Whenever an accident occurs to a fishing vessel or a defect is discovered, either of which affects the safety of the fishing vessel or the efficiency or completeness of its life-saving appliances or other equipment, the owner or the skipper of the fishing vessel must report at the earliest opportunity to the Directorate who must cause investigations to be initiated to determine whether a survey, as required by this regulation, is necessary, and if the fishing vessel is in a port of another State, the owner or the skipper must also report immediately to the appropriate authorities of the port State.

Issue and endorsement of certificates

10. (1) A Fishing Vessel Safety Certificate must be issued after survey to a fishing vessel, which complies with the applicable requirements of these Regulations and that certificate shall be in Form 3 set out in the Appendix.

(2) When the validity of a Fishing vessel Exemption Certificate expires in terms of regulation 14(2), the endorsement to extend the validity of that certificate until the vessel reaches the port of survey or for a period of grace shall be in Form 4 set out in the Appendix.

(3) The endorsement to extend, for a period of grace, the validity of a Fishing Vessel Safety Certificate which has not been extended under regulation 14(2), shall be in Form 5 set out in the Appendix.

(4) When an exemption is granted to a fishing vessel under, and in accordance with, these Regulations, a Fishing Vessel Exemption Certificate must be issued in addition to the certificate prescribed in subregulation (1), and that certificate shall be in Form 6 set out in the Appendix.

(5) When the validity of a fishing vessel exemption certificate expires, it may be extended for a period of grace under and in accordance with these Regulations, and an endorsement to extend the validity of that certificate shall be made in Form 7 set out in the Appendix.

(6) The certificates referred to in subregulations (1), (2) and (3) must be issued or endorsed either by the Directorate or by any person or organization duly authorized by the Directorate, and in every case, the Directorate must assume full responsibility for the issue of the certificates.

Safety certificates

11. No fishing vessel must proceed beyond port limits without a valid Fishing Vessel Safety Certificate issued by the Directorate.

Record of equipment

12. A Fishing Vessel Safety Certificate must be supplemented by a record of equipment which must be permanently attached to it, and that record of equipment shall be in Form 8 set out in the Appendix.

Availability of certificates

13. The certificate issued under regulation 10 must be readily available on board for examination at all times.

Duration and validity of certificates

14. (1) A fishing Vessel Safety Certificate must be issued for a period of not more than four years and may not be extended for more than one year, subject to the periodical and intermediate surveys as required in regulation 9(1)(c) and (d), except as provided for in subregulations (2) to (11) of that regulation: Provided that a Fishing Vessel Exemption Certificate may not be valid for longer than the period of the Fishing Vessel Safety Certificate.

(2) If at the time when the validity of the Fishing Vessel Safety Certificate expires or ceases, a fishing vessel is not in a port of the Party whose flag the vessel is entitled to fly, the validity of the certificate may be extended by that Party, but such extension must be granted only for the purpose of allowing the vessel to complete its voyage to a port of that Party or to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so.

(3) The validity of the certificate referred to in subregulation (2) may not be extended for a period longer than five months and a vessel to which such extension is granted may not, on its arrival in a port of the Party whose flag the vessel is entitled to fly or the port in which it is to be surveyed, be entitled by virtue of such extension to leave such port without having obtained a new certificate.

(4) A certificate which has not been extended under subregulation (2) may be extended by the Directorate for a period of grace up to one month from the date of expiry stated on it.

(5) A certificate issued under regulation 10 ceases to be valid in any of the following cases:

(a) If the relevant surveys are not completed within the periods specified in regulation 9;

- (b) if the certificate is not endorsed in accordance with these Regulations; or
- (c) upon transfer of the fishing vessel to the flag of another State.

Prior approval of plans and calculations

15. (1) Before the construction, major repairs, alterations, modifications or conversion of a fishing vessel may be undertaken, the Directorate must first ensure approval of -

- (a) all construction and conversion plans;
- (b) maximum permissible operating draught calculations; and
- (c) stability calculations for various operating conditions,

as may be applicable.

(2) Three copies of drawings, plans and stability calculations of a fishing vessel must be submitted to the Directorate.

CHAPTER 3 CONSTRUCTION, WATERTIGHT INTEGRITY AND EQUIPMENT

Construction

16. (1) The strength and construction of hull, superstructures, deckhouses, machinery casings, companionways and any other structures and a fishing vessel's equipment must be sufficient to withstand all foreseeable conditions of the intended service and must be to the satisfaction of the Directorate.

(2) The hull of fishing vessels intended for operation in ice must be strengthened in accordance with the anticipated conditions of the navigation and area of operation.

(3) Bulkheads, closing devices and closures of openings in the bulkheads of a fishing vessel, and methods for their testing, must be in accordance with the requirements of the Directorate.

(4) Fishing vessels constructed of material other than wood must be fitted with a collision bulkhead and at least with watertight bulkheads bounding the main machinery space, and those bulkheads must be extended up to the working deck: Provided that, in fishing vessels constructed of wood, bulkheads which must as far as is practicable and reasonable be watertight must also be fitted.

(5) Pipes piercing the collision bulkhead on a fishing vessel must be fitted with suitable valves operable from above the working deck, and the valve chest must be secured at the collision bulkhead inside the forepeak.

(6) No door, manhole, ventilation duct or any other opening must be fitted in the collision bulkhead below the working deck on a fishing vessel.

(7) Where a long forward superstructure is fitted on a fishing vessel, the collision bulkhead must be extended weathertight to the deck next above the working deck.

(8) The extension referred to in subregulation (7) may not be fitted directly over the bulkhead below, provided it is located within the limits given in the definition of "collision bulkhead" in regulation 5 and the part of the deck which forms the step is made effectively weathertight.

(9) The number of openings in the collision bulkhead above the working deck of a fishing vessel must be reduced to the minimum compatible with the design and normal operation of the fishing vessel, and those openings must be capable of being closed weathertight.

(10) In fishing vessels of 75 metres in length and over, a watertight double bottom must be fitted, as far as is practicable, between the collision bulkhead and the afterpeak bulkhead.

Watertight doors

17. (1) The number of openings in watertight bulkheads, as required by regulation 16(4), must be reduced to the minimum compatible with the general arrangements and operational needs of the fishing vessel.

(2) Openings in watertight bulkheads must be fitted with watertight closing appliances to the satisfaction of the Directorate, and watertight doors must be of an equivalent strength to the adjacent unpierced structure.

(3) In fishing vessels of less than 45 metres in length, the watertight doors referred to in subregulation (2) may be of the hinged type, which must be capable of being operated locally from each side of the door and must normally be kept closed at sea.

(4) A notice must be attached to each side of the watertight door referred to in subregulation (3) stating that the door must be kept closed at sea.

(5) In fishing vessels of 45 metres in length and over, watertight doors must be of the sliding type in -

- (a) spaces where it is intended to open them at sea and if located with their sills below the deepest operating waterline, unless the Directorate considers it to be impracticable or unnecessary taking into account the type and operation of the fishing vessels; and
- (b) the lower part of a machinery space where there is access from it to a shaft tunnel,

otherwise watertight doors may be of the hinged type.

(6) Sliding watertight doors on a fishing vessel must be capable of being operated when the fishing vessel is listed up to 15° either way.

(7) Sliding watertight doors on a fishing vessel, whether manually operated or otherwise must be capable of being operated locally from each side of the door: Provided that in fishing vessels of 45 metres in length and over these doors must also be capable of being operated by remote control from an accessible position above the working deck, except when the doors are fitted in crew accommodation spaces.

(8) Means must be provided at remote operating positions to indicate when a sliding door on a fishing vessel is open or closed.

Hull integrity

18. (1) External openings on a fishing vessel must be capable of being closed so as to prevent water from entering the fishing vessel.

(2) Deck openings on a fishing vessel, which may be open during fishing operations must normally be arranged near to the fishing vessel's centreline, but the Directorate may approve different arrangements if satisfied that the safety of the fishing vessel will not be impaired.

(3) Fish flaps on stern trawlers on a fishing vessel must be power-operated and capable of being controlled from any position which provides an unobstructed view of the operation of the flaps.

Weathertight doors

19. (1) All access openings in bulkheads of enclosed superstructures and other outer structures through which water could enter and endanger the fishing vessel must be fitted with doors permanently attached to the bulkhead, framed and stiffened so that the whole structure is of equivalent strength to the unpierced structure, and weathertight when closed.

(2) The means for securing the doors referred to in subregulation (1) must consist of gaskets and clamping devices or other equivalent means which must be permanently attached to the bulkhead or to the doors themselves, and must be arranged in such a way that they can be operated from each side of the bulkhead.

(3) The Directorate may, without prejudice to the safety of the crew, permit the doors referred to in subregulation (1) to be opened from one side only for freezer rooms, provided a suitable alarm device is fitted to prevent persons being trapped in those rooms.

(4) The height above deck of sills in the doorways, in companionways, erections and machinery casings which give direct access to parts of the deck exposed to the weather and sea must be at least 600 millimetres on the working deck and at least 300 millimetres on the superstructure deck.

(5) Where operating experience has shown justification, and on approval of the Directorate, the heights referred to in subregulation (4), except in the doorways giving direct access to machinery spaces, may be reduced to not less than 380 millimetres and 150 millimetres, respectively.

Hatchways closed by wood covers

20. (1) The height above deck of hatchway coamings on a fishing vessel must be at least 600 millimetres on exposed parts of the working deck and at least 300 millimetres on the superstructure deck.

(2) The finished thickness of wood hatchway covers on a fishing vessel must include an allowance for abrasion due to rough handling.

(3) The finished thickness of the wood hatchway covers referred to in subregulation (2) must be at least 4 millimetres for each 100 millimetres of unsupported span, subject to a minimum of 40 millimetres, and the width of their bearing surfaces must be at least 65 millimetres.

(4) Arrangements for securing wood hatchway covers on a fishing vessel, weathertight must be provided to the satisfaction of the Directorate.

Hatchways closed by covers other than wood

21. (1) The height above deck of hatchway coamings on a fishing vessel must be as specified in regulation 20(1).

(2) Where operating experience has shown justification, and on the approval by the Directorate, the height of the hatchway coamings referred to in subregulation (1) may be reduced, or omitted entirely, provided that the safety of fishing vessels is not impaired, and, in this case, the hatchway openings must be kept as small as is practicable and the covers be permanently attached by hinges or equivalent means and be capable of being rapidly closed and battened down, or by equally effective arrangements to the satisfaction of the Directorate.

(3) For the purpose of strength calculations, it must be assumed that hatchway covers are subjected to the weight of cargo intended to be carried on them or to the following static loads, whichever is the greater:

- (a) 5 kN per square metre for fishing vessels of 15 metres in length;
- (b) 10.0 kN per square metre for fishing vessels of 24 metres in length;
- (c) 17.0 kN per square metre for fishing vessels of 100 metres in length and over.

(4) For intermediate lengths the load values of fishing vessels must be determined by linear interpolation, but the Directorate may reduce the loads to not less than 75% of these values for covers to hatchways situated on the superstructure deck in a position abaft a point located 0.25L from the forward perpendicular.

(5) Where the covers referred to in subregulation (4) are made of mild steel, the maximum stress calculated according to subregulation (3) multiplied by 4.25 may not exceed the minimum ultimate strength of the material, and under these loads the deflections may not be more than 0.0028 times the span.

(6) Covers referred to in subregulation (4) which are made of materials other than mild steel must be at least of equivalent strength to those made of mild steel, and their construction must be of sufficient stiffness ensuring weathertightness under the loads specified in subregulation (3).

(7) Covers referred to in subregulation (4) must be fitted with clamping devices and gaskets sufficient to ensure weathertightness, or other equivalent arrangements to the satisfaction of the Directorate.

Machinery space openings

22. (1) Machinery space openings on a fishing vessel must be framed and enclosed by casings of a strength equivalent to the adjacent superstructure.

(2) External access openings on a fishing vessel must be fitted with doors complying with the requirements of regulation 19.

(3) Openings on a fishing vessel, other than access openings, must be fitted with covers of equivalent strength to the unpierced structure, permanently attached thereto and capable of being closed weathertight.

Other deck openings

23. (1) Where it is essential for fishing operations, flush deck scuttles of the screw, bayonet or equivalent type and manholes may be fitted on a fishing vessel, provided those scuttles are capable of being closed watertight, and such devices are permanently attached to the adjacent structure.

(2) Having regard to the size and disposition of the openings and the design of the closing devices, metal-to-metal closures may be fitted on a fishing vessel if the Directorate is satisfied that they are effectively watertight.

(3) Openings, other than hatchways, machinery space openings, manholes and flush scuttles in the working or superstructure deck of a fishing vessel must be protected by enclosed structures fitted with weathertight doors or their equivalent.

(4) Companionways in a fishing vessel must be situated as close as is practicable to the centreline of the fishing vessel.

Ventilators

24. (1) In fishing vessels of 45 metres in length and over, the height above deck of ventilator coamings, other than machinery space ventilator coamings, must be at least 900 millimetres on the working deck and at least 760 millimetres on the superstructure deck.

(2) In fishing vessels of less than 45 metres in length, the height of ventilator coamings must be 760 millimetres and 450 millimetres, respectively.

(3) The height above deck of machinery space ventilator openings in a fishing vessel must be to the satisfaction of the Directorate.

(4) Coamings of ventilators in a fishing vessel must be of equivalent strength to the adjacent structure and capable of being closed weathertight by closing appliances permanently attached to the ventilator or adjacent structure.

(5) Where the coaming of any ventilator in a fishing vessel exceeds 900 millimetres in (6) Closing appliances in fishing vessels of 45 metres in length and over may not be fitted to ventilators the coamings of which extend to more than 4.5 metres above the working deck or more than 2.3 metres above the superstructure deck, unless specifically required by the Directorate.

(6) Closing appliances in fishing vessels of 45 metres in length and over may not be fitted to ventilators the coamings of which extend to more than 4.5 metres above the working deck or more than 2.3 metres above the superstructure deck, unless specifically required by the Directorate.

(7) In fishing vessels of less than 45 metres in length, closing appliances may not be fitted to ventilators the coamings of which extend to more than 3.4 metres above the working deck or more than 1.7 metres above the superstructure deck.

(8) If the Directorate is satisfied that it is unlikely that water will enter the fishing vessel through machinery space ventilators, closing appliances to such ventilators may be omitted.

Air pipes

25. (1) Where air pipes to tanks and void spaces below deck in a fishing vessel extend above the working or the superstructure decks, the exposed parts of the pipes must be of strength equivalent to the adjacent structures and fitted with appropriate protection.

(2) Openings of air pipes in a fishing vessel must be provided with means of closing, permanently attached to the pipe or adjacent structure.

(3) The height of air pipes above deck on a fishing vessel to the point where water may have access below must be at least 760 millimetres on the working deck and at least 450 millimetres on the superstructure deck.

(4) The Directorate may accept reduction of the height of an air pipe on a fishing vessel to avoid interference with the fishing operations.

Sounding devices

26. (1) Sounding devices, to the satisfaction of the Directorate, must be fitted:

(a) to the bilges of compartments of a fishing vessel which are not readily accessible at all times during the voyage; and

(b) to all tanks and cofferdams.

(2) Where sounding pipes are fitted, their upper ends must be extended to a readily accessible position and, where practicable, above the working deck, and their openings must be provided with permanently attached means of closing.

(3) Sounding pipes which are not extended above the working deck must be fitted with automatic self-closing devices.

Sidescuttles and windows

27. (1) Sidescuttles to spaces on a fishing vessel below the working deck and to spaces within the enclosed structures on that deck must be fitted with hinged deadlights capable of being closed watertight.

(2) No sidescuttle on a fishing vessel must be fitted in such a position that its sill is less than 500 millimetres above the deepest operating waterline.

(3) Sidescuttles fitted less than 1000 millimetres above the deepest operating waterline on a fishing vessel must be of the fixed type.

(4) Sidescuttles on a fishing vessel, together with their glasses and deadlights must be of an approved construction, and those prone to be damaged by fishing gear must be suitably protected.

(5) Toughened safety glass or its equivalent must be used for the wheelhouse windows on a fishing vessel.

(6) The Directorate may accept sidescuttles and windows without deadlights in side and aft bulkheads of deckhouses located on or above the working deck of a fishing vessel if satisfied that the safety of the fishing vessel will not be impaired.

Inlets and discharges

28. (1) Discharges led through the shell on a fishing vessel either from spaces below the working deck or from within enclosed superstructures or deckhouses on the working deck fitted with doors complying with the requirements of regulation 19 must be fitted with accessible means for preventing water from passing inboard.

(2) Each separate discharge on a fishing vessel must have an automatic non-return valve with a positive means of closing it from an accessible position.

(3) The valve referred to in subregulation (2) is not required if the Directorate considers that the entry of water into the fishing vessel through the opening is not likely to lead to dangerous flooding and that the thickness of the piping is sufficient.

(4) The means of operating the positive action valve on a fishing vessel must be provided with an indicator showing whether the valve is open or closed.

(5) In manned machinery spaces in a fishing vessel, main and auxiliary sea inlets and discharges essential for the operation of machinery may be controlled locally.

(6) The controls referred to in subregulation (5) must be accessible and must be provided with indicators showing whether the valves are open or closed.

(7) Fittings attached to the shell of a fishing vessel and the valves required by this regulation must be of steel, bronze or other approved ductile material.

(8) All pipes in a fishing vessel between the shell and the valves must be of steel, except that in spaces other than machinery spaces of fishing vessels constructed of material other than steel, the Directorate may approve the use of other materials.

Freeing ports

29. (1) Where bulwarks on weather parts of the working deck of a fishing vessel form wells, the minimum freeing port area (A) in square metres on each side of the fishing vessel for each well on the working deck must be determined in relation to the length (l) and height of bulwark in the well as follows:

$$A = 0.07 l$$

(l may not be taken as greater than 0.7L).

(2) Where the bulwark on a fishing vessel is more than 1200 millimetres in average height the required area must be increased to 0.004 square metres per metre of length of well for each 100 millimetres difference in height.

(3) Where the bulwark on a fishing vessel is less than 900 millimetres in average height, the required area may be decreased by 0.004 square metres per metre of length of well for each 100 millimetres difference in height.

(4) The freeing port area calculated according to subregulation (1) must be increased where the Directorate considers that the fishing vessel's sheer is not sufficient to ensure that the deck is rapidly and effectively freed of water.

(5) Subject to the approval of the Directorate, the minimum freeing port area for each well on the superstructure deck of a fishing vessel must be not less than one half the area (A) given in subregulation (1).

(6) Freeing ports of a fishing vessel must be so arranged along the length of bulwarks as to ensure that the deck is freed of water most rapidly and effectively and lower edges of freeing ports must be as near the deck as is practicable.

(7) Poundboards and means for stowage of the fishing gear on a fishing vessel must be arranged in such a way that the effectiveness of freeing ports will not be impaired.

(8) Poundboards on a fishing vessel must be constructed in such a way that they can be locked in position when in use and may not hamper the discharge of shipped water.

(9) Freeing ports over 300 millimetres in depth on a fishing vessel, must be fitted with bars spaced not more than 230 millimetres nor less than 150 millimetres apart or provided with other suitable protective arrangements.

(10) Freeing port covers, if fitted on a fishing vessel, must be of approved construction.

(11) If devices are considered necessary for locking freeing port covers during fishing operations they must be to the satisfaction of the Directorate and easily operable from a readily accessible position.

(12) In fishing vessels intended to operate in areas subject to icing, covers and protective arrangements for freeing ports must be capable of being easily removed to restrict ice accretion.

(13) The size of openings and means provided for removal of the protective arrangements referred to in subregulation (12) must be to the satisfaction of the Directorate.

Anchor and mooring equipment

30. (1) Anchor equipment designed for quick and safe operation which must consist of anchoring equipment, anchor chains or wire ropes, stoppers and a windlass or other arrangements for dropping and hoisting the anchor and for holding the fishing vessel at anchor in all foreseeable service conditions must be provided.

(2) Fishing vessels must be provided with adequate mooring equipment for safe mooring in all operating conditions.

(3) Anchor and mooring equipment on a fishing vessel must be to the satisfaction of the Directorate.

Applicability of regulations

31. The Directorate may, after considering an individual ship or fishing vessel, make this Chapter applicable to -

- (a) a rebuilding of a fishing vessel;
- (b) a major repair of a fishing vessel; or
- (c) the conversion of any ship to a fishing vessel.

CHAPTER 4 STABILITY AND ASSOCIATED SEAWORTHINESS

General

32. Fishing vessels must be designed and constructed in such a way that the requirements of this Chapter will be satisfied in the operating conditions referred to in regulation 40.

Calculations of righting lever curves

33. Calculations of the righting lever curves on a fishing vessel must be to the satisfaction of the Directorate.

Stability criteria

34. (1) The following minimum stability criteria for fishing vessels must be met unless the Directorate is satisfied that operating experience justifies departures therefrom:

- (a) The area under the righting lever curve (GZ curve) may not be less than 0.055 m-rad up to 30° angle of heel and not less than 0.090 m-rad up to 40° or the angle of flooding (f if this angle is less than 40°, and the area under the righting lever curve (GZ curve) between the angles of heel of 30° and 40° or between 30° and (f, if this angle is less than 40° may not be less than 0.030 m-rad, where (f is the angle of heel at which openings in the hull, superstructure or deckhouses which cannot rapidly be closed weathertight commence to immerse: Provided that in applying this criterion, small openings through which progressive flooding cannot take place may not be considered as open;
- (b) the righting level GZ must be at least 200 millimetres at an angle of heel equal to or greater than 30°;
- (c) the maximum righting lever GZ_{max} must occur at an angle of heel preferably exceeding 30°, but not less than 25°; and
- (d) the initial metacentric height GM may not be less than 350 millimetres for single deck fishing vessels: Provided that in fishing vessels with complete superstructure or fishing vessels of 70 metres in length and over the metacentric height may be reduced to the satisfaction of the Directorate, but in no case shall it be less than 150 millimetres.

(2) Where arrangements other than bilge keels are provided to limit the angles of roll, the Directorate must be satisfied that the stability criteria given in subregulation (1) are maintained in all operating conditions.

(3) Where ballast is provided to ensure compliance with subregulation (1), its nature and arrangement must be to the satisfaction of the Directorate.

Flooding of fish-holds

35. The angle of heel at which progressive flooding of fish-holds could occur through hatches which remain open during fishing operations and which cannot rapidly be closed must be at least 20° unless the stability criteria of regulation 34(1) can be satisfied with the respective fish-holds partially or completely flooded.

Particular fishing methods

36. Fishing vessels engaged in particular fishing methods where additional external forces are imposed on the fishing vessel during fishing operations, must meet the stability criteria of regulation 34(1) increased, if necessary, to the satisfaction of the Directorate.

Severe wind and rolling

37. Fishing vessels must be able to withstand, to the satisfaction of the Directorate, the effect of severe wind and rolling in associated sea conditions taking account of the seasonal weather conditions, the sea states in which the fishing vessel will operate, the type of fishing vessel and its mode of operation.

Water on deck

38. Fishing vessels must be able to withstand to the satisfaction of the Directorate, the effect of water on deck, taking account of the seasonal weather conditions, the sea states in which the fishing vessel will operate, the type of fishing vessel and its mode of operation.

Operating conditions

39. (1) The number and type of operating conditions to be considered for fishing vessels must be to the satisfaction of the Directorate, and must include the following, as appropriate:

- (a) Departure for the fishing grounds with full fuel, stores, ice and fishing gear;
- (b) departure from the fishing grounds with full catch;
- (c) arrival at home port with full catch and 100% stores and fuel; and
- (d) arrival at home port with 10% stores, fuel and a minimum catch, which must normally be 20% of full catch, but may be up to 40%, provided the Directorate is satisfied that operating patterns justify such a value.

(2) In addition to the specific operating conditions for fishing vessels imposed in subregulation (1), the Directorate must be satisfied that -

- (a) the minimum stability criteria given in regulation 35 are met under all other actual operating conditions, including those which produce the lowest values of the stability parameters contained in these criteria; and
- (b) the special conditions associated with a change in the fishing vessel's mode or areas of operation which affect the stability considerations of this Part are taken into account.

(3) The calculations concerning the operating conditions referred to in subregulation (1), must include the following:

- (a) Allowance for the weight of the wet fishing nets and tackle on the deck;
- (b) allowance for ice accretion, if anticipated, in accordance with regulation 40;
- (c) even distribution of the catch, unless this is inconsistent with practice;
- (d) catch on deck, if anticipated, in operating conditions referred to in subregulation (1)(b) and (c) and subregulation (2);
- (e) water ballast if carried either in tanks which are especially provided for this purpose or in other tanks also equipped for carrying water ballast; and
- (f) allowance for the free surface effect of liquids and, if applicable, catch carried.

Ice accretion

40. (1) For fishing vessels operating in areas where ice accretion is likely to occur, the following icing allowance must be made in the stability calculations:

- (a) 30 kg per square metre on exposed weather decks and gangways;
- (b) 7.5 kg per square metre for projected lateral area of each side of the fishing vessel above the water plane; and
- (c) the projected lateral area of discontinuous surfaces of rail, spars (except masts) and rigging of fishing vessels having no sails and the projected lateral area of other small objects must be computed by increasing the total projected area of continuous surfaces by 5% and the static moments of this area by 10%.

(2) Fishing vessels intended for operation in areas where ice accretion is known to occur must be -

- (a) designed to minimize the accretion of ice; and
- (b) equipped with such means for removing ice as the Directorate may require.

Inclining test

41. (1) Every fishing vessel must undergo an inclining test upon its completion and the actual displacement and position of the centre of gravity must be determined for the light ship condition.

(2) Where alterations are made to a fishing vessel affecting its light ship condition and the position of the centre of gravity, the fishing vessel must, if the Directorate considers this necessary, be re-inclined and the stability information revised.

(3) The Directorate may allow the inclining test of an individual fishing vessel to be dispensed with, provided basic stability data are available from the inclining test of a sister ship and it is shown to the satisfaction of the Directorate that reliable stability information for the exempted fishing vessel can be obtained from such basic data.

Stability information

42. (1) Suitable stability information must be supplied to enable the skipper to assess with ease and certainty the stability of the fishing vessel under various operating conditions.

(2) The stability information referred to in subregulation (1) must include instructions to the skipper warning him or her of those operating conditions which could adversely affect either the stability or the trim of the fishing vessel, and a copy of that stability information must be submitted to the Directorate for approval.

(3) The approved stability information must be kept on board, readily accessible at all times and inspected at the periodical surveys of the fishing vessel to ensure that it has been approved for the actual operating conditions.

(4) Where alterations are made to a fishing vessel affecting its stability, revised stability calculations must be prepared and submitted to the Directorate for approval.

(5) If the Directorate decides that the stability information referred to in subregulation (3) must be revised, the new information must be supplied to the skipper and the superseded information removed.

Portable fish-hold divisions

43. (1) The scantlings of portable fish-hold divisions, if fitted on a fishing vessel, must be to the satisfaction of the Directorate.

(2) The catch must be properly secured against shifting which could cause dangerous trim or heel of the fishing vessel.

Bow height

44. The bow height in a fishing vessel must be sufficient, to the satisfaction of the Directorate, to prevent the excessive shipping of water and must be determined by taking into account the seasonal weather conditions, the sea states in which the fishing vessel will operate, the type of fishing vessel and its mode of operation.

Maximum permissible operating draught

45. A maximum permissible operating draught must be approved by the Directorate and must be such that, in the associated operating condition, the stability criteria of this Part and the requirements of Parts III and VII, as appropriate are satisfied.

Subdivision and damage stability

46. Fishing vessels of 100 metres in length and over, where the total number of persons carried is 100 or more, must be capable, to the satisfaction of the Directorate, of remaining afloat with positive stability, after the flooding of any one compartment assumed damaged, having regard to the type of fishing vessel, the intended service and area of operation.

Extension of application

47. This Chapter also applies to existing fishing vessel.

CHAPTER 5 MACHINERY AND ELECTRICAL INSTALLATIONS AND PERIODICALLY UNATTENDED MACHINERY SPACES

PART I GENERAL

Application

48. This Chapter applies to existing and new fishing vessels of 45 metres in length and over, but the Directorate may apply this Part to fishing vessels less than 45 metres in length, where practicable and reasonable.

Definitions

49. (1) For the purposes of this Part -

“auxiliary means of activating the rudder” means the equipment which is provided for effecting movement of the rudder for the purpose of steering the fishing vessel in the event of failure of the main steering gear;

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

“fuel oil unit” means the equipment used for the preparation of fuel oil for delivery to an oil-fired boiler, or equipment used for the preparation of oil for delivery to an internal combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a pressure greater than 0.18 N per square millimetre;

“main steering gear” means the machinery, the steering gear power units, if any, and ancillary equipment and the means of applying torque to the rudder stock (e.g. tiller or quadrant) necessary for effecting

“main switchboard” means a switchboard directly supplied by the main source of electrical power and intended to distribute electrical energy;

“maximum ahead service speed” means the greatest speed which the fishing vessel is designed to maintain in service at sea at its maximum permissible operating draught;

“maximum astern speed” means the speed which it is estimated the fishing vessel can attain at the designed maximum astern power at its maximum permissible operating draught;

“normal operational and habitable condition” means conditions under which the fishing vessel as a whole, its machinery services, means of main and auxiliary propulsion, steering gear and associated equipment, aids to safe navigation and to limit the risks of fire and flooding, internal and external means of communicating and signalling, means of escape and winches for rescue boats, are in proper working order and the minimum comfortable conditions of habitability are satisfactory;

“periodically unattended machinery space” means those spaces containing main propulsion and associated machinery and all sources of main electrical supply which are not at all times manned under all operating conditions, including manoeuvring.

“steering gear power unit” means in the case of -

- (a) electric steering gear, an electric motor and its associated electrical equipment;
- (b) electro-hydraulic steering gear, an electric motor and its associated electrical equipment and connected pump; and
- (c) other hydraulic steering gear, a driving engine and connected pump.

Machinery installations

50. (1) Main propulsion, control, steam pipe, fuel oil, compressed air, electrical and refrigeration systems, auxiliary machinery, boilers and other pressure fishing vessels, piping and pumping arrangements, steering equipment and gears, shafts and couplings for power transmission on a fishing vessel must be designed, constructed, tested, installed and serviced to the satisfaction of the Directorate.

(2) The machinery and equipment referred to in subregulation (1), as well as lifting gear, winches, fish handling and fish processing equipment must be protected so as to reduce to a minimum any danger to persons on board the fishing vessel.

(3) Special attention must be paid to moving parts and hot surfaces of machinery and equipment on a fishing vessel, and other dangers.

(4) Machinery spaces on a fishing vessel must be designed in such a way as to provide safe and free access to all machinery and its controls as well as to any other parts which may require servicing and those spaces must be adequately ventilated.

(5) Means must be provided on a fishing vessel whereby the operational capability of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative.

(6) In providing the means referred to in subregulation (5), special consideration must be given to the functioning of -

- (a) the arrangements which supply fuel oil pressure for main propulsion machinery;
- (b) the normal sources of lubricating oil pressure;
- (c) the hydraulic, pneumatic and electrical means for the control of main propulsion machinery including controllable pitch propellers;
- (d) the sources of water pressure for main propulsion cooling systems; and
- (e) an air compressor and an air receiver for starting or control purposes:

Provided that the Directorate may, having regard to overall safety considerations, accept a partial reduction in capability in lieu of full normal operation.

(7) Means must be provided on a fishing vessel whereby the machinery can be brought into operation from the dead ship condition without external aid.

(8) Main propulsion machinery and all auxiliary machinery on a fishing vessel, essential to the propulsion and the safety of the fishing vessel must, as fitted, be capable of operating whether the fishing vessel is upright or listed up to 15° either way under static conditions and up to 22.5° either way under dynamic conditions, that is to say, when rolling either way and simultaneously pitching (inclined dynamically) up to 7.5° by bow and stern.

(9) The Directorate may permit deviation from the angles referred to in subregulation (9), taking into consideration the type, size and service conditions of the fishing vessel.

(10) Special consideration must be given to the design, construction and installation of propulsion machinery systems so that any mode of their vibrations does not cause undue stresses in such machinery systems in the normal operating ranges.

Electrical installations

51. (1) The design and construction of electrical installations on a fishing vessel must be such as to provide -

- (a) the services necessary to maintain the fishing vessel in normal operational and habitable conditions without having recourse to an emergency source of power;
- (b) the services essential to safety when failure of the main source of electrical power occurs; and
- (c) protection of the crew and fishing vessel from electrical hazards.

(2) The Directorate must be satisfied that regulations 65 to 67 are uniformly implemented and applied.

Periodically unattended machinery spaces

52. (1) Part IV applies in addition to regulation 51 and Parts II and III of these Regulations and regulations 1 to 44 of Chapter V of the Convention Regulations, to fishing vessels with periodically unattended machinery spaces.

