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The Gazette of the Democratic Socialist Republic of Sri Lanka

EXTRAORDINARY

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PART I : SECTION (I) — GENERAL

Government Notifications

L.D.-B. 4/1996.

FISHERIES AND AQUATIC RESOURCES ACT, No. 2 OF 1996

REGULATIONS made by the Minister of Fisheries and Aquatic Resources under paragraphs (c) and (f) of Sub-section (1) of Section 61 of the Fisheries and Aquatic Resources Act, No. 2 of 1996.

FELIX PERERA,
Minister of Fisheries and Aquatic Resources.

Colombo,
28th March, 2009.

Regulations

1. These Regulations may be cited as "Fishing Boats Safety (Design, Construction and Equipment) Regulations, 2009".

2. (1) Subject to the provisions of paragraph (2) of this Regulations, these Regulations shall apply in respect of new decked and undecked fishing boats which are less than 24 m. in length and operating within the Sri Lankan waters.

(2) The provisions of these Regulations shall not apply to fishing boats which are boats of a type referred to in paragraph (1), that are used for sports or recreational activities.

3. (1) The Director-General of Fisheries and Aquatic Resources shall be the Competent Authority (in these Regulations referred to as the "Competent Authority") for the purpose of these Regulations, and it shall his duty to ensure that these Regulations are applied and enforced in respect of the construction of boats to which these Regulations are applicable, having regard to the type of the boat, its intended service and its area of operation.

(2) In the performance and discharge of his duties and functions under these Regulations, the Competent Authority shall be assisted by competent officers appointed by him as Surveyors, who shall carry out their duties under the supervision and control of the Competent Authority.

PART I

REGISTRATION OF BOATYARDS

4. (1) Every individual builder and every boat yard which is engaged in constructing fishing boats or any part thereof, shall be required to obtain a Boatyard Registration Certificate from the Competent Authority for such purpose.

(2) An Application for purpose of obtaining a Boatyard Registration Certificate shall be made to the Competent Authority along with a fee of five thousand rupees and accompanied by such other documents and information as may be determined by the Competent Authority.

(3) A Boatyard Registration Certificate shall be valid for a period of one year from the date of its issue and may thereafter be renewed for a further period of one year at a time, on application made for the purpose.

(4) An application for a the renewal of a Certificate issued under these regulations is required to be made to the Competent Authority one calendar month prior to the date of its expiry, accompanied by a renewal fees of the five thousand rupees.

(5) At the time of the issue of the issue of a Boatyard Registration Certificate, the Competent Authority shall give a registration number to each such individual or the boat yard as the case may be, in respect of whom or which such Certificate is being issued.

(6) An applicant or any person who is aggrieved by the decision of the Competent Authority refusing the grant of a Certificate or the renewal of a Certificate issued, as the case may be, shall be, shall be entitled to appeal against such decision to the Secretary of the Ministry of the Minister, within thirty days of being informed of such decision.

(7) The Secretary may upon receipt of an appeal under paragraph (6), make such inquiries as he may consider necessary or appropriate and thereafter—

(*a*) allow the appeal and direct the Competent Authority to issue a Certificate or renew a Certificate issued, as the case may be ; or

(*b*) disallow the appeal and confirm the decision made by the Competent Authority against which the appeal was made.

PART II

CONSTRUCTION, WATERTIGHT INTEGRITY AND EQUIPMENT

CONSTRUCTION MATERIAL AND STRUCTURE

5. Prior to the construction of any boat, all designs, plans and other relevant information and documents pertaining to such vessel, shall be submitted to the Competent Authority for his approval.

6. (1) The strength and construction of the hull and other structures and the equipment carried in a boat, shall be adequate to withstand all foreseeable conditions of its intended service and be to the satisfaction of the Competent Authority.

(2) Materials used in the construction of the hull of a boat shall be as approved by the Competent Authority.

(3) Fishing boats or any part thereof constructed out of Glass Reinforced Plastic shall comply with the construction requirements in the Instruction Manual.

INLETS AND DISCHARGES

7. All sea inlets shall be fitted with valves which have a positive means of closing from a readily accessible position. Each such valve shall be provided with an indicator, showing whether the valve is open or closed.

8. Discharge passing through the hull of a boat shall be fitted with an automatic non-return valve having a positive means of closing it from a readily accessible position and be provided with an indicator, showing whether the valve is open or closed. However an alternative arrangement may be accepted by the Competent Authority in certain circumstances, where the following requirements are complied with.—

(*a*) hull penetrations with openings less than 100 mm above the deepest waterline or below the floor on undecked boats, are fitted with a means of closing ; and

(*b*) discharges between 100mm above and 350mm above the deepest waterline, may be fitted with a non-return value without a means of closing. In case of wet exhaust systems, the value may be of a flap type and discharges more than 350mm above the deepest waterline, are not required to be fitted with a valve.

9. Sea inlets and discharge valves not accessible in an emergency shall be fitted with a remote means of operation, such as by extended spindle or wire pull device.

10. All fittings attached to the hull and all valves and all pipes between the shell and the valves, shall be of stainless steel , bronze or other ductile material. However, other materials may be used for pipes of non-steel boat with the approval of the Competent Authority.

11. Any penetration prone to be damaged by fishing gear, equipment or by the movement of crew members shall be suitably protected.

12. Where sea inlet piping systems comprise of flexible hose, the connections shall be fitted with double corrosion-resistant hose clips, at both ends.

HULL INTEGRITY

13. All external openings shall be capable of being closed so as to prevent water from entering the boat. Deck openings which may be open during fishing operations shall normally be arranged near to the boat's centreline. The Competent Authority may however approve alternative arrangements, where he is satisfied that such arrangement will not impair the safety of the boat.

BULKHEADS

14. (1) For decked boats, bulkheads, closing devices and closures of openings in those bulkheads including methods for their testing, shall be in accordance with the specifications and standards contained in the Instruction Manual. Boat shall be fitted with a collision bulkhead and at least with watertight bulkheads bounding the main machinery space. Such bulkheads shall be extended up to the working deck.

(2) Pipes piercing the collision bulkhead shall be fitted with suitable valves operable from above the working deck and the valve chest shall be secured at the collision bulkhead inside the forepeak.

(3) No door, manhole, ventilation duct or any other opening shall be fitted in the collision bulkhead, below the working deck.

(4) The forepeak shall not be used for carrying fuel oil.

WEATHER TIGHT DOORS

15. All access openings in bulkheads of enclosed superstructures and other outer structures through which water could enter and endanger the boat, shall 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 weather tight when closed.

16. The height above deck of skills in the doorways, in companionways, erections and machinery casings which give direct access to parts of the deck exposed to the weather and sea, shall be not less than 380 mm. However, where operating experience has shown justification, the height above deck of skills in the doorways may be reduced to not less than 150mm, with the approval of the Competent Authority.

HATCHWAYS

17. (1) The height above deck of hatchway coamings on exposed parts of the working deck, shall be not less than 300mm.

(2) Notwithstanding the height specified in regulation 17, where operating experience has shown justification and with the approval of the Competent Authority, the height of hatchway coamings, (except those which give direct access to machinery spaces), may be reduced from the height as specified in that regulation or the coamings may be omitted entirely, provided that efficient watertight hatch covers, other than wood, are fitted. These hatchways shall be kept as small as practicable and covers shall be permanently attached by hinges or equivalent means and should be capable of being rapidly closed or battened down.

18. (1) The hatchway covers shall have the same strength as the deck and the structural strength shall be as specified in the Instruction Manual.

(2) Covers shall be fitted with clamping devices and gaskets or other equivalent arrangements, sufficient to ensure weather rightness to the satisfaction of the Competent Authority.

MACHINERY SPACE OPENINGS

19. (1) Machinery space openings shall be framed and enclosed by casings of sufficient strength. External access openings therein shall be fitted with doors complying with regulations 15 and 16 or with hatch covers complying with regulations 17 and 18.

(2) Openings other than access openings shall be fitted with covers of equivalent strength to the un -pierced structure, permanently attached thereto and capable of being closed weather right.

OTHER DECK OPENINGS

20. Where it is essential for fishing operations flush deck covers may be fitted, provided these are capable of being closed watertight and are permanently attached to the adjacent structure. Having regard to the size and disposition of the openings and the design of the closing devices, metal-to-metal closures may be fitted, where the Competent Authority is satisfied that they are effectively watertight.

VENTILATORS

21. (1) The coamings of ventilators shall be as high as practicable. On the working deck, the height above deck of coamings of ventilators other than machinery space ventilators shall be not less than 450 mm. Where the height of such ventilators can interfere with the fishing operation of the boat, their coaming height may be reduced to the satisfaction of the Competent Authority.

(2) The height above deck of machinery space ventilator openings shall be to the satisfaction of the Competent Authority.

22. Coamings of ventilatros shall be of equivalent strength to the adjacent structure and capable of being closed weather tight by devices permanently attached to the ventilator or to the adjacent structure. Ventilators shall be arranged as close to the boat's centeline as possible, and where practicable, extend through the top of a deck erection or companion-way.

AIR PIPES

23. (1) Where air pipes to tanks and void spaces below deck extent above the working or superstructure decks, the exposed parts of the pipes shall be of strength equivalent to the adjacent structures fitted with appropriate protection and protected from damage by fishing or lifting gear. Openings of pipes shall be provided with means of closing , permanently attached to the pipe or adjacent structure, except that where the Competent Authority is satisfied that they are protected against water trapped on deck, these means of closing may be omitted.

(2) The height of air pipes above deck to the point where water may have access below shall be not less than 450 mm on the working deck. The Competent Authority may however permit a reduction of the height of an air pipe in order to avoid interference with the fishing operations.

(3) Provisions shall be made to prevent a vacuum forming in the pipe or tank.

(4) Exposed air pipes in excess of 25mm in diameter serving fuel oil and all other oil tanks, shall be fitted with anti-flame net protection or other equivalent devices.

SOUNDING DEVICES

24. (1) Sounding devices shall be to the satisfaction of the Competent Authority and be fitted to the bilges of those compartments which are not readily accessible at all times during the voyage and to all tanks and cofferdams.

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

(3) Sounding arrangements on fuel services tanks shall be as such that in the event of the tanks being overall, spillage through the means of sounding cannot occur.

