

Merchant Shipping (Safety of Fishing Vessels) Regulations 2000

GN No. 128 of 2000

THE MERCHANT SHIPPING ACT 1986

Regulations made by the Minister under section 199 of the Merchant Shipping Act 1986

PART I - PRELIMINARY

1. Short title

These regulations may be cited as the Merchant Shipping (Safety of Fishing Vessels) Regulations 2000.

2. Interpretation

In these regulations-

"Act" means the Merchant Shipping Act 1986;

"Director" means the Director of Shipping appointed under section 4 of the Act;

"dory" means any craft carried by the mother vessel for fishing operations on fishing grounds situated at more than 12 nautical miles off the coast of Mauritius;

"existing vessel" means a vessel other than a new vessel;

"fishing vessel" means a vessel used for the commercial catching of fish or other living resources of the sea and also includes any vessel processing fish or other living resources of the sea.

3. Application

- (1) Unless expressly provided otherwise, these regulations shall apply to -
 - (a) Mauritius fishing vessels over 15 net tons registered under the Act, wherever they may be; and
 - (b) all other fishing vessels, while they are within the territorial waters or the Exclusive Economic Zone of Mauritius.
- (2) The Director may, where he thinks fit, require a fishing vessel not exceeding 15 net registered tons to comply with any provision of these Regulations.

PART II-SURVEYS, INSPECTIONS AND CERTIFICATION

4. Type and contents of survey

- (1) Every fishing vessel shall be subject to the following surveys-

- (a) an initial survey;
 - (b) periodic surveys.
- (2) The initial survey of the fishing vessel shall-
- (a) be held before the vessel is put into service;
 - (b) include a complete survey of its structure, stability, machinery, arrangements and material, including the outside of the vessel's hull and the inside and the outside of the boilers and equipment;
 - (c) be such as to ensure that the arrangements, material, and scantlings of the structure, boilers, and other pressure vessels and their appurtenances, main and auxiliary machinery, electrical installations, radio installations, including those used in Life Saving appliances, fire protection, fire safety systems and appliances, Life Saving appliances and arrangements, ship-borne navigational equipment, nautical publications and other equipment fully comply with the requirements of these regulations.
- (3) Periodic surveys shall be held--
- (a) of the outside of the hull of the vessel--
 - (i) at intervals of not more than 2 years, where the vessel is aged under 12 years;
 - (ii) at intervals not exceeding 24 months specified by the Director where the vessel is aged over 12 years;
 - (b) of the tailshaft -
 - (i) at intervals of 5 years; or
 - (ii) at lesser intervals, where the Director directs an inspection;
 - (c) of the life saving appliances, fire fighting appliances, shipboard navigational equipment, machinery and auxiliary equipment -
 - (i) at intervals of not more than one year; or
 - (ii) at lesser intervals, where the Director so directs.

5. Inspection

Every fishing vessel shall be subject to an inspection when and as required to ensure that it complies with these regulations.

6. Issue of certificates

After inspection and survey of a fishing vessel, the Director shall issue to the vessel -

- (a) a Fishing Vessel Hull and Machinery Certificate, in the form specified in the First Schedule, where it complies with the requirements of the Second Schedule, with Parts I, II and III and any other relevant requirements of these regulations;
- (b) a Fishing Vessel Safety Equipment Certificate in the form specified in the Third Schedule where it complies with the requirements of the Fourth Schedule, with Parts I, II and III and any other relevant requirements of these regulations.

PART III- EMERGENCY INSTRUCTIONS AND MUSTER LIST

7. Emergency instructions

The Master of a vessel shall issue clear instructions which are to be followed by every person on board in the event of an emergency.

8. Muster lists to be exhibited

Muster lists shall be exhibited in conspicuous places throughout the ship including the navigating bridge, engine-room, crew and fishermen accommodation spaces.

9. Contents of muster list

The muster list shall specify -

- (a) details of the general emergency alarm signal;
- (b) instructions as to what action is to be taken by the crew and fishermen when the alarm is sounded;
- (c) the manner in which any order to abandon ship shall be given.

10. Duties set out in muster list

- (1) The muster list shall set out the duties assigned to the different members of the crew and pre-selected fishermen including -
 - (a) closing of the watertight doors, fire doors, valves, scuppers, side scuttles, skylights, portholes and other similar openings in the ship;
 - (b) preparation and launching of the survival craft;
 - (c) general preparation of other life saving appliances;
 - (d) muster of fishermen;
 - (e) manning of fire parties assigned to deal with shipboard fires;
 - (f) special duties assigned in respect of the use of fire fighting equipment and installations.

- (2) The muster list shall specify the names of officers or members of the crew assigned to ensure that the life-saving and fire-fighting appliances are maintained in good condition and are ready for immediate use.
- (3) The muster list shall specify the duties assigned to members of the crew and selected fishermen in relation to other fishermen in case of emergency.
- (4) These duties shall include -
 - (a) the warning of the fishermen;
 - (b) ensuring that they are suitably clad and have donned their life jackets properly;
 - (c) assembling them at muster stations;
 - (d) keeping order in the passageways and on the stairways;
and
 - (e) generally controlling the movements of the fishermen.
- (5) The muster list shall be prepared before the ship proceeds to sea.
- (6) Where any change takes place in the crew and selected fishermen which necessitates an alteration in the muster list, after such list has been prepared, the master shall either revise the list or prepare a new list.