(2) Measures must be taken to the satisfaction of the Directorate to ensure that all equipment on a fishing vessel is functioning in a reliable manner in all operating conditions, including manocuvring, and that arrangements to the satisfaction of the Directorate are made for regular inspections and routine tests to ensure continuous reliable operation.

(3) Fishing vessels must be provided with documentary evidence to the satisfaction of the Directorate of their fitness to operate with periodically unattended machinery spaces.

**PART II
MACHINERY INSTALLATIONS****Machinery**

53. (1) Main and auxiliary machinery essential for the propulsion and safety of a fishing vessel must be provided with effective means of control.

(2) Internal combustion engines of a cylinder having a diameter greater than 200 millimetres or a crankcase volume greater than 0.6 cubic metres must be provided with crankcase explosion relief valves of an approved type with sufficient relief area.

(3) Where main or auxiliary machinery including pressure fishing vessels or any parts of such machinery are subject to internal pressure and may be subject to dangerous overpressure, means must be provided, where applicable, which will protect against such excessive pressure.

(4) All gearing and every shaft and coupling used for transmission of power to machinery essential for the propulsion and safety of the fishing vessel or the safety of persons on board must be designed and constructed in such a way that it will withstand the maximum working stresses to which it may be subjected in all service conditions, provided due consideration is given to the type of engines by which it is driven or of which it forms part.

(5) Main propulsion machinery and, where applicable, auxiliary machinery on a fishing vessel must be provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could lead rapidly to damage, complete breakdown or explosion.

(6) An advance alarm must be provided on a fishing vessel so that warning is given before automatic shut-off, but the Directorate may permit provisions for overriding automatic shut-off devices.

(7) The Directorate may exempt fishing vessels from subregulations (5) and (6), giving consideration to the type of fishing vessel or its specific service.

Means of going astern

54. (1) Fishing vessels must have sufficient power for going astern to secure proper control of the fishing vessel in all normal circumstances.

(2) The ability of the machinery to reverse the direction of thrust of the propeller in a fishing vessel in sufficient time and to bring the fishing vessel to rest within a reasonable distance from maximum ahead service speed must be demonstrated at sea.

Steam boilers, feed systems and steam piping arrangements

55. (1) Every steam boiler and every unfired steam generator on a fishing vessel must be provided with not less than two safety valves of adequate capacity: Provided that the Directorate may, having regard to the output of any other features of any steam boiler or unfired steam generator, permit only one safety valve to be fitted if satisfied that adequate protection against overpressure is thereby provided.

(2) Every oil-fired steam boiler which is intended to operate without manual supervision must have safety arrangements which shut off the fuel supply and give an alarm in the case of low water level, air supply failure or flame failure.

(3) The Directorate must give special consideration to steam boiler installations to ensure that feed systems, monitoring devices, and safety provisions are adequate in all respects to ensure the safety of boilers, steam pressure fishing vessels and steam piping arrangements.

Communication between the wheelhouse and machinery space

56. At least two separate means of communication between the wheelhouse and the machinery space control platform must be provided on a fishing vessel, one of which must be an engine-room telegraph.

Wheelhouse control of propulsion machinery

57. (1) Where remote control of propulsion machinery is provided from the wheelhouse on a fishing vessel, the following apply:

- (a) Under all operating conditions, including manoeuvring, the speed, direction of thrust and, if applicable, the pitch of the propeller must be fully controllable from the wheelhouse;
- (b) the control referred to in paragraph (a) must be performed by means of a control device to the satisfaction of the Directorate with, where necessary, means of preventing overload of the propulsion machinery;
- (c) the main propulsion machinery must be provided with an emergency stopping device in the wheelhouse and independent from the wheelhouse control system referred to in paragraph (a);
- (d) remote control of the propulsion machinery must be possible only from one station at a time, but at any control station interlocked control units may be permitted;
- (e) there must be at each station an indicator showing which station is in control of the propulsion machinery;
- (f) the transfer of control between the wheelhouse and machinery spaces must be possible only in the machinery space or control room;
- (g) indicators must be fitted in the wheelhouse for -
 - (i) propeller speed and direction in the case of fixed propellers;
 - (ii) propeller speed and pitch position in the case of controllable pitch propellers; and
 - (iii) advance alarm as required in regulation 53(6);
- (h) it shall be possible to control the propulsion machinery locally even in the case of failure in any part of the remote control system;

- (i) unless the Directorate considers it impracticable, the design of the remote control system must be such that if it fails an alarm will be given and the pre-set speed and direction of thrust will be maintained until local control is in operation;
- (j) special arrangements must be provided to ensure that automatic starting does not exhaust the starting possibilities; and
- (k) an alarm must be provided to indicate low starting air pressure and must be set at a level which will still permit main engine starting operations.

(2) Where the main propulsion and associated machinery, including sources of main electrical supply are provided with various degrees of automatic or remote control and are under continuous manned supervision from a control room, the control room must be designed, equipped and installed in such a way that the machinery operation must be as safe and effective as if it were under direct supervision.

(3) In general, automatic starting, operational and control systems must include means for manually overriding the automatic means, even in the case of failure of any part of the automatic and remote control system.

Air pressure systems

58. (1) Means must be provided on a fishing vessel to prevent excess pressure in any part of compressed air systems, and wherever water-jackets or casings of air compressors and coolers might be subjected to dangerous excess pressure due to leakage into them from air pressure parts, suitable pressure-relief arrangements must be provided.

(2) The main starting air arrangements for main propulsion internal combustion engines on a fishing vessel must be adequately protected against the effects of backfiring and internal explosion in the starting air pipes.

(3) All discharge pipes from starting air compressors on a fishing vessel must lead directly to the starting air receivers and all starting pipes from the air receivers to main or auxiliary engines must be entirely separate from the compressor discharge pipe system.

(4) Provision must be made on a fishing vessel to reduce to a minimum the entry of oil into the air pressure systems and to drain these systems.

Arrangements for fuel oil, lubricating oil and other flammable oils

59. (1) Fuel oil which has a flashpoint of less than 60°C (closed cup test) as determined by an approved flashpoint apparatus may not be used as fuel, except in emergency generators, in which case the flashpoint must be not less than 43°C: Provided that the Directorate may permit the general use of fuel oil having a flashpoint of not less than 43°C, subject to such additional precautions as it may consider necessary and on condition that the temperature of the space in which such fuel is stored or used may not rise to within 10°C below the flashpoint of the fuel.

(2) Safe and efficient means of ascertaining the amount of fuel oil contained in any oil tank on a fishing vessel must be provided.

(3) If sounding pipes are installed on a fishing vessel, their upper ends must terminate in safe positions and must be fitted with suitable means of closure.

(4) Gauges made of glass of substantial thickness and protected with a metal case may be used on a fishing vessel, provided automatic closing valves are fitted.

(5) Other means of ascertaining the amount of fuel oil contained in any fuel oil tank on a fishing vessel may be permitted, provided their failure or overfilling of the tanks will not permit release of fuel.

(6) Provision must be made on a fishing vessel to prevent overpressure in any oil tank or in any part of the fuel oil system, including the filling pipes.

(7) Relief valves and air or overflow pipes for an oil tank on a fishing vessel must discharge to a position, and in a manner, which is safe.

(8) Subject to the satisfaction of the Directorate, fuel oil pipes on a fishing vessel which, if damaged, would allow oil to escape from a storage, settling or daily service tank situated above the double bottom, must be fitted with a cock or valve on the tank capable of being closed from a safe position outside the space concerned in the event of a fire arising in the space in which such tanks are situated.

(9) In the special case of deep tanks situated in any shaft or pipe tunnel or similar space in a fishing vessel, valves on the tank must be fitted, but control in the event of fire may be effected by means of an additional valve on the pipe or pipes outside the tunnel or similar space.

(10) If the additional valve referred to in subregulation (9) is fitted in the machinery space, that valve must be capable of being operated outside that space.

(11) Pumps forming part of the fuel oil system on a fishing vessel must be separate from any other system and the connections of any such pumps must be provided with an efficient relief valve which must be in closed circuit.

(12) Where fuel oil tanks are alternatively used as liquid ballast tanks, proper means must be provided to isolate the fuel oil and ballast systems.

(13) No oil tank on a fishing vessel must be situated where spillage or leakage from it can constitute a hazard by falling on heated surfaces, and precautions must be taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces.

(14) Fuel oil pipes and their valves and fittings on a fishing vessel must be made of steel or other equivalent material: Provided that restricted use of flexible pipes may be permitted in positions where the Directorate is satisfied that they are necessary.

(15) The flexible pipes referred to in the proviso to subregulation (14) and end attachments must be of adequate strength and must, to the satisfaction of the Directorate, be constructed of approved fire-resistant materials or have fire-resistant coatings.

(16) Where necessary, fuel oil and lubricating oil pipelines on a fishing vessel must be screened or otherwise suitably protected to avoid, as far as is practicable, oil spray or oil leakage on heated surfaces or into machinery air intakes.

(17) The number of joints in piping systems on a fishing vessel must be kept to a minimum.

(18) As far as is practicable, fuel oil tanks on a fishing vessel must be part of the fishing vessel's structure and must be located outside machinery spaces of category A.

(19) Where fuel oil tanks, other than double bottom tanks on a fishing vessel, are necessarily located adjacent to or within machinery spaces of category A, at least one of their vertical sides must be contiguous to the machinery space boundaries, and must preferably have a common boundary with the double bottom tanks, where fitted, and the area of the tank boundary common with the machinery space must be kept to a minimum.

(20) When fuel oil tanks on a fishing vessel are sited within the boundaries of machinery spaces of category A they may not contain fuel oil having a flashpoint of less than 60°C (closed cup test).

(21) In general, the use of free-standing fuel oil tanks on a fishing vessel must be avoided in fire hazard areas, and particularly in machinery spaces of category A.

(22) When free-standing fuel oil tanks are permitted on a fishing vessel, they must be placed in an oil-tight spill tray of ample size having a suitable drain pipe leading to a suitably sized spill oil tank.

(23) The ventilation of machinery spaces on a fishing vessel must be sufficient under all normal conditions to prevent accumulation of oil vapour.

(24) The arrangements for the storage, distribution and use of oil employed in pressure lubrication systems in a fishing vessel must be to the satisfaction of the Directorate.

(25) The arrangements referred to in subregulation (24), in machinery spaces of category A in a fishing vessel and, wherever practicable, in other machinery spaces, must at least comply with subregulations (1), (6), (7) and (13) to (15) and in so far as the Directorate may consider necessary, with subregulations (2) to (5), (8) to (10).

(26) The requirement in subregulation (25) does not preclude the use of sight flow glasses in lubrication systems, provided they are shown by test to have a suitable degree of fire resistance.

(27) The arrangements for the storage, distribution and use of flammable oils employed under pressure in power transmission systems other than oils referred to in subregulation (24) in control and activating systems and heating systems must be to the satisfaction of the Directorate.

(28) In locations where means of ignition are present, the arrangements referred to in subregulation (27) must at least comply with the provisions of subregulations (2) to (5) and (13), and with regulations (6), (7), (15) and (16) in respect of strength and construction.

(29) Fuel oil, lubricating oil and other flammable oils may not be carried in forepeak tanks on a fishing vessel.

Bilge pumping arrangements

60. (1) An efficient bilge pumping plant must be provided on a fishing vessel, which, under all practical conditions must be capable of pumping from and draining any watertight compartment which is neither a permanent oil tank nor a permanent water tank whether the fishing vessel is upright or listed, and for that purpose, wing suctions must be provided if necessary.

(2) Arrangements must be provided for easy flow of water to the suction pipes on a fishing vessel: Provided that if the Directorate is satisfied that the safety of the fishing vessel is not impaired, the bilge pumping arrangements may be dispensed with in particular compartments.

(3) At least two independently driven power bilge pumps must be provided on a fishing vessel, one of which may be driven by the main engine, and a ballast pump or other general service pump of sufficient capacity may be used as a power driven bilge pump.

(4) Power bilge pumps on a fishing vessel must be capable of giving a speed of water of at least 2 m/s through the main bilge pipe which must have an internal diameter of at least -

$$d = 25 + 1.68 \sqrt{L(B + D)}$$

where: d is the internal diameter in millimetres, and L , B and D are in metres.

However, the actual internal diameter of the bilge main may be rounded off to the nearest standard size acceptable to the Directorate.

(5) Each of the bilge pumps provided on a fishing vessel in accordance with this regulation must be provided with a direct bilge suction, one of these suctions drawing from the port side of the machinery space and the other from the starboard side, except that in the case of a fishing vessel of less than 75 metres in length only one bilge pump may be provided with a direct bilge suction.

(6) No bilge suction on a fishing vessel must have an inside diameter of less than 50 millimetres.

(7) The arrangement and sizing of the bilge system on a fishing vessel must be such that the full rated capacity of the bilge pump specified in subregulation (5) can be applied to each of the watertight compartments located between the collision and afterpeak bulkheads.

(8) A bilge ejector in combination with an independently driven high pressure seawater pump may be installed on a fishing vessel as a substitute for one independently driven power bilge pump required by subregulation (3), provided this arrangement is to the satisfaction of the Directorate.

(9) In fishing vessels where fish handling or processing may cause quantities of water to accumulate in enclosed spaces, adequate drainage must be provided.

(10) Bilge pipes on a fishing vessel may not be led through fuel oil, ballast or double bottom tanks, unless these pipes are of heavy gauge steel construction.

(11) Bilge and ballast pumping systems on a fishing vessel must be arranged in such a way as to prevent water passing from the sea or from water ballast spaces into holds or into machinery spaces or from one watertight compartment to another.

(12) The bilge connection on a fishing vessel to any pump which draws from the sea or from water ballast spaces must be fitted with either a non-return valve or a cock which cannot be opened simultaneously either to the bilges and to the sea or to the bilges and water ballast spaces.

(13) Valves in bilge distribution boxes on a fishing vessel must be of a non-return type.

(14) Any bilge pipe on a fishing vessel, piercing a collision bulkhead must be fitted with a positive means of closing at the bulkhead with remote control from the working deck with an indicator showing the position of the valve: Provided that, if the valve is fitted on the after side of the bulkhead and is readily accessible under all service conditions, the remote control may be dispensed with.

Protection against noise

61. Measures must be taken in accordance with the Labour Act, 1992 (Act No. 6 of 1992) and the Regulations relating to the Health and Safety of Employees at Work promulgated under Government Notice No. 156 of 1 August 1997, to reduce the effects of noise upon personnel in machinery spaces on fishing vessel.

Steering gear

62. (1) Fishing vessels must be provided with a main steering gear and an auxiliary means of actuating the rudder to the satisfaction of the Directorate.

(2) The main steering gear and the auxiliary means of actuating the rudder on a fishing vessel must be arranged in such a way that, as far as is reasonable and practicable, a single failure in one of them will not render the other one inoperative.

(3) Where the main steering gear on a fishing vessel comprises two or more identical power units, an auxiliary steering gear may not be fitted if the main steering gear is capable of operating the rudder as required by subregulations (16) and (17) when any one of the units is out of operation, and each of the power units must be operated from a separate circuit.

(4) The position of the rudder on a fishing vessel, if power operated, must be indicated in the wheelhouse.

(5) The rudder angle indication for power-operated steering gear on a fishing vessel must be independent of the steering gear control system.

(6) In the event of failure of any of the steering gear units on a fishing vessel an alarm must be given in the wheelhouse.

(7) Indicators for running indication of the motors of electric and electrohydraulic steering gear on a fishing vessel must be installed in the wheelhouse, and short circuit protection, an overload alarm and a no-voltage alarm must be provided for these circuits and motors.

(8) Protection against excess current, if provided on a fishing vessel, must be for not less than twice the full load current of the motor or circuit protected, and must be arranged to permit the passage of the appropriate starting currents.

(9) The main steering gear on a fishing vessel must be of adequate strength and sufficient to steer the fishing vessel at maximum service speed.

(10) The main steering gear and rudder stock on a fishing vessel must be designed in such a way that they will not be damaged at maximum speed astern or by manoeuvring during fishing operations.

(11) The main steering gear on a fishing vessel, with the fishing vessel at its maximum permissible operating draught, must be capable of putting the rudder over from 35° on one side to 35° on the other side with the fishing vessel running ahead at maximum service speed.

(12) The rudder on a fishing vessel must be capable of being put over from 35° on either side to 30° on the other side in not more than 28 seconds, under the same conditions.

(13) The main steering gear on a fishing vessel must be operated by power where necessary to fulfil the requirements of subregulation (16).

(14) The main steering gear power unit on a fishing vessel must be arranged to start either by manual means in the wheelhouse or automatically when power is restored after a power failure.

(15) The auxiliary means for actuating the rudder must be of adequate strength and sufficient to steer the fishing vessel at navigable speed and capable of being brought speedily into action in an emergency.

(16) The auxiliary means for actuating the rudder on a fishing vessel must be capable of putting the rudder over from 15° on one side to 15° on the other side in not more than 60 seconds with the fishing vessel running at one-half of its maximum service speed ahead or 7 knots whichever is the greater.

(17) The auxiliary means for actuating the rudder must be operated by power where necessary to fulfil the requirements of subregulation (16).

(18) Electric or electrohydraulic steering gear in fishing vessels of 75 metres in length and over must be served by at least two circuits fed from the main switchboard and these circuits must be as widely separated as possible.

Engineers' alarm

63. In fishing vessels of 15 metres in length and over an engineers' alarm must be provided to be operated from the engine control room or at the manoeuvring platform as appropriate, and must be clearly audible in the engineers' accommodation.

Refrigeration systems for the preservation of the catch

64. (1) Refrigeration systems on a fishing vessel must be designed, constructed, tested and installed in such a way as to take account of the safety of the system and also the emission of chlorofluorocarbons (CFCs) or any other ozone-depleting substances from the refrigerant held in quantities or concentrations which are hazardous to human health or to the environment, and must be to the satisfaction of the Directorate.

(2) Refrigerants to be used in refrigeration systems on a fishing vessel must be to the satisfaction of the Directorate, and methylchloride or CFCs whose ozone-depleting potential is higher than 5% of CFC-11 may not be used as refrigerants.

(3) Refrigerating installations on a fishing vessel must be adequately protected against vibration, shock, expansion and shrinkage, and must be provided with an automatic safety control device to prevent a dangerous rise in temperature and pressure.

(4) Refrigeration systems on a fishing vessel in which toxic or flammable refrigerants are used must be provided with drainage devices leading to a place where the refrigerant presents no danger to the fishing vessel or to persons on board the fishing vessel.

(5) Any space containing refrigerating machinery on a fishing vessel, including condensers and gas tanks utilizing toxic refrigerants must be separated from any adjacent space by gastight bulkheads.

(6) Any space on a fishing vessel, containing the refrigerating machinery including condensers and gas tanks must be fitted with a leak detention system having an indicator outside the space adjacent to the entrance and must be provided with an independent ventilation system and a water spray system.

(7) When the space referred to in subregulations (5) and (6) is not practicable, due to the size of the fishing vessel, the refrigeration system may be installed in the machinery space, provided the quantity of the refrigerant used will not cause danger to persons in the machinery space, should all the gas escape, and an alarm is fitted to give warning of a dangerous concentration of gas should any leakage occur in the compartment.

(8) In refrigerating machinery spaces and refrigerating rooms on a fishing vessel, alarms must be connected to the wheelhouse or control stations or escape exits to prevent persons being trapped.

(9) At least one exit from each refrigerating machinery space on a fishing vessel must be capable of being opened from the inside.

(10) Where practicable, exits from the spaces containing refrigerating machinery using toxic or flammable gas on a fishing vessel may not lead directly into any accommodation spaces.

(11) Where any refrigerant harmful to persons is used in a refrigeration system on a fishing vessel, at least two sets of breathing apparatus must be provided, one of which must be placed in a position not likely to become inaccessible in the event of leakage of the refrigerant.

(12) Breathing apparatus provided as part of the fishing vessel's fire-fighting equipment may be considered as meeting all or part of this provision, provided its location meets both purposes.

(13) Where self-contained breathing apparatus is used on a fishing vessel, spare cylinders must be provided.

(14) Adequate guidance for the safe operation and emergency procedures for the refrigeration system on a fishing vessel must be provided by suitable notices displayed on board the fishing vessel.

PART III ELECTRICAL INSTALLATIONS

Main source of electrical power

65. (1) Where electrical power constitutes the only means of maintaining auxiliary services essential for the propulsion and the safety of the fishing vessel, a main source of electrical power must be provided which must include at least two generating sets, one of which may be driven by the main engine, but the Directorate may accept other arrangements having equivalent electrical capability.

(2) The power of the generating sets referred to in subregulation (1) must be such as to ensure the functioning of the services referred to in regulation 51(1)(a), excluding the power required in fishing activities, processing and preservation of the catch, in the event of any one of these generating sets being stopped.

(3) The arrangement of a fishing vessel's main source of electrical power must be such that the services referred to in regulation 51(1)(a) can be contained regardless of the number of revolutions and direction of the main propelling engines or shafting.

(4) Where transformers constitute an essential part of a fishing vessel's supply system required by this regulation, the system must be arranged in such a way as to ensure continuity of the supply.

(5) The arrangement of a fishing vessel's main lighting system must be such that a fire or other casualty in the space or spaces containing the main source of electrical power, including transformers, if any, will not render the emergency lighting system inoperative.

(6) The arrangement of a fishing vessel's emergency lighting system must be such that a fire or other casualty in the space or spaces containing the emergency source of electrical power, including transformers, if any, will not render the main lighting system inoperative.

Emergency source of electrical power

66. (1) A self-contained emergency source of electrical power on a fishing vessel located, to the satisfaction of the Directorate, outside the machinery spaces must be provided and arranged in such a way as to ensure its functioning in the event of fire or other causes of failure of the main electrical installations.

(2) The emergency source of electrical power on a fishing vessel must be capable, having regard to starting current and the transitory nature of certain loads, of serving simultaneously for a period of at least three hours -

- (a) internal communication equipment, fire detecting systems and signals which may be required in an emergency;
- (b) the navigation lights if solely electrical and the emergency lights -
 - (i) of launching stations and overside of the fishing vessel;
 - (ii) in all alleyways, stairways and exits;
 - (iii) in spaces containing machinery or the emergency source of power;
 - (iv) in control stations; and
 - (v) in fish handling and fish processing spaces; and
- (c) the operation of the emergency fire pump, if any.

(3) The emergency source of electrical power on a fishing vessel may be either a generator or an accumulator battery.

(4) Where the emergency source of electrical power on a fishing vessel is a generator, it must be provided both with an independent fuel supply and with efficient starting arrangements to the satisfaction of the Directorate.

(5) Unless a second independent means of starting the emergency generator on a fishing vessel is provided, the single source of stored energy must be protected to preclude its complete depletion by the automatic starting system.

(6) Where the emergency source of electrical power on a fishing vessel is an accumulator battery, it must be capable of carrying the emergency load without recharging whilst maintaining the voltage of the battery throughout the discharge period within plus or minus 12% of its normal voltage.

(7) In the event of failure of the main power supply on a fishing vessel the accumulator battery referred to in subregulation (6), must be automatically connected to the emergency switchboard and must immediately supply at least those services specified in subregulation (2)(b) and (c).

(8) The emergency switchboard on a fishing vessel must be provided with an auxiliary switch allowing the battery to be connected manually, in case of failure of the automatic connection system.

(9) The emergency switchboard on a fishing vessel must be installed as near as is practicable to the emergency source of power and must be located in accordance with subregulation (1).

(10) Where the emergency source of power on a fishing vessel is a generator, the emergency switchboard must be located in the same place unless the operation of the emergency switchboard would thereby be impaired.

(11) An accumulator battery fitted on a fishing vessel in accordance with this regulation must be installed in a well ventilated space which may not be the space containing the emergency switchboard.

(12) An indicator on a fishing vessel must be mounted in a suitable place on the main switchboard or in the machinery control room to indicate when the battery constituting the emergency source of power is being discharged.

(13) The emergency switchboard on a fishing vessel is to be supplied in normal operation from the main switchboard by an inter-connector feeder which is to be protected at the main switchboard against overload and short circuit.

(14) The arrangement at the emergency switchboard on a fishing vessel must be such that in the event of a failure of the main power supply, an automatic connection of the emergency supply must be provided.

(15) When the emergency switchboard system is arranged for feedback operation, the inter-connector feeder must also be protected at the emergency switchboard at least against short circuit.

(16) The emergency generator and its prime mover and any accumulator battery on a fishing vessel must be arranged in such a way as to ensure that they will function at full rated power when the fishing vessel is upright and when rolling up to an angle of 22.5° either way and simultaneously pitching 10° by bow or stern, or is in any combination of angles within those limits.

(17) The emergency source of electrical power and automatic starting equipment on a fishing vessel must be constructed and arranged in such a way as to enable adequate testing to be carried out by the crew while the fishing vessel is in operating condition.

Precautions against shock, fire and other hazards of electrical origin

67. (1) Exposed permanently fixed metal parts of electrical machines or equipment on a fishing vessel which are not intended to be "live", but which are liable under fault conditions to become "live" must be earthed unless -

- (a) they are supplied at a voltage not exceeding 55 volts direct current or 55 volts, root mean square, between conductors: Provided that auto transformers may not be used for the purpose of achieving this alternative current voltage;
- (b) they are supplied at a voltage not exceeding 250 volts by safety isolating transformers supplying one consuming device only; or
- (c) they are constructed in accordance with the principle of double insulation.

(2) Portable electrical equipment on a fishing vessel must operate at a safe voltage, and exposed metal parts of such equipment which are not intended to have a voltage, but which may have such under fault conditions, must be earthed.

(3) The Directorate may require additional precautions for portable electric lamps, tools or similar apparatus on a fishing vessel for use in confined or exceptionally damp spaces where particular risks due to conductivity may exist.

(4) Electrical apparatus on a fishing vessel must be constructed and installed in such a way that it does not cause injury when handled or touched in the normal manner.

(5) Main and emergency switchboards on a fishing vessel must be arranged in such a way that they give such easy access as may be needed to apparatus and equipment, without danger to attendants.

(6) The sides and backs and, where necessary, the fronts of switchboard in a fishing vessel, must be suitably guarded.

(7) Exposed "live" parts on a fishing vessel, having voltages to earth exceeding a voltage to be specified by the Directorate may not be installed on the front of such switchboards.

(8) There must be non-conducting mats or gratings at the front and rear of a fishing vessel, where necessary.

(9) The hull return system of distribution may not be used for power, heating or lighting in fishing vessels of 15 metres in length and over.

(10) The requirement of subregulation (9) does not preclude, under conditions approved by the Directorate, the use of -

- (a) impressed current cathodic protective systems;
- (b) limited and locally earthed systems; or
- (c) insulation level monitoring devices provided the circulation current does not exceed 30 mA under the most unfavourable conditions.

(11) Where the hull return system is used on a fishing vessel, all final sub-circuits (all circuits fitted after the last protective device) must be two wire and special precautions must be taken to the satisfaction of the Directorate.

(12) Where a distribution system, whether primary or secondary, for power, heating or lighting, with no connection to earth is used, a device capable of monitoring the insulation level to earth must be provided.

(13) Where the distribution system is in accordance with subregulation (12) and a voltage exceeding 55 volts direct current or 55 volts, root mean square, between conductors, is used, a device capable of continuously monitoring the insulation level to earth and of giving an audible or visual indication of abnormally low insulation values must be provided.

(14) Distribution systems which are supplied at a voltage not exceeding 250 volts direct current or 250 volts, root mean square, between conductors and which are limited in extent, may comply with subregulation (12), subject to the satisfaction of the Directorate.

(15) Except as permitted by the Directorate in exceptional circumstances, all metal sheaths and armour of cables on a fishing vessel must be electrically continuous and must be earthed.

(16) All electrical cables on a fishing vessel must be at least of a flame-retardant type and must be installed in such a way as not to impair their original flame-retarding properties.

(17) The Directorate may permit the use of special types of cables on a fishing vessel when necessary for particular applications, such as radio frequency cables, which do not comply with subregulation (16).

(18) Cables and wiring serving essential or emergency power, lighting, internal communications or signals on a fishing vessel must as far as is practicable be routed clear of galleys, machinery spaces of category A and other high fire risk areas and laundries, fish handling and fish processing spaces and other spaces where there is a high moisture content.

(19) Cables connecting fire pumps to the emergency switchboard must be of a fire-resistant type where they pass through high fire risk areas.

(20) Where practicable, the cables referred to in subregulation (19) should be run in such a manner as to preclude their being rendered unserviceable by heating of the bulkheads that may be caused by a fire in an adjacent space.

(21) Where cables which are installed in spaces where the risk of fire or explosion on a fishing vessel exists in the event of an electrical fault, special precautions against such risks must be taken to the satisfaction of the Directorate.

(22) Wiring on a fishing vessel must be supported in such a manner as to avoid chafing or other damage.

(23) Terminations and joints in all conductors on a fishing vessel must be made in such a way that they retain the original electrical, mechanical, flame-retarding and, where necessary, fire-resisting properties of the cable.

(24) Cables installed in refrigerated compartments on a fishing vessel must be suitable for low temperatures and high humidity.

(25) Circuits on a fishing vessel must be protected against short circuit and against overload, except in accordance with regulation 62(7) or where the Directorate may exceptionally otherwise permit.

(26) The rating or appropriate setting of the overload protective device for each circuit on a fishing vessel must be permanently indicated at the location of the protective device.

(27) Lighting fittings on a fishing vessel must be arranged to prevent temperature rises which could damage the wiring and to prevent surrounding material from becoming excessively hot.

(28) Lighting or power circuits terminating in a space where the risk of fire or explosion exists on a fishing vessel must be provided with isolating switches outside the space.

(29) The housing of an accumulator battery on a fishing vessel must be constructed and ventilated to the satisfaction of the Directorate.

(30) Electrical and other equipment which may constitute a source of ignition of flammable vapours may not be permitted in these compartments, except as permitted in subregulation (32).

(31) An accumulator battery on a fishing vessel may not be located in accommodation spaces unless installed in an hermetically sealed container.

(32) In spaces where flammable mixtures are liable to collect and in any compartment assigned principally to the containment of an accumulator battery, no electrical equipment must be installed unless the Directorate is satisfied that it is -

- (a) essential for operational purposes;
- (b) of a type which will not ignite the mixture concerned;
- (c) appropriate to the space concerned; and
- (d) appropriately certified for safe usage in the dusts, vapours or gases likely to be encountered.

(33) Lightning conductors on a fishing vessel must be fitted to all wooden masts or topmasts.

(34) In fishing vessels constructed of non-conductive materials, the lightning conductors must be connected by suitable conductors to a copper plate fixed to the fishing vessel's hull well below the waterline.

PART IV
PERIODICALLY UNATTENDED MACHINERY SPACES

Number and position of hydrants

68. (1) The number and position of hydrants on a fishing vessel must be such that at least two jets of water not emanating from the same hydrant, one of which must be from a single length of hose, may reach any part of the ship normally accessible to the crew while the ship is being navigated and to any part of any space, and those hydrants must be positioned near the accesses to the spaces.

(2) In the accommodation, service and machinery spaces of fishing vessels, the number and position of hydrants must be such that the requirements of subregulation (1) may be complied with when all watertight doors and all doors in main vertical zone bulkheads are closed.

(3) Where access is provided to a machinery space at a low level from an adjacent shaft tunnel on a fishing vessel, two hydrants must be provided external to, but near the entrance to that machinery space.

(4) Where the access referred to in subregulation (3) is provided from other spaces on a fishing vessel, in one of those spaces, two hydrants must be provided near the entrance to the machinery space, but those hydrants may not be made where the tunnel or adjacent spaces are not part of the escape route.

Fire detection

69. (1) An approved fire detection system on a fishing vessel based on a self-monitoring principle and including facilities for periodical testing must be installed in machinery spaces.

(2) The detection system on a fishing vessel must initiate both audible and visual alarm in the wheelhouse and in sufficient appropriate spaces to be heard and observed by persons on board, when the fishing vessel is in harbour.

(3) The fire detection system on a boat must be fed automatically from an emergency source of power if the main source of power fails.

(4) Internal combustion engines of 2,500 kilowatts and over, on a fishing vessel, must be provided with crankcase oil mist detectors or engine bearing temperature detectors or equivalent devices.

Fire fighting

70. (1) A fixed fire-extinguishing system must be provided to the satisfaction of the Directorate, which must be in compliance with the requirements of regulations 22 and 40 of Chapter V of the Convention Regulations.

(2) In fishing vessels of 75 metres in length and over provision must be made for immediate water delivery from the fire main system either by -

- (a) remote starting arrangements of one of the main fire pumps in the wheelhouse and at the fire control station, if any; or
- (b) permanent pressurization of the fire main system, due regard being paid to the possibility of freezing.

(3) The Directorate must be satisfied with the maintenance of the fire integrity of the machinery spaces, the location and centralization of the fire-extinguishing system controls and the shut-down arrangements referred to in regulation 75, and may require fire-extinguishing appliances and other fire-fighting equipment and breathing apparatus in addition to the relevant requirements of Chapter 6.