(4) Fuel tank sounding pipe openings shall not be located in the area used as crew accommodation.

25. Where a dip stick is used to measure the fuel tank level, the sounding pipe shall be provided with a proper striker plate to avoid tank bottom damage.

SIDESCUTTLES AND WINDOWS

26. (1) Sidescuttles to spaces below the working deck and to enclosed spaces on the working deck, shall be fitted with hinged deadlights capable of being closed watertight.

(2) No sidescuttle shall be fitted in such a position that its sill is less than 500mm above the deepest operating waterline.

(3) Sidescuttles fitted less than 1000mm above the deepest operating waterline, shall be of the fixed type.

(4) Sidescuttles together with their glasses and deadlights, shall be of such construction as approved by the Competent Authority. Those prone to be damaged by fishing gear, shall be suitably protected.

27. Skylights leading to spaces below the working deck shall be of substantial construction and be capable of being closed and secured weathertight, having provision for adequate means of closing in the event of damage to the inserts. Skylights leading to machinery spaces shall be avoided as far as practicable.

28. Toughened safety glass or suitable permanently transparent material of equivalent strength, shall be fitted in all wheelhouse windows exposed to the weather. The means of securing windows and the width of the bearing surfaces shall be adequate, having regard to the window material used.

29. Openings leading to spaces below deck from a wheelhouse whose windows are not provided with the protection as required by regulation 30, shall be fitted with a weathertight closing appliance.

30. (1) A suitable number of storm shutters shall be provided where there is no other method of preventing water from entering the boat though a broken window.

(2) The Competent Authority may accept windows without storm shutters, where he is satisfied that the safety of the boat will not be impaired as a result.

FREEING PORTS

31. (1) Care should be taken to ensure the quick release of water trapped on deck. Where freeing ports as fitted with locking devices, the opening mechanism shall always be easily accessible.

(2) Where the main deck is prepared for carrying deck load by dividing it with pound boards or any division capable of trapping water, there shall be slots between them of suitable size to allow easy flow of water to freeing ports.

(3) Where water is apt to accumulate on exposed deck, scupper shall be provided to drain water overboard.

(4) The size, number and location of freeing ports and scuppers shall be sufficient to drain water overboard from exposed deck as specified in the Instruction Manual.

ANCHOR AND MOORING EQUIPMENT

32. Anchor and mooring equipment designed for quick and safe operation shall be as approved by the Competent Authority, and all anchor and mooring equipment shall comply with the specifications provided for in the Instruction Manual.

WORKING SPACES WITHIN AN ENCLOSED SUPERSTRUCTURE

33. Working spaces within an enclosed superstructure shall be arranged to the satisfaction of the Competent Authority, taking into account where practicable—

(*a*) efficient drainage ;
(*b*) openings necessary for fishing operations ;
(*c*) means of escape ;
(*d*) stowage of catch ;
(*e*) headroom ; and
(*f*) ventilation.

TANKS FOR FISH IN REFRIGERATED SEA WATER OR CHILLED SEA WATER

34. (1) Where tanks for fish in refrigerated sea water or chilled sea water or any similar tank systems are used, such tanks shall be provided with a separate permanently fitted arrangement for the filling and emptying of sea water.

(2) Where the above mentioned tanks are to be used also for other purposes, the tanks shall be arranged with a bilge system and be provided with adequate means to avoid ingress of water from the bilge system, into the tanks.

DRAINAGE

35. Means shall be provided for any partial decks either inboard or outboard, to be adequately drained.

SECURING OF HEAVY ITEMS

36. Means shall be provided to secure all heavy items of equipment in position to prevent movement, when the boat is at sea.

PART III

STABILITY AND ASSOCIATED SEA WORTHINESS

GENERAL

37. Boats shall be designed and constructed in a manner that satisfies the requirements of this Part and particularly the operating conditions referred to in Regulations 44, 45 and 46. Calculations of the righting lever curves shall be as specified in the Instruction Manual and be to the satisfaction of the Competent Authority.

38. Wherever practicable, guidance shall be provided for an approximate determination of the boat's stability, by means of the rolling period test as specified in the Instruction Manual.

STABILITY CRITERIA FOR DECKED BOATS

39. The following minimum stability criteria shall be satisfied by all decked boats, unless the Competent Authority is satisfied that operating experience justifies a departure there from—

(*a*) the area under the righting lever curve (GZ curve) shall not be less than 0.055 m-rad up to 30^0 angle of heel and not less than 0.090 m-rad up to 40^0 or the angle of flooding 0_f , if this angle is less than 40^0. Additionally, the area under the righting lever curve (GZ curve) between the angles of heel of 30^0 and 40^0 or between 30^0 and 0_f, if this angle is less than 40^0, shall not be less than 0.030 m-rad. 0_f is the angle of heel at which openings in the hull, superstructures or deckhouses which cannot rapidly be closed watertight commence to immerse. In applying this criterion small openings through which progressive flooding cannot take place, need not be considered as open ;

(*b*) the righting lever GZ shall be at least 200 mm at an angle of heel equal to or greater than 30^0, however the righting lever GZ may be reduced to the satisfaction of the Competent Authority, but in no case by more than 2(24-LOA)%, where length overall (LOA), in metres, is as defined in Paragraph (1) of regulation 179 ;

(*c*) the maximum righting lever GZ max shall occur at an angle of heel, preferably exceeding 30^0 but not less than 25^0 ; and

(*d*) the initial metacentric height GM_0 shall not be less than 350 mm.

40. Where ballast is provided to ensure compliance with Regulation 39, its nature and arrangement shall be to the satisfaction of the Competent Authority. Ballast shall be secured in the boat in such a way, that it will not move even if the boat is inclined to 90^0.

ALTERNATIVE STABILITY CRITERIA FOR DECKED VESSELS

41. For decked boats for which by reason of insufficient stability data Regulation 39 cannot be applied or where the Competent Authority is satisfied that operating experience justifies departure from the stability criteria specified in that regulation, one of the criteria specified in the Instruction Manual shall be used as the criterion.

FLOODING OF FSH-HOLDS

42. For decked boats, 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, shall be not less than $20^{0,}$ unless the stability criteria specified in Regulation 39 can be satisfied, with the respective fish-holds partially or completely flooded.

PARTICULAR FISHING METHODS

43. (1) Boats engaged in particular fishing methods where additional external forces are imposed on the boat during fishing operations, shall meet the stability criteria specified in Regulation 39, enhanced if necessary, to the satisfaction of the Competent Authority.

(2) Boats on which equipment for shooting and hauling of fishing gear has been installed, shall not heel more than 10^0 when the maximum weight is being lifted.

OPERATING CONDITIONS FOR BOATS

44. The numer and type of operating conditions to be considered shall be to the satisfaction of the Competent Authority and where appropriate, shall include the following :—

(*a*) Departure for the fishing grounds with full fuel, stores, ice, fishing gear, etc. ;

(*b*) Departure from the fishing grounds with full catch, 30% stores, fuel etc. ;

(*c*) Arrival at home port with full catch and 10% stores, fuel etc. ;

(*d*) Arrival at home port with 10% stores, fuel, etc. and minimum catch, which shall normally be 20% of full catch but may be up to 40%, provided the Competent Authority is satisfied that operating patterns justify such a value.

45. In addition to the operating conditions specified in Regulation 44, the Competent Authority shall also be satisfied that the minimum stability criteria specified in Regulations 39 and 40 are met under all other actual operating conditions, including those which produce the lowest values of the stability parameters contained in these criteria. The Competent Authority shall further be satisfied that those special conditions associated with a change in the boat's mode or areas of operation which affect the stability considerations of this part, are taken into account.

46. Concerning the conditions specified to in Regulation 44, the calculations shall include the following :—

(*a*) Allowance for the weight of the wet fishing nets and tackle, etc. on deck ;

(*b*) Homogeneous distribution of the catch, unless this is inconsistent with practice ;

(*c*) Catch on deck, if anticipated, in operating conditions, specified Paragraphs (b) and (c) of Regulation 44 and in Regulation 45 ; and

(*d*) Allowance for the free surface effect of liquids and if applicable, catch carried.

INCLINING TEST FOR DECKED BOATS

47. Every decked boat for which the stability criteria's in Regulation 39 are used, shall undergo an inclining test upon its completion, and the actual displacement and position of the centre of gravity shall be determined for the light ship condition.

48. Where alterations are made to a boat affecting its light ship condition and the position of the centre of gravity, the boat shall, if the Competent Authority considers this necessary, be re-inclined and the stability information revised.

BUILT-IN BUOYANCY FOR UNDECKED BOATS

49. Every undecked boat shall be fitted with buoyancy compartments which shall be filled with solid buoyancy material to the satisfaction of the Competent Authority, distributed so that the boat will stay afloat and on an even keel in order that bailing is possible, without listing if flooded. This buoyancy shall be demonstrated by a calculation and/or by a practical test as specified in the Instruction Manual.

STABILITY INFORMATION

50. Suitable stability information to the satisfaction of the Competent Authority, shall be supplied by the builder to enable the skipper of a boat to assess with ease the stability of the boat under various opeating conditions. Such information shall include specific instructions to the skipper warning him of those operating conditions which could adversely affect either the stability or the trim of the boat.

51. The stability information referred to in regulation 50 shall be posted on board, readily accessible at all times and inspected at the periodical Surveys of the 1 to ensure that it is still valid.

52. Where alterations are made to a boat affecting its stability, revised stability calculations shall be undertaken to the satisfaction of the Competent Authority. If the Competent Authority requires that the stability information be revised, the new information shall be supplied to the skipper and the superseded information removed.

PORTABLE FISH-HOLD DIVISIONS

53. The catch shall be properly secured against shifting which could cause danger to the trim or heel of the boat. The scantlings of portable fish-hold divisions, if fitted, shall be in accordance with the recommended practice on portable fish-hold divisions, as set out in the Instruction Manual.

BOW HEIGHT

54. The bow height shall be to the satisfaction of the Competent Authority, to prevent the excessive shipping of water and shall be determined taking account the seasonal weather conditions and the design category in which the boat is intended to operate and its mode of operation.