11. Practice musters and fire drills

- (1) Each member of the crew and fisherman shall participate in at least 2 abandon ship drills and fire drills each month.
- (2) As far as is reasonable and practicable the drills of the crew and fishermen shall take place within 24 hours but not later than 36 hours of the ship leaving a port.
- (3) Each abandon ship drill shall include-
 - (a) summoning of the crew and fishermen to muster stations after sounding the alarm;
 - (b) ensuring that they are made aware of the order to abandon ship specified in, the muster list;
 - (c) reporting to stations and preparing for the duties described in the muster list;
 - (d) checking that fishermen and crew are suitably dressed;
 - (e) checking that life jackets are correctly donned; and
 - (f) operation of davits used for launching survival craft.

12. Conduct of drills

Drills shall, as far as practicable, be conducted as if there was an actual emergency.

13. On-board training and instructions

- (1) On-board training and instructions in the use of the life-saving appliances and in survival at sea shall be given at the same interval as the drills.
- (2) On-board training in the launching of survival craft shall -
 - (a) take place at intervals of not more than one month;
 - (b) where practicable, include the inflation and lowering of a life raft, which-
 - (i) shall be conspicuously marked; and
 - (ii) may be a special life raft intended for training purposes only and which is not part of the ship's life-saving equipment.

14. Records

The -

- (a) dates when musters are held; and
- (b) details of -
 - (i) abandons ship drills;
 - (ii) fire drills;
 - (iii) drills of other life-saving appliances; and
 - (iv) on-board training,

shall be recorded in the official log-book and signed by the Skipper and Second Hand.

15. Report of Deficiencies between Surveys

Any deficiency-

- (a) liable to cause injury; or
- (b) which may affect-
 - (i) the safety of life at sea; or
 - (ii) the seaworthiness of the vessel between surveys,

shall be reported in writing by the owner, Master or agent to the Director within 24 hours following its occurrence.

16. Detention of ships

- (1) Where the Director believes that the Master of any Mauritius

Condition 1

Date Signature.....

Condition 1

Date Signature.....

Condition 3

Date Signature.....

Condition 4

Date Signature.....

SECOND SCHEDULE
(regulation 6(a))

BULL, MACHINERY AND ELECTRICAL INSTALLATIONS

CHAPTER I - HULL

1. Openings in shell plating

- (1) The arrangements and efficiency of the means for closing any opening in the shell plating shall be consistent with its intended purpose and shall be to the satisfaction of the Director.
- (2) The sides cuttles and their deadlights where fitted shall be

closed watertight.

- (3) All inlets and discharges in the shell plating shall be fitted with efficient and accessible arrangements for preventing the accidental admission of water into the vessel.
- (4) All shell fittings and sea inlet valves shall be of steel, bronze or other approved ductile material.
- (5) Valves in ordinary cast iron or similar material shall not be acceptable.
- (6) All associated pipes shall be of steel or other equivalent material to the satisfaction of the Director.

2. Construction of watertight bulkheads

- (1) Every watertight subdivision bulkhead shall be constructed in such a manner that it shall be capable of supporting within a proper margin of resistance the pressure due to the maximum head of water it might have to sustain in the event of damage to the ship.
- (2) The forepeak, double bottoms and inner skins and tanks intended to hold liquids shall be tested to the satisfaction of the Director.

CHAPTER II-MACHINERY INSTALLATION

II

3. Machinery equipment and Systems

- (1) Any -
 - (a) main propulsion;
 - (b) control;
 - (c) fueloil;
 - (d) compressed air;
 - (e) electrical and refrigeration system;
 - (f) auxilliary machinery;
 - (g) piping and pumping arrangement;
 - (h) steering gear equipment; and
 - (i) gears, shafts and couplings for power transmission shall be installed to the satisfaction of the Director.
- (2) The machinery and equipment, the lifting gear winches, and the fish handling and fish processing equipment shall be protected so as to reduce to a minimum any danger to persons on board.
- (3) Special attention shall be paid to moving parts, hot surfaces and other dangers.
- (4) Machinery spaces layout shall be designed to provide safe and free access to all machinery and controls as well as to any other parts which may require servicing.
- (5) Such spaces shall be adequately ventilated.

- (6) Adequate means shall be provided for the operational capability of the propulsion machinery to be sustained or restored where one of the essential auxiliaries becomes inoperative.
- (7) Special consideration shall be given to the functioning of-
 - (a) the arrangements which supply fuel oil pressure for main propulsion machinery;
 - (b) the normal sources of lubricating oil pressure;
 - (c) the hydraulic, pneumatic and electrical means for the control of main propulsion machinery including controllable pitch propellers;
 - (d) the sources of water pressure for main propulsion cooling systems;
 - (e) an air compressor and an air receiver for starting or control purposes except that, having regard to overall safety considerations, a partial reduction in capability in lieu of full normal operation may be accepted.
- (8) Any main propulsion machinery and auxiliary machinery essential to the propulsion and the safety of the vessel shall, as fitted, be capable of operating whether the vessel is upright or listed up to 15 degrees.