Protection against flooding

71. (1) Bilges in machinery spaces on a fishing vessel must be provided with a high level alarm in such a way that the accumulation of liquids is detected at normal angles of trim and heel.

(2) The detection system on a fishing vessel must initiate an audible and visual alarm in the places where continuous watch is maintained.

(3) The controls of any valve serving a sea inlet, a discharge below the waterline or a bilge injection system must be so sited as to allow adequate time for operation in case of influx of water to the space.

Communications

72. (1) In fishing vessels of 75 metres in length and over one of the two separate means of communication referred to in regulation 56 must be a reliable vocal communication.

(2) An additional reliable means of vocal communication must be provided on a fishing vessel between the wheelhouse and the engineers' accommodation.

Alarm system

73. (1) An alarm system on a fishing vessel must be provided which must indicate any fault requiring attention.

(2) The alarm system on a fishing vessel must be capable of sounding an audible alarm in the machinery space and must indicate visually each separate alarm function at a suitable position.

(3) The alarm system on a fishing vessel must have a connection to the engineers' cabins through a selector switch to ensure connection to one of those cabins and to the engineers' public rooms, if any: Provided that the Directorate may permit alternative arrangements which provide an equivalent measure of safety on a fishing vessel.

(4) An engineers' alarm and an alarm to the wheelhouse for persons on watch must be activated if an alarm function has not received attention within a limited period as specified by the Directorate.

(5) Audible and visual alarms on a fishing vessel must be activated in the wheelhouse for any situation requiring action by the responsible person on watch or which should be brought to his or her attention.

(6) The alarm system on a fishing vessel must as far as is practicable be designed on the fail-safe principle.

(7) The alarm system on a fishing vessel must be -

(a) continuously powered with automatic change-over to a stand-by power supply in case of loss of normal power supply; and

(b) activated by failure of the normal power supply.

(8) The alarm system on a fishing vessel must be able to indicate at the same time more than one fault and the acceptance of any alarm may not inhibit another alarm.

(9) Acceptance at the position referred to in subregulation (2) of any alarm condition must be indicated at the positions where it was shown.

(10) Alarms on a fishing vessel must be maintained until they are accepted and the visual indications must remain until the fault has been corrected.

(11) All alarms on a fishing vessel must automatically reset when the fault has been rectified.

Special requirements for machinery, boiler and electrical installations

74. (1) In fishing vessels of 75 metres in length and over, the main source of electrical power must be supplied as follows:

- (a) Where the electrical power can normally be supplied by one generator, there must be provided suitable load shedding arrangements to ensure the integrity of supplies to services required for propulsion and steering;
- (b) to cover the case of loss of the generator in operation on a fishing vessel, there must be adequate provisions for the automatic starting and connecting to the main switchboard of a stand-by generator of sufficient capacity to permit propulsion and steering and with automatic restarting of the essential auxiliaries including, where necessary, sequential operations.
- (c) means may be provided on a fishing vessel to the satisfaction of the Directorate for remote (manual) starting and connection of the stand-by generator to the main switchboard as well as means of repeated remote starting of essential auxiliaries; and
- (d) if the electrical power is normally supplied by more than one generating set simultaneously, there must be provisions, such as by load shedding, to ensure that in case of loss of one of these generating sets, the remaining ones are kept in operation without overload to permit propulsion and steering.

(2) Where required to be duplicated, other auxiliary machinery essential to propulsion of a fishing vessel must be fitted with automatic change-over devices allowing transfer to a stand-by machine.

(3) An alarm on a fishing vessel must be given on automatic change-over.

(4) Automatic control and alarm systems on a fishing vessel must be provided as follows:

- (a) The control system must be such that through the necessary automatic arrangements the services needed for the operation of the main propulsion machinery and its auxiliaries are ensured;
- (b) means must be provided on a fishing vessel to keep the starting air pressure at the required level where internal combustion engines are used for main propulsion;
- (c) an alarm system complying with regulation 73 must be provided for all important pressures, temperatures and fluid levels on a fishing vessel; and
- (d) where appropriate an adequate central position must be arranged with the necessary alarm panels and instrumentation indicating any alarmed fault.

Safety system

75. (1) A safety system must be provided on a fishing vessel so that serious malfunction in machinery or boiler operations, which presents an immediate danger, must initiate the automatic shut-down of that part of the plant and an alarm must be given.

(2) Shut-down of the propulsion system on a fishing vessel may not be automatically activated, except in cases which could lead to serious damage, complete breakdown or explosion.

(3) Where arrangements for overriding the shut-down of the main propelling machinery are fitted on a fishing vessel, they must be fitted in such a way as to preclude inadvertent activation, and visual means must be provided to show whether or not it has been activated.

CHAPTER 6 FIRE PROTECTION, FIRE DETECTION, FIRE EXTINCTION AND FIRE FIGHTING

PART I GENERAL

General

76. (1) One of the following methods of protection must be adopted in accommodation and service spaces on a fishing vessel:

- (a) The construction of all internal divisional bulkheads of non-combustible "B" or "C" class divisions generally without the installation of a detection or sprinkler system in the accommodation and service spaces (*Method IF*);
- (b) the fitting of an automatic sprinkler and fire alarm system for the detection and extinction of fire in all spaces in which fire might be expected to originate, generally with no restriction on the type of internal bulkheads (*Method IIF*); or
- (c) the fitting of an automatic fire alarm and detection system in all spaces in which a fire might be expected to originate, generally with no restriction on the type of internal divisional bulkheads, except that in no case must the area of any accommodation space or spaces bounded by an "A" or "B" class division exceed 50 square metres, but the Directorate may increase this area for public spaces (*Method IIIF*).

(2) The requirements for the use of non-combustible materials in construction and insulation of the boundary bulkheads of machinery spaces and control stations and the protection of stairway enclosures and corridors must be common to all three methods.

Definitions

77. For the purpose of this section -

"accommodation spaces" means spaces used for public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, games and hobbies rooms, pantries containing no cooking appliances and similar spaces;

'Continuous "B" class ceilings or lining's means "B" class ceilings or linings which terminate only at an "A" or "B" class division;

"control stations" means spaces in which the fishing vessel's radio or main navigation equipment or the emergency source of power is located, or where the fire recording or fire control equipment is centralized;

"low flame spread" means that the surface described will adequately restrict the spread of flame as determined to the satisfaction of the Directorate by an established test procedure;

“machinery spaces” means spaces of category A and all other spaces containing propulsion machinery, boilers, fuel oil units, steam and internal combustion engines, generators, steering gear, major electrical machinery, oil filling stations, refrigerating, stabilizing, ventilating and air conditioning machinery and similar spaces, and trunks to such spaces;

“machinery spaces of category A” means spaces which contain internal combustion type machinery used either -

- (a) for main propulsion; or
- (b) for other purposes where such machinery has in the aggregate a total power output of not less than 750 kilowatts, or which contain any oil-fired boiler or fuel oil unit;

“non-combustible material” means a material which neither burns nor gives off flammable vapours in sufficient quantity for self-ignition when heated to approximately 750°C, as determined to the satisfaction of the Directorate by an established test procedure;

“public spaces” means portions of the accommodation spaces which are used for halls, dining rooms, lounges, and similar permanently enclosed spaces;

“service spaces” means spaces used for galleys, pantries containing cooking appliances, lockers and store-rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces;

“standard fire test” means a test in which specimens of the relevant bulkheads or decks having an exposed surface of not less than 4.65 square metres and a height (or length of deck) of 2.44 metres, resembling as closely as possible the intended construction and including, where appropriate, at least one joint are exposed in a test furnace to temperatures corresponding approximately to the standard time-temperature curve which is defined by a smooth curve drawn through the following temperature points measured above the initial furnace temperature:

- | | | |
|-----|------------------------------------|------------|
| (a) | At the end of the first 5 minutes | 556°C; |
| (b) | at the end of the first 10 minutes | 659°C; |
| (c) | at the end of the first 15 minutes | 718°C; |
| (d) | at the end of the first 30 minutes | 821°C; and |
| (e) | at the end of the first 60 minutes | 925°C; |

“steel or other equivalent material” means steel or any material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the applicable fire exposure to the standard fire test; (for example, aluminium alloy with appropriate insulation);

““A” class divisions’ means divisions formed by bulkheads and decks which -

- (a) must be constructed of steel or other equivalent material;
- (b) must be suitably stiffened;
- (c) must be constructed in such a way as to be capable of preventing the passage of smoke and flame to the end of the one-hour standard fire test; and
- (d) must be insulated with approved non-combustible materials such that the average temperature of the unexposed side will not rise more than 139°C above the original temperature, nor will the temperature, at any one point, including any joint, rise more than 180°C above the original temperature, within the time listed below:

- | | | |
|-------|--------------|-----------------|
| (i) | Class "A-60" | 60 minutes; |
| (ii) | Class "A-30" | 30 minutes; |
| (iii) | Class "A-15" | 15 minutes; and |
| (iv) | Class "A-0" | 0 minutes; |

The Directorate may require a test of a prototype bulkhead or deck to ensure that it meets the requirements for integrity and temperature rise stated in subparagraphs (i) to (iv), inclusive.

"B" class divisions' means divisions formed by bulkheads, decks, ceilings or linings which -

- (a) must be constructed in such a way as to be capable of preventing the passage of flame to the end of the first one-half hour of the standard fire test;
- (b) must have an insulation value such that the average temperature of the unexposed side will not rise more than 139°C above the original temperature, nor will the temperature at any point, including any joint, rise more than 225°C above the original temperature, within the time listed below:

(i)	Class "B-15"	15 minutes; and
(ii)	Class "B-)"	0 minutes;
- (c) must be constructed of approved non-combustible materials entering into the construction and erection of "B" class divisions, with the exception that combustible veneers may be permitted, provided they meet the relevant requirements of this Part;

The Directorate may require a test of a prototype division to ensure that it meets the requirements stated in paragraphs (a) to (c) for integrity and temperature rise.

"C" class divisions' means divisions constructed of approved non-combustible material and which do not need to meet requirements relative to the passage of smoke and flame nor the limiting of temperature rise, with the exception that combustible veneers are permitted, provided they meet the relevant requirements of this Part;

"F" class divisions' means divisions formed by bulkheads, decks, ceilings or linings which -

- (a) must be constructed in such a way as to be capable of preventing the passage of flame to the end of the first one-half hour of the standard fire test; and
- (b) must have an insulation value such that the average temperature of the unexposed side will not rise more than 139°C above the original temperature, nor will the temperature at any one point, including any joint, rise more than 225°C above the original temperature, up to the end of the first one-half hour of the standard fire test;

The Directorate may require a test of a prototype division to ensure that it meets the requirements stated in paragraphs (a) and (b) for integrity and temperature rise.

PART II
FIRE SAFETY MEASURES IN FISHING VESSELS OF 60 METRES IN LENGTH
AND OVER

Structure

78. (1) The hull, superstructure, structural bulkheads, decks and deckhouses on a fishing vessel must be constructed of steel or other equivalent material, except as otherwise specified in subregulation (4).

(2) The insulation of aluminium alloy components of "A" or "B" class divisions, except structures which, in the opinion of the Directorate, are non-load bearing, must be such that the temperature of the structural core does not rise more than 200°C above the ambient temperature at any time during the applicable fire exposure to the standard fire test.

(3) Special attention must be given to the insulation of aluminium alloy components of columns, stanchions and other structural members required to support survival craft stowage, launching and embarkation areas, and "A" and "B" class divisions, to ensure -

- (a) that for such members supporting survival craft areas and "A" class divisions, the temperature rise limitation specified in subregulation (2) must apply at the end of one hour; and
- (b) that for such members required to support "B" class divisions, the temperature rise limitation specified in subregulation (2) must apply at the end of one half-hour.

(4) Crowns and casings of machinery spaces of category A in a fishing vessel must be of steel construction adequately insulated and any openings therein must be suitably arranged and protected to prevent the spread of fire.

Bulkheads within the accommodation and service spaces

79. (1) Within the accommodation and service spaces on a fishing vessel, all bulkheads required to be "B" class divisions must extend from deck to deck and to the shell or other boundaries, unless continuous "B" class ceilings and linings, or both, are fitted on both sides of the bulkheads, in which case the bulkhead may terminate at the continuous ceiling or lining.

(2) All bulkheads on a fishing vessel not required by this Part to be "A" or "B" class divisions must be at least "C" class divisions (*Method I*).

(3) There must be no restriction on the construction of bulkheads on a fishing vessel, not required by this part to be "A" or "B" class divisions, except in individual cases where "C" class bulkheads are required in accordance with Table 1 set out in the Appendix (*Method IIF*).

(4) There must be no restriction on the construction of bulkheads on a fishing vessel, not required by this Part to be "A" or "B" class divisions (*Method IIIF*).

(5) In no case must the area of any accommodation space or spaces bounded by a continuous "A" or "B" class division on a fishing vessel exceed 50 square metres, except in Table 1 set out in the Appendix, but the Directorate may increase this area for public spaces.

Protection of stairways and lift trunks in accommodation spaces, service spaces and control stations

80. (1) Stairways which penetrate only a single deck on a fishing vessel must be protected at least at one level by at least "B-0" class divisions and self-closing doors.

(2) Lifts which penetrate only a single deck on a fishing vessel must be enclosed by "A-0" class divisions and protected by self-closing doors at all levels.

(3) All stairways on a fishing vessel must be of steel frame construction, except where the Directorate permits the use of other equivalent material.

Doors in fire-resistant divisions

81. (1) Doors on a fishing vessel must have resistance to fire as far as is practicable, equivalent to the division in which they are fitted.

(2) Doors and door frames in "A" class divisions on a fishing vessel must be constructed of steel.

(3) Doors in "B" class divisions on a fishing vessel must be non-combustible.

(4) Doors fitted in boundary bulkheads of machinery spaces of category A on a fishing vessel must be self-closing and reasonably gastight.

(5) The Directorate may permit the use of combustible materials in doors separating cabins from the individual interior sanitary accommodation, such as showers, on a fishing vessel, if constructed according to method IF.

(6) Doors required to be self-closing on a fishing vessel may not be fitted with hold-back hooks, but hold-back arrangements fitted with remote release fittings of the fail-safe type may be used.

(7) Ventilation openings on a fishing vessel may be permitted in and under the doors in corridor bulkheads, except that such openings may not be permitted in and under stairway enclosure doors.

(8) The openings on a fishing vessel must be provided only in the lower half of a door and where any such opening is in or under a door, the total net area of any such opening or openings may not exceed 0.05 square metres.

(9) When the opening referred to in subregulation (8) is cut in a door, it must be fitted with a grille made of non-combustible material.

(10) Watertight doors may or may not be insulated.

Fire integrity of bulkheads and decks

82. (1) In addition to the specific provisions for fire integrity of bulkheads and decks on a fishing vessel required in this Part, the minimum fire integrity of bulkheads and decks must be as prescribed in Table 1 and Table 2 set out in the Appendix.

(2) The following requirements must govern application of the Tables:

(a) Tables 1 and 2 set out in the Appendix apply respectively to bulkheads and decks separating adjacent spaces; and

(b) for determining the appropriate fire integrity standards to be applied to divisions between adjacent spaces, such spaces are classified according to their fire risk as follows:

- (i) Control stations (1):
 - (aa) Spaces containing emergency sources of power and lighting;
 - (bb) wheelhouse and chartroom;
 - (cc) spaces containing the fishing vessel's radio equipment;
 - (dd) fire-extinguishing rooms, fire-control rooms and fire-recording stations;
 - (ee) control room for propulsion machinery when located outside the machinery space; and
 - (ff) spaces containing centralized fire alarm equipment;
- (ii) Corridors (2):

Corridors and lobbies.
- (iii) Accommodation spaces (3):

Spaces as defined in the definition of "accommodation spaces" and "public spaces", contained in regulation 77, excluding corridors.
- (iv) Stairways (4):

Interior stairways, lifts and escalators other than those wholly contained within the machinery spaces and enclosures thereto, and a stairway which is enclosed only at one level must be regarded as part of the space from which it is not separated by a fire door.
- (v) Service spaces of low fire risk (5):

Lockers and store-rooms having areas of less than 2 square metres, drying rooms and laundries.
- (vi) Machinery spaces of category A (6):

Spaces as defined in regulation 77.
- (vii) Other machinery spaces (7):

Spaces as defined in the definition of "machinery spaces" contained in regulation 77, including fishmeal processing spaces, but excluding machinery spaces of category A.
- (viii) Cargo spaces (8):

All spaces used for cargo, including cargo oil tanks, and trunkways and hatchways to such spaces.
- (ix) Service spaces of high fire risk (9):

Galleys, pantries containing cooking appliances, paint rooms, lamp rooms, lockers and store-rooms having areas of 2 square metres or more, and workshops other than those forming part of the machinery spaces.

- (x) Open decks (10):

Open deck spaces and enclosed promenades, spaces for processing fish in the raw state, fish washing spaces and similar spaces containing no fire risk.

(3) The title of each category in subregulation (2) is intended to be typical rather than restrictive, and the number in parenthesis following each category refers to the applicable column or row in Tables 1 and 2 set out in the Appendix.

(4) Continuous "B" class ceilings or linings, in association with the relevant decks or bulkheads, may be accepted as contributing, wholly or in part, to the required insulation and integrity of a division.

- (5) Windows and skylights to machinery spaces must be as follows:

- (a) Where skylights can be opened they must be capable of being closed from outside the space;
- (b) skylights containing glass panels must be fitted with external shutters of steel or other equivalent material permanently attached;
- (c) glass or similar materials may not be fitted in machinery space boundaries, but this does not preclude the use of wire-reinforced glass for skylights and glass in control rooms within the machinery spaces; and
- (d) in skylights referred to in paragraphs (a) and (b) wire-reinforced glass must be used.

(6) External boundaries on a fishing vessel which are required by regulation 78(1) to be of steel or equivalent material may be pierced for the fitting of windows and sidescuttles, unless they are required by any provision in this Part for such boundaries to have "A" class integrity.

(7) In boundaries on a fishing vessel which are not required to have "A" class integrity, doors may be of materials to the satisfaction of the Directorate.

Details of construction

83. (1) In accommodation and service spaces and control stations on a fishing vessel, all linings, draught stops, ceilings and their associated grounds must be of non-combustible materials (*Method IF*).

(2) In corridors and stairway enclosures serving accommodation and service spaces and control stations, ceilings, linings, draught stops and their associated grounds must be of non-combustible material (*Methods IIF and IIIF*).

(3) Except in cargo spaces or refrigerated compartments of service spaces on a fishing vessel, insulating materials must be non-combustible (*Methods IF, IIF and IIIF-separate methods according to subregulations*).

(4) Vapour barriers and adhesives on a fishing vessel, used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems may or may not be of non-combustible material, but they must be kept to the minimum quantity practicable, and their exposed surfaces must have qualities of resistance to the propagation of flame to the satisfaction of the Directorate.

(5) In spaces where penetration of oil products is possible, the surface of insulation must be impervious to oil or oil vapour.

(6) Where non-combustible bulkheads, linings and ceilings are fitted in accommodation and service spaces they may have a combustible veneer not exceeding 2.0 millimetres in thickness within any such space, except corridors, stairway enclosures and control stations, where it may not exceed 1.5 millimetres in thickness.

(7) Air spaces enclosed behind ceilings, panellings, or linings on a fishing vessel must be divided by close-fitting draught stops spaced not more than 14 metres apart.

(8) In the vertical direction, the spaces referred to in subregulation (7), including those behind linings of stairways and trunks must be closed at each deck.

Ventilation systems

84. (1) Ventilation ducts must be of non-combustible material, but short ducts, however, not generally exceeding 2 metres in length and with a cross section not exceeding 0.02 square metres may not be non-combustible, subject to the conditions set out in subregulation (2).

(2) The ducts referred to in subregulation (1) -

- (a) must be of a material which, to the satisfaction of the Directorate, has a low fire risk;
- (b) may only be used at the end of the ventilation device; and
- (c) may not be situated less than 600 millimetres, measured along the duct, from an opening in an "A" or "B" class division, including continuous "B" class ceilings.

(3) Where the ventilation ducts with a free cross-sectional area exceeding 0.02 square metres pass through "A" class bulkheads or decks on a fishing vessel, the openings must be lined with a steel sheet sleeve, unless the ducts passing through the bulkheads or decks are of steel in the vicinity of passage through the deck or bulkhead and comply in that portion of the duct with the following:

- (a) For ducts with a free cross-sectional area exceeding 0.02 square metres, the sleeves must have a thickness of at least 3 millimetres and a length of at least 900 millimetres, and when passing through bulkheads, this length must preferably be divided evenly on each side of the bulkhead;
- (b) ducts with a free cross-sectional area exceeding 0.02 square metres must be provided with fire insulation, and the insulation must have at least the same fire integrity as the bulkhead or deck through which the duct passes;
- (c) equivalent penetration protection may be provided to the satisfaction of the Directorate;
- (d) ducts with a free cross-sectional area exceeding 0.085 square metres must be fitted with fire dampers in addition to the requirements of paragraphs (a) to (c);
- (e) the fire damper must operate automatically, but must also be capable of being closed manually from both sides of the bulkhead or deck;
- (f) the damper must be provided with an indicator which shows whether the damper is open or closed;
- (g) fire dampers are not required where ducts pass through spaces surrounded by "A" class divisions without serving those spaces, provided those ducts have the same fire integrity as the bulkheads which they penetrate;

- (h) ventilation ducts for machinery spaces of category A or galleys may not in general pass through accommodation spaces, service spaces or control stations, and where the Directorate permits this arrangement, the ducts must be constructed of steel or equivalent material and arranged in such a way as to preserve the integrity of the divisions;
 - (i) ventilation ducts of accommodation spaces, service spaces or control stations may not in general pass through machinery spaces of category A or through galleys, and where the Directorate permits this arrangement, the ducts must be constructed of steel or equivalent material and arranged in such a way as to preserve the integrity of the divisions;
 - (j) where ventilation ducts with a free cross-sectional area exceeding 0.02 square metres pass through "B" class bulkheads, the openings must be lined with steel sheet sleeves of at least 900 millimetres in length, unless the ducts are of steel for this length in way of the bulkheads, and when passing through a "B" class bulkhead, this length must preferably be divided evenly on each side of the bulkhead;
 - (k) such measures as are practicable must be taken in respect of control stations outside machinery spaces in order to ensure that ventilation, visibility and freedom from smoke are maintained, so that in the event of fire, the machinery and equipment contained therein may be supervised and continue to function effectively;
 - (l) alternative and separate means of air supply must be provided, and air inlets of the two sources of supply must be so disposed that the risk of both inlets drawing in smoke simultaneously is minimized;
 - (m) at the discretion of the Directorate, the requirements referred to in paragraphs (k) and (l) may not apply to control stations situated on, and openings on to, an open deck, or where local closing arrangements are equally effective; and
 - (n) where they pass through accommodation spaces or spaces containing combustible materials, the exhaust ducts from galley ranges must be constructed of "A" class divisions, and each exhaust duct must be fitted with -
 - (i) a grease trap readily removable for cleaning;
 - (ii) fire damper located in the lower end of the duct;
 - (iii) arrangements, operable from within the galley, for shutting off the exhaust fan; and
 - (iv) fixed means for extinguishing a fire within the duct, except where the Directorate considers such fittings impractical in a fishing vessel of less than 75 metres in length.
- (4) The main inlets and outlets of all ventilation systems must be capable of being closed from outside the spaces being ventilated.
- (5) Power ventilation of accommodation spaces, service spaces, control stations and machinery spaces on a fishing vessel must be capable of being served, and this position may not be readily cut off in the event of a fire in the spaces served.
- (6) The means provided for stopping the power ventilation of the machinery spaces on a fishing vessel must be entirely separate from the means provided for stopping ventilation of other spaces.

(7) Means must be provided for closing, from a safe position, the annular spaces around funnels on a fishing vessel.

(8) Ventilation systems serving machinery spaces on a fishing vessel must be independent of systems serving other spaces.

(9) Store-rooms containing appreciable quantities of highly flammable products on a fishing vessel must be provided with ventilation arrangements which are separate from other ventilation systems.

(10) Ventilation on a fishing vessel must be arranged at high and low levels and the inlets and outlets of ventilators must be positioned in safe areas and fitted with spark arresters.

Heating installations

85. (1) Electric radiators on a fishing vessel must be fixed in position and constructed in such a way as to reduce fire risks to a minimum.

(2) No electric radiator on a fishing vessel must be fitted with an element so exposed as to render clothing, curtains or other similar materials to be scorched or set on fire by heat from the element.

(3) Heating by means of open fires on a fishing vessel may not be permitted.

(4) Heating stoves and other similar appliances on a fishing vessel must be firmly secured and adequate protection and insulation against fire must be provided beneath and around such appliances and in way of their uptakes.

(5) Uptakes of stoves on a fishing vessel which burn solid fuel must be arranged and designed in such a way as to minimize the possibility of becoming blocked by combustion products and must have a ready means for cleaning.

(6) Dampers for limiting draughts in uptakes must, when in the closed position, still leave an adequate area open.

(7) Spaces on a fishing vessel in which stoves are installed must be provided with ventilators of sufficient area to provide adequate combustion-air for the stove, and such ventilators must have no means of closure and their position must be such that closing appliances in accordance with regulation 9 of Chapter II of the Convention Regulations are not required.

(8) Open gas flame appliances on a fishing vessel, except cooking stoves and water heaters, may not be permitted and spaces containing any such stoves or water heaters must have adequate ventilation to remove fumes and possible gas leakage to a safe place.

(9) All pipes on a fishing vessel conveying gas from container to stove or water heater must be of steel or other approved material.

(10) Automatic safety gas shut-off devices must be fitted on a fishing vessel to operate on loss of pressure in the gas main pipe or flame failure on any appliance.

(11) Where gaseous fuel is used for domestic purposes, the arrangements, storage, distribution and use of fuel must be to the satisfaction of the Directorate and in accordance with regulation 12 of Chapter V of the Convention Regulations.

Miscellaneous items

86. (1) All exposed surfaces in corridors and stairway enclosures and surfaces, including grounds in concealed or inaccessible spaces in accommodation and service spaces and control stations must have low flame-spread characteristics.

(2) Exposed surfaces of ceilings in accommodation and service spaces and control stations on a fishing vessel must have low flame-spread characteristics.

(3) Paints, varnishes and other finishes used on exposed interior surfaces on a fishing vessel may not be capable of producing excessive quantities of smoke or toxic gases or vapours, and the Directorate must be satisfied that they are not of a nature to offer an undue fire hazard.

(4) Primary deck coverings within accommodation and service spaces and control stations on a fishing vessel, must be of approved material which will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures.

(5) Where "A" or "B" class divisions are penetrated for the passage of electrical cables, pipes, trunks and ducts, or for the fitting of ventilation terminals, lighting fixtures and similar devices, arrangements must be made to ensure that the fire integrity of the divisions is not impaired.

(6) In accommodation and service spaces and control stations on a fishing vessel, pipes penetrating "A" or "B" class divisions must be of approved materials having regard to the temperature that such divisions are required to withstand.

(7) Where the Directorate permits the conveying of oil and combustible liquids through accommodation and service spaces on a fishing vessel, pipes conveying oil or combustible liquids must be of an approved material having regard to the fire risk.

(8) Materials readily rendered ineffective by heat may not be used for overboard scuppers, sanitary discharges, and other outlets which are close to the waterline and where the failure of the material in the event of fire would give rise to danger of flooding.

(9) Cellulose-nitrate-based film may not be used in cinematograph installations on a fishing vessel.

(10) All waste receptacles on a fishing vessel other than those used in fish processing must be constructed of non-combustible materials with no openings in the sides or bottom.

(11) Machinery driving fuel oil transfer pumps, fuel oil unit pumps and other similar fuel pumps on a fishing vessel must be fitted with remote controls situated outside the space concerned so that they can be stopped in the event of a fire arising in the space in which they are located.

(12) Drip trays must be fitted on a fishing vessel where necessary to prevent oil leaking into bilges.

(13) Within compartments used for stowage of fish, combustible insulation must be protected by close-fitting cladding.

Storage of gas cylinders and dangerous materials

87. (1) Cylinders for compressed, liquefied or dissolved gases on a fishing vessel must be clearly marked by means of prescribed identifying colours, have a clearly legible identification of the name and chemical formula of their contents and be properly secured.

(2) Cylinders containing flammable or other dangerous gases and expended cylinders on a fishing vessel must be stored and properly secured on open decks, and all valves, pressure regulators and pipes leading from such cylinders must be protected against damage.

(3) The cylinders referred to in subregulation (2) must be protected against excessive variations in temperature, direct rays of the sun, and accumulation of snow, but the Directorate may permit such cylinders to be stored in compartments complying with the requirements of subregulations (4) to (10).

(4) Spaces on a fishing vessel containing highly flammable liquids, such as volatile paints, paraffin or benzole, and where permitted, liquefied gas, must have direct access from open decks only.

(5) Pressure-adjusting devices and relief valves on a fishing vessel must exhaust within the compartment, and where boundary bulkheads of such compartments adjoin other enclosed spaces, they must be gastight.

(6) Except as necessary for service within the space on a fishing vessel, electrical wiring and fittings may not be permitted within compartments used for the storage of highly flammable liquids or liquefied gases.

(7) Where the electrical fittings referred to in subregulation (6) are installed, they must be to the satisfaction of the Directorate for use in a flammable atmosphere.

(8) Sources of heat on a fishing vessel must be kept clear of the spaces on that vessel, and "No smoking" and "No naked light" notices must be displayed in a prominent position.

(9) Separate storage must be provided on a fishing vessel for each type of compressed gas.

(10) Compartments used for the storage of compressed gases on a fishing vessel may not be used for storage of other combustible products nor for tools or objects not part of the gas distribution system, but the Directorate may relax these requirements considering the characteristics, volume and intended use of such compressed gases.

Means of escape

88. (1) Stairways and ladders leading to and from all accommodation spaces and in spaces in which the crew is normally employed on a fishing vessel, other than machinery spaces, must be arranged in such a way as to provide ready means of escape to the open deck and thereafter to the survival craft.

- (a) In particular, in relation to the spaces referred to in subregulation (1) -
- (b) at all levels of accommodation, at least two widely separated means of escape must be provided, which may include the normal means of access from each restricted space or group of spaces;
- (c) below the weather deck the main means of escape must be a stairway and the second escape may be a trunk or a stairway;
- (d) above the weather deck the means of escape must be stairways or doors to an open deck or a combination thereof;
- (e) exceptionally, the Directorate may permit only one means of escape, due regard being paid to the nature and location of spaces and to the number of persons who normally might be accommodated or employed there;
- (f) a corridor or part of a corridor from which there is only one route of escape, may not exceed 7 metres in length; and

- (g) the width and continuity of the means of escape must be to the satisfaction of the Directorate.
- (2) Means of escape must be provided from every machinery space of category A by the means specified in subregulation (3) or (7).
- (3) Two sets of steel ladders, as widely separated as possible, leading to doors in the upper part of the machinery space referred to in subregulation (2) similarly separated and from which access is provided to the open deck on a fishing vessel, must be provided as a means of escape.
- (4) One of the ladders referred to in subregulation (3) must provide continuous fire shelter from the lower part of the machinery space referred to in subregulation (2) to a safe position outside the space, but the Directorate may not require such shelter if, due to special arrangements or dimensions of the machinery space, a safe escape route from the lower part of this space is provided.
- (5) The fire shelter referred to in subregulation (4) must be of steel insulated, where necessary, to the satisfaction of the Directorate and be provided with a self-closing steel door at the lower end.
- (6) One steel ladder leading to a door in the upper part of the machinery space referred to in subregulation (2) from which access is provided to the open deck, and additionally, in the lower part of the machinery space and in a position well separated from the ladder referred to, a steel door capable of being operated from each side and which provides access to a safe escape route from the lower part of the space to the open deck must be provided as a means of escape.
- (7) From machinery spaces other than those of category A, escape routes must be provided on a fishing vessel to the satisfaction of the Directorate having regard to the nature and location of the space and whether persons are normally employed in that space.
- (8) Lifts may not be considered as forming one of the required means of escape form a fishing vessel.

Automatic sprinkler and fire alarm and fire detection systems (Method IIF)

89. (1) In fishing vessels in which method IIF is adopted, an automatic sprinkler and fire alarm system of an approved type and complying with the requirements of this regulation must be installed and arranged in such a way as to protect accommodation spaces and service spaces, except spaces which afford no substantial fire risks, such as void spaces and sanitary spaces.
- (2) The fire alarm system referred to in subregulation (1) must be capable of immediate operation at all times and no action by the crew must be necessary to set it in operation.
- (3) The fire alarm system on a fishing vessel must be of the wet pipe type, but small exposed sections may be of the dry pipe type where in the opinion of the Directorate this is a necessary precaution.
- (4) Any parts of the fire alarm system on a fishing vessel which may be subjected to freezing temperatures in service must be suitably protected against freezing, must be kept charged at the necessary pressure and must have provision for a continuous supply of water as required in subregulation (24).
- (5) Each section of sprinklers in the fire alarm system on a fishing vessel must include means for giving a visible and audible fire alarm signal automatically at one or more indicating units whenever any sprinkler comes into operation.