MAXIMUM PERMISSIBLE OPERATING DRAUGHT

55. The maximum permissible operating draught shall be to the satisfaction of the Competent Authority and shall be such that, in the associated operating condition the stability criteria of this Part and the provisions of Part II and IV as appropriate, are satisfied.

PART IV

MACHINERY AND ELECTRICAL INSTALLATIONS

A—Machinery

GENERAL

56. Machinery and electrical installations to be used in boats, shall be designed, constructed and installed in accordance with good engineering practice. Equipment shall be installed, protected and maintained so as not to constitute a danger to persons and to the boat.

57. (1) Layout and installation of machinery spaces and propulsion machinery shall be designed for safe and efficient operation.

(2) Access to machinery spaces shall be arranged clear of any moving or heated surfaces and the latter shall be sufficiently insulated. Effective guards shall protect exposed moving pars such as shafts, drive pulleys and belts, and access ladders shall be securely fixed to the boat's permanent structure and shall be of a metal such as steel, where practicable.

58. Lighting shall be watertight where practicable, and designed ton facilities easy inspection and be unaffected by vibration.

59. Ventilation shall be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes and excessive heat.

60. Floor plates where fitted, shall not be slippery and be securely fastened with accessible fasteners.

61. Tools, spare parts and spare gear required for routine maintenance and simple repairs shall be provided for all machinery and equipment and shall be securely stowed in an easily accessible place as specified in the Instruction Manual.

PROPULSION MACHINERY AND STERN GEAR

62. Propulsion engines and associated stern gear shall be of a design, type and rating to suit the design and size of the boat taking into account the operating conditions and the area of operation of the boat.

63. (1) Inboard engines shall in general be diesel powered, but however in the case of undecked boats, inboard petrol engines may be fitted.

(2) A boat fitted with an inboard engine shall have adequate means and power for going a stern in order to maintain control of the boat in all foreseeable circumstances.

64. Out board engines shall be securely mounted on a substantial transom, Outboard engines with out put more than 15kW shall be surrounded by an overboard drained well, large enough to allow the engine to be titled entirely above the waterline in parked position. Undecked boats shall have alternative means of propulsion, such as oars, paddles or sails.

65. Flexibly mounted engines shall be fitted with short flexible connections of an appropriate type fitted to associated piping and exhaust systems. flexible shaft couplings shall be properly constructed and be suitable for the power being transmitted.

SHAFT AND PROPELLER

66. (1) The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes shall be properly constructed and operate efficiently. Shaft materials, diameter and eventual free span between bearings shall be suitable for the power being transmitted and be according to the requirements of the person constructing the boat. Inboard stern glands shall be accessible for adjustment.

(2) As a minimum, the shaft diameter shall be—

$$d = k * \sqrt[3]{\frac{p}{r}}$$

where,

d	=	Shaft diameter in mm
p	=	Maximum Continuous Rating in k W
r	=	Propeller revolutions per second
k	=	30 for carbon steel
	=	23 for AISI 316
	=	22 for AISI 431
	=	21 for AISI 429
	=	18 for CuNi K 500

ENGINE STARTING

67. All propulsion engines except those engines fitted with hand starting arrangements, shall be provided with a secondary means of starting.

CONTROLS AND INSTRUMENTS

68. (1) The controls shall be properly constructed and operate efficiently. Instrumentation system for the propulsion engine shall be illuminated and where practicable, show the following parameters :—

(a) Revolution Per Minute (RPM) ;
(b) Cooling water temperature ;
(c) Lubricating oil pressure ;
(d) Engine reverse/reduction gear box oil pressure gauge ;
(e) Ammeters for batteries ;
(f) Exhaust temperature gauge (on engines of 250 kW and above) ; and
(g) Running hour meter.

(2) High water temperature and low lubricating oil pressure alarm shall be fitted, where practicable.

69. Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheel house or helm position, shall be provided with an arrangement on or adjacent to the engine to the stop it.

STEERING GEAR

70. (1) The steering arrangements including the rudder and associated fittings shall be of adequate strength and be capable of steering the boat at maximum speed. They shall also be so designed and constructed in such a manner that they are not damaged at maximum astern speed or by manoeuvring during fishing operations.

(2) All parts of the steering gear shall be easily accessible for maintenance and comply with the specifications contained in the Instruction Manual.

(3) Boats shall be provided with an alternative means of steering which will operate if the main system fails, and these may include a steering oar.

PIPING SYSTEMS

71. (1) Piping materials including plastic piping, shall be suitable for their intended purpose and in selecting the appropriate material to be used, it should be ensured that there will be no failure or degradation of the pipe as a result of any reaction with the fluid.

(2) Valves, piping and flexible hoses shall be of sound and efficient construction and installation. All piping systems shall be well supported with pipe clips or mounts and protected against vibration and chafing or wear.

(3) Where pipe work is replaced, alignment of the replaced part shall be as close as possible to the original.

72. Flexible connections shall be of an appropriate armoured fire-resistant hose with screw fittings, and kept as short as practicable, and readily accessible.

FUEL OIL INSTALLATIONS

73. (1) tanks for fuel oil shall be of sound and efficient construction and be safe in operation located away from heated surfaces and not be situated above hot surfaces and electrical equipment.

(2) Tanks and piping shall be arranged to minimize in the event of leakage or rupture, the possibility of the fuel coming into contact with hot surfaces or electrical components.

(3) all fuel tanks shall be fitted either with a level gauge or able to be sounded manually.

(4) Glass contents gauges where fitted, shall have self-closing valves at the base.

(5) metal rods or slotted covers shall protect sight glasses.

(6) Fixed tanks shall be fitted with separate filling and air pipes.

(7) On the fuel pipe line, there shall be mounted as close as possible to the tank, a closing valve which also can be closed from outside the engine room. There shall be a drain valves as close as possible to the tanks lowest point.

(8) There shall be drain valve as close as possible to the tanks lowest point.

74. (1) Petrol tanks shall not be integral with the hull structure. An efficient system shall be installed to ensure that petrol does not spill into the hull of the vessel when tanks are being filled. Petrol filling systems shall be effective bonded or earthed.

(2) Portable petrol tanks for outboard motors shall be secured when in use and arranged in a way that they can be taken ashore for filling.

COOLING WATER SYSTEMS

75. The piping and fittings are to be of sound construction and efficient in operation and should comply with the following requirements:-

(*a*) cooling water inlets for main and auxiliary machinery, shall be kept to a minimum and comply with the requirements of sea inlets, specified in regulations 7 to 12 ;

(*b*) sea inlet trunks or boxes built into the hull structure shall be of such a design, that they remain below the waterline at all normal conditions of trim and heel, and shall be fitted with arrangements for purging of trapped air ;

(*c*) the sea inlet pipe to the propulsion engine shall be fitted with an accessible strainer ;

(*d*) where a common sea main supplying a number of services is installed, each branch pipe shall be fitted with an easily accessible isolating valve, with open/closed indication ;

(*e*) where practicable, decked boats with a single sea water cooling supply to the propulsion engine, shall be fitted with an additional hose connection with a valve, whereby an emergency supply of cooling water from another pump that has a sea suction, may be introduced in the event of blockage of the main sea inlet valve ; and

(*f*) when modifications are made, particular care shall be made in the selection and installation of appropriate materials and comply with the requirements in paragraphs (2) and (3) of regulations 71 and paragraph (1) of regulation 83.

BILGE PUMPING SYSTEMS

76. (1) Decked boats shall have an efficient bilge pumping arrangements fitted, and where practicable, each watertight compartment shall have one bilge suction and each such suction shall be fitted with an easily cleanable filter.

(2) Undecked boats not fitted with a bilge system, shall have means of manual bailing such as a bucket, bailer or hand operated bilge pump.

BILGE PUMPS

77. (1) All decked boats shall have at least one hand bilge pump and decked boats, with inboard engines, shall in addition have at least one power-driven bilge pump fitted.

(2) The power-driven pump referred to in paragraph (1) may be any pump, provided that any sea connection to the pump is isolated from the bilge suction main by a switch cock or interlocked valve system, so that sea water cannot drain into the bilge main.

(3) where a deck wash pump is also utilised for bilge suction purposes, means shall be provided to prevent flooding of any compartment from the sea inlet *via* the bilge main.

78. Where water tight bulkheads are fitted, means shall be provided in the piping system to prevent any leakage *via* the system from one compartment to another, and/or from the sea inlet to a compartment.

79. In all boats except where the bilge can be readily seen, an audible and visible bilge level alarm shall be fitted where practicable to indicate leakage of water into the machinery space. Indication shall be at the helm or control position.

BILGE PUMP INSTALLATION IN BOATS ABOVE 15M BUT LESS THAN 24M IN LENGTH OVERALL

80. (1) A ballast pump or other general service pump of sufficient capacity may be used as a power driven bilge pump. Power bilge pumps shall be capable of giving a speed of water of at least 2 m/s through the main bilge pipe, which shall have an internal diameter of at least :-

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

Where *d* is the internal diameter in mm, and L, B and D are in metres.

(2) The internal diameter (in mm) of the branch pipes (d_b) shall be calculated using the following formula :-

$$d_b = 25 + 2.15\sqrt{C\,(B+D)}$$

where 'C' is the length in meters of the compartment considered.

(3) The capacity (m^3/h) of the bilge pump (Q) shall be calculated using the following formula :-

$$Q = (5.75/10^3) \times d$$

(4) The actual internal diameter of the bilge main may be rounded off to the nearest standard size as shall be acceptable to the Competent Authority. The manually operated pump shall be fitted outside the machinery space, and in no case shall the capacity of the bilge pump(s) be less than the capacity of the installed fire pump(s).

(5) The inside diameter of the bilge main and bilge suction pipe directly connected to the pump, shall be not less than the inside diameter of the bilge pump suction inlet.

(6) Bilges in machinery spaces shall 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. The detection system shall initiate an audible and visual alarm in the places where continuous watch is maintained.

(7) For the machinery space, direct bilge suction shall be supplied.

BILGE PUMP INSTALLATION IN BOATS ABOVE 6M BUT LESS THAN 15M IN LENGTH OVERALL

81. Each boat shall be fitted with two bilge pumps with a minimum total capacity of 140 liters per minute, one of which shall be a power driven pump with a minimum capacity of 70 liters per minute.

EXHAUST SYSTEMS

82. (1) Engine exhaust systems of the dry or water-injected type which discharge through the hull below the deck at the side or stern, shall be provided with means of preventing back flooding into the hull or engine, through the exhaust system. This may be by system design, valve or non-return device.

(2) The exhaust systems shall be of sound construction and hoses of a suitable material, well supported, free from defects and not in contact with combustible materials and should comply with they specifications contained in the Instruction Manual.

Sea Water Systems - Materials for Valves and Associated Piping

83. (1) Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the boat below the loaded waterline, shall be of stainless steel, bronze, or other equivalent and compatible material. Care should be taken not to use dissimilar metals when joints are required and particularly when lengths of pipe are replaced.

(2) The sea inlet valve shall be as close as possible to the hull. Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece shall be of a materials that is compatible with the hull and valve.

Hydraulic Systems

84. The design and installation of hydraulic piping systems shall ensure the lowest possible risk of leakages, noise and pipe failure. To enable noise reduction, expansion pieces shall be fitted on supply lines.

Refrigeration Systems

85. (1) Refrigeration systems shall be so designed, constructed, tested and installed so as to take account of the safety of the system. The emission of refrigerants held in quantities or concentrations which are hazardous to human health or to the environment, shall be to the satisfaction of the Competent Authority. Refrigeration systems shall also comply with the requirements contained in the Instruction Manual.

(2) Refrigerants to be used in refrigeration systems shall be to the satisfaction of the Competent Authority. However, methyl chloride or CFCs' whose ozone-depleting potential is higher than 5% of CFC-11, shall not be used as refrigerants.

Ventilation of engine room

86. Where fitted, the separate engine room air intake shall be of a size capable of meeting the engine manufacturers' requirements, but not less than $10cm^2/kW$. The engine room air intake shall be located on the opposite side of the boats to the engine air intake. The ventilation duct shall be provided with means of closing outside the engine room.

B - ELECTRICAL INSTALLATIONS

Main source of electrical supply

87. (1) When electrical power constitutes the only means of maintaining auxiliary services essential for the propulsion and safety of the boat, a main source of electrical power shall be provided.

(2) In boats above 15m but less than 24m in length overall (LOA) the main source of electrical power shall be provided by two generator sets, one of which may be driven by the main engine. The Competent Authority may where operating experience justifies departure from this, accept other arrangements having equivalent electrical capacity.

(3) The electrical generating system where fitted, shall have sufficient capacity in normal operating conditions to ensure the correct operation of all safety and navigational equipment, including navigation and fishing lights.

Emergency source of electrical power

88. There shall be a minimum of two battery banks on board.

89. (1) All boats operating less than 20 nautical miles from shore, shall be equipped with an emergency accumulator battery bank capable of supplying the emergency lights, radio communication equipment and the navigation lights for not less than three hours.

(2) The emergency battery shall receive constant charging from the main (electrical generator) engine. The battery shall where practicable, be located outside the machinery space above deck or as high as possible and be so arranged as to ensure functionality in the event of fire or other cause of failure to the main electrical installations.

(3) On boat without hand starting ability of the main engine, one emergency starting battery shall be installed with capacity according to the engine manufacturers' requirements and to the satisfaction of the Competent Authority. This battery could be same battery that supplies other consumers onboard, provided it has enough capacity to start the engine.

(4) Batteries shall be fitted in enclosed boxes or trays with covers and provided with sufficient ventilation for the battery to avoid the risk of explosion, away from sources of ignition. Battery boxes shall be sited clear of heat sources and where they are least likely to be flooded. Where batteries are sited in accommodation spaces, the boxes shall be sealed and ventilated to open air.

(5) Each battery or bank of batteries shall have a spark proof isolating switch. Systems such as automatic bilge pumps or alarm s used when the boat is unattended, shall be connected before the cut-off switch.

(6) A means for checking the charge of the battery shall always be available.

(7) Batteries positioned in the engine compartment shall be so arranged as not to short circuit when the compartment is flooded up to the loaded waterline. The batteries shall be securely fastened to avoid movement due to the motion of the boat.

(8) Battery installations of more than 5 k Wh, equipment to 208 Ah at 24 V and 416 Ah at 12 V, shall be placed in a separate compartment with ventilation to open air. The arrangement shall be such so that the air circulation is not blocked.

(9) Where the main and/or auxiliary engines are fitted with electric motor starters, the batteries connected to the system for starting shall be separate from the batteries used for other services. The starter batteries shall be capable of starting the engine at least six times, without recharging.

PRECAUTIONS AGAINST SHOCK, FIRE AND OTHER HAZARDS OF ELECTRICAL ORIGIN

90. The design and installation of electrical systems shall be such that the risk of fire and electrical shock to operating personnel is minimised.

91. (1) Cables used should be capable of carrying the maximum rated current for the circuit. The cross sectional area shall be sufficient to ensure that a voltage drop will not exceed 6% of the nominal rating under maximum rated load for the circuit. Electrical wiring shall be of marine grade multi-strand tinned copper wire cores, with an approved insulated cover.

(2) Except where authorized by the Competent Authority in exceptional circumstances, all metal sheaths and armour of cables shall be electrically continuous and be earthed.

(3) Cables which are not provided with electrical protection shall be kept as short as possible and be "short circuit proofed", meaning a single core with an additional insulating sleeve over the insulation of each core. Normal marine cable which is single core without an additional sleeve shall be sufficient for this purpose, since it has both conductor insulation and a sheath.

(4) Cable installations shall be of the correct current carrying capacity of their application and in selecting cables, particular attention shall be given to environmental factors such as temperature and contact with substances, such as polystyrene, which degrades PVC insulation. The cables shall be at least of a flame retardant type.

(5) The Competent Authority may permit the use of special types of cables when necessary for particular applications, such as radio frequency cables, which do not comply with the requirements specified in this regulation.

(6) Cables shall not be run below floor plate level, except where this is necessary for connections to underwater equipment and such like. The cable shall be run through a protective pipe/shield or conduit.

(7) Cables running through machinery spaces shall be secured with suitable clips and installed as not to impair the flame retarding properties.

(8) Cables running through fish holds shall be fitted in conduits and cables shall not be secured directly to fuel or oil storage tanks.

ELECTRICAL SYSTEMS

92. (1) The installation of electrical equipment shall comply with the requirements contained in the Instruction Manual.

(2) In the installation of electrical equipment, particular attention shall be given to protection against water ingress and the effects of vibration.

(3) All electrical circuits shall be clearly identified on switchboards and distribution boards, including service, protective device rating, current carrying capacity and voltage values. Differing voltages shall not be included in any one distribution board, unless permitted by the Competent Authority.

(4) All electrical circuits for consumers larger than 5A, (except the main supply from the battery to the starter motor), shall be provided with fuses or circuit breakers, to provide protection against overload and short circuit.

93. Piping conveying liquid shall not be fitted above or close to switchboards or other electrical equipment, and where such arrangements are unavoidable, provision shall be made to prevent leakage damaging the equipment.

94. Taking into consideration the design of the system and the working voltage, the Competent Authority may require a system of earth indicator lamps or means of detecting current leakage to be installed.

DIRECT CURRENT SYSTEMS

95. (1) Direct current installations shall be wired as insulated return systems, but the hull shall not be used to carry current.

(2) The Competent Authority may approve the following direct current generating and distribution systems, provided these are suitable for the intended purpose :-

12V
24V

(3) The two-wire system shall be used in steel and aluminum vessels. In GRP and wooden boats where suitable earthing systems are not fitted, the single wire system may be used.

ALTERNATING CURRENT SYSTEMS

96. (1) The Competent Authority may approve alternating current systems of over 220V, provided that these are suitable for the intended purpose.

(2) Cables for alternating current systems shall be kept separate from direct current systems and run in separate trays and conduits, unless approved by the Competent Authority.

(3) Switchgear for alternating current systems shall be fitted in switchboards and panels which are separate from those containing direct current systems, unless approved by the Competent Authority. systems and equipment shall be clearly marked.

(4) Switchgear and sockets shall be so arranged as to prevent the fitting of low voltage equipment and lamps, into high voltage systems.

EARTHING AND BONDING

97. (1) Earthing systems shall be sound and efficient and should be such that no danger to the system or boat can occur. Hull earth plates, where fitted, shall be efficiently connected and not painted over.

(2) In steel and aluminium boats, non-conducting exposed metal parts of electrical equipment that requires to be earthed, shall be effectively earthed to the hull.

(3) On wood and composite boats, a continuous ground conductor shall be installed to facilitate the grounding of non-conducting exposed metal parts of electronic and communication equipment that requires to be earthed, and the conductor shall terminate at a point on the main engine or at a copper plate of area not less than $0.2m^2$, fixed to the keel below the light waterline so as to be fully immersed under all conditions of heel, Inside the hull, the earth plate shall be connected to a copper bar or rod of at least $64mm^2$, the length being appropriate to the number of bounding points.

(4) Every earthing conductor shall be of copper or other corrosion-resistant material and shall be securely installed and protected where necessary, against damage and against electrolytic corrosion.

(5) Exposed permanently fixed metal parts of electrical machines or equipment which are not intended to be "live" but which are liable under fault conditions to become "live", shall be earthed, unless they are—

(*a*) supplied at a voltage not exceeding 55 volts direct current or 55 volts root mean square between conductors and auto-transformers, shall not be used for the purpose of achieving this alternative current voltage ;

(*b*) supplied at a voltage not exceeding 250 volts by safety isolating transformers supplying only one consuming device ;or

(*c*) constructed taking into account the principle of double insulation.

(6) Lighting Conductors shall be attached directly to the earth plate.

(7) Radar, radio and other navigational equipment that requires to be earthed, shall have a separate earthing point and the connection shall be as short as possible.

(8) Where a flexible non-conducting coupling is fitted between the engine and the propeller shafting, the coupling shall be bridget by a piece of braided copper conductor.

LIGHTING SYSTEMS

98. (1) Lighting of normally unattended spaces such as fish rooms and net stores, shall be controlled from outside the space.

(2) Emergency lighting shall be supplied from an accumulator battery and shall be placed at stairways, exits, machinery spaces, control station and where survival craft are positioned. An emergency source of power shall be made available for a signalling lamp, if being carried.