(6) The indicating units referred to in subregulation (5) must indicate in which section served by the fire alarm system, fire has occurred and must be centralized in the wheelhouse and, in addition, visible and audible alarms from the indicating unit must be placed in a position other than in the wheelhouse, so as to ensure that the indication of fire is immediately received by the crew.

(7) The fire alarm system on a fishing vessel must be constructed in such a way as to indicate if any fault occurs in the system.

(8) Sprinklers in a fire alarm system on a fishing vessel must be grouped into separate sections, each of which must contain not more than 200 sprinklers.

(9) Each section of sprinklers in a fire alarm system on a fishing vessel must be capable of being isolated by one stop valve only.

(10) The stop valve in each section of sprinklers on a fishing vessel must be readily accessible and its location must be clearly and permanently indicated.

(11) Means must be provided to prevent the operation of the stop valves by any unauthorized person.

(12) A gauge indicating the pressure in the fire alarm system on a fishing vessel must be provided at each section stop valve and at a central station.

(13) The sprinklers on a fishing vessel must be resistant to corrosion.

(14) In accommodation and service spaces on a fishing vessel, the sprinklers must come into operation within the temperature range of 68°C and 79°C, except that in locations such as drying rooms, where high ambient temperatures might be expected, the operating temperature may be increased by not more than 30°C above the maximum deck head temperature.

(15) A list or plan must be displayed at each indicating unit on a fishing vessel showing the spaces covered by sprinklers and the location of the zone in respect of each section.

(16) Suitable instructions for testing and maintenance of sprinklers on a fishing vessel must be available.

(17) Sprinklers on a fishing vessel must be placed in an overhead position and spaced in a suitable pattern to maintain an average application rate of not less than 5L per square metre per minute over the nominal area covered by the sprinklers, or, alternatively, the Directorate may permit the use of sprinklers on a fishing vessel providing such quantity of water suitably distributed as has been shown to the satisfaction of the Directorate to be not less effective.

(18) A pressure tank having a volume equal to at least twice that of the charge of water specified in subregulation (17) must be provided on a fishing vessel.

(19) The pressure tank on a fishing vessel must contain a standing charge of fresh water, equivalent to the amount of water which would be discharged in one minute by the power pump referred to in subregulation (24).

(20) The standing charge of fresh water referred to in subregulation (19) must provide for maintaining such air pressure in the tank as to ensure that, where the standing charge of fresh water in the tank has been used, the pressure will be not less than the working pressure of the sprinkler, plus the pressure due to a head of water measured from the bottom of the tank to the highest sprinkler in the system.

(21) Suitable means of replenishing the air under pressure and of replenishing the fresh water charge in the pressure tank on a fishing vessel must be provided.

(22) A glass gauge shall be provided on a pressure tank on a fishing vessel to indicate the correct level of the water in the tank.

(23) Means must be provided on a fishing vessel to prevent the passage of seawater into the pressure tank.

(24) An independent power pump must be provided on a fishing vessel solely for the purpose of continuing automatically the discharge of water from the sprinklers.

(25) The power pump on a fishing vessel must be brought into action automatically by the pressure drop in the fire alarm system before the standing fresh water charge in the pressure tank is completely exhausted.

(26) The power pump and the piping system on a fishing vessel must be capable of maintaining the necessary pressure at the level of the highest sprinkler to ensure a continuous output of water sufficient for the simultaneous coverage of the maximum area separated by fire-resisting bulkheads of "A" and "B" class divisions or an area of 280 square metres, whichever is the lesser at the application rate specified in subregulation (17).

(27) The power pump on a fishing vessel must have fitted on the delivery side a test valve with a short open-ended discharge pipe.

(28) The effective area through the valve and pipe on a fishing vessel must be adequate to permit the release of the required pump output while maintaining the pressure in the system specified in subregulation (19).

(29) The sea inlet to the power pump on a fishing vessel must, wherever possible, be in the space containing the pump and must be arranged in such a way that when the fishing vessel is afloat it will not be necessary to shut off the supply of seawater to the pump for any purpose other than the inspection or repair of the pump.

(30) The sprinkler pump and tank on a fishing vessel must be situated in a position reasonably remote from any machinery space of category A and may not be situated in any space required to be protected by the sprinkler system.

(31) There may not be less than two sources of power supply for the seawater pump and the automatic fire alarm and fire detection system on a fishing vessel.

(32) If the seawater pump on a fishing vessel is electrically driven, it must be connected to the main source of electrical power, which must be capable of being supplied by at least two generators.

(33) The feeders on a sea water pump on a fishing vessel must be arranged in such a way as to avoid galleys, machinery spaces and other enclosed spaces of high fire risk, except in so far as it is necessary to reach the appropriate switchboard.

(34) One of the sources of power supply for the fire alarm and fire detection system on a fishing vessel must be an emergency source.

(35) Where one of the sources of power for the pump on a fishing vessel is an internal combustion engine, it must, in addition to complying with subregulation (30), be situated in such a position that a fire in any protected space will not affect the air supply to that engine.

(36) The sprinkler system on a fishing vessel must have a connection from the fishing vessel's fire main by way of a lockable screw-down non-return valve at the connection which will prevent a backflow from the sprinkler system to the fire main.

(37) A test valve must be provided in a sprinkler system on a fishing vessel for testing the automatic alarm for each section of sprinklers by a discharge of water equivalent to the operation of one sprinkler, and the test valve for each section must be situated near the stop valve for that section.

(38) Means must be provided in the sprinkler system on a fishing vessel for testing the automatic operation of the pump on reduction of pressure in the system.

(39) Switches must be provided at one of the indicating units referred to in subregulation (5) which will enable the alarm and the indicators for each section of sprinklers to be tested.

(40) Spare sprinkler heads must be provided on a fishing vessel for each section of sprinklers to the satisfaction of the Directorate.

Automatic fire alarm and fire detection systems (Method IIIF)

90. (1) In fishing vessels in which method IIIF is adopted, an automatic fire alarm and fire detection system of an approved type and complying with the requirements of this regulation must be installed and arranged in such a way as to detect the presence of fire in all accommodation spaces and service spaces, except spaces which afford no substantial fire risk, such as void spaces and sanitary spaces.

(2) The automatic fire alarm and fire detection system on a fishing vessel must be capable of immediate operation at all times and no action of the crew must be necessary to set it in operation.

(3) Each section of detectors on an automatic fire alarm and fire detection system on a fishing vessel must include means for giving a visible and audible alarm signal automatically at one or more indicating units whenever any detector comes into operation.

(4) The indicating units referred to in subregulation (3) must indicate in which section served by the system a fire has occurred and must be centralized on the wheelhouse and such other positions as will ensure that any alarm from the system is immediately received by the crew.

(5) In addition to the requirement in subregulation (4), arrangements must be provided to ensure that an alarm is sounded on the deck on which the fire has been detected.

(6) The automatic fire alarm and fire detection system on a fishing vessel must be constructed in such a way as to indicate if any fault occurs in the system.

(7) Detectors on an automatic fire alarm and fire detection system must be grouped into separate sections, each covering not more than 50 rooms served by such a system and containing not more than 100 detectors.

(8) The detectors referred to in subregulation (7) must be zoned to indicate on which deck a fire has occurred.

(9) The automatic fire alarm and fire detection system on a fishing vessel must be operated by an abnormal air temperature, by an abnormal concentration of smoke or by other factors indicative of incipient fire in any one of the spaces to be protected.

(10) Automatic fire alarm and fire detection systems on a fishing vessel which are sensitive to air temperature may not operate at less than 54°C and must operate at a temperature not greater than 78°C when the temperature increase to those levels is not more than 1°C per minute.

- (11) At the discretion of the Directorate, the permissible temperature of operation may be increased to 30°C above the maximum deckhead temperature in drying rooms and similar places of normally high ambient temperature.
- (12) Automatic fire alarm and fire detection systems on a fishing vessel which are sensitive to smoke concentration must operate on the reduction of the intensity of a transmitted light beam by an amount to be determined by the Directorate, but other equally effective methods of operation may be accepted at the discretion of the Directorate.
- (13) The fire detection system on a fishing vessel may not be used for any purpose other than fire detection.
- (14) The fire detectors on a fishing vessel may be arranged to operate the alarm by the opening or closing of contacts or by other appropriate methods, and must be -
- (a) fitted in an overhead position;
 - (b) suitably protected against impact and physical damage;
 - (c) suitable for use in a marine atmosphere; and
 - (d) placed in an open position clear of beams and other objects likely to obstruct the flow of hot gases or smoke to the sensitive element.
- (15) Detectors on a fishing vessel operated by the closing of contacts must be of the sealed contact type and the circuit must be continuously monitored to indicate fault conditions.
- (16) At least one fire detector must be installed in each space on a fishing vessel where detection facilities are required and there must be not less than one fire detector for each 37 square metres of deck area approximately.
- (17) In large spaces, the detectors must be arranged in a regular pattern so that no detector is more than 9 metres from another detector or more than 4.5 metres from a bulkhead.
- (18) There must be not less than two sources of power supply on a fishing vessel for the electrical equipment used in the operation of the fire alarm and fire detection system, one of which must be an emergency source.
- (19) The power supply on a fishing vessel must be provided by separate feeders reserved solely for that purpose, and those feeders must run to a change-over switch in the control station for the fire detection system.
- (20) The wiring system on a fishing vessel must be arranged in such a way as to avoid galleys, machinery spaces and other enclosed spaces having a high fire risk, except in so far as it is necessary to provide for fire detection in such spaces or to reach the appropriate switchboard.
- (21) A list or plan must be displayed adjacent to each indicating unit, showing the spaces covered and the location of the zone in respect of each system, and suitable instructions for testing and maintenance must be available.
- (22) Provision must be made on a fishing vessel for testing the correct operation of the fire detectors and the indicating units by supplying means for applying hot air or smoke at detector positions.
- (23) Spare fire detector heads must be provided on a fishing vessel for each section of fire detectors to the satisfaction of the Directorate.

Fixed fire-extinguishing arrangements in cargo spaces of high fire risk

91. Cargo spaces of high fire risk must be protected by a fixed gas fire-extinguishing system or by a fire-extinguishing system which gives equivalent protection to the satisfaction of the Directorate.

Fire pumps

92. (1) At least two fire pumps must be provided on a fishing vessel.

(2) If a fire in any one compartment on a fishing vessel could put all the fire pumps out of action, there must be an alternative means of providing water for fire fighting.

(3) In fishing vessels of 75 metres in length and over the alternative means referred to in subregulation (2) must be a fixed emergency fire pump independently driven, and this emergency fire pump must be capable of supplying two jets of water to the satisfaction of the Directorate.

(4) The fire pumps, other than the emergency pump, on a fishing vessel must be capable of delivering, for fire-fighting purposes, a quantity of water at a minimum pressure of 0.25 N per square millimetre, with a total capacity (Q) of at least:

$$Q = (0.15 \sqrt{L(B + D) + 2.25})^2 \text{ m}^3/\text{h}$$

where L, B and D are in metres.

However, the total required capacity of the fire pumps need not exceed 180 cubic metres/hour.

(5) Each of the required fire pumps, other than any emergency pump, must have a capacity of not less than 40% of the total capacity of fire pumps required by subregulation (4) and must, in any event, be capable of delivering at least the jets of water required by regulation 94(5).

(6) The fire pumps referred to in subregulation (5) must be capable of supplying the fire main systems under the required conditions.

(7) Where more than two fire pumps are installed on a fishing vessel, the capacity of the additional pumps must be to the satisfaction of the Directorate.

(8) Fire pumps on a fishing vessel must be independently driven power pumps, but sanitary, ballast, bilge or general service pumps may be accepted as fire pumps, provided they are not normally used for pumping oil and, if they are subject to occasional duty of the transfer or pumping of fuel oil, suitable change-over arrangements are fitted.

(9) Relief valves must be provided in conjunction with all fire pumps on a fishing vessel if the fire pumps are capable of developing a pressure exceeding the design pressure of the water service pipes, hydrants and hoses, and these valves must be placed and adjusted in such a way as to prevent excessive pressure in any of the fire main systems.

(10) Emergency power-operated fire pumps must be independently driven self-contained pumps, either with their own diesel engine prime mover and fuel supply fitted in an accessible position outside the compartment which contains the main fire pumps, or with a self-contained generator, which may be the emergency generator referred to in regulation 17 of Chapter IV of the Convention Regulations, of sufficient capacity and which is positioned in a safe place outside the engine room and preferably above the working deck.

(11) The emergency fire pump on a fishing vessel must be capable of operating for a period of at least three hours.

(12) Emergency fire pumps, sea-suction valves and other necessary valves on a fishing vessel must be operable from outside compartments containing main fire pumps in a position not likely to be cut off by a fire in those compartments.

Fire mains

93. (1) Where more than one hydrant is required to provide the number of jets specified in regulation 94(5), a fire main must be provided on a fishing vessel.

(2) Fire mains on a fishing vessel must have no connections other than those required for fire fighting, except for the purpose of washing the deck and anchor chains and operation of bilge ejectors, subject to the efficiency of the fire-fighting system being maintained.

(3) Where fire mains on a fishing vessel are not self-draining, suitable drain cocks must be fitted where frost damage could be expected.

(4) The diameter of the fire main and water service pipes must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously or of 140 m³/h, whichever is the less.

(5) If the two pumps referred to in subregulation (4) simultaneously deliver through nozzles specified in regulation 94(11), the quantity of water specified in subregulation (2), through any adjacent hydrants, the minimum pressure of 0.25 N/square millimetre must be maintained at all hydrants.

Fire hydrants, fire hoses and nozzles

94. (1) The number of fire hoses provided must be equal to the number of fire hydrants arranged according to subregulation (5) and one spare hose, but the number does not include any fire hoses required in any engine or boiler room.

(2) The Directorate may increase the number of fire hoses required on a fishing vessel so as to ensure that hoses in sufficient number are available and accessible at all times, having regard to the size of the fishing vessel.

(3) Fire hoses must be of approved material and sufficient in length to project a jet of water to any of the spaces in which they may be required to be used, and their maximum length must be 20 metres.

(4) Every fire hose on a fishing vessel must be provided with a nozzle and the necessary couplings, and must, together with any necessary fittings and tools be kept ready for use in conspicuous positions near the water service hydrants or connections.

(5) The number and position of fire hydrants on a fishing vessel must be such that at least two jets of water not emanating from the same hydrant, one of which must be from a single length of fire hose, may reach any part of the fishing vessel normally accessible to the crew while the fishing vessel is being navigated.

(6) All required hydrants must be fitted with fire hoses having dual purpose nozzles as required by subregulation (13), and one hydrant must be located near the entrance of the space to be protected.

(7) Materials readily rendered ineffective by heat may not be used for fire mains and hydrants on a fishing vessel unless they are adequately protected.

(8) The pipes and hydrants on a fishing vessel must be placed in such a way that the fire hoses may be easily coupled to them, but on fishing vessels where deck

cargo may be carried, the positions of the hydrants must be such that they are always readily accessible and the pipes must be arranged as far as practicable in such a way as to avoid risk of damage by such cargo.

(9) Unless one fire hose and nozzle is provided for each hydrant on a fishing vessel, there must be complete interchangeability of fire hose couplings and nozzles.

(10) A cock or valve must be fitted on a fishing vessel to serve each fire hose so that any fire hose may be removed while the fire pumps are operating.

(11) Standard nozzle sizes must be 12 millimetres, 16 millimetres and 19 millimetres or as near thereto as possible, but larger diameter nozzles may be permitted at the discretion of the Directorate.

(12) For accommodation and service spaces on a fishing vessel, a nozzle size greater than 12 millimetres may or may not be used.

(13) For machinery spaces and exterior locations, the nozzle size must be such as to obtain the maximum discharge possible from two jets at the pressure specified in regulation 93(5) from the smallest pump, provided that a nozzle size greater than 19 millimetres may or may not be used.

Fire extinguishers

95. (1) Fire extinguishers on a fishing vessel must be of approved types.

(2) The capacity of required portable fluid extinguishers on a fishing vessel must be not more than 13.5L and not less than 9 l.

(3) Other extinguishers on a fishing vessel may not be in excess of the equivalent portability of the 13.5L fluid extinguisher and may not be less than the fire-extinguishing equivalent of a 9 l fluid extinguisher, and the Directorate must determine the equivalents of fire extinguishers.

(4) Spare charges must be provided on a fishing vessel to the satisfaction of the Directorate.

(5) Fire extinguishers on a fishing vessel, containing an extinguishing medium which, in the opinion of the Directorate, either by itself or under expected conditions of use, gives off toxic gases in such quantities as to endanger persons may not be permitted.

(6) Fire extinguishers on a fishing vessel must be periodically examined and subjected to such tests as the Directorate may require.

(7) Normally, one of the portable fire extinguishers on a fishing vessel intended for use in any space on the fishing vessel must be stowed near an entrance to that space.

Portable fire extinguishers in control stations and accommodation and service spaces

96. (1) At least five approved portable fire extinguishers must be provided in control stations and accommodation and service spaces on a fishing vessel to the satisfaction of the Directorate.

(2) Spare charges must be provided on a fishing vessel to the satisfaction of the Directorate.

Fire-extinguishing appliances in machinery spaces

97. (1) Spaces containing oil-fired boilers or fuel oil units on a fishing vessel must be provided with one of the following fixed fire-extinguishing systems, to the satisfaction of the Directorate:

- (a) A pressure water-spraying installation;
 - (b) a fire-smothering gas installation;
 - (c) a fire-extinguishing installation using vapours from low toxicity vapourizing liquids; or
 - (d) a fire-extinguishing installation using high expansion foam.
- (2) Where the engine and boiler rooms on a fishing vessel are not entirely separate, or if fuel oil can drain from the boiler room into the engine room, the combined engine and boiler rooms must be considered as one compartment.
- (3) New installations of halogenated hydrocarbon systems used as fire-extinguishing media on a fishing vessel must be prohibited on new and existing fishing vessels.
- (4) Every boiler room on a fishing vessel must be provided with at least one set of portable foam equipment to the satisfaction of the Directorate.
- (5) At least two approved portable extinguishers discharging foam or equivalent must be provided in each firing space in each boiler room and each space in which a part of the fuel oil installation on a fishing vessel is situated.
- (6) At least one approved foam-type extinguisher of at least 135L capacity or equivalent must be provided with hoses on reels suitable for reaching any part of the boiler room on a fishing vessel.
- (7) The Directorate may relax the requirements of subregulations (5) and (6), having regard to the size and nature of the space to be protected.
- (8) In each firing space on a fishing vessel, there must be a receptacle containing sand, sawdust impregnated with soda or other approved dry material, in such quantity as may be required by the Directorate, or alternatively an approved portable extinguisher may be provided.
- (9) Spaces on a fishing vessel, containing internal combustion machinery used either for main propulsion or for other purposes, when such machinery has a total power output of not less than 750 kilowatts, must be provided with the following arrangements:
- (a) One of the fire-extinguishing systems required by subregulation (1);
 - (b) at least one set of portable foam equipment to the satisfaction of the Directorate;
 - (c) in each such space, approved foam-type fire extinguishers each of at least 45L capacity, or equivalent, sufficient in number to enable foam or its equivalent to be directed on to any part of the fuel and lubricating oil pressure systems, gearing and other fire hazards; and
 - (d) a sufficient number of portable foam extinguishers or equivalent which must be located in such a position that an extinguisher is not more than 10 metres walking distance from any point in the space: Provided that there must be at least two extinguishers in each space, except for smaller spaces where the Directorate may relax these requirements.
- (10) Spaces containing steam turbines or enclosed steam engines used either for main propulsion, or for other purposes, when such machinery has a total power output of not less than 750 kilowatts must be provided with the following arrangements:

- (a) Foam fire extinguishers each of at least 45L capacity, or equivalent, sufficient in number to enable foam or its equivalent to be directed on to any part of the pressure lubrication system, on to any part of the casings enclosing pressure lubricated parts of the turbines, engines or associated gearing, and any other fire hazards: Provided that such extinguishers may not be required if protection at least equivalent to that of this subregulation is provided in such spaces by a fixed fire-extinguishing system fitted in compliance with subregulation (1); and
- (b) a sufficient number of portable foam extinguishers, or equivalent, which must be so located that an extinguisher is not more than 10 metres walking distance from any point in the space: Provided that there must be at least two such extinguishers in each such space, and such extinguishers may not be required in addition to any provided in compliance with subregulation (9)(d).

(11) Where, in the opinion of the Directorate, a fire hazard exists in any machinery space on a fishing vessel, for which no specific provisions for fire-extinguishing appliances are prescribed in subregulations (1), (5), (6), (8), (9)(a) and (d) and (10) there must be provided in, or adjacent to, that space a number of approved portable fire extinguishers or other means of fire extinction to the satisfaction of the Directorate.

(12) Where fixed fire-extinguishing systems not required by this Part are installed on a fishing vessel, those systems must be to the satisfaction of the Directorate.

(13) For any machinery space of category A to which access is provided at a low level from an adjacent shaft tunnel, there must be provided in addition to any watertight door and on the side remote from that machinery space a light steel fire-screen door which must be capable of being operated from each side of the door.

International shore connection

98. (1) At least one international shore connection, complying with subregulation (2) must be provided on a fishing vessel.

(2) Standard dimensions of flanges for the international shore must be in accordance with Table 3 set out in the Appendix.

(3) The international shore connection referred to in subregulation (2) must be constructed of material suitable for 1.0 N per square millimetre service pressure.

(4) The flange referred to in subregulation (2) must have a flat face on one side and the other must have a coupling permanently attached to it that will fit the fishing vessel's hydrant and hose.

(5) The international shore connection referred to in subregulation (2) must be kept aboard the fishing vessel together with a gasket of any material suitable for 1.0 N per square millimetre service pressure, together with four 16 millimetre bolts 50 millimetres in length and eight washers.

(6) Facilities must be available on a fishing vessel enabling an international shore connection to be used on either side of the fishing vessel.

Fireman's outfits

99. (1) At least two fireman's outfits must be carried on a fishing vessel to the satisfaction of the Directorate.

(2) The fireman's outfits on a fishing vessel must be stored in such a way as to be easily accessible and ready for use and must be stored in widely separated positions.

- (3) A fireman's outfit must consist of -
- (a) personal equipment comprising -
- (i) protective clothing of material to protect the skin from the heat radiating from the fire and from burns and scalding by steam, the outer surface of which protective clothing must be water-resistant;
 - (ii) boots and rubber gloves or other electrically non-conducting material;
 - (iii) a rigid helmet providing effective protection against impact;
 - (iv) an electric safety lamp (hand lantern) of an approved type with a minimum burning period of three hours; and
 - (v) an axe to the satisfaction of the Directorate;
- (b) a breathing apparatus of an approved type which may be either -
- (i) a smoke helmet or a smoke mask which must be provided with a suitable air pump and a length of air hose sufficient to reach from the open deck, well clear of hatch or doorway, to any part of the holds or machinery spaces, but if, in order to comply with this subparagraph, an air hose exceeding 36 metres in length would be necessary, a self-contained breathing apparatus must be substituted or provided in addition as determined by the Directorate; or
 - (ii) a self-contained compressed-air-operated breathing apparatus, the volume of air contained in the cylinders of which must be at least 1,200 l or other self-contained breathing apparatus which must be capable of functioning for at least 30 minutes, and a number of spare charges, suitable for use with the apparatus provided, must be available on board to the satisfaction of the Directorate.
- (4) For each breathing apparatus, a fireproof lifeline of sufficient length and strength must be provided, capable of being attached by means of a snaphook to the harness of the apparatus or to a separate belt in order to prevent the breathing apparatus from becoming detached when the lifeline is operated.

Fire control plan

100. In all fishing vessels, a duplicate set of fire control plans or a booklet containing those plans must be stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shoreside fire-fighting personnel.

Ready availability of fire-extinguishing appliances

101. Fire-extinguishing appliances must be kept in good order by approved personnel and must be serviced annually and be available for immediate use at all times.

Acceptance of substitutes

102. Where in this Part any special type of appliance, apparatus, extinguishing medium or arrangement is specified, any other type of appliance may be allowed, provided the Directorate is satisfied that it is not less effective.

PART III

FIRE SAFETY MEASURES IN FISHING VESSELS OF 45 METRES IN LENGTH AND OVER, BUT LESS THAN 60 METRES

Structural fire protection

103. (1) The hull, superstructure, structural bulkheads, decks and deckhouses on a fishing vessel must be constructed of non-combustible materials, but the Directorate may permit combustible construction, provided the requirements of this regulation and the additional fire-extinguishing requirements of regulation 115(5) are complied with.

(2) In fishing vessels, the hull of which is constructed of non-combustible materials, the decks and bulkheads separating machinery spaces of category A from accommodation spaces, service spaces or control stations must be constructed to "A-60" class standard where the machinery space of category A is not provided with a fixed fire-extinguishing system and to "A-30" class standard where such a system is fitted.

(3) Decks and bulkheads other machinery spaces from accommodation, service spaces and control stations in a fishing vessel must be constructed to "A-0" class standard.

(4) Decks and bulkheads separating control stations from accommodation and service spaces on a fishing vessel must be constructed to "A" class standard, insulated to the satisfaction of the Directorate, but the Directorate may permit the fitting of "B-15" class divisions for separating such spaces as skipper's cabin from the wheelhouse.

(5) In fishing vessels, the hull of which is constructed of combustible materials, the decks and bulkheads separating machinery spaces from accommodation spaces, service spaces or control stations must be constructed to "F" class or "B-15" class standard.

(6) In addition to the requirement in subregulation (5), machinery space boundaries must, as far as is practicable, prevent the passage of smoke.

(7) Decks and bulkheads separating control stations from accommodation and service spaces on a fishing vessel must be constructed to "F" class standard.

(8) In fishing vessels, the hull of which is constructed of non-combustible materials, bulkheads of corridors serving accommodation spaces, service spaces and control stations must be of "B-15" class divisions.

(9) In fishing vessels, the hull of which is constructed of combustible materials, bulkheads of corridors serving accommodation spaces, service spaces and control stations must be of "F" class divisions.

(10) Any bulkhead required by subregulation (7) or ((8) must extend from deck to deck unless a continuous ceiling of the same class as the bulkhead is fitted on both sides of the bulkhead, in which case the bulkhead may terminate at the continuous ceiling.

(11) Interior stairways serving accommodation spaces, service spaces or control stations on a fishing vessel must be of steel or other equivalent material.

(12) The stairways referred to in subregulation (11) must be within enclosures constructed of "F" class divisions in fishing vessels the hull of which is constructed of combustible materials, or "B-15" class divisions in fishing vessels the hull of which is constructed of non-combustible materials: Provided that where a stairway penetrates only one deck, it must be enclosed at one level only.

(13) Doors and other closures of openings in bulkheads and decks referred to in subregulation (12) and doors fitted in engine and boiler casings, must be as far as is practicable equivalent in resisting fire to the divisions in which they are fitted.

(14) Doors to machinery spaces of category A on a fishing vessel must be self-closing.

(15) Lift trunks which pass through the accommodation and service spaces on a fishing vessel must be constructed of steel or equivalent material and must be provided with means of closing which will permit control of draught and smoke.

(16) In fishing vessels, the hull of which is constructed of combustible materials, the boundary bulkheads and decks of spaces containing any emergency source of power and bulkheads and decks between galleys, paint rooms, lamp rooms or any store-rooms which contain appreciable quantities of highly flammable materials, and accommodation spaces, service spaces or control stations must be constructed of "F" class or "B-15" class divisions.

(17) In fishing vessels, the hull of which is constructed of non-combustible materials, the bulkheads and decks referred to in subregulation (16) must be "A" class divisions insulated to the satisfaction of the Directorate, having in mind the risk of fire.

(18) The Directorate may accept "B-15" class divisions between a galley and accommodation spaces, service spaces and control stations on a fishing vessel when the galley contains electrically heated furnaces, electrically heated hot water appliances or other electrically heated appliances only.

(19) Highly flammable products on a fishing vessel must be carried in suitably sealed containers.

(20) Where bulkheads or decks required by subregulation (3),(4),(5), (7) or (10) to be of "A" class, "B" class or "F" class divisions are penetrated for the passage of electrical cables, pipes, trunks or ducts, arrangements must be made to ensure that the fire integrity of the division is not impaired.

(21) Air spaces enclosed behind ceilings, panellings or linings in accommodation spaces, service spaces and control stations on a fishing vessel must be divided by close-fitting draught stops spaced not more than 7 metres apart.

(22) Windows and skylights to machinery spaces on a fishing vessel must be as follows:

- (a) Where skylights can be opened, they must be capable of being closed from outside the space;
- (b) skylights containing glass panels must be fitted with external shutters of steel or other equivalent material permanently attached;
- (c) glass or similar materials may not be fitted in machinery space boundaries, but this does not preclude the use of wire-reinforced glass for skylights and glass in control rooms within the machinery spaces; and
- (d) in skylights referred to in paragraphs (a) and (b), wire-reinforced glass must be used.

(23) Insulating materials in accommodation spaces, service spaces except domestic refrigeration compartments, control stations and machinery spaces, on a fishing vessel must be non-combustible.

(24) The surface of insulation fitted on the internal boundaries of machinery spaces of category A on a fishing vessel must be impervious to oil or oil vapours.

(25) Within compartments used for stowage of fish, combustible insulation must be protected by close-fitting cladding.

(26) Notwithstanding the requirements of this regulation, the Directorate may accept "A-O" class divisions in lieu of "B-15" or "F" class divisions, having regard to the amount of combustible materials used in adjacent spaces.

Ventilation systems

104. (1) Except as provided for in regulation 105(6) and (7), means must be provided on a fishing vessel to stop fans and close main openings to ventilation systems from outside the spaces served.

(2) Means must be provided on a fishing vessel for closing, from a safe position, the annular spaces around funnels.

(3) Ventilation openings may be permitted in and under the doors in corridor bulkheads on a fishing vessel, except that those openings may not be permitted in and under stairway enclosure doors.

(4) Ventilation openings on a fishing vessel must be provided only in the lower half of a door.

(5) Where a ventilation opening on a fishing vessel is in or under a door, the total net area of any such opening may not exceed 0.05 square metres.

(6) When a ventilation opening on a fishing vessel is cut in a door, it must be fitted with a grille made of non-combustible material.

(7) Ventilation ducts for machinery spaces of category A or galleys on a fishing vessel may not in general pass through accommodation spaces, service spaces or control stations, and where the Directorate permits this arrangement, the ducts must be constructed of steel or equivalent material and arranged to preserve the integrity of the divisions.

(8) Ventilation ducts of accommodation spaces, service spaces or control stations in a fishing vessel may not in general pass through machinery spaces of category A or through galleys, and where the Directorate permits this arrangement the ducts must be constructed of steel or equivalent material and arranged to preserve the integrity of the divisions.

(9) Store-rooms containing appreciable quantities of highly flammable products on a fishing vessel must be provided with ventilation arrangements which are separate from other ventilation systems.

(10) Ventilation on a fishing vessel must be arranged at high and low levels and the inlets and outlets of ventilators must be positioned in safe areas.

(11) Suitable wire mesh guards to arrest sparks on a fishing vessel must be fitted over inlet and outlet ventilation openings.

(12) Ventilation systems serving machinery spaces on a fishing vessel must be independent of systems serving other spaces.

(13) Where trunks or ducts serve spaces on both sides of "A" class bulkheads or decks, dampers must be fitted so as to prevent the spread of fire and smoke between compartments.

(14) Manual dampers on a fishing vessel must be operable from both sides of the bulkhead or the deck.

(15) Where the trunks or ducts with a free cross-sectional area exceeding 0.02 square metres pass through "A" class bulkheads or decks, automatic self-closing dampers must be fitted, and trunks serving compartments situated only on one side of those bulkheads must comply with regulation 84(3).

Heating installations

105. (1) Heating radiators on a fishing vessel must be fixed in position and constructed in such a way as to reduce fire risks to a minimum.

(2) No radiator on a fishing vessel must be fitted with an element which is so exposed as to cause clothing, curtains or other similar materials to be scorched or set on fire by heat from the element.

(3) Heating by means of open fires may not be permitted on a fishing vessel.

(4) Heating stoves and other similar appliances on a fishing vessel must be firmly secured and adequate protection and insulation against fire must be provided beneath and around those appliances and in way of their uptakes.

(5) Uptakes of stoves which burn solid fuel on a fishing vessel must be arranged and designed in such a way as to minimize the possibility of becoming blocked by combustion products and must have a ready means for cleaning.