ELECTRIC MOTORS

99. Every electric motor shall be provided with a means of starting and stopping, located in a manner that enables it to be easily operated by the person controlling the motor.

100. The circuit supplying the motor shall be fitted with short circuit and overload protection. In the case of motors in a steering gear system that are not required to be so protected, an overload alarm shall be provided at the helm. However, protection against excess current, if provided, shall be set at not less than twice the full load current of the motor or circuit and shall be arranged to allow the passage of the appropriate starting current.

101. Fans and pumps driven by electric motors shall be fitted with a remote control and such remote control shall be positioned outside the machinery space concerned, to enable the motors to be stopped in the event of a fire in the space in which they are located.

LIGHTNING CONDUCTORS

102. (1) Lightning conductors shall be fitted on wooden masts. They shall be of continuous copper tape or copper rope having a cross section of not less than 75mm^2 and secured to a copper spike of 12mm diameter, projecting at least 150mm beyond the top of the mast. All sharp bends shall be avoided and bolted or riveted joints alone may be used.

(2) In the case of metal hulls, the lower end of the conductor is to be earthed to the hull and in the case of wood or other non-metallic hulls, the lower end of the conductor is to be attached to the earth plate. All sharp bends must be avoided and bolted or riveted joints alone shall be used.

ANODES

103. Where applicable, boats shall be fitted with adequate numbers of zinc or equivalent anodes, suitable for the areas to be protected. Anodes fitted in the propeller aperture shall be positioned in such a way that they do not disturb the flow of water to the propeller. Anodes shall not be painted over and shall not be fitted close to earthing plates.

EQUIVALENCY

104. Electrical installations which do not comply with the requirements of this Part may be accepted, provided that they are unavoidable and there are justifiable reasons precluding compliance and that the electrical installations used are deemed by the Competent Authority to be equivalent to the requirements specified in this Part.

PART V

FIRE PROTECTION, FIRE DETECTION, FIRE EXTINCTION AND FIRE FIGHTING

A - GENERAL

STRUCTURE

105. (1) Fire retardant materials shall be used in any part of the boat where the risk of fire is increased due to the proximity of heat sources.

(2) Manholes or other openings to fuel oil tanks, shall not be positioned in the area provided for accommodation.

(3) Fire fighting appliances shall be maintained, as required by the manufacturer of such fire-fighting appliance and to the satisfaction of the Competent Authority.

Storages of gas cylinders

106. (1) Cylinders which contain flammable or other dangerous gases, shall be stored and suitably secured on the open deck and in a shelter which is designed to protect them from external heat sources, sun and external impact. It is further recommended that gas detectors are carried onboard.

(2) All pipes conveying gas from cylinder to appliances for domestic purposes, shall be of steel or other material approved by the Competent Authority. Where appropriate the Competent Authority may permit alternative arrangement which provide an equivalent measure of safety.

Miscellaneous items

107. (1) The Competent Authority shall ensure that materials used as deck coverings and for fittings do not have low spontaneous combustion temperatures or have explosive qualities when exposed to abnormal heat sources. However wood, GRP or other similar materials are permitted to be used.

(2) The Competent Authority shall further ensure that materials used onboard do not emit excessive toxic vapours, if ignited.

(3) In the event of a fire in a space containing machinery, it should be possible to stop the machinery from a location outside the machinery space.

B - UNDECKED BOATS

Number of fire fighting appliances

108. Undecked boats shall be provided with fire extinguishers of a type and size approved by the Competent Authority and such extinguishers shall be located close to the machinery space.

C - DECKED BOATS

Number of fire fighting appliances

109. (1) The structure and equipment required to be installed in decked boats shall comply with the specifications provided in the Instruction Manual.

(2) Boats shall carry not less than two appropriate fire extinguishers, one of which shall be located near the machinery space. Where only two fire extinguishers are provided, a fire bucket painted in red and filled with sand shall also be carried.

(3) Boats fitted only with outboard engines may dispense with one fire extinguisher.

Fire Fighting Appliances for Machinery Spaces

110. (1) Where appropriate, a sufficient number of automatic dispersion type fire extinguishers or any other type of fire extinguishers deemed appropriate by the Competent Authority shall be placed in the machinery spaces, taking into account the volume of the space and arrangement of the machinery.

(2) Where the automatic dispersion type fire extinguishers or extinguishing equipment are provided in accordance with paragraph (1), one of the extinguishers required under paragraph (2) of regulation 109, shall not be necessary.

Ventilation systems

111. Means shall be provided for stopping the ventilators and closing the openings in the ventilation system from a location outside the spaces being served.

Means of escape

112. Stairways and ladders leading to and from rooms used by crew members and spaces in which crew members are normally employed, shall be so arranged as to provide ready means of escape to the open deck and from there to the survival craft.

Automatic fire alarm and fire detection systems

113. (1) In fishing boats above 15 m but less than 24 m in length overall which are of flammable construction, or where in other respects considerable quantities of flammable materials are used in the fitting out of accommodation, service rooms and control rooms, it should be carefully considered whether an automatic fire detection and alarm system shall be installed in these rooms, taking into consideration the size of the rooms, lay-out and location in relation to control rooms, and where relevant, the flame propagation properties of the installed furniture.

(2) Machinery spaces containing propelling machinery shall be provided with suitable alarm and fire detection systems.

Fire hydrants, Fire Hoses and Nozzles

114. (1) Fishing boats above 15 m but less than 24 m in length overall (LOA) shall be provided with not less than one mechanically-driven fire pump. Depending on the sea area available, the Competent Authority may also require an emergency fire pump.

(2) Where more than one hydrant is required to provide on board the boat the number of jets required under paragraph (3), a fire main shall be provided.

(3) Fire hydrants shall be positioned in such a way that they allow easy and rapid connection of fire hose and at least one water jet can be directed towards any part of the boat, which is normally accessible during navigation.

PART VI

PROTECTION OF THE CREW

General Protective Measures

115. (1) The surface of decks and of flooring in working spaces on board such as machinery spaces, galleys, fish handling and deck equipment operating areas and deck areas at the foot and head of ladders, shall be specially designed and treated to minimize the possibility of those on board from slipping.

(2) Where practicable, an adequate system of lifelines shall be provided, complete with the necessary wires, ropes, shackles, eye bolts and cleats.

(3) All boats shall be provided with a means of re-boarding after an accidental fall overboard, which shall be permanently attached to the boat. On single-handed boats, the means of re-boarding shall be accessible by a person in the water.

(4) On single-handed boats, the Competent Authority shall where practicable, require an arrangement to ensure that if the operator falls overboard the engine will stop automatically. Such an arrangement however should not constitute a danger to the operator.

Deck openings and doors

116. (1) Hinged and sliding covers of hatchways, manholes, doors and other openings, shall be prevented from swinging or accidentally closing.

(2) Dimensions of access hatches shall be of an adequate size suitable for the intended purpose.

(3) Having regard to the operation of the boat and where practicable, suitable protection shall be provided in positions where there is a danger of those on board falling through deck openings.

(4) Handholds shall be provided above the level of the deck and over escape openings.

(5) In general, external hatches and doors shall be closed when the boat is at sea. All openings occasionally required to be kept open during fishing and which may lead to flooding, shall be closed immediately if such danger of filling occurs with subsequent loss of buoyancy and stability.

(6) Moving parts of machinery, winches, line and net haulers shall be adequately guarded.

Bulwarks, rails and guards

117. (1) On decked boats, efficient bulwarks or guardrails shall be fitted on all exposed parts of the working deck, on superstructures and on deck erections.

(2) On undecked boats, the height of the gunwales shall be sufficient to minimise the risk of persons falling overboard.

(3) In every boat where a fixed bulwark or gunwale is less than 1 m, guardrails shall be fitted up to 1 m, provided that where this would interfere with the fishing operations, alternative arrangements may be permitted by the Competent Authority.

118. Clearance below the lowest rail shall not exceed 230 mm and other rails shall not be more than 250 mm apart. The distance between stanchions shall not be more than 1.5 m. Rails and bulwarks shall be free from sharp edges and corners and shall be of adequate strength.

119. Satisfactory means in the form of guard rails or lifelines shall be provided for the protection of the crew members in getting to and from their quarters, machinery spaces and other working spaces. Storm rails shall be fitted on the outside of all deckhouses and casings.

120. (1) Where equipment is normally incorporated in the structure of a bulwark or rail within the minimum height prescribed for the bulwark or mounted between stanchions of a guard rail, provision shall be made to protect the area when the equipment is not in place.

(2) Where part of a bulwark or guard rail has to be removed for the purpose of the fishing operation, protection for the crew members shall be provided at the opening.

Stairways and ladders

121. (1) For ensuring the safety of the crew members, stairways and ladders shall be of adequate size and strength with handrails and anti-slip treads, to the satisfaction of the Competent Authority.

(2) Emergency ladders in machinery space shall be of steel not less than 450 mm wide.

(3) Accommodation ladders shall be provided with hooks or other suitable fastenings for adequate support and securing against displacement or slipping and be able to be adjusted to the height of the landing place.

Safe Access

122. Wherever necessary and to the extent practicable adequate means shall be provided to ensure safety and convenient access to the boat where facilities are not provided in the port. Such means shall be of safe construction and adequate strength, be well illuminated and where practicable, have anti-skid surfaces.

Cooking facilities

123. (1) Cooking facilities shall be provided with guard rails and hand rails.

(2) Cooking stoves shall be fitted with guards to retain cooking utensils.

Deck machinery, tackle and lifting gear

124. (1) All winches and hauling equipment for fishing gear shall be fitted with self activated emergency stop safety devices in order to ensure an automatic stop, if a person is pulled towards a winch or other hauling equipment.

(2) Controls of winches, line and net hauling equipment shall be placed in such a manner, that winch operators shall have ample room for their unimpeded operation and have as unobstructed a view as possible of the working area. Control handles shall be provided where necessary with a suitable locking device in the stop or neutral position, to prevent accidental movements, displacement or unauthorized use.

(3) Winches, line haulers and lifting gear shall comply with the requirements contained in the Instruction Manual.

Lighting in working spaces and areas

125. (1) All passageways, working spaces and working areas on board the boat shall be well lit. The quality and intensity of the lighting shall be sufficient to ensure that the work can be carried out having regard to health and safety of crew members and all those travelling on board.