(6) Dampers for limiting draughts in uptakes on a fishing vessel must, when in the closed position, still leave an adequate area open.

(7) Spaces in which stoves are installed must be provided with ventilators of sufficient area to provide adequate combustion-air for the stove, and those ventilators must have no means of closure and their position must be such that no closing appliances in accordance with regulation 9 of Chapter II of the Convention Regulations are required.

(8) Open flame gas appliances, except cooking stoves and water heaters, may not be permitted on a fishing vessel, and spaces containing any such stoves or water heaters must have adequate ventilation to remove fumes and possible gas leakage to a safe place.

(9) All pipes conveying gas from container to stove or water heater on a fishing vessel must be of steel or other approved material.

(10) Automatic safety gas shut-off devices must be fitted to operate on loss of pressure in the gas main pipe or flame failure on any appliance.

Miscellaneous items

106. (1) Exposed surfaces within accommodation spaces, service spaces, control stations, corridor and stairway enclosures and the concealed surfaces behind bulkheads, ceilings, panellings and linings in accommodation spaces, service spaces, and control stations must have low flame-spread characteristics.

(2) All exposed surfaces of glass reinforced plastic construction within accommodation and service spaces, control stations, machinery spaces of category A and other machinery spaces of similar fire risk on a fishing vessel must have the final lay-up layer of approved resin having inherent fire-retardant properties or be coated with an approved fire-retardant paint or be protected by non-combustible materials.

(3) Paints, varnishes and other finishes used on exposed interior surfaces on a fishing vessel may not be capable of producing excessive quantities of smoke or toxic gases or vapours, and the Directorate must be satisfied that they are not of a nature to offer an undue fire hazard.

(4) Primary deck coverings within accommodation and service spaces and control stations on a fishing vessel, must be of approved material which will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures.

(5) In communication and service spaces and control stations on a fishing vessel, pipes penetrating "A" or "B" class divisions must be of approved materials having regard to the temperature such divisions are required to withstand.

(6) Where the Directorate permits conveying of oil and combustible liquids through accommodation and service spaces, the pipes conveying oil or combustible liquids must be of an approved material having regard to the fire risk.

(7) Materials readily rendered ineffective by heat may not be used for overboard scuppers, sanitary discharges, and other outlets on a fishing vessel which are close to the waterline and where the failure of the material in the event of fire would give rise to danger of flooding.

(8) All waste receptacles other than those used in fish processing must be constructed of non-combustible materials with no openings in the sides and bottom.

(9) Machinery driving fuel oil transfer pumps, fuel oil unit pumps and other similar fuel pumps on a fishing vessel must be fitted with remote controls situated outside the space concerned so that they can be stopped in the event of a fire arising in the space in which they are located.

(10) Drip trays must be fitted on machinery driving fuel oil transfer pumps, fuel oil unit pumps and other similar fuel pumps, where necessary, to prevent oil leaking into bilges.

Storage of gas cylinders and dangerous materials

107. (1) Cylinders for compressed, liquefied or dissolved gases on a fishing vessel must be clearly marked by means of prescribed identifying colours, have a clearly legible identification of the name and chemical formula of their contents and be properly secured.

(2) The applicable international maritime dangerous goods code hazardous sign showing the hazardous class must be clearly displayed on a fishing vessel within close proximity of the cylinders referred to in subregulation (1).

(3) Cylinders on a fishing vessel, containing flammable or other dangerous gases and expended cylinders must be stored and properly secured on open decks and all valves.

(4) Pressure regulators and pipes leading from the cylinders referred to in subregulation (3) must be protected against damage.

(5) The cylinders referred to in subregulation (3) must be protected against excessive variations in temperature, direct rays of the sun, and accumulation of snow, but the Directorate may permit such cylinders to be stored in compartments complying with the requirements of subregulations (6) to (13).

(6) Spaces on a fishing vessel, containing highly flammable liquids, such as volatile paints, paraffin or benzole, and where permitted, liquefied gas, must have direct access from open decks only.

(7) Pressure-adjusting devices and relief valves on a fishing vessel must exhaust within the compartment.

(8) Where boundary bulkheads of compartments on a fishing vessel adjoin other enclosed spaces they must be gastight.

(9) Except as necessary for service within the space on the fishing vessel, electrical wiring and fittings may not be permitted within compartments used for the storage of highly flammable liquids or liquefied gases.

(10) Where electrical fittings are installed within the compartments referred to in subregulation (9), they must be to the satisfaction of the Directorate for use in a flammable atmosphere.

(11) Sources of heat on a fishing vessel must be kept clear of such spaces and "No smoking" and "No naked light" notices must be displayed in a prominent position.

(12) Separate storage must be provided on a fishing vessel for each type of compressed gas.

(13) Compartments on a fishing vessel, used for the storage of such gases may not be used for storage of other combustible products nor for tools or objects not part of the gas distribution system, but the Directorate may relax these requirements considering the characteristics, volume and intended use of those compressed gases.

Means of escape

108. (1) Stairways and ladders leading to and from all accommodation spaces and in spaces in which the crew is normally employed, other than machinery spaces, must be arranged in such a way as to provide ready means of escape to the open deck and to the survival craft, and, in particular, in relation to these spaces -

- (a) at all levels of accommodation at least two widely separated means of escape must be provided which may include the normal means of access from each restricted space or group of spaces;
- (b) below the weather deck the means of escape must all be a stairway and the second escape may be a trunk or a stairway;
- (c) above the weather deck the means of escape must be stairways or doors to an open deck or a combination thereof, and where it is not practicable to fit stairways or doors, one of these means of escape may be by means of adequately sized portholes or hatches protected, where necessary, against ice accretion;
- (d) exceptionally, the Directorate may permit only one means of escape, due regard being paid to the nature and location of spaces and to the number of persons who normally might be accommodated or employed there;
- (e) a corridor or a part of a corridor from which there is only one route of escape must preferably not exceed 2.5 metres in length and in no case be greater than 5.0 metres in length; and
- (f) the width and continuity of the means of escape must be to the satisfaction of the Directorate.

(2) Two means of escape must be provided from every machinery space of category A on a fishing vessel which must be as widely separated as possible, and vertical escapes must be by means of steel ladders.

(3) Where the size of the machinery spaces on a fishing vessel makes it impracticable, one of the means of escape referred to in subregulation (2) may be omitted, and in such cases, special consideration must be given to the remaining exit.

(4) Lifts may not be considered as forming one of the required means of escape from a fishing vessel.

Automatic fire alarm and fire detection systems

109. Where the Directorate has under regulation 103(1) permitted a combustible construction, or where otherwise appreciable amounts of combustible materials are used on the construction of accommodation spaces, service spaces and control stations, special consideration must be given to the installation of an automatic fire alarm and fire detection system in those spaces, having due regard to the size of those spaces, their arrangement and location relative to control stations as well as, where applicable, the flame-spread characteristics of the installed furniture.

Fire pumps

110. (1) The minimum number and type of fire pumps to be fitted on a fishing vessel must be as follows:

- (a) One power pump not dependent upon the main machinery for its motive power; or
 - (b) one power pump driven by main machinery provided that the propeller shafting can be readily disconnected or provided that a controllable pitch propeller is fitted.
- (2) Sanitary, bilge, ballast, general service or any other pumps may be used as fire pumps on a fishing vessel if they comply with the requirements of this Part and do not affect the ability to cope with pumping of the bilges.
- (3) The fire pumps referred to in subregulation (2) must be connected in such a way that they cannot be used for pumping oil or other flammable liquids.
- (4) Centrifugal pumps or other pumps on a fishing vessel connected to the fire main through which backflow could occur must be fitted with non-return valves.
- (5) Fishing vessels not fitted with a power-operated emergency pump and without a fixed fire-extinguishing system in the machinery spaces on a fishing vessel must be provided with additional fire-extinguishing means to the satisfaction of the Directorate.
- (6) Where fitted on a fishing vessel, emergency power-operated fire pumps must be independently driven self-contained pumps either with their own prime mover and fuel supply fitted in an accessible position outside the compartment which contains the main fire pumps, or be driven by a self-contained generator which may be an emergency generator of sufficient capacity and which is positioned in a safe place outside the engine room and preferably above the working deck.
- (7) For any emergency fire pump, where fitted on a fishing vessel, the pump, sea-suction valves and other necessary valves must be operable from outside compartments containing main fire pumps in a position not likely to be cut off by a fire in those compartments.
- (8) The total capacity (Q) of main power-operated fire pumps must be at least:
- $$Q = (0.15 \sqrt{L(B + D)} + 2.25)^2 \text{ m}^3/\text{h}$$
- where *L*, *B* and *D* are in metres.
- (9) Where two, independent power operated fire pumps are fitted on a fishing vessel, the capacity of each pump may not be less than 40% of the quantity required by subregulation (8).
- (10) When main power fire pumps are delivering the quantity of water required by subregulation (8), through the fire main, fire hoses and nozzles, the pressure maintained at any hydrant must be not less than 0.25 N per square millimetre.

(11) Where power-operated emergency fire pumps are delivering the maximum quantity of water through the jet required by regulation 112(1), the pressure maintained at any hydrant shall be to the satisfaction of the Directorate.

Fire mains

111. (1) Where more than one hydrant is required on a fishing vessel to provide the number of jets required by regulation 112(1), a fire main must be provided.

(2) Materials readily rendered ineffective by heat may not be used for fire mains on a fishing vessel, unless adequately protected.

(3) Where fire pump delivery pressure can exceed the designed working pressure of fire mains on a fishing vessel, relief valves must be fitted.

(4) Fire mains on a fishing vessel must have no connections other than those required for fire fighting, except for the purpose of washing the deck and anchor chains and operation of bilge ejectors, subject to the efficiency of the fire-fighting system being maintained.

(5) Where fire mains on a fishing vessel are not self-draining, suitable drain cocks must be fitted where frost damage may be expected.

Fire hydrants, fire hoses and nozzles

112. (1) Fire hydrants on a fishing vessel must be positioned in such a way as to allow easy and quick connection of fire hoses and so that at least one jet can be directed into any part of the fishing vessel which is normally accessible during navigation.

(2) The jet required in subregulation (1) must be from a single length of fire hose.

(3) In addition to the requirements of subregulation (1), machinery spaces of category A must be provided with at least one hydrant complete with fire hose and dual purpose nozzle, and that fire hydrant must be located outside the space and near the entrance.

(4) For every required fire hydrant on a fishing vessel, there must be one fire hose, and at least one spare hose must be provided in addition to this requirement.

(5) A single length of a fire hose on a fishing vessel may not exceed 20 metres.

(6) Fire hoses on a fishing vessel must be of an approved material, and each fire hose must be provided with couplings and a dual-purpose nozzle.

(7) Except where fire hoses are permanently attached to the fire main, the couplings of fire hoses and nozzles on a fishing vessel must be completely interchangeable.

(8) The nozzle on a fishing vessel as required by subregulation (6) must be appropriate to the delivery capacity of the fire pumps fitted, but in any case must have a diameter of not less than 12 millimetre.

Fire extinguishers

113. (1) Fire extinguishers on a fishing vessel must be of approved types.

(2) The capacity of required portable fluid extinguishers on a fishing vessel may not be more than 13.5L and not less than 9 l, and other extinguishers may not be in excess of the equivalent portability of the 13.5Litre fluid extinguisher and may not be less than the fire-extinguishing equivalent of a 9 litre fluid extinguisher: Provided that the Directorate must determine the equivalents of fire extinguishers to be used on a fishing vessel.

(3) Spare charges must be provided on a fishing vessel to the satisfaction of the Directorate.

(4) Fire extinguishers containing an extinguishing medium which, in the opinion of the Directorate, either by itself or under expected conditions of use, gives off toxic gases in such quantities as to endanger persons may not be permitted on a fishing vessel.

(5) Fire extinguishers on a fishing vessel must be periodically examined and subjected to annual services, and tests as the Directorate may require.

(6) One of the portable fire extinguishers intended for use in any space on a fishing vessel must at all times be stowed near an entrance to that space.

Portable fire extinguishers in control stations and accommodation and service spaces

114. (1) A sufficient number of approved portable fire extinguishers must be provided in control stations and accommodation and service spaces on a fishing vessel to ensure that at least one extinguisher of a suitable type is readily available for use in any part of such spaces, and the total number of extinguishers in these spaces, however, may not be less than three.

(2) Spare charges must be provided on a fishing vessel to the satisfaction of the Directorate.

Fire-extinguishing appliances in machinery spaces

115. (1) Spaces containing oil-fired boilers, fuel oil units or internal combustion machinery having a total power output of not less than 750 kilowatts must be provided with one of the following fixed fire-extinguishing systems, to the satisfaction of the Directorate:

- (a) A pressure water-spraying installation;
- (b) a fire-smothering gas installation;
- (c) a fire-extinguishing installation using vapours from low toxicity vapourizing liquids; or
- (d) a fire-extinguishing installation using high expansion foam.

(2) New installations of halogenated hydrocarbon systems used as fire-extinguishing media on a fishing vessel must be prohibited on new and existing fishing vessels.

(3) Where the engine and boiler rooms on a fishing vessel are not entirely separated from each other, or if fuel oil can drain from the boiler room into the engine room, the combined engine and boiler rooms must be considered as one compartment.

(4) Installations listed in subregulation (1) must be controlled from readily accessible positions outside the spaces not likely to be cut off by a fire in the protected space, and arrangements must be made to ensure the supply of power and water necessary for the operation of the system in the event of fire in the protected space.

(5) Fishing vessels which are constructed mainly or wholly of wood or fibre reinforced plastic and fitted with oil-fired boilers or internal combustion machinery which are decked in way of the machinery space with such material, must be provided with one of the extinguishing systems referred to in subregulation (1).

(6) In all machinery spaces of category A on a fishing vessel, at least two portable extinguishers must be provided, of a type suitable for extinguishing fires involving fuel oil.

(7) Where the spaces referred to in subregulation (6) contain machinery which has a total power output of not less than 250 kilowatts, at least three such extinguishers must be provided, and one of the extinguishers must be stowed near the entrance to the space.

(8) Fishing vessels having machinery spaces not protected by a fixed fire-extinguishing system must be provided with at least a 45L foam extinguisher or its equivalent, suitable for fighting oil fires, but where the size of the machinery spaces make the provision impracticable, the Directorate may accept an additional number of portable fire extinguishers.

Fireman's outfits

116. (1) The number of fireman's outfits and their location on a fishing vessel must be to the satisfaction of the Directorate.

(2) A fireman's outfit must consist of -

(a) personal equipment comprising -

(i) protective clothing of material having a water-resistant outer surface to protect the skin from the heat radiating from the fire and from burns and scalding by steam;

(ii) boots and gloves of rubber or other electrically non-conducting material;

(iii) a rigid helmet providing effective protection against impact;

(iv) an electrical safety lamp (hand lantern) of an approved type with a minimum burning period of three hours; and

(v) an axe to the satisfaction of the Directorate;

(b) a breathing apparatus of an approved type which may be either -

(i) a smoke helmet or smoke mask which must be provided with a suitable air pump and a length of air hose sufficient to reach from the open deck, well clear of hatch or doorway, to any part of the holds or machinery spaces, and if, in order to comply with this subparagraph, an air hose exceeding 36 metres in length would be necessary, a self-contained breathing apparatus must be substituted or provided, in addition, as determined by the Directorate; or

(ii) a self-contained compressed-air-operated breathing apparatus, the volume of air contained in the cylinders of which must be at least 1,200 l, or other self-contained breathing apparatus which must be capable of functioning for at least 30 minutes, a number of spare charges, suitable for use with the apparatus provided, must be available on board to the satisfaction of the Directorate.

(3) For each breathing apparatus, a fireproof lifeline of sufficient length and strength must be provided, capable of being attached by means of a snaphook to the harness of the apparatus or to a separate belt in order to prevent the breathing apparatus becoming detached when the lifeline is operated.

Fire control plan

117. There must be a permanently exhibited fire control plan to the satisfaction of the Directorate, and in all fishing vessels, a duplicate set of fire control plans or a booklet containing such plans must be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shoreside fire-fighting personnel.

Ready availability of fire-extinguishing appliances and acceptance of substitutes

118. (1) Fire-extinguishing appliances on a fishing vessel must be kept in good order and available for immediate use at all times.

(2) Where, in this Part, any special type of appliance, apparatus, extinguishing medium or arrangement is specified, any other type of appliance, etc., may be allowed, provided the Directorate is satisfied that it is not less effective.

PART IV**FIRE SAFETY MEASURES IN FISHING VESSELS OF 15 METRES IN LENGTH OR MORE, BUT LESS THAN 45 METRES****Fire safety measures**

119. (1) Hatches around the galley, paint rooms, lamp rooms and storerooms which are adjacent to accommodation quarters on a fishing vessel must be made of steel, but for superstructures and accommodation made from materials other than steel, the above mentioned spaces must be insulated by non-combustible materials of at least class B-15.

(2) Hatches on a fishing vessel, which are not covered by subregulation (1) may be of approved combustible materials.

(3) Paints and varnishes made from easily combustible materials may not be used on board a fishing vessel.

(4) Surfaces of hatches and linings underneath the deck in corridors and stairways must be flame resistant.

Fire pumps, fire mains, hydrants and hoses

120. (1) Fishing vessels of less than 45 metres must have at least one independently driven fire pump.

(2) On fishing vessels of less than 24 metres, the fire pump may be replaced by other equipment approved by the Directorate.

(3) The total approved fire pump capacity on a fishing vessel must be calculated using the following formula:

$$Q = (0.15 \sqrt{L(B + D) + 2.25})^2 \text{ m}^3/\text{h} \text{ (where } C, B \text{ and } D \text{ are given in metres)}$$

(4) The fire pump's pressure on a fishing vessel must be such that at any place along the fire mains a pressure of at least 4.0 barrels with a nozzle in operation must be achieved.

(5) No fire pump on a fishing vessel must have a capacity of less than 12.5 cubic metres per hour.

Fire mains

121. (1) The fire mains on a fishing vessel must have a diameter of sufficient size to ensure a consistent discharge and a consistent pressure of the required capacity by the fire pump.

(2) Materials used for fire mains on a fishing vessel must be non-combustible and fire-resistant.

Hydrants

122. (1) On fishing vessels of 24 metres in length or more, the number and arrangement of the hydrants must be such that at least two jets of water not supplied by the same hydrant can reach any part of the fishing vessel, and one of the jets must be able to be supplied by a single hose length.

(2) On fishing vessels of less than 24 metres in length, the number and arrangement of hydrants must be such that at least one jet of water can reach any part of the fishing vessel.

(3) The hydrants on a fishing vessel must be arranged in such a way that the hoses can easily be coupled to them.

Fire hoses

123. (1) There must be located at each hydrant on a fishing vessel a hose station, and the hose station must, in addition to the hydrant, consist of a hose and approved nozzle.

(2) Fishing vessels must have at least one hose station with a nozzle capable of producing jet and fog spray in the engine and boiler rooms, and on fishing vessels of less than 24 metres in length, the hose station may be located near the stairway to the engine room.

(3) Fire hoses on a fishing vessel must be of a type acceptable to the Directorate.

Acceptance of substitutes

124. Where in this part any special type of appliance, apparatus, extinguishing medium or arrangement is specified, any other type of appliance may be allowed, provided the Directorate is satisfied that it is not less effective.

CHAPTER 7 PROTECTION OF THE CREW

General protection measures

125. (1) A lifeline system on a fishing vessel must be designed to be effective for all needs, and the necessary wires, shackles, eye bolts and cleats must be provided.

(2) Deck openings on a fishing vessel, provided with coamings or sills of less than 600 mm in height must be provided with guards, such as hinged or portable railings or nettings, but the Directorate may exempt small openings such as fish scuttles from compliances with these requirements.

(3) Skylights, or other similar openings on a fishing vessel must be fitted with protective bars not more than 350 millimetres apart, but the Directorate may exempt small openings from compliance with this requirement.

(4) The surface of all decks on a fishing vessel must be designed or treated in such a way as to minimize the possibility of personnel slipping, and in particular, decks of working areas, such as in machinery spaces, in galleys, at winches and where fish is handled as well as at the foot and head of ladders and in front of doors, must be provided with anti-skid surfaces.

Deck openings

126. (1) Hinged covers of hatchways, manholes and other openings on a fishing vessel must be protected against accidental closing, and, in particular, heavy covers on escape hatches must be equipped with counterweights, and constructed in such a way as to be capable of being opened from each side of the cover.

(2) Dimensions of access hatches on a fishing vessel may not be less than 600 millimetres by 600 millimetres or 600 millimetres diameter.

(3) Where practicable, hand-holds must be provided above the level of the deck over escape openings on a fishing vessel.

Bulwarks, rails and guards

127. (1) Efficient bulwarks or guard rails must be fitted on all exposed parts of the working deck and on superstructure decks on a fishing vessel if they are working platforms.

(2) The height of bulwarks or guard rails above deck on a fishing vessel must be at least 1 metre, but where this height would interfere with the normal operation of the fishing vessel, a lesser height may be approved by the Directorate.

(3) The minimum vertical distance from the deepest operating waterline to the lowest point of the top of the bulwark, or to the edge of the working deck on a fishing vessel if guard rails are fitted must ensure adequate protection of the crew from water shipped on deck, taking into account the sea states and the weather conditions in which the fishing vessel may operate, the areas of operation, the type of fishing vessel and its method of fishing and must be to the satisfaction of the Directorate.

(4) Clearance below the lowest course of guard rails on a fishing vessel may not exceed 230 millimetres, and other courses may not be more than 380 millimetres apart, and the distance between stanchions may not be more than 1.5 metres.

(5) In a fishing vessel with rounded gunwales, guard rail supports must be placed on the flat of the deck.

(6) Rails on a fishing vessel must be free from sharp points, edges and corners and must be of adequate strength.

(7) Means to the satisfaction of the Directorate, such as guard rails, lifelines, gangways or underdeck passages, must be provided on a fishing vessel to protect the crew in moving between accommodation, machinery and other working spaces.

(8) Storm rails must be fitted as necessary to the outside of all deckhouses and casings on a fishing vessel to secure safety of passage or work for the crew.

(9) Stern trawlers on a fishing vessel must be provided with suitable protection such as doors, gates or nets at the top of the stern ramp at the same height as the adjacent bulwark or guard rails, and when such protection is not in position a chain or other means of protection must be provided across the ramp.

Stairways and ladders

128. For the safety of the crew, stairways and ladders of adequate size and strength with handrails and non-slip treads must be provided on a fishing vessel to the satisfaction of the Directorate.

Application

129. This Part also applies to existing fishing vessels.

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

PART I
GENERAL

Application

130. (1) Unless expressly provided otherwise, this Part applies to new and existing fishing vessels of 15 millimetres in length and over.

(2) Regulations 142 and 143 also apply to existing fishing vessels of 45 metres in length and over: Provided that the Directorate may defer the implementation of the requirements of these Regulations until 1 February 2004.

Definitions

131. For the purposes of this Part -

“float-free launching” means the method of launching a survival craft whereby the craft is automatically released from a sinking fishing vessel and is ready for use;

“free-fall launching” means the method of launching a survival craft whereby the craft with its complement of persons and equipment on board is released and allowed to fall into the sea without any restraining apparatus;

“inflatable appliance” means an appliance which depends upon non-rigid, gas-filled chambers for buoyancy and which is normally kept uninflated until ready for use;

“inflated appliance” means an appliance which depends upon non-rigid, gas-filled chambers for buoyancy and which is kept inflated and ready for use at all times;

“launching appliance or arrangement” means a means of transferring a survival craft or rescue boat from its stowed position safely to the water;

“novel life-saving appliance or arrangement” means a life-saving appliance or arrangement which embodies new features not fully covered by this Part, but which provides an equal or higher standard of safety;

“rescue boat” means a boat designed to rescue persons in distress and to marshal survival craft;

“retro-reflective material” means a material which reflects in the opposite direction a beam of light directed on it;

“survival craft” means a craft capable of sustaining the lives of persons in distress from the time of abandoning the fishing vessel.

Evaluation, testing and approval of life-saving appliances and arrangements

132. (1) Except as provided in subregulations (5) and (6), life-saving appliances and arrangements for a fishing vessel, required by this Part must be approved by the Directorate.

(2) Before installation of life-saving appliances and arrangements on board a fishing vessel, the Directorate must ensure that such life-saving appliances and arrangements -

- (a) are tested, to confirm that they comply with the requirements of this Part, in accordance with the recommendation of the International Maritime Organization; or

- (b) have successfully undergone, to the satisfaction of the Directorate, tests which are substantially equivalent to those specified in that recommendation.
- (3) Before giving approval to novel life-saving appliances or arrangements for a fishing vessel, the Directorate must ensure that such appliances or arrangements -
 - (a) provide safety standards at least equivalent to the requirements of this Part and have been evaluated and tested in accordance with the recommendations of the International Maritime Organization; or
 - (b) have successfully undergone, to the satisfaction of the Directorate, evaluation and tests which are substantially equivalent to the recommendations referred to in paragraph (a).
- (4) Procedures adopted by the Directorate for approval must also include the conditions whereby approval would continue or would be withdrawn.
- (5) Before accepting life-saving appliances and arrangements for a fishing vessel, that have not been previously approved by the Directorate, the Directorate must be satisfied that life-saving appliances and arrangements comply with the requirements of this Part.
- (6) Life-saving appliances required by this Part for which detailed specifications are not included in Part III must be to the satisfaction of the Directorate.

Production tests

133. The Directorate must require life-saving appliances to be subjected to such production tests as are necessary to ensure that the life-saving appliances are manufactured to the same standard as the approved prototype.

PART II FISHING VESSEL REQUIREMENTS

Number and types of survival craft and rescue boats

- 134.** (1) Every fishing vessel of 24 metres in length and over must be provided with at least two survival craft.
- (2) The number, capacity and type of survival craft and rescue boats of fishing vessels of 75 metres in length and over must comply with the following:
- (a) Survival craft of sufficient aggregate capacity to accommodate on each side of the fishing vessel at least the total number of persons on board must be provided, but if the fishing vessel complies with subdivision requirements, damage stability criteria and criteria of increased structural fire protection additional to those stipulated by regulation 14 of Chapter III and Chapter V of the Convention Regulations, and the Directorate considers that a decrease of the number of survival craft and their capacity will not affect safety, the Directorate may allow this decrease, provided the aggregate capacity of survival craft situated on each side of the fishing vessel is sufficient to accommodate at least 50% of the persons on board;
 - (b) liferafts for at least 50% of the total number of persons on board must be provided; and
 - (c) a rescue boat must be provided unless the fishing vessel is provided with a lifeboat which fulfils the requirements for a rescue boat and which is capable of being recovered after the rescue operation.

(3) Fishing vessels of less than 75 metres, but more than 45 metres in length must comply with the following:

- (a) Survival craft of sufficient aggregate capacity to accommodate on each side of the fishing vessel at least the total number of persons on board must be provided; and
- (b) a rescue boat must be provided, unless the fishing vessel is provided with a suitable survival craft which is capable of being recovered after the rescue operation.

(4) A fishing vessel of less than 45 metres, but more than 24 metres in length must have survival craft of sufficient aggregate capacity to accommodate on each side of the fishing vessel at least the total number of persons on board.

(5) A fishing vessel of less than 24 metres in length must have survival craft of sufficient capacity to accommodate the total number of persons on board.

(6) In lieu of meeting the requirements of subregulation 2 (a) and (b), or 3(a), a fishing vessel may carry one or more lifeboats capable of being free-fall, launched over the stern of the fishing vessel of sufficient capacity to accommodate the total number of persons on board and with liferafts of sufficient capacity to accommodate the total number of persons on board.

(7) Except on fishing vessels of less than 45 metres in length, the number of lifeboats and rescue boats that are carried on fishing vessels must be sufficient to ensure that in providing for abandonment by the total number of persons on board, not more than nine liferafts need be marshalled by each lifeboat or rescue boat.

(8) A survival craft and rescue boat must comply with the applicable requirements of Parts III, IV and V and regulation 191.

Availability and stowage of survival craft and rescue boats

135. Survival craft must -

- (a) be readily available in case of emergency;
- (b) be capable of being launched safely and rapidly under the conditions required by regulation 209(1);
- (c) be capable of rapid recovery if fulfilling also the requirements for a rescue boat; and
- (d) be stowed in such a way that -
 - (i) the marshalling of persons at the embarkation deck is not impeded;
 - (ii) the prompt handling of persons at the embarkation deck is not impeded;
 - (iii) embarkation can be effected rapidly and in good order; and
 - (iv) the operation of any other survival craft is not interfered with.

(2) Where the distance from the embarkation deck to the waterline of the fishing vessel in the lightest operating condition exceeds 4.5 metres, survival craft, except float-free liferafts, must be capable of being davit-launched with a full complement of persons or be provided with equivalent approved means of embarkation.

(3) Survival craft and launching appliances must be in working order and available for immediate use before the fishing vessel leaves port and must be so kept at all times when at sea.

(4) Survival craft on a fishing vessel must be stowed to the satisfaction of the Directorate.

(5) Every lifeboat must be attached to a separate set of davits or approved launching appliance.

(6) Survival craft on a fishing vessel must be positioned as close to accommodation and service spaces as possible, stowed in suitable positions to ensure safe launching, with particular regard to clearance from the propeller.

(7) Lifeboats for lowering down the fishing vessel's side must be stowed with regard to steeply overhanging portions of the hull, ensuring, as far as is practicable, that they can be launched down the straight side of the fishing vessel, and if positioned forward, they must be stowed abaft the collision bulkhead in a sheltered position and in this respect the Directorate must give special consideration to the strength of the davits.

(8) The method of launching and recovering of rescue boats must be approved taking into account the weight of the rescue boat including its equipment and 50% of the number of persons it is certificated to carry in regulations 191(2)(b) and (3), the construction and size of the rescue boat and its position of stowage above the waterline in the fishing vessel's lightest operating condition.

(9) Every rescue boat stowed at a height of more than 4.5 metres above the waterline in the fishing vessel's lightest operating condition must be provided with approved arrangements for launching and recovery.

(10) Launching and embarkation appliances must comply with the requirements of regulation 208.

(11) The liferafts on a fishing vessel must be stowed in such a way as to be readily available in case of emergency in such a manner as to permit them to float free from their stowage, inflate and break free from the fishing vessel in the event of its sinking, but davit-launched liferafts may not float free.

(12) Lashings, if used on a fishing vessel, must be fitted with an automatic (hydrostatic) release system of an approved type.

(13) The Directorate, if it is satisfied that the constructional features of the fishing vessel and the method of fishing operation may render it unreasonable and impractical to apply particular provisions of this subregulation, may accept relaxations from such provisions, provided that the fishing vessel is fitted with alternative launching and recovering arrangements adequate for the service for which it is intended.

Embarkation into survival craft

136. Suitable arrangements must be made for embarkation into the survival craft, which must include -

- (a) at least one ladder, or other approved means, on each side of the fishing vessel to afford access to the survival craft when waterborne, except where the Directorate is satisfied that the distance from the point of embarkation to the waterborne survival craft is such that a ladder is unnecessary;
- (b) means for illuminating the stowage position of survival craft and their launching appliances during preparation for and the process of launching, and also for illuminating the water into which the survival craft are launched until the process of launching is completed, the power for which is to be supplied from the emergency source required by regulation 17 of Chapter IV of the Convention Regulations;

- (c) arrangements for warning all persons on board that the fishing vessel is about to be abandoned; and
- (d) means of preventing any discharge of water into the survival craft.

Lifejackets

137. (1) For every person on board, a lifejacket of an approved type complying with the requirements of regulation 193(2) to (12) must be carried on every fishing vessel.

(2) Lifejackets must be placed in such a way as to be readily accessible and their position must be plainly indicated.

Immersion suits and thermal protective aids

138. (1) An approved immersion suit, of an appropriate size, complying with the requirements of regulation 196 must be provided for every person assigned to crew the rescue boat.

(2) Fishing vessels complying with the requirements of regulation 134(2) and (3) must carry immersion suits complying with the requirements of regulation 196 for every person on board not accommodated in -

- (a) lifeboats;
- (b) davit-launched liferafts; and
- (c) liferafts served by equivalent approved appliances which do not require entry into the water to board the liferaft.

(3) In addition to subregulation (2)(a), fishing vessels must carry for each lifeboat at least three immersion suits complying with the requirements of regulation 196.

(4) In addition to the thermal protective aids required by regulation 153(3)(ee), every fishing vessel must carry thermal protective aids complying with the requirements of regulation 200 for persons to be accommodated in the lifeboats and not provided with immersion suits.

(5) Immersion suits and thermal protective aids are not required if the fishing vessel is equipped with either totally enclosed lifeboats of such aggregate capacity as to accommodate on each side of the fishing vessel at least the total number of persons on board or a free-fall lifeboat of sufficient capacity to accommodate the total number of persons on board.

(6) The requirements of subregulations (2), (3) and (4) do not apply to fishing vessels constantly engaged in warm climates, where, in the opinion of the Directorate, immersion suits and thermal protective aids are unnecessary.