(2) The amount of light should be sufficient to distinguish details and should create suitable contrast conditions and shall not glare.

(3) Fish holds shall be provided with adequate lighting ensuring lighting in all conditions, both for orientation and during work in the hold.

(4) The lighting shall not interfere with the keeping of a proper lookout and where practicable, provision shall be made for some form of emergency lighting.

Ventilation in working spaces

126. Ventilation in enclosed working spaces shall be in accordance with the provisions of regulation 111, and due consideration shall be given to providing ventilation for the protection of all those on board entering fish holds and other spaces.

Medical Services

127. (1) Medical supplies, equipment and instructions shall be provided in all boats as specified in the Instruction Manual.

(2) Where the operating area of the boat changes, the medical supplies carried shall be reviewed.

Miscellaneous

128. (1) Protective clothing and safety working equipment as specified in the Instruction Manual shall be provided to the crew members, appropriate to prevent injury or illness being caused to them.

(2) Clothing worn by crew members working on deck shall be capable of supporting the wearer in the water, in the event of being washed overboard. A personal flotation device or a self-inflating working lifejacket may be used for this purpose.

129. All reasonable steps shall be taken to minimize harmful noise and vibration.

130. (1) The Competent Authority shall ensure that crew members are made aware of the health hazards in connection with the carriage of fish in bulk and the depletion of oxygen in the hold, and shall advise them concerning safe working practices in this regard.

(2) The Competent Authority shall ensure that crew members joining a boat are made aware by the skipper of the particular hazards of the working of the boat.

131. Arrangement of fish processing equipment shall ensure free access for inspection, operation and cleaning of the equipment and where applicable be suitably guarded. In boats above 15m but not less than 24m in length overall (LOA), the fish processing equipment shall comply with the requirements contained in the Instruction Manual.

132. (1) Where practicable —

(*a*) all work stations on deck shall be visible from the wheelhouse ;

(*b*) enclosed working spaces shall be provided with an adequate system of heating and/or a supply of fresh air ; and

(*c*) any deck obstructions and head height obstructions that are a hazard, shall be painted with a bright, conspicuous colour.

(2) In boats without an enclosed working space, a shelter which does not affect the stability of the boat made of tarpaulin or a similar material shall be provided where practicable, to protect crew members from excessive exposure to sun and weather. The shelter may also be used to collect rainwater or as an emergency sail.

Dangerous areas

133. (1) A notice shall be posted below radar and radio aerials warning that no work shall be undertaken in the vicinity without authorization. A notice shall also be posted at the operating controls of radar and radio equipment, warning the operator that the equipment shall not be started unless it is clear, that no one is working near the antennas.

(2) Any working area which is designated by the skipper as dangerous or requiring extra care, shall be brought to the attention of the crew members at regular briefing sessions on safety and to each new crew member on joining the boat.

PART VII

LIFE SAVING APPLIANCES

A - GENERAL

Definitions

134. For the purpose of this Part —

"buoyant apparatus" means, flotation equipment (other than lifeboats, life rafts, life buoys and life-jackets) designed to support a specified number of persons who are in the water and of such construction that it retains its shape and properties ;

"launching appliance or arrangement" means the mode used for transferring a survival craft from its stowed position safely to the water ;

"novel life-saving appliance or arrangement" means is a life-saving appliance or an arrangement which embodies new feature not fully covered by the provisions of this Part, but which provides an equal or higher standard of safety ;

"personal flotation device" means flotation equipment designed to keep a person afloat and which does not hinder a person's ability to work while wearing it ;

"retro-reflective material" means a material which reflects in the opposite direction a beam of light directed at it ; and

"survival craft" means a craft capable of sustaining the lives of persons in distress, from the time of abandoning the boat.

Evaluation, testing and approval of life-saving appliance and arrangements

135. (1) Except as provided for in the Instruction Manual, life-saving appliances and arrangements to which this Part refers to, shall be approved by the Competent Authority.

(2) The Competent Authority shall have procedures for the approval of life saving appliances and novel life-saving appliances and their arrangements. These procedures shall also include the conditions whereby approval would continue or would be withdrawn.

Production tests

136. The Competent Authority shall require proof that life-saving appliances have been 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.

B - BOAT REQUIREMENT

Number and types of survival craft

137. (1) Every boat shall be provided with not less than one life raft or buoyant apparatus, unless the boat complies with the requirements for built-in buoyancy referred to in regulation 49, having the capacity to accommodate the total number of persons on board.

(2) The Competent Authority may taking into consideration the boat's navigational area, conditions of operation and the size of the boat, permit boats to carry other types of survival craft of a type and number. Such survival craft may be of rigid or semi-rigid construction. The Competent Authority shall consider the local meteorological conditions and area of operations and may require a life raft or buoyant apparatus to be carried on any boat.

Availability and stowage of survival craft

138. A survival craft shall be —

(*a*) readily available in case of emergency ;
(*b*) capable of being launched safely and rapidly ; and
(*c*) so stowed as to ensure that —

(i) the marshalling of persons and their prompt handling is not be impeded ;
(ii) embarkation can be effected rapidly and in good order ; and
(iii) operation of any other survival craft is not interfered with.

139. (1) A survival craft and launching appliances, if fitted, shall be in working order and be available for immediate use before the boat leaves port and be so kept at all times when at sea.

(2) Lashings if used, shall be fitted with an automatic release system of an approved type.

140. The Competent Authority, where he is satisfied that the constructional features of the boat and fishing operations render it unreasonable and impractical to apply the provisions of regulations 138 and 139, may permit non-compliance of those provisions, provided that the boat is fitted with alternative launching and recovering arrangements adequate for the service intended.

141. All survival crafts shall be marked with the same registration or other identification marks used for the boat as referred to in regulation 146.

Lifejackets and Personal Flotation Devices

142. (1) A lifejacket of an approved type or a personal flotation device accepted by the Competent Authority shall be carried for each person on board.

(2) Lifejackets shall comply with the requirements contained in the Instruction Manual relating to the testing of lifejackets.

(3) Lifejackets shall be so placed as to be readily accessible and their position shall be clearly indicated.

(4) The Competent Authority shall have the authority to determine whether lifejackets or personal flotation devices or a combination of both, shall be carried onboard.

(5) All lifejacket shall be marked with name of the boat or its registration number or both.

Lifebuoys

143. (1) Decked boats above 7m but less than 15m in length overall (LOA), shall be provided with not less than one lifebuoy, which shall be attached to a buoyant line of not less than 18m in length.

(2) Boats above 15m but less than 20m in length overall (LOA), shall be provided with not less than two lifebuoys, one of which shall be attached to a buoyant line of not less than 30m in length.

(3) Boats above 20m but less than 24m in length overall (LOA), shall be provided with not less than three lifebuoys.

(4) On every boat carrying more than one lifebuoy, not less than one such lifebuoys shall be provided with self-igniting light.

(5) Not less than one of the lifebuoys provided with self-igniting lights in accordance with paragraph (4), shall be provided with self-activating smoke signals.

(6) Where three lifebuoys are required, at least one lifebuoy on each side of the boat shall be fitted with a buoyant lifeline of not less than 30m in length. At least one lifebuoy shall not be fitted with a buoyant line. Lifebuoys fitted with buoyant lines shall not have self-igniting lights.

(7) All lifebuoys shall be —

(*a*) so placed as to be readily accessible and shall always be capable of being rapidly deployed and not be permanently secured in any way ; and

(*b*) in a bright contrasting colour to the sea and marked with the same registration or other identification marks used for the boat as referred to in regulation 146.

Distress Signals

144. (1) Every boat shall be provided with means of making effective distress signals by day and by night to the satisfaction of the Competent Authority.

(2) The Competent Authority when considering the amount and types of pyrotechnics carried, consider the area and the nature of the fishing operation. As a minimum, the following pyrotechnics shall be carried —

(*a*) four parachute rockets for boats above 15m but less than 24m length overall (LOA), in and of which two of the rockets may be replaced by hand held flares ; and

(*b*) two hand held flares for boats of less than 15m in length overall (LOA).

(3) Distress signals shall be of an approved type and shall be correctly stored in a dry place. They shall be so placed as to be readily accessible and their position shall be clearly indicated.

(4) Distress signals which have expired, shall be replaced.

(5) The following additional safety equipment shall also be carried on all boats :—

(*a*) whistle ;

(*b*) mirror ; and

(*c*) torch.

Retro-reflective materials on life-saving appliances

145. All survival crafts, lifejackets, personal flotation devices, immersion suits and lifebuoys shall be fitted with retro-reflective material in accordance with instructions issued by the Competent Authority.

Miscellaneous

146. To facilitate aerial rescue operations, wheelhouse tops or other prominent horizontal surfaces shall be painted in a highly visible colour, and shall bear the boat's registration or other identification marks in letters and/or numerals in contrasting colours to the background. Similar marks on the sides of the wheelhouse would also facilitate search and identification by an aircraft.

147. Marking of fishing boats for identification shall be in accordance with uniform an internationally recognisable boat marking system.

148. The Competent Authority shall ensure that crew members receive adequate training and certification in the use and inspection of life-saving appliances and that the skipper regularly inspects all such equipment.

149. (1) There shall be hand rails or similar means, such as a capsize rope which shall be 1.5 times the length of the boat fitted with a snap shackle or equivalent attachment, to allow persons to hold on to the boat in the event of a capsize.

(2) Every boat shall carry adequate means of recovering persons from the water.

(3) Every boats 15m above m but less than of 24m in length overall (LOA), shall carry not less than one radar transponder, complying with the requirement contained in the Instruction Manual.

PART VIII

EMERGENCY PROCEDURES AND SAFETY TRAINING

Emergency Instructions

150. (1) The Competent Authority shall ensure that all boats are provided with clear instructions which shall be written where practicable, to be followed by the crew members in case of emergency. These instructions shall be given to a new crew member before sailing on their first trip.

(2) The duties assigned to the crew members may include —

(*a*) closing of valves, scuppers, overboard shoots, skylights, portholes and other similar opening in the boat ;

(*b*) supplying additional equipment to 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*) fire fighting.