(7) The immersion suits required by subregulations (2) and (3) may be used to comply with the requirements of subregulation (1).

(8) All fishing vessels navigating south of latitude 40 degrees south and north of latitude 40 degrees north must carry one immersion suit complying with the requirements of Part VIII for every person on board.

Lifebuoys

139. (1) At least the following number of lifebuoys complying with the requirements of regulation 200 must be provided:

- (a) Eight lifebuoys in fishing vessels of 75 metres in length and over;
- (b) six lifebuoys in fishing vessels of less than 75 metres in length;
- (c) four lifebuoys in fishing vessels of less than 45 metres, but over 24 metres in length; and
- (d) three lifebuoys in fishing vessels of 15 metres up to and including 24 metres in length.

(2) At least half of the number of lifebuoys referred to in subregulation (1) must be provided with self-igniting lights complying with the requirements of regulation 202.

(3) At least half of the lifebuoys provided with self-igniting lights in accordance with subregulation (2) must be provided with self-activating smoke signals complying with the requirements of regulation 203 and must, where practicable, be capable of quick release from the navigating bridge: Provided that on fishing vessels of 15 metres up to and including 24 metres in length, the self-activating smoke signal may be substituted with an approved danbuoy.

(4) At least one lifebuoy on each side of the fishing vessel must be fitted with a buoyant lifeline complying with the requirements of regulation 204 equal in length to not less than twice the height at which it is stowed above the waterline in the lightest seagoing condition, or 30 metres, whichever is greater, but such lifebuoys may not have self-igniting lights.

(5) All lifebuoys must be placed in such a way as to be readily accessible to the persons on board and must always be capable of being rapidly deployed and may not be permanently secured in any way.

Line-throwing appliances

140. Every fishing vessel of more than 24 metres in length must carry a line-throwing appliance of an approved type, complying with the requirements of regulation 205.

Distress signals

141. (1) Every fishing vessel must be provided, to the satisfaction of the Directorate, with means of making effective distress signals by day and by night, including at least 12 rocket parachute flares complying with the requirements of regulation 206.

(2) Distress signals must be of an approved type and must be placed in such a way as to be readily accessible and their position must be plainly indicated.

Radio life-saving appliances

142. (1) At least three portable two-way VHF radiotelephone apparatus must be provided on every fishing vessel of 45 metres in length and over, and such apparatus must conform to performance standards not inferior to those adopted by the International Maritime Organization.

(2) If a fixed two-way VHF radiotelephone apparatus is fitted in a survival craft it must conform to performance standards not inferior to those adopted by the International Maritime Organization.

(3) Portable two-way VHF radiotelephone apparatus provided on board existing fishing vessels of 45 metres in length and over and not complying with the performance standards adopted by the International Maritime Organization may be accepted by the Directorate until 1 February 2004, provided that the Directorate is satisfied that they are compatible with approved portable two-way VHF radiotelephone apparatus.

(4) At least two portable VHF radiotelephone apparatus must be provided on every fishing vessel of 24 metres in length and over, but less than 45 metres in length.

Radar transponders

143. (1) At least one radar transponder must be carried on each side of every fishing vessel of 45 metres in length and over.

(2) At least one radar transponder must be carried on every fishing vessel of less than 45 metres in length.

(3) The radar transponders referred to in subregulations (1) and (2) must conform to performance standards not inferior to those adopted by the International Maritime Organization.

(4) The radar transponders referred to in subregulations (1) and (2) must be stowed in such locations that they can be rapidly placed in any survival craft, or alternatively one transponder must be stowed in each survival craft.

Retro-reflective materials on life-saving appliances

144. All survival craft, rescue boats, lifejackets and lifebuoys must be fitted with retro-reflective material in accordance with the recommendations of the International Maritime Organization.

Operational readiness, maintenance and inspections

145. (1) Before a fishing vessel leaves port and at all times during the voyage, all life-saving appliances must be in working order and ready for immediate use.

(2) Instructions for on-board maintenance of life-saving appliances on a fishing vessel, approved by the Directorate must be provided and maintenance must be carried out accordingly.

(3) The Directorate may accept, in lieu of the instructions required by subregulation (2), a shipboard planned maintenance programme.

(4) Falls used in launching on a fishing vessel must be turned end for end at intervals of not more than 30 months and be renewed, when necessary, due to deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier.

(5) Spares and repair equipment must be provided for life-saving appliances and their components on a fishing vessel, which are subject to excessive wear or consumption and need to be replaced regularly.

(6) The following tests and inspections must be carried out weekly:

(a) All survival craft, rescue boats and launching appliances must be visually inspected to ensure that they are ready for use;

(b) all engines in lifeboats and rescue boats must be run ahead and astern for a total period of not less than three minutes provided the ambient temperature is above the minimum temperature required for starting the engine; and

(c) the general emergency alarm system must be tested.

- (7) Inspection of the life-saving appliances, including lifeboat equipment, must be carried out monthly using a checklist to ensure that they are complete and in good order, and report of the inspection must be entered in the logbook.
- (8) Every inflatable liferaft and inflatable lifejacket must be serviced -
- (a) at intervals not exceeding 12 months, but, in cases where it appears proper and reasonable, the Directorate may extend this period to 17 months; and
 - (b) at an approved servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.
- (9) All repairs and maintenance of inflated rescue boats must be carried out in accordance with the manufacturer's instructions.
- (10) Emergency repairs may be carried out on board the fishing vessel, but, permanent repairs must be effected at an approved servicing station.
- (11) Disposable hydrostatic release units must be replaced when their date of expiry has passed, but, if not disposable, hydrostatic release units must be serviced -
- (a) at intervals not exceeding 12 months, but, in cases where it appears proper and reasonable, the Directorate may extend this period to 17 months; and
 - (b) at a servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.
- (12) In cases of fishing vessels where the nature of fishing operations may cause difficulty for compliance with the requirements of subregulations (8) and (9), the Directorate may allow the extension of the service intervals to 24 months, provided that the Directorate is satisfied that those appliances are manufactured and arranged in such a way that they will remain in a satisfactory condition until the next period of servicing.

PART III LIFE-SAVING APPLIANCES REQUIREMENTS

Sub-part A General Requirements for Lifeboats

Construction of lifeboats

- 146.** (1) All lifeboats must be properly constructed and must be of such form and proportions that they have ample stability in a seaway and sufficient freeboard when loaded with their full complement of persons and equipment.
- (2) All lifeboats must have rigid hulls and must be capable of maintaining positive stability when in an upright position in calm water and loaded with their full complement of persons and equipment and holed in any one location below the waterline, assuming no loss of buoyancy material and no other damage.
- (3) All lifeboats must be of sufficient strength to enable them to be safely lowered into the water when loaded with their full complement of persons and equipment.
- (4) Hulls and rigid covers on a lifeboat must be fire-retardant or non-combustible.
- (a) Seating on a lifeboat must be provided on thwarts, benches or fixed chairs fitted as low as is practicable in the lifeboat and constructed in such a way as to be capable of supporting the number of persons each weighing 100 kg for which spaces are provided in compliance with the requirements of subregulation 147(2)(b).

- (b) Each lifeboat must be of sufficient strength to withstand a load, without residual deflection on removal of that load -
- (c) in the case of boats with metal hulls, 1.25 times the total mass of the lifeboat when loaded with its full complement of persons and equipment; or
- (d) in the case of other boats, twice the total mass of the lifeboat when loaded with its full complement of persons and equipment.

(7) Each lifeboat must be of sufficient strength to withstand, when loaded with its full complement of persons and equipment and with, where applicable, skates or fenders in position, a lateral impact against the fishing vessel's side at an impact velocity of at least 3.5 m/s and also a drop into the water from a height of at least three metres.

(8) The vertical distance between the floor surface and the interior of the enclosure or canopy over 50% of the floor area of a lifeboat must be -

- (a) not less than 1.3 metres for a lifeboat permitted to accommodate nine persons or less;
- (b) not less than 1.7 metres for a lifeboat permitted to accommodate 24 persons or more; and
- (c) not less than the distance as determined by linear interpolation between 1.3 metres and 1.7 metres for a lifeboat permitted to accommodate between 9 and 24 persons.

Carrying capacity of lifeboats

147. (1) No lifeboat must be approved to accommodate more than 150 persons.

(2) The number of persons that a lifeboat is permitted to accommodate must be equal to the lesser of -

- (a) the number of persons having an average mass of 75 kg, all wearing lifejackets, that can be seated in a normal position without interfering with the means of propulsion or the operation of any of the lifeboat's equipment; or
- (b) the number of spaces that can be provided in the seating arrangements, and, although the shapes may be overlapped, footrests must be fitted and there must be sufficient room for legs, and the vertical separation between the upper and lower seat must be not less than 350 millimetres.

(3) Each seating position must be clearly indicated on a lifeboat.

Access into lifeboats

148. (1) Every lifeboat must be arranged in such a way that it can be boarded by its full complement of persons in not more than three minutes from the time instruction to board is given, and rapid disembarkation must be possible.

(2) Lifeboats must have a boarding ladder that can be used on either side of the lifeboat to enable persons in the water to board the lifeboat, and the lowest step of the ladder must be not less than 0.4 metres below the lifeboat's light waterline.

(3) The lifeboats must be arranged in such a way that helpless people can be brought on board either from the sea or on stretchers.

(4) All surfaces on which persons might walk must have a non-skid finish.

Lifeboat buoyancy

149. (1) All lifeboats must have inherent buoyancy or must be fitted with inherently buoyant material which may not be adversely affected by seawater, oil or oil products, sufficient to float the lifeboat with all its equipment on board when flooded and open to the sea.

(2) Additional inherently buoyant material, equal to 280 N of buoyant force per person must be provided for the material, unless in addition to that required above, may not be installed external to the hull of the lifeboat.

Lifeboat freeboard and stability

150. All lifeboats, when loaded with 50% of the number of persons the lifeboat is permitted to accommodate seated in their normal positions to one side of the centreline, must have a freeboard, measured from the waterline to the lowest opening through which the lifeboat may become flooded, of at least 1.5% of the lifeboat's length or 100 millimetres, whichever is the greater.

Lifeboat propulsion

151. (1) Every lifeboat must be powered by a compression ignition engine, and no engine must be used for any lifeboat if its fuel has a flashpoint of 43°C or less (closed cup test).

(2) The engine on a lifeboat must be provided with either a manual starting system, or a power starting system with two independent rechargeable energy sources, and any necessary starting aids must be provided.

(3) The engine starting systems and starting aids on a lifeboat must start the engine at an ambient temperature of -15°C within two minutes of commencing the start procedure unless, in the opinion of the Directorate, having regard to the particular voyages in which the fishing vessel carrying the lifeboat is constantly engaged, a different temperature is appropriate.

(4) The starting systems on a lifeboat may not be impeded by the engine casing, thwarts or other obstructions.

(5) The engine on a lifeboat must be capable of operating for not less than five minutes after starting from cold with the lifeboat out of the water.

(6) The engine on a lifeboat must be capable of operating when the lifeboat is flooded up to the centreline of the crankshaft.

(7) The propeller shafting on a lifeboat must be arranged in such a way that the propeller can be disengaged from the engine, and provision must be made for ahead and astern propulsion of the lifeboat.

(8) The exhaust pipe on a lifeboat must be arranged in such a way as to prevent water from entering the engine in normal operation.

(9) All lifeboats must be designed with due regard to the safety of persons in the water and to the possibility of damage to the propulsion system by floating debris.

(10) The speed of a lifeboat when proceeding ahead in calm water, when loaded with its full complement of persons and equipment and with all engine-powered auxiliary equipment in operation, must be at least 6 knots and at least 2 knots when towing a 25-person liferaft loaded with its full complement of persons and equipment or its equivalent.

(11) Sufficient fuel, suitable for use throughout the temperature range expected in the area in which the fishing vessel operates, must be provided to run the fully loaded lifeboat at 6 knots for a period of not less than 24 hours.

(12) The lifeboat engine, transmission and engine accessories must be enclosed in a fire-retardant casing or other suitable arrangements providing similar protection.

(13) The arrangements referred to in subregulation (12) must also protect persons from coming in accidental contact with hot or moving parts and protect the engine from exposure to weather and sea, and adequate means must be provided to reduce the engine noise.

(14) Starter batteries on a lifeboat must be provided with casings that form a watertight enclosure around the bottom and sides of the batteries, and those battery casings must have a tight fitting top which provides for necessary gas venting.

(15) The lifeboat engine and accessories on a lifeboat must be designed to limit electromagnetic emissions so that engine operation does not interfere with the operation of radio life-saving appliances used in the lifeboat.

(16) Means must be provided on a lifeboat for recharging all engine-starting, radio and searchlight batteries, but radio batteries may not be used to provide power for engine starting.

(17) Means must be provided for recharging lifeboat batteries from the fishing vessel's power supply at a supply voltage not exceeding 55 Volts that can be disconnected at the lifeboat embarkation station.

(18) Water-resistant instructions for starting and operating the engine must be provided and mounted in a conspicuous place near the engine starting controls.

Lifeboat fittings

152. (1) All lifeboats must be provided with at least one drain valve fitted near the lowest point in the hull, which must automatically open to drain water from the hull when the lifeboat is not waterborne and must automatically close to prevent entry of water when the lifeboat is waterborne.

(2) Each drain valve on a lifeboat must be provided with a cap or plug to close the valve, which must be attached to the lifeboat by a lanyard, a chain, or other suitable means.

(3) Drain valves on a lifeboat must be readily accessible from inside the lifeboat and their position must be clearly indicated.

(4) All lifeboats must be provided with a ladder and tiller, and if a wheel or other remote steering mechanism is also provided, the tiller must be capable of controlling the rudder in case of failure of the steering mechanism.

(5) The rudder referred to in subregulation (4) must be permanently attached to the lifeboat, and the tiller must be permanently installed on, or linked to, the rudder stock.

(6) If the lifeboat has a remote steering mechanism, the tiller may be removable and securely stowed near the rudder stock.

(7) The rudder and tiller must be arranged in such a way as not to be damaged by operation of the release mechanism or the propeller.

(8) Except in the vicinity of the rudder and propeller, a buoyant lifeline must be becketed around the outside of the lifeboat.

(9) Lifeboats which are not self-righting when capsized must have suitable handholds on the underside of the hull to enable persons to cling to the lifeboat.

(10) The handholds referred to in subregulation (9) must be fastened to the lifeboat in such a way that, when subjected to an impact sufficient to cause them to break away from the lifeboat, they break away without damaging the lifeboat.

(11) All lifeboats must be fitted with sufficient watertight lockers or compartments to provide for the storage of the small items of equipment, water and provisions required by regulation 152, and means must be provided for the storage of collected rainwater.

(12) Every lifeboat to be launched by a fall or falls must be fitted with a release mechanism complying with the following requirements:

- (a) The mechanism must be arranged in such a way that all hooks are released simultaneously;
- (b) the mechanism must have two release capabilities as follows:
 - (i) A normal release capability which will release the lifeboat when it is waterborne or when there is no load on the hooks;
 - (ii) an on-load release capability which will release the lifeboat with a load on the hooks, which release capability must be arranged in such a way as to release the lifeboat under any conditions of loading from no-load with the lifeboat waterborne to a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment and must be adequately protected against accidental or premature use;
 - (iii) the release control must be clearly marked in a colour that contrasts with its surroundings; and
 - (iv) the mechanism must be designed with a factor of safety of 6 based on the ultimate strength of the materials used, assuming the mass of the lifeboat is equally distributed between the falls.

(13) Every lifeboat must be fitted with a release device to enable the forward painter to be released when under tension.

(14) Every lifeboat which is fitted with a fixed two-way VHF radiotelephone apparatus with an antenna that is separately mounted must be provided with arrangements for siting and securing the antenna effectively in its operating position.

(15) Lifeboats intended for launching down the side of a fishing vessel must have skates and fenders as necessary to facilitate launching and prevent damage to the lifeboat.

(16) A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least 2 miles for a period of not less than 12 hours must be fitted to the top of the cover or enclosure of a lifeboat.

(17) If the lamp referred to in subregulation (16) is a flashing light, it must initially flash at a rate of not less than 50 flashes per minute over the first two hours of operation of the 12 hours operating period.

(18) A lamp or source of light must be fitted inside the lifeboat to provide illumination for not less than 12 hours to enable reading of survival and equipment instructions, but, oil lamps may not be permitted for this purpose.

(19) Unless expressly provided otherwise, every lifeboat must be provided with effective means of bailing or be automatically self-bailing.

(20) Every lifeboat must be arranged in such a way that an adequate view forward, aft and to both sides is provided from the control and steering position for safe launching and manoeuvring.

Lifeboat equipment

153. (1) All items of lifeboat equipment, whether required by this subregulation or elsewhere in this Part, with the exception of boat-hooks which must be kept free for fending off purposes, must be secured within the lifeboat by lashings, storage in lockers or compartments, storage in brackets or similar mounting arrangements or other suitable means.

(2) All items of lifeboat equipment must be secured in such a manner as not to interfere with any abandonment procedures, must be as small and of as little mass as possible and must be packed in a suitable compact form.

(3) Except where otherwise stated, the normal equipment of every lifeboat must consist of -

- (a) sufficient buoyant oars to make headway in calm seas, and thole pins, crutches or equivalent arrangements, attached to the boat by lanyards or chain, must be provided for each oar provided;
- (b) two boat-hooks;
- (c) a buoyant bailer and two buckets;
- (d) a survival manual;
- (e) a binnacle containing an efficient compass which is luminous or provided with suitable means of illumination, and in a totally enclosed lifeboat, the binnacle must be permanently fitted at the steering position, while in any other lifeboat, it must be provided with suitable mounting arrangements;
- (f) a sea-anchor of adequate size fitted with a shock-resistant hawser and a tripping line which provides a firm hand grip when wet, and the strength of which sea-anchor, hawser and tripping line must be adequate for all sea conditions;
- (g) two efficient painters of a length equal to not less than twice the distance from the stowage position of the lifeboat to the waterline in the lightest seagoing condition or 15 metres, whichever is the greater, and one painter attached to the release device required by regulation 152 (13) must be placed at the forward end of the lifeboat and the other must be firmly secured at or near the bow of the lifeboat ready for use;
- (h) two hatchets, one at each end of the lifeboat;
- (i) watertight receptacles containing a total of three l of fresh water for each person the lifeboat is permitted to accommodate, of which one litre per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in two days;
- (j) a rustproof dipper with lanyard;
- (k) a rustproof graduated drinking fishing vessel;

- (l) a food ration totalling not less than 10,000 kilo joules for each person the lifeboat is permitted to accommodate, which rations must be kept in airtight packaging and be stowed in a watertight container;
- (m) four rocket parachute flares complying with the requirements of regulation 206;
- (n) six hand flares complying with the requirements of regulation 207;
- (o) two buoyant smoke signals complying with the requirements of regulation 208;
- (p) one waterproof electric torch suitable for Morse signalling together with one spare set of batteries and one spare bulb in a waterproof container;
- (q) one daylight signalling mirror with instructions for its use for signalling to ships and aircraft;
- (r) one copy of the life-saving signals prescribed by regulation 16 of Chapter V of the Convention Regulations, on a waterproof card or in a waterproof container;
- (s) one whistle or equivalent sound signal;
- (t) a first-aid outfit in a waterproof case capable of being closed tightly after use;
- (u) six doses of anti-seasickness medicine and one seasickness bag for each person;
- (v) a jack-knife to be kept attached to the boat by a lanyard;
- (w) three tin-openers;
- (x) two buoyant rescue quoits, attached to not less than 30 metres of buoyant line;
- (y) a manual pump;
- (z) one set of fishing tackle;
 - (aa) sufficient tools for minor adjustments to the engine and its accessories;
 - (bb) portable fire-extinguishing equipment suitable for extinguishing oil fires;
 - (cc) a searchlight capable of effectively illuminating a light-coloured object at night having a width of 18 metres at a distance of 180 metres for a total period of six hours and of working for not less than three hours continuously;
 - (dd) an efficient radar reflector, unless a survival craft radar transponder is stowed in the lifeboat;
 - (ee) thermal protective aids complying with the requirements of regulation 200 sufficient for 10% of the number of persons the lifeboat is permitted to accommodate or two, whichever is the greater; and
 - (ff) in the case of fishing vessels engaged on voyages of such a nature and duration that, in the opinion of the Directorate, the items specified in paragraphs (l) and (z) are unnecessary, the Directorate may allow these items to be dispensed with.

Lifeboat markings

154. (1) The dimensions of the lifeboat and the number of persons which it is permitted to accommodate must be marked on it in clear permanent characters.

(2) The name and port of registry of the fishing vessel to which the lifeboat belongs must be marked on each side of the lifeboat's bow in block capitals of the Roman alphabet.

(3) Means of identifying the fishing vessel to which the lifeboat belongs and the number of the lifeboat must be marked in such a way that they are, as far as is practicable, visible from above.

Self-righting partially enclosed lifeboats

155. (1) Self-righting partially enclosed lifeboats must comply with the requirements of regulations 146 to 154, inclusive and, in addition, must comply with the requirements of this subregulation and subregulations (2) to (7) of this regulation and regulations 156 to 158, inclusive.

(2) Permanently attached rigid covers must be provided extending over not less than 20% of the length of the lifeboat from the stem and not less than 20% of the length of the lifeboat from the aftermost part of the lifeboat.

(3) The rigid covers referred to in subregulation (2) must form two shelters, and -

(a) if the shelters have bulkheads they must have openings of sufficient size to permit easy access by persons each wearing an immersion suit or warm clothes and a lifejacket; and

(b) the interior height of the shelters must be sufficient to permit persons easy access to their seats in the bow and stern of the lifeboat.

(4) The rigid covers referred to in subregulation (2) must be arranged in such a way that they include windows or translucent panels to admit sufficient daylight to the inside of the lifeboat with the openings or canopies closed, so as to make artificial light unnecessary.

(5) The rigid covers referred to in subregulation (2) must have railings to provide a secure handhold for persons moving about the exterior of the lifeboat.

(6) Open parts of the lifeboat must be fitted with a permanently attached foldable canopy arranged in such a way that -

(a) it can be easily erected by not more than two persons in not more than two minutes; and

(b) it is insulated to protect the occupants against cold by means of not less than two layers of material separated by an air gap or other equally efficient means.

(7) The enclosure formed by the rigid covers and the canopy referred to in subregulations (2) and (6), respectively, must be arranged in such a way that -

(a) it allows launching and recovery operations to be performed without any occupant having to leave the enclosure;

(b) it has entrances at both ends and on each side, provided with efficient adjustable closing arrangements which can be easily and quickly opened and closed from inside or outside, so as to permit ventilation, but exclude seawater, wind and cold;

- (c) means are provided for holding the entrances securely in the open and in the closed position;
- (d) with the canopy erected and all entrances closed, sufficient air is admitted for the occupants at all times;
- (e) it has means for collecting rainwater;
- (f) the exterior of the rigid covers and canopy and the interior of that part of the lifeboat covered by the canopy is of a highly visible colour and the interior of the shelters is of a colour which does not cause discomfort to the occupants; and
- (g) it is possible to row the lifeboat.

Capsizing and re-righting

156. (1) A safety belt must be fitted at each indicated seating position, and must be designed in such a way as to hold a person of a mass of 100 kg securely in place when the lifeboat is in a capsized position.

(2) The stability of the lifeboat must be such that it is inherently or automatically self-righting when loaded with its full or a partial complement of persons and equipment and the persons are secured with safety belts.

Propulsion

157. (1) The engine and transmission on a lifeboat must be controlled from helmsman's position.

(2) The engine and engine installation on a lifeboat must be capable of running in any position during capsize and continue to run after the lifeboat returns to the upright, or must automatically stop on capsizing and be easily restarted after the lifeboat returns to the upright and the water has been drained from the lifeboat.

(3) The design of the fuel and lubricating systems on a lifeboat must prevent the loss of fuel and the loss of more than 250 millilitres of lubricating oil from the engine during capsize.

(4) Air-cooled engines must have a duct system to take in cooling air from, and exhaust it to, the outside of the lifeboat, and manually operated dampers must be provided to enable cooling air to be taken in from, and exhausted to, the interior of the lifeboat.

Construction and fendering

158. (1) Notwithstanding regulation 146(7), a self-righting partially enclosed lifeboat must be constructed and fendered in such a way as to ensure that the lifeboat renders protection against harmful accelerations resulting from an impact of the lifeboat, when loaded with its full complement of persons and equipment, against the fishing vessel's side at an impact velocity of not less than 3.5 m/s.

- (2) A lifeboat must be automatically self-bailing.

Sub-part B
Totally enclosed lifeboats

General requirements for totally enclosed lifeboats

159. Totally enclosed lifeboats must comply with the requirements of regulations Sub-part A, and the requirements of this regulation.

Enclosure

160. Every totally enclosed lifeboat must be provided with a rigid watertight enclosure which completely encloses that lifeboat and that enclosure must be arranged in such a way that -

- (a) it protects the occupants against heat and cold;
- (b) access to that lifeboat is provided by hatches which can be closed to make that lifeboat watertight;
- (c) hatches are positioned so as to allow launching and recovery operations to be performed without any occupant having to leave the enclosure;
- (d) access hatches are capable of being opened and closed from both inside and outside and are equipped with means to hold them securely in open positions;
- (e) it is possible to row that lifeboat;
- (f) it is capable, when that lifeboat is in the capsized position with the hatches closed and without significant leakage, of supporting the entire mass of that lifeboat, including all equipment, machinery and its full complement of persons;
- (g) it includes windows or translucent panels on both sides which admit sufficient daylight to the inside of that lifeboat with the hatches closed to make artificial light unnecessary;
- (h) its exterior is of a highly visible colour and its interior of a colour which does not cause discomfort to the occupants;
- (i) handrails provide a secure handhold for persons moving about the exterior of that lifeboat, and aid embarkation and disembarkation;
- (j) persons have access to their seats from an entrance without having to climb over thwarts or other obstructions; and
- (k) the occupants are protected from the effects of dangerous subatmospheric pressures which might be created by the lifeboat's engine.

Capsizing and re-righting

161. (1) A safety belt must be fitted at each indicated seating position on a totally enclosed lifeboat and must be designed to hold a person of a mass of 100 kg securely in place when that lifeboat is in a capsized position.

(2) The stability of the totally enclosed lifeboat must be such that it is inherently or automatically self-righting when loaded with its full or a partial complement of persons and equipment and all entrances and openings are closed watertight and the persons are secured with safety belts.

(3) A partially enclosed lifeboat must be capable of supporting its full complement of persons and equipment when that lifeboat is in a damaged condition and

its stability must be such that, in the event of capsizing, it will automatically attain a position that will provide an above-water escape for its occupants.

(4) The design of all engine exhaust pipes, air ducts and other openings on a totally enclosed lifeboat must be such that water is excluded from the engine when that lifeboat capsizes and re-rights.

Propulsion

162. (1) A totally enclosed lifeboat must be controlled from the helmsman's position.

(2) The engine and engine installation on a totally enclosed lifeboat must be capable of running in any position during capsize and continue to run after that lifeboat returns to the upright, or must automatically stop on capsizing and be easily restarted after that lifeboat returns to the upright.

(3) The design of the fuel and lubricating systems on a totally enclosed lifeboat must prevent the loss of fuel and the loss of more than 250 millilitres of lubricating oil from the engine during capsize.

(4) Air-cooled engines on a totally enclosed lifeboat must have a duct system to take in cooling air from, and exhaust it to, the outside of the lifeboat, and manually operated dampers must be provided to enable cooling air to be taken in from, and exhausted to, the interior of the lifeboat.

Construction and fendering

163. Notwithstanding regulation 146(7), a totally enclosed lifeboat must be constructed and fendered in such a way as to ensure that that lifeboat renders protection against harmful accelerations resulting from an impact of that lifeboat, when loaded with its full complement of persons and equipment, against the fishing vessel's side at an impact velocity of not less than 3.5 m/s.

Free-fall lifeboats

164. A totally enclosed lifeboat arranged for free-fall launching must be constructed in such a way that it is capable of rendering protection against harmful accelerations resulting from being launched, when loaded with its full complement of persons and equipment, from at least the maximum height at which it is designed to be stowed above the waterline with the fishing vessel in its lightest seagoing condition, under unfavourable conditions of trim of up to 10° and with the fishing vessel listed not less than 20° either way.

Sub-part C *General Requirements for Liferrafts*

Construction of liferafts

165. (1) Every liferaft must be constructed in such a way as to be capable of withstanding exposure for 30 days afloat in all sea conditions.

(2) A liferaft must be constructed in such a way that when it is dropped into the water from a height of 18 metres, the liferaft and its equipment will operate satisfactorily, and if the liferaft is to be stowed at a height of more than 18 metres above the waterline in the lightest seagoing condition, it must be of a type which has been satisfactorily drop-tested from at least that height.

(3) A floating liferaft must be capable of withstanding repeated jumps on to it from a height of at least 4.5 metres above its floor both with and without the canopy erected.

(4) A liferaft and its fittings must be constructed in such a way as to enable it to be towed at a speed of 3 knots in calm water when loaded with its full complement of persons and equipment and with one of its sea-anchors streamed.

(5) A liferaft must have a canopy to protect the occupants from exposure which is automatically set in place when the liferaft is launched and waterborne, and the canopy must comply with the following:

- (a) It must provide insulation against heat and cold by means of either two layers of material separated by an air gap or other equally efficient means, and means must be provided to prevent accumulation of water in the air gap;
- (b) its interior must be of a colour that does not cause discomfort to the occupants;
- (c) each entrance must be clearly indicated and be provided with efficient adjustable closing arrangements which can be easily and quickly opened from inside and outside the liferaft so as to permit ventilation, but exclude seawater, wind and cold. Provided that liferafts accommodating more than eight persons must have at least two diametrically opposite entrances;
- (d) it must admit sufficient air for the occupants at all times, even with the entrances closed;
- (e) must be provided with at least one viewing port;
- (f) it must be provided with means for collecting rainwater; and
- (g) it must have sufficient headroom for sitting occupants under all parts of the canopy.

Minimum carrying capacity and mass of liferafts

166. (1) No liferaft must be approved which has a carrying capacity of less than six persons calculated in accordance with the requirements of regulation 175 or 185, as appropriate.

(2) Unless the liferaft is to be launched by an approved launching appliance complying with the requirements of regulations 209 to 215 and is not required to be portable, the total mass of the liferaft, its container and its equipment may not be more than 185 kg.

Liferaft fittings

167. (1) Lifelines must be securely becketed around the inside and outside of the liferaft.

(2) The liferaft must be fitted with an efficient painter of length equal to not less than twice the distance from the stowed position to the waterline in the lightest seagoing condition or 15 metres whichever is the greater.

Davit-launched liferafts

168. (1) In addition to the requirements in regulations 165 to 167, a liferaft for use with an approved launching appliance must -

- (a) when the liferaft is loaded with its full complement of persons and equipment, be capable of withstanding a lateral impact against the fishing vessel's side at an impact velocity of not less than 3.5 m/s and also a drop into the water from a height of not less than three metres without damage that will affect its function; and
- (b) be provided with means for bringing the liferaft alongside the embarkation deck and holding it securely during embarkation.

(2) Every davit-launched liferaft must be arranged in such a way that it can be boarded by its full complement of persons in not more than three minutes from the time the instruction to board is given.

Equipment

169. (1) The normal equipment of every liferaft must consist of -
- (a) one buoyant rescue quoit, attached to not less than 30 metres of buoyant line;
 - (b) one knife of the non-folding type having a buoyant handle and lanyard attached and stowed in a pocket on the exterior of the canopy near the point at which the painter is attached to the liferaft, and, in addition, a liferaft which is permitted to accommodate 13 persons or more must be provided with a second knife which may not be of the non-folding type;
 - (c) for a liferaft which is permitted to accommodate not more than 12 persons, one buoyant bailer;
 - (d) for a liferaft which is permitted to accommodate 13 persons or more, two buoyant bailers;
 - (e) two sponges;
 - (f) two sea-anchors, each -
 - (i) with a shock-resistant hawser and tripping line, one being spare and the other permanently attached to the liferaft in such a way that when the liferaft inflates or is waterborne it will cause the liferaft to lie oriented to the wind in the most stable manner;
 - (ii) together with its hawser and tripping line having a strength that is adequate for all sea conditions; and
 - (iii) fitted with a swivel at each end of the line and must be of a type which is unlikely to turn inside-out between its shroud lines;
 - (g) two buoyant paddles;
 - (h) three tin-openers, or alternatively, safety knives containing special tin-opener blades;
 - (i) one first-aid outfit in a waterproof case capable of being closed tightly after use;
 - (j) one whistle or equivalent sound signal;
 - (k) four rocket parachute flares complying with the requirements of regulation 206;
 - (l) six hand flares complying with the requirements of regulation 207;

- (m) two buoyant smoke signals complying with the requirements of regulation 208;
- (n) one waterproof electric torch suitable for Morse signalling together with one spare set of batteries and one spare bulb in a waterproof container;
- (o) an efficient radar reflector, unless a survival craft radar transponder is stowed in the liferaft;
- (p) one daylight signalling mirror with instructions for its use for signalling to ships and aircraft;
- (q) one copy of the life-saving signals prescribed by regulation 16 of Chapter V of the Convention Regulations, on a waterproof card or in a waterproof container;
- (r) one set of fishing tackle;
- (s) a food ration totalling not less than 10,000 kilojoules for each person the liferaft is permitted to accommodate; these rations must be kept in airtight packaging and be stowed in a watertight container;
- (t) watertight receptacles containing a total of 1.5L of fresh water for each person the liferaft is permitted to accommodate, of which 0.5L per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in two days;
- (u) one rustproof graduated drinking fishing vessel;
- (v) six doses of anti-seasickness medicine and one seasickness bag for each person the liferaft is permitted to accommodate;
- (w) instructions on how to survive;
- (x) instructions for immediate action; and
- (y) thermal protective aids complying with the requirements of regulation 200 sufficient for 10% of the number of persons the liferaft is permitted to accommodate or two, whichever is the greater.

(2) The marking required by regulations 179(3)(e) and 189(g) on liferafts equipped in accordance with subregulation (1) must be "SOLAS A PACK" in block capitals of the Roman alphabet.

(3) Where appropriate, the equipment referred to in subregulation (1) must be stowed in a container which, if it is not an integral part of, or permanently attached to, the liferaft, must be stowed and secured inside the liferaft and be capable of floating in water for at least 30 minutes without damage to its contents.

Sub-part D
Float-free Arrangements for Liferafts

Painter system

170. The liferaft painter system must provide a connection between the fishing vessel and the liferaft and must be arranged in such a way as to ensure that the liferaft, when released and, in the case of an inflatable liferaft, inflated is not dragged under by the sinking fishing vessel.

Weak link

171. If a weak link is used in the float-free arrangements for liferafts, it must -
- (a) not be broken by the force required to pull the painter from the liferaft container;
 - (b) if applicable, be of sufficient strength to permit the inflation of the liferaft; and
 - (c) break under a strain of 2.2 ± 0.4 kN.

Hydrostatic release units

172. If a hydrostatic release unit is used in the float-free arrangements, it must -
- (a) be constructed of compatible materials so as to prevent malfunction of the unit: Provided that galvanizing or other forms of metallic coating on parts of the hydrostatic release unit may not be accepted;
 - (b) automatically release the liferaft at a depth of not more than 4 metres;
 - (c) have drains to prevent the accumulation of water in the hydrostatic chamber when the unit is in its normal position;
 - (d) be constructed in such a way as to prevent release when seas wash over the unit;
 - (e) be permanently marked on its exterior with its type and serial number;
 - (f) be provided with a document or identification place stating the date of manufacture, type and serial number;
 - (g) be such that each part connected to the painter system has a strength of not less than that required for the painter; and
 - (h) if disposable, have instructions for determining the date of expiry and means for marking the date on the unit.

PART IV
INFLATABLE LIFERAFTS

General requirements for inflatable liferafts

173. Inflatable liferafts must comply with the requirements of regulation 165 and of this Part.

Construction of inflatable liferafts

174. (1) The main buoyancy chamber on an inflatable liferaft must be divided into not less than two separate compartments, each inflated through a non-return inflation valve on each compartment.

(2) The buoyancy chamber on an inflatable liferaft must be arranged in such a way that, in the event of any one of the compartments being damaged or failing to inflate, the intact compartments must be able to support, with positive freeboard over that liferaft's entire periphery, the number of persons which that liferaft is permitted to accommodate, each having a mass of 75 kg and seated in their normal positions.

- (3) The floor of an inflatable liferaft must be waterproof and must be capable of being sufficiently insulated against cold either -
- (a) by means of one or more compartments that the occupants can inflate, or which inflate automatically and can be deflated and re-inflated by the occupants; or
 - (b) by other equally efficient means not dependent on inflation.
- (4) An inflatable liferaft must be inflated with a non-toxic gas, and inflation must be completed within a period of one minute at an ambient temperature of between 18°C and 20°C and within a period of three minutes at an ambient temperature of -30°C.
- (5) After inflation, an inflatable liferaft must maintain its form when loaded with its full complement of persons and equipment.
- (6) Each inflatable compartment on an inflatable liferaft must be capable of withstanding a pressure equal to at least three times the working pressure and must be prevented from reaching a pressure exceeding twice the working pressure either by means of relief valves or by a limited gas supply.
- (7) Means must be provided for fitting the topping-up pump or bellows required by regulation 182(1)(b), on an inflatable liferaft, so that the working pressure can be maintained.

Carrying capacity of inflatable liferafts

- 175.** The number of persons that an inflatable liferaft is permitted to accommodate must be equal to the lesser of -
- (a) the greatest whole number obtained by dividing by 0.096 the volume, measured in cubic metres, of the main buoyancy tubes (which for this purpose must include neither the arches nor the thwarts, if fitted) when inflated;
 - (b) the greatest whole number obtained by dividing by 0.372 the inner horizontal cross-sectional area of that liferaft measured in square metres (which for this purpose may include the thwart or thwarts, if fitted) measured to the innermost edge of the buoyancy tubes; or
 - (c) the number of persons having an average mass of 75 kg all wearing lifejackets, that can be seated with sufficient comfort and headroom without interfering with the operation of any of that liferaft's equipment.

Access into inflatable liferafts

- 176.** (1) At least one entrance must be fitted with a semi-rigid boarding ramp to enable persons to board an inflatable liferaft from the sea, arranged in such a way as to prevent significant deflation of that liferaft if the ramp is damaged: Provided that in the case of a davit-launched liferaft having more than one entrance, the boarding ramp must be fitted at the entrance opposite the bowsing lines and embarkation facilities.
- (2) Entrances not provided with a boarding ramp must have a boarding ladder, the lowest step of which must be situated not less than 0.4 metres below the liferaft's light waterline.
- (3) There must be means inside the liferaft to assist persons to pull themselves into the liferaft from the ladder.

Stability of inflatable liferafts

177. (1) Every inflatable liferaft must be constructed in such a way that, when fully inflated and floating with the canopy uppermost, it is stable in a seaway.

(2) The stability of an inflatable liferaft when in the inverted position must be such that it can be righted in a seaway and in calm water by one person.

(3) The stability of an inflatable liferaft when loaded with its full complement of persons and equipment must be such that it can be towed at speeds of up to 3 knots in calm water.

Inflatable liferaft fittings

178. (1) The breaking strength of the painter system, including its means of attachment to an inflatable liferaft, except the weak link required by regulation 171, must be not less than 10.0 kN for an inflatable liferaft permitted to accommodate nine persons or more, and not less than 7.5 kN for any other inflatable liferaft, and the inflatable liferaft must be capable of being inflated by one person.

(2) A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least two miles for a period of not less than 12 hours must be fitted to the top of the canopy of the inflatable liferaft, and, if it is a flashing light, it must flash at a rate of not less than 50 flashes per minute for the first two hours operation of the 12 hours operating period.

(3) The lamp referred to in subregulation (2), must be powered by a sea-activated cell or a dry chemical cell and must light automatically when the inflatable liferaft inflates, and the cell must be of a type that does not deteriorate due to damp or humidity in the stowed inflatable liferaft.

(4) A manually controlled lamp must be fitted inside an inflatable liferaft capable of continuous operation for a period of at least 12 hours, and must light automatically when that liferaft inflates and be of sufficient intensity to enable reading of survival and equipment instructions.

Containers for inflatable liferafts

179. (1) An inflatable liferaft must be packed in a container that is -

- (a) constructed in such a way as to withstand hard wear under conditions encountered at sea;
- (b) of sufficient inherent buoyancy, when packed with that liferaft and its equipment, to pull the painter from within and to operate the inflation mechanism should the fishing vessel sink; and
- (c) as far as is practicable watertight, except for drain holes in the container bottom.

(2) An inflatable liferaft must be packed in its container in such a way as to ensure, as far as possible, that the waterborne inflatable liferaft inflates in an upright position on breaking free from its container.

(3) The container referred to in subregulation (2) must be marked with -

- (a) the maker's name or trade mark;
- (b) the serial number;
- (c) the name of the approving authority and the number of persons it is permitted to carry;

- (d) SFV or SOLAS A;
- (e) the type of emergency pack enclosed;
- (f) the date when last serviced;
- (g) the length of painter;
- (h) the maximum permitted height of stowage above waterline (depending on drop-test height and length of painter); and
- (i) launching instructions.

Markings on inflatable liferafts

180. An inflatable liferaft must be marked with -

- (a) the maker's name or trade mark;
- (b) the serial number;
- (c) the date of manufacture (month and year);
- (d) the name of the approving authority;
- (e) the name and place of the servicing station where it was last serviced; and
- (f) the number of persons it is permitted to accommodate over each entrance in characters not less than 100 millimetres in height of a colour contrasting with that of that liferaft.

Davit-launched inflatable liferafts

181. (1) In addition to complying with the requirements of regulations 173 to 180, an inflatable liferaft for use with an approved launching appliance must, when suspended from its lifting hook or bridle, withstand a load of -

- (a) four times the mass of its full complement of persons and equipment, at an ambient temperature and a stabilized liferaft temperature of 20 (3°C with all relief valves inoperative; and
- (b) 1.1 times the mass of its full complement of persons and equipment at an ambient temperature and a stabilized liferaft temperature of -30°C with all relief valves operative.

(2) Rigid containers for inflatable liferafts to be launched by a launching appliance must be secured in such a way that the container or parts of it are prevented from falling into the sea during and after inflation and launching of the contained liferaft.

Additional equipment for inflatable liferafts

182. (1) In addition to the equipment required by regulation 169, every inflatable liferaft must be provided with -

- (a) one repair outfit for repairing punctures in buoyancy compartments; and
 - (b) one topping-up pump or bellows.
- (2) The knives required by regulation 169(b) must be safety knives.

PART V
RIGID LIFERAFTS

General requirements for rigid liferafts

183. Rigid liferafts must comply with the requirements of regulations 162 to 169 and of this regulation.

Construction of rigid liferafts

184. (1) The buoyancy of a rigid liferaft must be provided by approved inherently buoyant material placed as near as possible to the periphery of the liferaft, and the buoyant material must be fire-retardant or be protected by a fire-retardant covering.

(2) The floor of a rigid liferaft must prevent the ingress of water and must effectively support the occupants out of the water and insulate them from cold.

Carrying capacity of rigid liferafts

185. The number of persons which a rigid liferaft must be permitted to accommodate must be equal to the lesser of -

- (a) the greatest whole number obtained by dividing by 0.096 the horizontal cross-sectional area of the floor of that liferaft measured in square metres;
- (b) the greatest whole number obtained by dividing by 0.372 the horizontal cross-sectional area of the floor of that liferaft measured in square metres; or
- (c) the number of persons having an average mass of 75 kg all wearing lifejackets, that can be seated with sufficient comfort and headroom without interfering with the operation of any of that liferaft's equipment.

Access into rigid liferafts

186. (1) At least one entrance must be fitted with a rigid boarding ramp to enable persons to board rigid liferaft from the sea, and in the case of a davit-launched liferaft having more than one entrance, the boarding ramp must be fitted at the entrance opposite to the bowsing and embarkation facilities.

(2) Entrances on a rigid liferaft which are not provided with a boarding ramp must have a boarding ladder, the lowest step of which must be situated not less than 0.4 metres below the liferaft's light waterline.

(3) There must be means inside a rigid liferaft to assist persons to pull themselves into the liferaft from the ladder.

Stability of rigid liferafts

187. (1) Unless a rigid liferaft is capable of operating safely whichever way up it is floating, its strength and stability must be such that it is either self-righting or can be readily righted in a seaway and in calm water by one person.

(2) The stability of a rigid liferaft when loaded with its full complement of persons and equipment must be such that it can be towed at speeds of up to 3 knots in calm water.

Rigid liferaft fittings

188. (1) A rigid liferaft must be fitted with an efficient painter, and the breaking strength of the painter system, including its means of attachment to the liferaft, except the weak link required by regulation 168, must be not less than 10.0 kN for rigid liferafts permitted to accommodate nine persons or more, and not less than 7.5 kN for any rigid liferaft.

(2) A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least two miles for a period of not less than 12 hours must be fitted to the top of the canopy of a rigid liferaft, and if the light is a flashing light it must flash at a rate of not less than 50 flashes per minute over the first 2 hours of operation of the 12 hours operating period.

(3) The lamp referred to in subregulation (2) must be powered by a sea-activated cell or a dry chemical cell and must light automatically when the canopy of the liferaft is set in place, and the cell must be of a type that does not deteriorate due to damp or humidity in the stowed liferaft.

(4) A manually controlled lamp must be fitted inside a rigid liferaft, capable of continuous operation for a period of at least 12 hours, and must light automatically when the canopy is set in place and be of sufficient intensity to enable reading of survival and equipment instructions.

Markings on rigid liferafts

189. A rigid liferaft must be marked with -

- (a) the name and port of registry of the fishing vessel to which it belongs;
- (b) the maker's name or trade mark;
- (c) the serial number;
- (d) the name of approving authority;
- (e) the number of persons it is permitted to accommodate over each entrance in characters not less than 100 millimetres in height of a colour contrasting with that of the liferaft;
- (f) SFV or SOLAS A;
- (g) the type of emergency pack enclosed;
- (h) the length of the painter;
- (i) the maximum permitted height of stowage above waterline (drop-test height);
and
- (j) launching instructions.

Davit-launched rigid liferafts

190. In addition to the requirements of regulations 183 to 189, a rigid liferaft for use with an approved launching appliance must, when suspended from its lifting hook or bridle, withstand a load of four times the mass of its full complement of persons and equipment.

PART VI
RESCUE BOATS

General requirements for rescue boats

191. (1) Except as provided by this regulation, a rescue boat must comply with the requirements of regulations 146, 152(9), (10), (12) (13), (15) and (19) and regulation 154.

(2) A rescue boat may be either of rigid or inflated construction or a combination of both and must -

(a) be not less than 3.8 metres and not more than 8.5 metres in length except where, owing to the size of the fishing vessel, or for other reasons where the carriage of such boats is considered unreasonable or impracticable, the Directorate may accept a rescue boat of a lesser length, but not less than 3.3 metres; and

(b) be capable of carrying at least five seated persons and a person lying down or in the case of a rescue boat less of than 3.8 metres in length, such lesser number as may be to the satisfaction of the Directorate.

(3) The number of persons which a rescue boat must be permitted to accommodate must be to the satisfaction of the Directorate.

(4) A rescue boat which is a combination of rigid and inflated construction must comply with the appropriate requirements of this regulation to the satisfaction of the Directorate.

(5) Unless a rescue boat has adequate sheer, it must be provided with a bow cover extending for not less than 15% of its length.

(6) A rescue boat must be capable of manoeuvring at a speed up to six knots and maintaining that speed for a period of at least four hours.

(7) A rescue boat must have sufficient mobility and manoeuvrability in a seaway to enable persons to be retrieved from the water, marshal liferafts and tow the largest liferaft carried on the fishing vessel when loaded with its full complement of persons and equipment or its equivalent at a speed of at least two knots.

(8) A rescue boat must be fitted with an inboard engine or outboard motor, and if it is fitted with an outboard motor, the rudder and tiller may form part of the engine.

(9) Notwithstanding the requirements of regulation 151(1), petrol-driven outboard engines with an approved fuel system may be fitted in a rescue boat provided the fuel tank is specially protected against fire and explosion.

(10) Arrangements for towing must be permanently fitted in a rescue boat and must be sufficiently strong to marshal or tow a liferaft as required by subregulation (7).

(11) A rescue boat must be fitted with weathertight stowage for small items of equipment.

Rescue boat equipment

192. (1) All items of rescue boat equipment, with the exception of boat-hooks which must be kept free for fending off purposes, must be secured within the rescue boat by lashings, storage in lockers or compartments, storage in brackets or similar mounting arrangements, or other suitable means.

(2) The equipment referred to in subregulation (1) must be secured in such a manner as not to interfere with any launching or recovery procedures.

(3) All items of rescue boat equipment must be as small and of as little mass as possible and must be packed in suitable and compact form.

(4) The normal equipment of every rescue boat must consist of -

- (a) sufficient buoyant oars or paddles to make headway in calm seas, and thole pins or crutches, attached to the boat by lanyards or chains, or equivalent arrangements, must be provided for each oar;
- (b) a buoyant bailer;
- (c) a binnacle containing an efficient compass which is luminous or provided with suitable means of illumination;
- (d) a sea-anchor and a tripping line with a hawser of adequate strength not less than 10 metres in length;
- (e) a painter of sufficient length and strength, attached to the release device complying with the requirements of regulation 152(13) and placed at the forward end of the rescue boat;
- (f) one buoyant line, not less than 50 metres in length, of sufficient strength to tow a liferaft as required by regulation 191(7);
- (g) one waterproof electric torch suitable for Morse signalling, together with one spare set of batteries and one spare bulb in a waterproof container;
- (h) one whistle or equivalent sound signal;
- (i) a first-aid outfit in a waterproof case capable of being closed tightly after use;
- (j) two buoyant rescue quoits, attached to not less than 30 metres of buoyant line;
- (k) a searchlight capable of effectively illuminating a light-coloured object at night having a width of 18 metres at a distance of 180 metres for a total period of six hours and of working for not less than three hours continuously;
- (l) an efficient radar reflector; and
- (m) thermal protective aids complying with the requirements of regulation 200 sufficient for 10% of the number of persons the lifeboat is permitted to accommodate or two, whichever is the greater.

(5) In addition to the equipment required by subregulation (4), the normal equipment of every rigid rescue boat must include -

- (a) a boat-hook;
- (b) a bucket; and
- (c) a knife or hatchet.

(6) In addition to the equipment required by subregulation (4), the normal equipment of every inflated rescue boat must consist of -

- (a) a buoyant safety knife;
- (b) two sponges;
- (c) an efficient manually operated bellows or pump;
- (d) a repair kit in a suitable container for repairing punctures; and
- (e) a safety boat-hook.

Additional requirements for inflated rescue boats

193. (1) The requirements of regulation 146(4) and (6) do not apply to inflated rescue boats.

(2) An inflated rescue boat must be constructed in such a way that, when suspended by its bridle or lifting hook -

- (a) it is of sufficient strength and rigidity to enable it to be lowered and recovered with its full complement of persons and equipment;
- (b) it is of sufficient strength to withstand a load of four times the mass of its full complement of persons and equipment at an ambient temperature of 20 (3°C with all relief valves inoperative; and
- (c) it is of sufficient strength to withstand a load of 1.1 times the mass of its full complement of persons and equipment at an ambient temperature of -30°C, with all relief valves operative;

(3) Inflated rescue boats must be constructed in such a way as to be capable of withstanding exposure -

- (a) when stowed on an open deck on a fishing vessel at sea; and
- (b) for 30 days afloat in all sea conditions.

(4) In addition to complying with the requirements of regulation 154, inflated rescue boats must be marked with a serial number, the maker's name or trade mark and the date of manufacture.

(5) The buoyancy of an inflated rescue boat must be provided by either a single tube subdivided into at least five separate compartments of approximately equal volume or two separate tubes neither exceeding 60% of the total volume.

(6) The buoyancy tubes on a rescue boat must be arranged in such a way that, in the event of any one of the compartments being damaged, the intact compartments must be able to support the number of persons which the rescue boat is permitted to accommodate, each having a mass of 75 kg, when seated in their normal positions with positive freeboard over the rescue boat's entire periphery.

(7) The buoyancy tubes forming the boundary of the inflated rescue boat must, on inflation, provide a volume of not less than 0.17 cubic metres for each person the rescue boat is permitted to accommodate.

(8) Each buoyancy compartment on a rescue boat must be fitted with a non-return valve for manual inflation and means for deflation, and a safety relief valve must also be fitted unless the Directorate is satisfied that such an appliance is unnecessary.

(9) Underneath the bottom and on vulnerable places on the outside of the inflated rescue boat, rubbing strips must be provided to the satisfaction of the Directorate.

(10) Where a transom is fitted, on a rescue boat, it may not be inset by more than 20% of the overall length of the rescue boat.

(11) Suitable patches must be provided for securing the painters fore and aft and the becketed lifelines inside and outside a rescue boat.

(12) An inflated rescue boat must be maintained at all times in a fully inflated condition.

PART VII LIFEJACKETS

General requirements for lifejackets

194. (1) A lifejacket may not sustain burning or continue melting after being totally enveloped in a fire for a period of two seconds.

(2) A lifejacket must be constructed in such a way that -

- (a) after demonstration, a person can correctly don it within a period of one minute without assistance;
- (b) it is capable of being worn inside-out or is clearly capable of being worn in only one way and, as far as possible, cannot be donned incorrectly;
- (c) it is comfortable to wear; and
- (d) it allows the person wearing it to jump from a height of at least 4.5 metres into the water without injury and without dislodging or damaging the lifejacket.

(3) A lifejacket must have sufficient buoyancy and stability in calm fresh water to -

- (a) lift the mouth of an exhausted or unconscious person not less than 120 millimetres clear of the water with the body inclined backwards at an angle of not less than 20° and not more than 50° from the vertical position; and
- (b) turn the body of an unconscious person in the water from any position to one where the mouth is clear of the water in not more than five seconds.

(4) A lifejacket must have buoyancy which is not reduced by more than 5% after 24 hours submersion in fresh water.

(5) A lifejacket must allow the person wearing it to swim a short distance and to board a survival craft.

(6) Each lifejacket must be fitted with a whistle firmly secured by a cord.

Inflatable lifejackets

195. A lifejacket which depends on inflation for buoyancy must have not less than two separate compartments and comply with the requirements of regulation 194 and must -

- (a) inflate automatically on immersion, be provided with a device to permit inflation by a single manual motion and be capable of being inflated by mouth;
- (b) in the event of loss of buoyancy in any one compartment, be capable of complying with the requirements of regulation 194(2), (3) and (5); and

- (c) comply with the requirements of regulation 194(4) after inflation by means of the automatic mechanism.

Lifejacket lights

- 196.** (1) Each lifejacket must have a light which must -
- (a) have a luminous intensity of not less than 0.75 cd;
 - (b) have a source of energy capable of providing a luminous intensity of 0.75 cd for a period of at least eight hours; and
 - (c) be visible over as great a segment of the upper hemisphere as is practicable when attached to a lifejacket.
- (2) If the light referred to in subregulation (1) is a flashing light, it must, in addition -
- (a) be provided with a manually operated switch;
 - (b) not be fitted with a lens or curved reflector to concentrate the beam; and
 - (c) flash at a rate of not less than 50 flashes per minute with an effective luminous intensity of at least 0.75 cd.

PART VIII IMMERSION SUITS

General requirements for immersion suits

- 197.** (1) An immersion suit must be constructed with waterproof material such that -
- (a) it can be unpacked and donned without assistance within two minutes taking into account any associated clothing, and a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket;
 - (b) it will not sustain burning or continue melting after being totally enveloped in a fire for a period of two seconds;
 - (c) it will cover the whole body, with the exception of the face, and cover hands unless permanently attached gloves are provided;
 - (d) it is provided with arrangements to minimize or reduce free air in the legs of the suit; and
 - (e) following a jump from a height of not less than 4.5 metres into the water there is no undue ingress of water into the suit.
- (2) An immersion suit which also complies with the requirements of regulations 194 to 196 may be classified as a lifejacket.
- (3) An immersion suit must permit the person wearing it, and also wearing a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket to -
- (a) climb up and down a vertical ladder at least five metres in length;
 - (b) perform normal duties during abandonment;
 - (c) jump from a height of not less than 4.5 metres into the water without damaging or dislodging the immersion suit, or being injured; and

(d) swim a short distance through the water and board a survival craft.

(4) An immersion suit which has buoyancy and is designed to be worn without a lifejacket must be fitted with a light complying with the requirements of regulation 196 and the whistle prescribed by regulation 194(6).

(5) If the immersion suit is to be worn in conjunction with a lifejacket, the lifejacket must be worn over the immersion suit.

(6) A person wearing an immersion suit with a lifejacket over it must be able to don a lifejacket without assistance.

Thermal performance requirements for immersion suits

198. (1) An immersion suit made of material which has no inherent insulation must be -

(a) marked with instructions that it must be worn in conjunction with warm clothing; and

(b) constructed in such a way that, when worn in conjunction with warm clothing and with a lifejacket if that immersion suit is to be worn with a lifejacket, the immersion suit continues to provide sufficient thermal protection following one jump by the person wearing it into the water from a height of 4.5 metres to ensure that when it is worn for a period of one hour in calm circulating water at a temperature of 5°C the body core temperature of the person wearing it does not fall more than 2°C.

(2) An immersion suit made of material with inherent insulation when worn either on its own or with a lifejacket, if the immersion suit is to be worn in conjunction with a lifejacket, must provide the person wearing it with sufficient thermal insulation following one jump into the water from a height of 4.5 metres to ensure that the body core temperature of the person wearing it does not fall more than 2°C after a period of six hours immersion in calm circulating water at a temperature of between 0°C and 2°C.

(3) An immersion suit must permit the person wearing it with hands covered to pick up a pencil and write after being immersed in water at 5°C for a period of one hour.

Buoyancy requirements

199. A person in fresh water wearing either an immersion suit complying with the requirements of regulation 197 and 198 or an immersion suit with a lifejacket must be able to turn from a face-down to a face-up position in not more than five seconds.

PART IX THERMAL PROTECTIVE AIDS

General requirements for thermal protective aids

200. (1) A thermal protective aid must be made of waterproof material having a thermal conductivity of not more than 0.25 W/m/K and must be constructed in such a way that, when used to enclose a person, it must reduce both the convective and evaporative heat loss from the body of the person wearing it.

(2) A thermal protective aid must -

(a) cover -

(i) the whole body of the person wearing a lifejacket, with the exception of the face; and

- (ii) hands of the person wearing a lifejacket, unless permanently attached gloves are provided;
 - (b) be capable of being unpacked and easily donned without assistance in a survival craft or rescue boat; and
 - (c) permit the person wearing it to remove it in the water in not more than two minutes, if it impairs ability to swim.
- (3) A thermal protective aid must function properly throughout an air temperature range -30°C to $+20^{\circ}\text{C}$.

PART X LIFEBUOYS

Lifebuoy specification

201. Every lifebuoy must -

- (a) have an outer diameter of not more than 800 millimetres and an inner diameter of not less than 400 millimetres;
- (b) be constructed of inherently buoyant material, and may not depend upon rushes, cork shavings or granulated cork, any other loose granulated material or any air compartment which depends on inflation for buoyancy;
- (c) be capable of supporting not less than 14.5 kg of iron in fresh water for a period of 24 hours;
- (d) have a mass of not less than 2.5 kg;
- (e) not sustain burning or continue melting after being totally enveloped in a fire for a period of two seconds;
- (f) be constructed to withstand a drop into the water from the height at which it is stowed above the waterline in the lightest seagoing condition or 30 minutes, whichever is the greater, without impairing either its operating capability or that of its attached components;
- (g) if it is intended to operate the quick-release arrangement provided for the self-activated smoke signals and self-igniting lights, have a mass sufficient to operate the quick-release arrangement or 4 kg, whichever is the greater; and
- (h) be fitted with a grabline not less than 9.5 millimetres in diameter and not less than four times the outside diameter of the body of the buoy in length, and the grabline must be secured at four equidistant points around the circumference of the buoy to form four equal loops.

Lifebuoy self-igniting lights

202. Self-igniting lights required by regulation 139(2) must -

- (a) be such that they cannot be extinguished by water;
- (b) be capable of either burning continuously with a luminous intensity of not less than 2 cd in all directions of the upper hemisphere or flashing (discharge flashing) at a rate of not less than 50 flashes per minute with at least the corresponding effective luminous intensity;
- (c) be provided with a source of energy capable of meeting the requirement of paragraph (b) for a period of at least two hours; and

- (d) be capable of withstanding the drop test required by regulation 201(f).

Lifebuoy self-activating smoke signals

203. Self-activating smoke signals required by regulation 139(3) must -

- (a) emit smoke of a highly visible colour at a uniform rate for a period of at least 15 minutes when floating in calm water;
- (b) not ignite explosively or emit any flame during the entire smoke emission time of the signal;
- (c) not be swamped in a seaway;
- (d) continue to emit smoke when fully submerged in water for a period of at least 10 seconds; and
- (e) be capable of withstanding the drop test required by regulation 201(f).

Buoyant lifelines

204. Buoyant lifelines required by regulation 139(4) must -

- (a) be non-kinking;
- (b) have a diameter of not less than 8 millimetres; and
- (c) have a breaking strength of not less than 5 kN.

PART XI LINE-THROWING APPLIANCES

General requirements for line-throwing appliances

205. (1) Every line-throwing appliance must -

- (a) be capable of throwing a line with reasonable accuracy;
- (b) include not less than four projectiles each capable of carrying the line at least 230 metres in calm weather;
- (c) include not less than four lines each having a breaking strength of not less than 2 kN; and
- (d) have brief instructions or diagrams clearly illustrating the use of the line-throwing appliance.

(2) The rocket, in the case of a pistol-fired rocket, or the assembly, in the case of an integral rocket and line, must be contained in a water-resistant casing, and in addition to this, in the case of a pistol-fired rocket, the line and rockets together with the means of ignition must be stowed in a container which provides protection from the weather.

PART XII
ROCKET PARACHUTE FLARES

General requirements for rocket parachute flares

206. (1) The rocket parachute flare must -
- (a) be contained in a water-resistant casing;
 - (b) have brief instructions or diagrams clearly illustrating the use of the rocket parachute flare printed on its casing;
 - (c) have integral means of ignition; and
 - (d) be designed in such a way as not to cause discomfort to the person holding the casing when used in accordance with the manufacturer's operating instructions.
- (2) A rocket must, when fired vertically, reach an altitude of not less than 300 metres, and at or near the top of its trajectory, eject a parachute flare, which must -
- (a) burn with a bright red colour;
 - (b) burn uniformly with an average luminous intensity of not less than 30,000 cd;
 - (c) have a burning period of not less than 40 seconds;
 - (d) have a rate of descent of not more than 5 m/s; and
 - (e) not damage its parachute or attachments while burning.

PART XIII
HANDFLARES

General requirements for hand flares

207. (1) A hand flare must -
- (a) be contained in a water-resistant casing;
 - (b) have brief instructions or diagrams clearly illustrating the use of the hand flare printed on its casing;
 - (c) have a self-contained means of ignition; and
 - (d) be designed in such a way as not to cause discomfort to the person holding the casing and not endanger the survival craft by burning or glowing residues when used in accordance with the manufacturer's instructions.
- (2) A hand flare must -
- (a) burn with a bright red colour;
 - (b) burn uniformly with an average luminous intensity of not less than 15,000 cd;
 - (c) have a burning period of not less than one minute; and
 - (d) continue to burn after having been immersed for a period of 10 seconds under 100 millimetres of water.

PART XIV
BUOYANT SMOKE SIGNALS

General requirements for buoyant smoke signals

- 208.** (1) A buoyant smoke signal must -
- (a) be contained in a water-resistant casing;
 - (b) not ignite explosively when used in accordance with the manufacturer's operating instructions; and
 - (c) have brief instructions or diagrams clearly illustrating the use of the buoyant smoke signal printed on its casing.
- (2) The buoyant smoke signal must -
- (a) emit smoke of a highly visible colour at a uniform rate for a period of not less than three minutes when floating in calm water;
 - (b) not emit any flame during the entire smoke emission time;
 - (c) not be swamped in a seaway; and
 - (d) continue to emit smoke when submerged in water for a period of 10 seconds under 100 millimetres of water.

PART XV
LAUNCHING AND EMBARKATION APPLIANCES

General requirements for launching appliances

209. (1) Each launching appliance together with all its lowering and recovery gear must be arranged in such a way that the fully equipped survival craft or rescue boat it serves can be safely lowered against a trim of up to 10° and a list of up to 20° either way -

- (a) when boarded by its full complement of persons; or
- (b) without persons in the survival craft or rescue boat.

(2) A launching appliance may not depend on any means other than gravity or stored mechanical power which is independent of the fishing vessel's power supplies to launch the survival craft or rescue boat it serves in the fully loaded and equipped condition and also in the light condition.

(3) A launching mechanism must be arranged in such a way that -

- (a) it may be actuated by one person from a position on the fishing vessel's deck, and from a position within the survival craft or rescue boat; and
- (b) the survival craft must be visible to the person on deck operating the launching mechanism.

(4) Each launching appliance must be constructed in such a way that a minimum amount of routine maintenance is necessary, and all parts requiring regular maintenance by the fishing vessel's crew must be readily accessible and easily maintained.