Abandon ship training

151. The Competent Authority shall ensure that the crew members receive on-board training and are certified in the use of the boat's life-saving appliances, including survival craft equipment. Such training shall be given as soon as possible after a new crew member joins the boat. The training shall, among others, include the following :—

(*a*) instructions on operation and use of the boat's life-saving equipment including the launching of life rafts, the donning of lifejackets, personal flotation devices and immersion suits, and precaution against injury and damage caused by sharp objects ;

(*b*) special instructions necessary for use of the boat's life-saving appliances in severe weather and sea conditions ;

(*c*) measures for survival when adrift ;

(*d*) precautions against sharks and other fish which are capable of attacking humans ; and

(*e*) landing and survival ashore.

Training in emergency procedures

152. Crews members shall be adequately trained to the satisfaction of the Competent Authority, and be certified in the carrying out of their duties in the event of emergencies.

PART IX

RADIO COMMUNICATIONS

Application

153. (1) Unless otherwise expressly provided for, the provisions of this Part shall apply to boats engaged on voyages where radio communications or mobile telephone coverage is provided. Where no land based reception is available, boats shall not operate beyond sight of shore and shall have means of signalling distress in the manner provided for in regulation 144.

(2) The provisions of this Part shall not prevent the use by any boat or person in distress of any means at its disposal to attract attention, make known its position and obtain help.

Watches

154. Every boat equipped with a VHF installation shall while at sea, maintain a continuous listening watch on VHF Channel 16.

Sources of energy

155. (1) Where applicable, there shall be available at all times while the boat is at sea, a supply of electrical energy complying with the relevant requirements of regulation 87 and sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy, for the radio installations.

(2) Where applicable, a reserve source or sources of energy complying with the relevant requirements of regulation 89 shall to the satisfaction of the Competent Authority be provided on every boat, to supply radio installations for the purpose of conducting distress and safety radio communications, in the event of a failure of the boats main and emergency source of electrical power. The reserve source of energy shall be capable of simultaneously operating :-

(*a*) VHF radio installation in sea area A1 ;

(*b*) VHF radio installation and the MF or HF or satellite installation in sea area A2 ;

(*c*) navigation lights and emergency lighting ; and

(*d*) for a period of not less than three hours.

(3) Where applicable, the reserve source of energy shall be independent of the propulsion machinery of the boat and the boats electrical system.

(4) Where a reserve source of energy consists of a rechargeable accumulator battery or batteries —

(*a*) means for automatically charging such battery or batteries shall be capable of recharging them to minimum capacity requirements within ten hours ; and

(*b*) the capacity of the battery or batteries shall be checked using an appropriate method, at intervals not exceeding twelve months.

Performance standards

156. Radio equipment to which this Part applies, (except domestic radio equipment, its ancillary equipment, and mobile telephones) shall be of a type approved by the Competent Authority. Such equipment shall conform to appropriate performance standards as specified in the Instruction Manual.

Maintenance requirements

157. (1) The Competent Authority shall ensure that radio equipment referred to in this Part are maintained to meet the recommended performance standards of such equipment, and that adequate tools and spares are being carried to enable such radio equipment to be maintained as specified in the Instruction Manual.

(2) Satellite Emergency Position Indicating Radio Beacon (EPIRB's) if carried, shall be tested at intervals not exceeding twelve months for all aspects of operational efficiency, with particular emphasis on frequency stability, signal strength, coding and registration. The test shall be performed within three months prior to or after the expiry date or anniversary date.

(3) The EPIRBs shall be subject to maintenance at intervals not exceeding five years and such maintenance shall be performed by approved personnel, preferably at an approved shore based maintenance facility.

Radio personnel

158. Where applicable, boats shall carry personnel qualified for performing distress and safety radio communications to the satisfaction of the Competent Authority.

Alternative Arrangements

159. In lieu of the radio equipment required to be carried on board a boat under this Part, the Competent Authority may approve a domestic local system of radio communication, provided such equipment are as effective as the equipment referred to in this Part.

160. For the purpose of this Part —

"continuous watch" means that the radio watch concerned shall not be interrupted other than for brief intervals when the boat's receiving capability is impaired or blocked by its own communications or when the facilities are under periodical maintenance or checks ;

"digital selective calling (DSC)" means a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations of the International Radio Consultative Committee (CCIR) ;

"general radio communications" means operational and public correspondence traffic, other than distress, urgency and safety messages, conducted by radio ;

"locating" means the finding of ships, boats, aircraft, units or persons in distress ;

"Radio Regulations" means the Radio Regulations annexed to or regarded as being annexed to the most recent International Telecommunication Convention which is inforce at anytime ;

"Sea area A1" means an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available ;

"Sea area A2" means an area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available ;

"Sea area A3" means an area, excluding sea areas A1 and A2, within the coverage of an Inmarsat geostationary satellite in which continuous alerting is available ;

"Sea area A4" means an area outside sea area A1, A2 and A3.

Radio records

161. A record shall be kept to the satisfaction of the Competent Authority and as required by the Radio Regulations, of all incidents connected with the radio communication service which appear to be of importance to safety of life at sea.

Radio installations and equipment

162. (1) Every boat shall be provided with —

(*a*) a radio receiver to receive weather forecasting ;

(*b*) VHF Radio installation (which may be a hand-held VHF apparatus) where such boat is operating in seas area up to 15 Nautical Miles from ashore ; and

(*c*) VHF Radio installation together with a HF/MF (SSB) Radio Communication unit, where such boat is operating in sea area beyond 15 Nautical Miles from ashore.

PART X

NAVIGATIONAL EQUIPMENT

Navigational Equipment

163. (1) All boats shall be fitted with a standard magnetic compass except as provided for in this regulation, and such compass shall be properly adjusted and its table or curve of residual deviations shall be available at all times.

(2) Where the Competent Authority considers it unreasonable or unnecessary to require a standard magnetic compass to be fitted, he may exempt individual boats or classes of boats from such requirement, if the nature of the voyage, the boat's proximity to land or the type of boat does not warrant a standard compass, provided that in all such instances a suitable steering compass is carried.

(3) It should be possible to read the compass by day and by night from the steering position. Where applicable, securing devices for the compass and compensators shall be made of nonmagnetic materials.

(4) Fixed compasses shall be sited as near the fore-and-aft line of the boat as practicable, with the lubber line parallel with the fore-and-aft line as accurately as possible.

(5) All boats operating in the seas beyond 15 Nautical Miles from shore shall be equipped with GPS/Satellite Navigation System. In boats equipped with an auto-pilot system actuated by a magnetic sensor which does not indicate the vessel's heading, suitable means shall be provided to show this information.

(6) Decked boats shall to the satisfaction of the Competent Authority, be provided with suitable means for determining the depth of water under the boat. Where fish-finding devices are fitted, they could be used for this purpose.

(7) Every boat shall be equipped with a radar reflector complying with the specifications contained in the Instruction Manual.

(8) All equipment fitted in compliance with the requirements of this regulation, shall be to the satisfaction of the Competent Authority.

Nautical instruments and publications

164. (1) Where applicable, suitable nautical instruments, adequate and up-to-date charts and all other nautical publications necessary for the intended voyage, shall be carried onboard to the satisfaction of the Competent Authority.

(2) An Electronic Chart Display and Information System (ECDIS) or electronic chart plotter, may be accepted as meeting the chart carriage requirements specified in paragraph (1) and adequate back-up arrangements shall be provided for, to meet their functional requirements.

Signalling equipment

165. (1) Every boats shall carry all equipment necessary to comply in every respect with the requirements of the International Regulations for Preventing Collisions at Sea, 1972, as specified in the Instruction Manual.

(2) Lights, shapes and flags shall be provided to indicate that the boat is engaged in any specific operation, where such signals are required to be used.

(3) All boats which are required to carry radio installations shall carry the table of life-saving signals contained in the International Code of Signals, as specified in the Instruction Manual.

(4) All boats shall carry a table of distress signals as specified in the Instruction Manual.

Navigating bridge visibility

166. Power-driven boats shall meet the following requirements :-

(*a*) the view of the sea surface from the conning position shall extend from right ahead to 22.5^0 abaft the beam on either side of the boat. Blind sectors caused by any obstruction outside the wheelhouse, shall be kept as small as possible ; and

(*b*) from each side of the wheelhouse the horizontal field of vision shall extend over an are of at least 225^0, that is from at least 45^0 on the opposite bow through right ahead and then from right ahead to right astern, through 180^0 on the same side of the boat.

Navigation lights

167. Deck lighting shall not impair the visibility of navigation and signal lights as required by the Convention International Regulations for Preventing Collisions at Sea, ratified on October 20th, 1972.

PART XI

CREW ACCOMMODATION

General

168. The provisions of this Part shall apply only to decked boats.

169. (1) Accommodation of appropriate size and quality shall be provided on boats, bearing in mind the length of the voyage, the weather conditions and the size of the boat.

(2) Location, structure and arrangement of crew accommodation spaces and means of access thereto shall be such as to ensure adequate security, protection against weather, sea, heat, cold, condensation, undue noise, vibration, fumes, odours and effluvia from other spaces. Sleeping rooms shall be placed aft of the collision bulkhead, if fitted.

(3) In the choice of materials used for the construction of accommodation spaces, account shall be taken of properties potentially harmful to the health of persons on board or likely to harbour vermin and mould.

(4) All practical measures shall be taken to protect crew accommodation and furnishings against the invasion of insects and any other pests.

Lighting, heating and ventilation

170. (1) All crew accommodation spaces shall be adequately lit as far as possible by natural lilght. Such spaces shall also be equipped with adequate artificial light. However methods of lighting shall not endanger the health or safety of the crew members or the safety of the boat.

(2) Adequate heating facilities shall be provided in crew accommodation spaces as are necessary in accordance with climatic conditions and such facilities shall be designed so as not to endanger health or safety of the crew members or the safety of the boat.

(3) Accommodation spaces shall be adequately ventilated. Boats operating in tropical climates shall where practicable, be fitted with a mechanical ventilation system.

(4) The ventilation of galleys and sanitary spaces shall be to the open air and unless fitted with a mechanical ventilation system, be independent from the mechanical ventilation system provided for crew accommodation.

Sleeping spaces

171. (1) Sleeping spaces shall be so planned and equipped as to ensure reasonable comfort for the occupants and to facilitate tidiness.