(5) The winch brakes of a launching appliance must be of sufficient strength to withstand -

- (a) a static test with a proof load of not less than 1.5 times the maximum working load; and
- (b) a dynamic test with a proof load of not less than 1.1 times the maximum working load at maximum lowering speed.
- (6) The launching appliance and its attachments other than winch brakes must be of sufficient strength to withstand a static proof load on test of not less than 2.2 times the maximum working load.
- (7) Structural members and all blocks, falls, padeyes, links, fastenings and all other fittings used in connection with launching equipment must be designed with not less than a minimum factor of safety on the basis of the maximum working load assigned and the ultimate strength of the material used for construction.
- (8) A minimum factor of safety of 4.5 must be applied to all davit and winch structural members, and a minimum factor of safety of six must be applied to falls, suspension chains, links and blocks.
- (9) Each launching appliance must, as far as is practicable, remain effective under conditions of icing.
- (10) A lifeboat launching appliance must be capable of recovering the lifeboat with its crew.
- (11) The arrangements of the launching appliance must be such as to enable safe boarding of the survival craft in accordance with the requirements of regulation 148(1) and 166(2).

Launching appliances using falls and a winch

- 210.** (1) Falls must be of rotation-resistant and corrosion-resistant steel wire rope.
- (2) In the case of a multiple drum winch, unless an efficient compensatory device is fitted, the falls must be arranged in such a way as to wind off the drums at the same rate when lowering, and to wind on to the drums evenly at the same rate when hoisting.
- (3) Every launching appliance of a rescue boat must be fitted with a powered winch motor of such capacity that the rescue boat can be raised from the water with its full complement of persons and equipment.
- (4) An efficient hand gear must be provided for recovery of each survival craft and rescue boat, and hand gear handles or wheels may not be rotated by moving parts of the winch when the survival craft or rescue boat is being lowered or when it is being hoisted by power.
- (5) Where davit arms are recovered by power, safety devices must be fitted which automatically cut off the power before the davit arms reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.
- (6) The speed at which the survival craft or rescue boat is lowered into the water must be not less than that obtained from the formula:

$$S = 0.4 + 0.02H$$

where:

S = speed of lowering in metres per second, and

H = height in metres from davit head to the waterline in the lightest seagoing condition.

(7) The maximum lowering speed must be established by the Directorate having regard to the design of the survival craft or rescue boat, the protection of its occupants from excessive forces, and the strength of the launching arrangements taking into account inertia forces during an emergency stop, and means must be incorporated in the appliance to ensure that this speed is not exceeded.

(8) Every launching appliance of a rescue boat must be capable of hoisting the rescue boat when loaded with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 m/s.

(9) Every launching appliance must be fitted with brakes capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with its full complement of persons and equipment, and brake pads must, where necessary, be protected from water and oil.

(10) Manual brakes must be arranged in such a way that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the "off" position.

Float-free launching

211. Where a survival craft requires a launching appliance and is also designed to float free, the float-free release of the survival craft from its stowed position must be automatic.

Free-fall launching

212. (1) Every free-fall launching appliance using an inclined plane must, in addition to complying with the applicable requirements of regulation 209, also comply with the requirements of subregulations (2) to (4)

(2) The launching appliance must be arranged in such a way that excessive forces are not experienced by the occupants of the survival craft during launching.

(3) The launching appliance must be a rigid structure with a ramp angle and length sufficient to ensure that the survival craft effectively clears the fishing vessel.

(4) The launching appliance must be efficiently protected against corrosion and be constructed in such a way as to prevent incendive friction or impact sparking during the launching of the survival craft.

Evacuation-slide launching and embarkation

213. Every evacuation-slide launching appliance must, in addition to complying with the applicable requirements of regulation 205, comply with the following requirements:

- (a) The evacuation-slide must be capable of being deployed by one person at the embarkation station; and
- (b) the evacuation slide must be capable of being used in high winds and in a seaway.

Liferaft launching appliances

214. (1) Every liferaft launching appliance must comply with the requirements of regulations 209 and 210, except with regard to use of gravity for turning out the appliance, embarkation in the stowed position and recovery of the loaded liferaft.

(2) A launching appliance must be arranged in such a way as to prevent premature release during lowering and must release the liferaft when waterborne.

Embarkation ladders

215. (1) Handholds must be provided to ensure a safe passage from the deck to the head of the ladder and vice versa.

(2) The steps of an embarkation ladder must be -

- (a) made of hardwood, free from knots or other irregularities, smoothly machined and free from sharp edges and splinters, or of suitable material of equivalent properties;
- (b) provided with an efficient non-slip surface either by longitudinal grooving or by the application of an approved non-slip coating;
- (c) not less than 480 millimetres long, 115 millimetres wide and 25 millimetres in depth, excluding any non-slip surface or coating; and
- (d) equally spaced not less than 300 millimetres or more than 380 millimetres apart and secured in such a manner that they will remain horizontal.

(3) Subject to subregulation (4), the side ropes of an embarkation ladder must consist of two uncovered manila ropes not less than 65 millimetres in circumference on each side, and each rope must be continuous with no joints below the top step.

(4) Notwithstanding subregulation (3), other materials may be used for the side ropes of an embarkation ladder, provided the dimensions, breaking strain, weathering, stretching and gripping properties are at least equivalent to those of manila rope, and all rope ends must be secured to prevent unravelling.

CHAPTER 9
EMERGENCY PROCEDURES, MUSTERS AND DRILLS

PART I
GENERAL

Application

216. This Chapter applies to new and existing fishing vessels of 15 metres in length and over.

General emergency alarm system, muster list and emergency instructions

217. (1) The general emergency alarm system must be capable of sounding the general alarm signal consisting of seven or more short blasts followed by one long blast on the fishing vessel's whistle or siren and additionally on an electrically operated bell or klaxon or other equivalent warning system which must be powered from the fishing vessel's main supply and the emergency source of electrical power required by regulation 17 of Chapter IV of the Convention Regulations.

(2) All fishing vessels must be provided with clear instructions for each member of the crew, which must be followed in case of emergency.

(3) The muster list must be posted up in several parts of the fishing vessel and, in particular, in the wheelhouse, the engine room and in the crew accommodation, and must include the information specified in subregulations (4) to (9).

(4) The muster list must specify -

- (a) details of the general alarm signal prescribed by subregulation (1) and also the action to be taken by the crew when this alarm is sounded; and
- (b) how the order to abandon ship will be given.

(5) The muster list must show the duties assigned to the different members of the crew, including -

- (a) closing of watertight doors, fire doors, valves, scuppers, overboard shoots, sidescuttles, skylights, portholes and other similar openings in the fishing vessel;
- (b) equipping the survival craft and other life-saving appliances;
- (c) preparation and launching of survival craft;
- (d) general preparation of other life-saving appliances;
- (e) use of communication equipment; and
- (f) manning of fire parties assigned to deal with fires.

(6) In fishing vessels of less than 24 metres in length, the Directorate may permit relaxation of the requirements of subregulation (5) if satisfied that, due to the small number of crew members, no muster list is necessary.

(7) The muster list must specify which officers are assigned to ensure that the life-saving and fire appliances are maintained in good condition and are ready for immediate use.

(8) The muster list must specify substitutes for key persons who may become disabled, taking into account that different emergencies may call for different actions.

(9) The muster list must be prepared before the fishing vessel proceeds to sea, and, after the muster list has been prepared, if any change takes place in the crew which necessitates an alteration in the muster list, the skipper must either revise the list or prepare a new list.

PART II ABANDON SHIP TRAINING AND DRILLS

Practice musters and drills

218. (1) The owner and skipper of every fishing vessel must ensure that each member of the crew participates in at least one abandon ship drill and one fire drill every month, and the drills of the crew must take place within 24 hours of the fishing vessel leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular fishing vessel in the previous muster, provided the Directorate may accept other arrangements that are at least equivalent to those classes of fishing vessels for which this is impracticable.

(2) Each abandon ship drill must include -

- (a) summoning of crew to muster stations with the general emergency alarm and ensuring that they are made aware of the order to abandon ship specified in the muster list;
- (b) reporting to stations and preparing for the duties described in the muster list;
- (c) checking that crew are suitably dressed;
- (d) checking that lifejackets are correctly donned;
- (e) lowering of at least one lifeboat after any necessary preparation for launching;
- (f) starting and operating the lifeboat engine; and
- (g) operation of davits used for launching liferafts.

(3) Each fire drill must include -

- (a) reporting to stations and preparing for the duties described in the fire muster list;
- (b) starting of a fire pump, using at least two required jets of water to show that the system is in proper working order;
- (c) checking of fireman's outfit and other personal rescue equipment;
- (d) checking of relevant communication equipment;
- (e) checking the operation of watertight doors, fire doors, fire dampers and means of escape; and
- (f) checking the necessary arrangements for subsequent abandoning of the fishing vessel.

(4) Different lifeboats must, as far as is practicable, be lowered in compliance with the requirements of subregulation (2)(e) at successive drills.

(5) Drills must, as far as is practicable, be conducted as if there were an actual emergency.

(6) Each lifeboat must be launched with its assigned operating crew aboard and manoeuvred in the water at least once every three months during an abandon ship drill.

(7) As far as is reasonable and practicable, rescue boats other than lifeboats which are also rescue boats must be launched each month with their assigned crew aboard and manoeuvred in the water, and in all cases, this requirement must be complied with at least once every three months.

(8) If lifeboat and rescue boat launching drills are carried out with the fishing vessel making headway, such drills must, because of the dangers involved, be practised in sheltered waters only and under the supervision of an officer experienced in such drills.

(9) Emergency lighting for mustering and abandonment must be tested at each abandon ship drill.

(10) The drills may be adjusted according to the relevant equipment required by subregulations, (2) to (4), (6) to (9) and, if equipment is carried on a voluntary basis, it must be used in the drills and the drills must be adjusted accordingly.

On-board training and instructions

219. (1) On-board training in the use of the fishing vessel's life-saving appliances, including survival craft equipment, must be given as soon as possible, but not later than two weeks after a crew member joins the fishing vessel, and, if the crew member is on a regularly scheduled rotating assignment to the fishing vessel, such training must be given not later than two weeks after the time of first joining the fishing vessel.

(2) Instructions in the use of the fishing vessel's life-saving appliances and in survival at sea must be given at the same intervals as the drills.

(3) Individual instruction in the use of the fishing vessel's life-saving appliances may cover different parts of the fishing vessel's life-saving system, but all the fishing vessel's life-saving equipment and appliances must be covered within any period of two months.

(4) Each member of the crew must be given instructions in the use of the fishing vessel's life-saving appliances, which must include, but not necessarily be limited to -

- (a) operation and use of the fishing vessel's inflatable liferafts, including precautions concerning nailed shoes and other sharp objects;
- (b) problems of hypothermia, first-aid treatment for hypothermia and other appropriate first-aid procedures; and
- (c) special instructions necessary for use of the fishing vessel's life-saving appliances in severe weather and severe sea conditions.

(5) On-board training in the use of davit-launched liferafts must take place at intervals of not more than four months on every fishing vessel fitted with such appliances, and whenever practicable this must include the inflation and lowering of a liferaft.

(6) The liferaft referred to in subregulation (5) may be a special liferaft intended for training purposes only, which is not part of the fishing vessel's life-saving equipment and which must be conspicuously marked.

Records

220. (1) The date when musters are held, details of abandon ship drills and fire drills, drills of other life-saving appliances and on-board training must be recorded in such log-book as may be prescribed by the Directorate.

(2) If a full muster, drill or training session is not held at the appointed time, an entry must be made in the log-book stating the circumstances and the extent of the muster, drill or training session held.

Training manual

221. (1) A training manual must be provided in each crew mess room and recreation room or in each crew cabin, may comprise several volumes and must contain instructions and information, in easily understood terms illustrated wherever possible, on the life-saving appliances provided in the fishing vessel and on the best method of survival.

(2) Any part of the information referred to in subregulation (1) may be provided in the form of audio-visual aids in lieu of the manual, and the following must be explained in detail:

- (a) Donning of lifejackets and immersion suits, as appropriate;
- (b) muster at the assigned stations;
- (c) boarding, launching and clearing the survival craft and rescue boats;
- (d) method of launching from within the survival craft;
- (e) release from launching appliances;
- (f) methods and use of devices for protection in launching areas, where appropriate;
- (g) illumination in launching areas;
- (h) use of all survival equipment;
- (i) use of all detection equipment;
- (j) with the assistance of illustrations, the use of radio life-saving appliances;
- (k) use of drogues;
- (l) use of engine and accessories;
- (m) recovery of survival craft and rescue boats, including stowage and securing;
- (n) hazards of exposure and the need for warm clothing;
- (o) best use of the survival craft facilities in order to survive;
- (p) methods of retrieval, including the use of helicopter rescue gear (slings, baskets, stretchers), breeches-buoy and shore life-saving apparatus and fishing vessel's line-throwing apparatus;
- (q) all other functions contained in the muster list and emergency instructions; and
- (r) instructions for emergency repair of the life-saving appliances.

PART III
TRAINING IN EMERGENCY PROCEDURES

Training in emergency procedures

222. The Directorate must take such measures as it may consider necessary to ensure that crews are adequately trained in their duties in the event of emergencies, and such training must include, as appropriate -

- (a) types of emergencies which may occur, such as collisions, fire and foundering;
- (b) types of life-saving appliances normally carried on fishing vessels;
- (c) need to adhere to the principles of survival;
- (d) value of training and drills;
- (e) need to be ready for any emergency and to be constantly aware of -
 - (i) the information in the muster list, in particular -
 - (aa) each crew member's specific duties in any emergency;
 - (bb) each crew member's own survival station; and
 - (cc) the signals calling the crew to their survival craft or fire stations;
 - (ii) location of each crew member's own lifejacket and spare lifejackets;
 - (iii) location of fire alarm controls;
 - (iv) means of escape; and
 - (v) consequences of panic;
- (f) actions to be taken in respect to lifting persons from fishing vessels and survival craft by helicopter;
- (g) actions to be taken when called to survival craft stations, including -
 - (i) putting on suitable clothing;
 - (ii) donning of lifejacket; and
 - (iii) collecting additional protection, such as blankets, if time permits;
- (h) actions to be taken when required to abandon ship, such as -
 - (i) how to board survival craft from fishing vessel and water; and
 - (ii) how to jump into the sea from a height and reduce the risk of injury when entering the water;
- (i) actions to be taken when in the water, such as -
 - (i) how to survive in circumstances of -
 - (aa) fire or oil on the water;
 - (bb) cold conditions; and

- (cc) shark-infested waters; and
- (ii) how to right a capsized survival craft;
- (j) actions to be taken when aboard a survival craft, such as -
 - (i) getting the survival craft quickly clear of the fishing vessel;
 - (ii) protection against cold or extreme heat;
 - (iii) using a drogue or sea-anchor;
 - (iv) keeping a look-out;
 - (v) recovering and caring for survivors;
 - (vi) facilitating detection by others;
 - (vii) checking equipment available for use in the survival craft and using it correctly; and
 - (viii) remaining, so far as possible, in the vicinity;
- (k) main dangers to survivors and the general principles of survival, including -
 - (i) precautions to be taken in cold climates;
 - (ii) precautions to be taken in tropical climates;
 - (iii) exposure to sun, wind, rain and sea;
 - (iv) importance of wearing suitable clothing;
 - (v) protective measures in survival craft;
 - (vi) effects of immersion in the water and of hypothermia;
 - (vii) importance of preserving body fluids;
 - (viii) protection against seasickness;
 - (ix) proper use of fresh water and food;
 - (x) effects of drinking water;
 - (xi) means available for facilitating detection by others; and
 - (xii) importance of maintaining morale;
- (l) actions to be taken in respect to fire fighting, such as -
 - (i) the use of fire hoses with different nozzles;
 - (ii) the use of fire extinguishers;
 - (iii) knowledge of the location of fire doors; and
 - (iv) the use of breathing apparatus.

CHAPTER 10
SHIPBORNE NAVIGATIONAL EQUIPMENT
AND ARRANGEMENTS

Application

223. Unless expressly provided otherwise, this Part applies to new and existing fishing vessels.

Exemptions

224. The Permanent Secretary may exempt any fishing vessel from any of the requirements of this Part where it considers that the nature of the voyage or the fishing vessel's proximity to land does not warrant such requirements.

Shipborne navigational equipment

225. (1) Fishing vessels of 24 metres in length and over must be fitted with -

- (a) a standard magnetic compass, except as provided in subregulation (4);
- (b) a steering magnetic compass, unless heading information provided by the standard magnetic compass required under paragraph (a) is made available and is clearly readable by the helmsman at the main steering position;
- (c) adequate means of communication between the standard compass position and the normal navigation control position to the satisfaction of the Directorate; and
- (d) means for taking bearings as nearly as practicable over an arc of the horizon of 360°.

(2) Each magnetic compass referred to in subregulation (1) must be properly adjusted and its table or curve of residual deviations must be available at all times.

(3) A spare magnetic compass, interchangeable with the standard compass, must be carried, unless the steering compass mentioned in subregulation (1)(a) or a gyro-compass is fitted.

(4) The Directorate, if it considers it unreasonable or unnecessary to require a standard magnetic compass, may exempt individual fishing vessels or classes of fishing vessels from these requirements if the nature of the voyage, the fishing vessel's proximity to land or the type of fishing vessel does not warrant a standard compass, provided that a suitable steering compass is in all cases carried.

(5) Fishing vessels of less than 24 metres in length must, as far as the Directorate considers it reasonable and practicable, be fitted with a steering compass and have means for taking bearings.

(6) Fishing vessels of 45 metres in length and over constructed on or after 1 September 1984 must be fitted with a gyro-compass complying with the following requirements:

- (a) The master gyro-compass or a gyro-repeater must be clearly readable by the helmsman at the main steering position; and
- (b) on fishing vessels of 75 metres in length and over a gyro-repeater or gyro-repeaters must be provided and must be suitably placed for taking bearings as nearly as practicable over an arc of the horizon of 360°.

(7) Fishing vessels of 75 metres in length and over constructed before 1 September 1984 must be fitted with a gyro-compass complying with the requirements of subregulation (6).

(8) Fishing vessels with emergency steering positions must at least be provided with a telephone or other means of communication for relaying heading information to such positions, and, in addition, fishing vessels of 45 metres in length and over constructed on or after 1 February 1992 must be provided with arrangements for supplying visual compass readings to the emergency steering position.

(9) Fishing vessels of 15 metres in length and over must be fitted with a radar installation capable of operating in the 9 GHz frequency band.

(10) Facilities for radar plotting must be provided on fishing vessels required by subregulation (9), and, in fishing vessels of 75 metres in length and over constructed on or after 1 September 1984, the plotting facilities must be at least as effective as a reflection plotter.

(11) Fishing vessels of 15 metres in length and over must be fitted with an echo-sounding device.

(12) Fishing vessels of 45 metres in length and over constructed on or after 1 September 1984 must be fitted with a device to indicate speed and distance.

(13) Fishing vessels of 75 metres in length and over constructed before 1 September 1984 and all fishing vessels of 45 metres in length and over constructed on or after 1 September 1984 must be fitted with indicators showing the rudder angle, the rate of revolution of each propeller and in addition, if fitted with variable pitch propellers or lateral thrust propellers, the pitch and operational mode of such propellers, and these indicators must be readable from the conning position.

(14) Except as provided in regulation 9, while all reasonable steps must be taken to maintain the apparatus referred to in subregulations (1) to (8) and (10) to (13) in efficient working order, malfunctions of the equipment may not be considered as making a fishing vessel unseaworthy or as a reason for delaying the fishing vessel in ports where repair facilities are not readily available.

(15) All equipment fitted in compliance with this regulation must be of a type approved by the Directorate.

(16) Equipment installed on board fishing vessels on or after 1 September 1984 must conform to appropriate performance standards not inferior to those adopted by the International Maritime Organization.

(17) Equipment fitted prior to the adoption of related performance standards may be exempted from full compliance with those standards at the discretion of the Directorate.

Nautical instruments and publications

226. Suitable nautical instruments, adequate and up-to-date charts, sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications necessary for the intended voyage, to the satisfaction of the Directorate, must be carried on board.

Signalling equipment

227. (1) On every fishing vessel of 45 metres in length and over a daylight signalling lamp must be provided, the operation of which is not solely dependent upon the main source of electrical power, and the power supply to the daylight signalling lamp must in any case include a portable battery.

(2) Fishing vessels of 25 metres in length and over must be provided with a full complement of flags and pennants to enable communications to be sent using the International Code of Signals.

Navigating bridge visibility

228. (1) New fishing vessels of 45 metres in length and over must meet the following requirements:

- (a) The view of the sea surface from the conning may not be obscured by more than two fishing vessel lengths, or 500 metres, whichever is the lesser, forward of the bow to 10° on either side irrespective of the fishing vessel's draught and trim;
- (b) no blind sector caused by fishing gear or other obstructions outside of the wheelhouse forward of the beam which obstructs the view of the sea surface as seen from the conning position, must exceed 10° ;
- (c) the total arc of blind sectors may not exceed 20° , and the clear sectors between blind sectors must be at least 5° , but, with due regard to the view described in paragraph (a), each individual blind sector must not exceed 5° ;
- (d) the height of the lower edge of the navigating bridge front windows above the bridge deck must be kept as low as possible, and in no case must the lower edge present an obstruction to the forward view as described in paragraph (a);
- (e) the upper edge of the navigating bridge front windows must allow a forward view of the horizon for a person with a height of eye of 1,800 millimetres above the bridge deck at the conning position when the fishing vessel is pitching in heavy seas, but the Directorate, being satisfied that a 1,800 millimetres height of eye is unreasonable and impractical, may reduce the height of eye, but not to less than 1,600 millimetres;
- (f) the horizontal field of vision from the conning position must extend over an arc of not less than 225° , that is from right ahead to not less than 22.5° abaft the beam on either side of the fishing vessel;
- (g) from each bridge wing, the horizontal field of vision must extend over an arc of at least 225° , that is, from at least 45° on the opposite bow through right ahead and then from right ahead to right astern through 180° on the same side of the fishing vessel;
- (h) from the main steering position, the horizontal field of vision must extend over an arc from right ahead to at least 60° on each side of the fishing vessel;
- (i) the fishing vessel's side must be visible from the bridge wing; and
- (j) windows must meet the following requirements:
 - (i) Framing between navigating bridge windows must be kept to a minimum and not be installed immediately forward of any workstation;
 - (ii) to help avoid reflections, the bridge front windows must be inclined from the vertical plane top out, at an angle of not less than 10° and not more than 25° ;
 - (iii) polarized and tinted windows may not be fitted; and

(iv) a clear view through at least two of the navigating bridge front windows and depending on the bridge configuration, an additional number of clear view windows must be provided at all times regardless of weather conditions.

(2) Existing fishing vessels must, where practicable, meet the requirements of subregulations (1)(a), (b and (c).

(3) On fishing vessels of unconventional design which, in the opinion of the Directorate cannot comply with this regulation, arrangements must be provided to achieve a level of visibility that is as near as is practicable to that prescribed in this regulation.

APPENDIX

(Regulations 9(1)(e) and (f), 10(1), (2), (3) (4) and (5), 12, 79(3) and (5), 82(1) and (2)(a) and 98(2))

FORM 1

ENDORSEMENT FOR PERIODICAL SURVEYS

(Regulation 9(1)(e))

Equipment survey

THIS IS TO CERTIFY that, at a survey required by regulation 9(1)(c)(ii), the fishing vessel was found to comply with the relevant requirements.

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Radio surveys

THIS IS TO CERTIFY that, at a survey required by regulation 9(1)(c)(iii) the fishing vessel was found to comply with the relevant requirements.

First periodical radio survey:

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Second periodical radio survey:

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Third periodical radio survey:

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

FORM 2

ENDORSEMENT FOR INTERMEDIATE SURVEY
(Regulation 9(1)(f))

THIS IS TO CERTIFY that, at a survey required by regulation 9(1)(d) the fishing vessel was found to comply with the relevant requirements.

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

FISHING VESSEL SAFETY CERTIFICATE
(Regulation 10(1))

*(This Certificate must be supplemented by a
Record of Equipment)*

(Official seal)
(State)

Issued under the provisions of the
.....
under the authority of the Government of Namibia

.....
(Name of the State)

by
.....
(Person or organization authorized)

Particulars of fishing vessel¹

¹ Alternatively, the particulars of the fishing vessel may be placed horizontally in boxes.

Name of fishing vessel

Distinctive number of letters

Port of registry

Length (L)²

Date of building or major conversion contract

Date on which keel was laid or fishing vessel was at a similar stage of construction in accordance with paragraph (c)(i) or (iii)

Date of delivery or completion of major conversion

THIS IS TO CERTIFY THAT:

1. The fishing vessel has been surveyed in accordance with the requirements of 9.
2. The survey showed that -
 - (a) the condition of the hull, machinery and equipment, as defined in the above regulation was in all respects satisfactory and that the fishing vessel complied with the applicable requirements;
 - (b) the maximum permissible operating draught associated with each operating condition for the fishing vessel is contained in the approved stability booklet dated.....

² Length as defined in regulation 5

3. An Exemption Certificate has/has not³ been issued.

This certificate is valid until subject to surveys in accordance with regulation 9(1)(c)(ii) and (iii) and (d).

Issued at
(Place of issue of certificate)

Date of issue.....

Signed.....
(Signature of authorized official issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

³ Delete as appropriate.

FORM 4

**ENDORSEMENT TO EXTEND VALIDITY OF FISHING VESSEL SAFETY
CERTIFICATE UNTIL REACHING PORT OF SURVEY OR FOR A PERIOD
OF GRACE
(Regulation 10(2))**

This certificate must, in accordance with regulation 14(2) or (4)¹ be accepted as valid until

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

¹ Delete as appropriate.

FORM 5

**ENDORSEMENT TO EXTEND VALIDITY OF
FISHING VESSEL SAFETY CERTIFICATE FOR A PERIOD OF GRACE
(Regulation 10(3))**

This certificate must, in accordance with regulation 14(4) be accepted as valid until
.....

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

FORM 6

**FISHING VESSEL EXEMPTION CERTIFICATE
(Regulation 10(4))**

(Official seal)
(State)

Issued under the provisions of the
.....
under the authority of the Government of Namibia

.....
Name of the State)

by

(Person or organization authorized)

Particulars of fishing vessel¹

Name of fishing vessel

Distinctive number of letters

Port of registry

Length (L)²

THIS IS TO CERTIFY:

That the fishing vessel is, under the authority conferred by regulation.....exempted from the requirements of

Conditions, if any, on which the Exemption Certificate is granted:

.....
.....

This certificate is valid untilsubject to the International Fishing Vessel Safety Certificate, to which this certificate is attached, remaining valid.

Issued at
(Place of issue of certificate)

Date of issue.....

Signed.....
(Signature of authorized official issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

¹ Alternatively, the particulars of the fishing vessel may be placed horizontally in boxes.
² Length as defined in regulation 5.

FORM 7

**ENDORSEMENT TO EXTEND VALIDITY OF FISHING VESSEL
EXEMPTION CERTIFICATE FOR A PERIOD OF GRACE
(Regulation 10(5))**

This certificate must, in accordance with the proviso to regulation 10(5), be accepted as valid until

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

FORM 8

**RECORD OF EQUIPMENT FOR THE FISHING VESSEL SAFETY
CERTIFICATE
(Regulation 12)**

(This Record must be permanently attached to the Fishing vessel Safety Certificate)

1. *Particulars of fishing vessel*

Name of fishing vessel
 Distinctive number of letters
 Port of registry
 Length

2. *Details of life-saving appliances*

1	Total number of persons for whom life-saving appliances are provided	.....
		Port side	Starboard side
2	Total number of lifeboats	.....	.....
2.1	Total number of persons accommodated by them	.....	.....
2.2	Number of partially enclosed lifeboats (regulation 155)	.....	.....
2.3	Number of totally enclosed lifeboats (regulation 159)	.....	.....
3.	Number of rescue boats	.....
3.1	Number of boats which are included in the total lifeboats shown above	.....
4.	Liferafts		
4.1	Those for which approved launching appliances are required		
4.1.1	Number of liferafts	.....
4.1.2	Number of persons accommodated by them	.....
4.2	Those for which approved launching appliances are not required		
4.2.1	Number of liferafts	.....
4.2.2	Number of persons accommodated by them	.....
5	Number of lifeboys	.....
6	Number of lifejackets	.....
7	Immersion suits		
7.1	Total number	.....
7.2	Number of suits complying with the requirements for lifejackets	.....

8.	Number of thermal protective aids ¹	.....
9.	Radio installations used in life-saving appliances	
9.1	Number of rada transponders	.....
9.2	Number of two-way VHF radiotelephone apparatus	.....

3. *Details of radio facilities*

Item	Actual provision
1. Primary systems	
1.1 VHF radio installation:	
1.1.1 DSC encoder
1.1.2 DCS watch receiver
1.1.3 Radiotelephony
1.2 MF radio installation:	
1.2.1 DSC encoder
1.2.2 DSC wat receiver
1.2.3 Radiotelephony
1.3 MF/HF radio installation:	
1.3.1 DSC encoder
1.3.2 DSC wach receiver
1.3.3 Radiotelephony
1.3.4 Direct-printing radiotelegraphy
1.4 Inmarsat ship earth station
2. Secondary means of alerting	
3. Facilities for reception or maritime safety information	
3.1 NAVTEX receiver
3.2 EGC receiver
3.3 HF direct-printing radiotelegraph receiver
4. Satellite EPIRB	
4.1 COSPAS-SARSAT
4.2 Inmarsat
5. VHF EPIRB	
6. Fishing vessel's radar transponder	
7. Radiotelephone distress frequency watch receiver on 2.182 kHz
8. Device for generating the radiotelephone alarm signal on 2.182 kHz
9. 9 GHz radar

¹ Excluding those required by regulations 153(ee), 169(x) and 192(4)(m)

4. *Methods used to ensure availability of radio facilities*

- 4.1 Duplication of equipment
- 4.2 Shore-based maintenance
- 4.3 At-sea maintenance capability

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at
(Place of issue of certificate)

Date of issue.....

Signed.....
*(Signature of authorized official
issuing the certificate)*

(Seal or stamp of the issuing authority, as appropriate)

TABLE 2
(Regulation 82(1))

**FIRE INTEGRITY OF DECKS
SEPARATING ADJACENT SPACES**

Spaces ↓ Spaces →	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Control stations (1)	A-0	A-0	A-0	A-0	A-0	A-60	A-0	A-0	A-0	*
Corridors (2)	A-0	*	*	A-0	*	A-60	A-0	A-0	A-0	*
Accommodation on spaces (3)	A-60	A-0	*	A-0	*	A-60	A-0	A-0	A-0	*
Stairways (4)	A-0	A-0	A-0	*	A-0	A-60	A-0	A-0	A-0	*
Service spaces of low fire risk (5)	A-15	A-0	A-0	A-0	*	A-60	A-0	A-0	A-0	*
Machinery spaces of category A (6)	A-60	A-0	A-60	A-60	A-60	*	A-60	A-30	A-60	*
Other machinery spaces (7)	A-15	A-60	A-0	A-0	A-0	A-0	*	A-0	A-0	*
Cargo spaces (8)	A-60	A-0	A-0	A-0	A-0	A-0	A-0	*	A-0	*
Service spaces of high fire risk (9)	A-60	A-0	*							
Open decks (10)	*	*	*	*	*	*	*	*	*	-

Notes: To be applied to both Tables 1 and 2, as appropriate.

- (a) No special requirements are imposed upon these bulkheads in methods IIF and IIIF fire protection.
- (b) In case of method IIIF "B" class bulkheads of "B-0" rating shall be provided between spaces or groups of spaces of 50 m² and over in area.
- (c) For clarification as to which applies, see regulations 4 and 5.
- (d) Where spaces are of the same numerical category and superscript *d* appears, a bulkhead or deck of the rating shown in the Tables is only required when the adjacent spaces are for a different purpose, e.g. in category (9). A galley next to a galley does not require a bulkhead but a galley next to a paint room requires an "A-0" bulkhead.
- (e) Bulkheads, separating the wheelhouse, chartroom and radio room from each other may be "B-0" rating.
- (f) Fire insulation need not be fitted if the machinery spaces in category (7), in the opinion of the Directorate, has little or no fire risk.

* Where an asterisk appears in the tables the division is required to be of steel or equivalent material but is not required to be of "A" class standard.

TABLE 3
(Regulation 98(2))

**STANDARD DIMENSIONS OF FLANGES FOR THE INTERNATIONAL
SHORE CONNECTION**

Description	Dimension
Outside diameter	178 mm
Inner diameter	64 mm
Bolt circle diameter	132 mm
Slots in flange	4 holes 19 mm in diameter equidistantly placed on a bolt circle of the above diameter, slotted to the flange periphery.
Flange thickness	14.5 mm minimum
Bolts and nuts	4 each of 16 mm in diameter and 50 mm in length