(2) Each crew member shall be provided with a berth. Where, having regard to the size, type or the intended service of the boat and the sleeping spaces available, it is not practicable to provide each crew member with a berth, the number of berths to be provided shall not be less than half the number of crew members onboard.

(3) The minimum size of each berth shall not be less than 1.9 m in length and 600mm in breadth.

(4) Suitable bedding shall be provided for each crew member and mattresses provided shall not be of a type that is liable to develop toxic fumes in cases of fire, not be of a type that will attract pests or insects. All mattresses shall be provided with a cover made of fire retardant material.

(5) Wherever reasonable and practicable having regard to the size, type or intended service of the boat, the furnishing of sleeping spaces shall include both a fitted cupboard preferably with an integral lock and a drawer for each occupant.

(6) Berths shall wherever possible be not placed side by side in such a way that access to one berth can be obtained only over another. Berths shall not normally be arranged in tiers of more than two, with the lower berth in a double tier not being less than 300 mm above the deck. The upper berth shall be paced approximately midway between the bottom of the lower berth and the lower side of the deck head beams.

(7) Where the upper berth in a tier overlaps a lower berth, the underside of the upper berth shall be fitted with a dust proof bottom of wood, canvas or other material.

Eating spaces and Cooking facilities

172. (1) Wherever reasonable and practicable, eating spaces and cooking facilities shall be arranged separate from sleeping spaces.

(2) Cooking facilities shall be of adequate dimensions for the purpose and have sufficient storage space and satisfactory drainage. Wherever possible, refrigerators or other low-temperature storage facilities shall be provided to the satisfaction of the Competent Authority.

(3) Cooking facility provided shall contain adequate cooking utensils, an adequate number of cupboards, shelves, sinks and dish racks made out of rustproof material and with satisfactory drainage.

(4) The cooking facilities provided shall include suitable facilities for the preparation of hot drinks for the crew members at all times.

(5) Cooking appliances shall be fitted with fail-safe devices in the event of any failure of the power source or fuel. Supplies of fuel in the form of gas or oil, shall not be stored in the cooking facility provided.

Sanitary facilities

173. (1) Having regard to the intended service of the boat, sufficient sanitary facilities including toilets and washing facilities, shall be provided to the satisfaction of the Competent Authority. Wherever practicable such facilities shall include the following :-

(*a*) one shower-bath for every eight persons or less ;

(*b*) one water-closet or suitable alternative for every eight person or less ; and

(*c*) one wash-basin for every six persons or less.

(2) Soil and waste discharge pipes shall not pass through fresh water or drinking water tanks or where practicable, provision stores. Neither shall they where practicable, pass overhead of eating spaces or sleeping spaces. Such pipes shall be fitted with anti-siphon closures.

(3) In general, toilets shall be situated convenient to but separate from sleeping spaces, eating spaces and wash rooms.

(4) The deck area of wash places shall have a covering of durable material, easy to be cleaned, impervious to damp and properly drained. The deck covering shall be carried up the sides of the compartment to a height of not less than 0.2 m and be adequately sealed at all joints to prevent the ingress of water and damp.

Water facilities

174. (1) Filling, storage and distribution arrangements for drinking water shall be so designed as to preclude any possibility of water contamination. Tanks shall be designed to allow internal cleaning.

(2) In every boat a dedicated supply of not less than 2.5 litres of drinking water per person per day shall be provided for drinking and cooking purposes.

(3) Where the washing facilities use salt water, an additional 12 litres of fresh water shall be carried to allow the crew members to rinse themselves.

PART XII

MISCELLANEOUS

Instruction Manual

175. (1) The boats to which these Regulations are applicable, shall be subject to and be required to comply with all the requirements, specifications and standards pertaining to their construction and other related matters, contained in the Instruction Manual maintained by the Competent Authority for that purpose, and such Instruction Manual shall constitute on integral part of these Regulations.

(2) Where under these Regulations the Competent Authority is empowered to evaluate, administer or give effect to certain provisions of these Regulations to his satisfaction or at his discretion or where the Competent Authority is authorized to permit a deviation from a strict compliance with certain requirements imposed by these Regulations, such authority or power shall be exercised in accordance with the guidelines specified for the same in the Instruction Manual.

Inspection of Boats

176. The hull, machinery, equipment, radio installations, and crew accommodation of every boat shall be so constructed and installed as to be capable of being regularly maintained to ensure that they are at all times and in all respects, satisfactory for the boat's intended service.

Surveys

177. (1) The Competent Authority shall arrange for a Surveyor to carry out appropriate inspections of every boat during its construction and at regular intervals thereafter, in order to ensure that the boat's hull, machinery, equipment and crew accommodation are constructed and maintained in the manner provided for by these Regulations and the requirements, specifications and standards contained in the Instruction Manual.

(2) Where an inspection has been carried out by a Surveyor under paragraph (1) of this regulation, no change shall be made in the structural arrangements, machinery, equipment and crew accommodation covered by the such inspection, without obtaining the prior approval of the Competent Authority.

Equivalent

178. Notwithstanding the provisions of these Regulations, where a particular fitting, material, appliance or apparatus, or type thereof, is required to be fitted or carried in a boat, or any particular arrangement is required to be made, the Competent Authority may permit any other fitting, material, appliance or apparatus, or type thereof to be fitted or carried, or any other arrangement to be made in that boat, if he is satisfied by trail thereof or otherwise, that such fitting, material, appliance or apparatus, or type thereof arrangement, as the case may be, is as effective as that which is required under the provisions of these Regulations.

Definitions

179. For the purposes of these Regulations, unless the context otherwise requires —

"amidships" means the mid-length of length overall (LOC) ;

"approved" means approved by the Competent Authority ;

"base line" means the horizontal line intersecting at amidship the keel line ;

"bow height" means the vertical distance at the forward perpendicular between the waterline corresponding to the maximum permissible draught and the designed trim and the top of the exposed deck at side ;

"breadth" (*B*) means the maximum breadth of a boat, measured at maximum beam to the moulded line of the frame in a boat with a metal shell and to the outer surface of the hull, in a boat with a shell of any other material ;

"collision bulkhead" means a watertight bulkhead up to the working deck in the fore part of the boat, as approved by the Competent Authority ;

"crew member" means the skipper and all other persons employed or engaged in any capacity on board a boat in performing any duty connected with the business of that boat ;

"deck erection" means any decked structure on the working deck ;

"decked boat" means a boat having a fixed structural deck covering the entire hull above the deepest operating waterline. Where open wells or cockpits are fitted in this deck the boat is considered a decked boat if flooding of the well or cockpit will not endanger the boat ;

"deepest operating waterline" means the waterline related to the maximum permissible operating draft ;

"depth" (*D*) means the moulded depth amidships ;

"fishing boat" shall have the same meaning as given to that phrase in the Fisheries and Aquatic Resources Act, No. 2 of 1996 ;

"enclosed superstructure" means a superstructure with —

(*a*) enclosing bulkheads of efficient construction ;

(*b*) access openings if any, in those bulkheads fitted with permanently attached weathertight doors, of a strength equivalent to the intact 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 :

Provided a raised quarter-deck is regarded as a superstructure and a bridge or poop shall not be regarded as "enclosed", unless access is provided for the crew members to reach machinery and other working spaces inside those superstructures, by alternative means which are available at all times when bulkhead openings are closed ;

"freeboard (f)" means the actual minimum freeboard and consist of the distance from the underside of the working deck at the side to a water-line , measured perpendicularly to the water-line plus the minimum thickness of decking. When the working deck is stepped, the lowest line of the deck and the continuation of that line parallel to the upper part of the deck, shall be taken as the working deck ;

"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 ;

"Instruction Manual" is the document containing requirements, specifications and standards pertaining to the construction of boats, being maintained by the Competent Authority under regulation 175 ;

"Keel line" means the line parallel to the slope of the 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 boat with a metal shell or the rabbet lower line of the keel, of a boat with a shell of wood or a composite material ; or

(*b*) the intersection of a fair extension of the outside of the shell contour at the bottom, with the centreline of a boat with a shell of material, other than wood and metal ;

"last depth" means the depth measured from the keel line to the top of the working deck beam at side. Where the working deck is stepped and the raised part of the deck extends over the point at which the least depth is to be determined, the least depth shall be measured to a line of reference extending from the lower part of the deck, along a line parallel with the raised part ;

"length (L)" shall be taken as 96% of the total length on a waterline at 85% of the least depth, or as the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be greater. In boats designed with rake of keel, the waterline on which this length is measured shall be parallel to the designed waterline ;

"length overall (LOA)" is the length of the boat in a straight line parallel to the design waterline, from the foremost part of the stem at the height of the deck or gunwale, to the after most part of the stern ;

"machinery spaces" are those spaces which contain internal combustion type machinery used for main propulsion, generating electricity, compressor units and machine driven pumps etc ;

"new boat" is a boat the keel of which is laid or which is at a similar stage of construction, on or after the date of adoption of these Regulations ;

"owner" means any person or entity having assumed the responsibility for the operation of a boat ;

"Radio Regulations" means the Radio Regulations issued by the International Telecommunications Union ;

"Skipper" means the person having the command of a boat ;

"Sri Lanka water" shall have the same meaning as given to that phrase in the Fisheries and Aquatic Resources Act, No. 2 of 1996 ;

"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 fires test (e.g. aluminium alloy with appropriate insulation) ;

"Superstructure deck" means the complete or partial deck forming the top of a deck erection situated at a height of not less than 1.8 m above the working deck. Where this height is less than 1.8 m, the top of such deck erections shall be treated in the same way as the working deck ;

"undecked boat" means a boat which is not a decked boat ;

"boat" means a fishing boat which belongs to the type of boat referred to in paragraph (1) of regulation 2 ;

"watertight" means being 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 sea condition in which water will not penetrate into the boat ; and

"working deck" means the lowest complete deck above the deepest operating waterline from which fishing is undertaken. In boats fitted with two or more complete decks, the Competent Authority may accept a lower deck as a working deck, provided that they deck is situated above the deepest operating waterline.

Measurements

180. In these Regulations, measurements are given in the metric system using the following abbreviations :—

m - metre
cm - centimetre
mm - millimetre
t - tonne (1,000 kg)
kg - kilogram
^{0}C - degree Celsius
N - Newton
KW - Kilowatt

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