4. Machinery

- (1) Any main and auxiliary machinery essential for the propulsion and safety of the vessel shall be provided with effective means of control.
- (2) Any internal combustion engine of-
 - (a) a cylinder diameter greater than 200 millimeters; or
 - (b) a crank case volume greater than 0.6 cubic meters,shall be provided with crank case explosion relief valves of an approved type with sufficient relief area.
- (3) Where any -
 - (a) main or auxiliary machinery including pressure vessels; or
 - (b) part of such machinery are subject to internal pressure and may be subject to dangerous overpressure,means shall be provided where applicable, which shall protect against such excessive pressure.
- (4) Any gearing and every shaft and coupling used for transmission of power to machinery essential for the propulsion and safety of the vessel or the safety of persons on board shall be designed and

constructed in such a way as to withstand the maximum working stresses to which it may be subjected in all service conditions.

- (5) Any main propulsion machinery and, where applicable, auxiliary machinery shall be provided with automatic shut off arrangements in the case of failures such as lubricating oil supply failure which could lead rapidly to damage, complete breakdown or explosion.
- (6) An advance alarm shall be provided to give adequate notice before automatic shut off.

5. Means of Going Astern

- (1) Every vessel shall have sufficient power for going astern to secure proper control of the vessel in normal circumstances.
- (2) The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time and so to bring the vessel to rest within a reasonable distance from maximum ahead service speed shall be demonstrated at sea by the Master, whenever the Director so requires.

6. Communication between the wheel house and machinery space

- (1) Two separate means of communication between the wheelhouse and the machinery space control platform shall be provided.
- (2) One of the means shall be engine room telegraph.

7. Control of propulsion machinery

Where the propulsion and associated machinery including sources of main electrical supply are -

- (a) provided with various degrees of automatic or remote control; and
- (b) under continuous manned supervision from a control room, the control room shall be designed, equipped and installed in such a way that the machinery operation shall be as safe and effective as if it were under direct supervision.

8. Air pressure systems

Suitable pressure relief arrangements shall be provided to prevent excess pressure-

- (a) in any part of compressed air systems; and
- (b) wherever there are water jackets or casings of air compressors and coolers,

that might be subjected to dangerous excess pressure due to leakage into them from air pressure parts;

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

- (3) All discharge pipes from starting air compressors shall lead directly to the starting air receivers, and all starting pipes from the air receivers to main or auxiliary engines shall be entirely separate from the compressor discharge pipe system.
 - (4) Provision shall be made to reduce to a minimum the entry of oil into the air pressure systems and to drain these systems.
9. Arrangements for fuel oil, lubricating oils and other flammable oils
- (1) (a) Subject to subparagraph (b), fuel oil, which has a flash point of less than 60 degrees Celsius as determined by an approved flash point apparatus, shall not be used as fuel.
 - (b) In special cases, the general use of fuel oil having flash point of not less than 43 degrees Celsius may be permitted subject to such additional precautions as may be considered necessary.
 - (2) (a) Safe and efficient means of ascertaining the amount of fuel oil contained in any oil tank shall be provided.
 - (b) Where sounding pipes are installed, their upper ends shall terminate in safe positions and shall be fitted with suitable means of closure.
 - (c) Gauges made of glass of substantial thickness with a metal case may be used, provided that automatic closing valves are fitted.
 - (3) Provisions shall be made to prevent overpressure in any oil tank or in any part of fuel oil system including filling pipes.
 - (4) Fuel oil pipes which, if damaged, would allow oil to escape from a storage, settling or daily service tank situated above the double bottom, shall be fitted with a cock or a valve on the tank capable of being closed from a safe position outside the space concerned, in the event of a fire arising in the space in which such tanks are situated.
 - (5) Pumps forming part of the fuel oil system shall be separate from any other system and all such pumps shall be provided with an efficient relief valve, which shall be in closed circuit.
 - (6) No oil tank shall be situated where spillage or leakage therefrom can constitute a hazard by falling on heated surfaces.
 - (7) The ventilation of machinery spaces shall be sufficient under all normal conditions to prevent accumulation of oil vapour.
 - (8) (a) Fuel oil pipes and their valves and fittings shall be of steel or other equivalent material, the restricted use of flexible pipes being permitted only in positions where the Director is satisfied that they are necessary.
 - (b) Such flexible pipes and end attachments shall be of

adequate strength and shall be constructed of approved fire-resistant materials or have fire-resistant coatings.

- (c) Fuel oil and lubricating oil pipelines shall be adequately supported to prevent failure due to vibration.
 - (d) Spray or deflection plates shall be provided to all external high pressure fuel and lubricating oil pipes to avoid as far as practicable oil spray or oil leakage on heated surfaces or into machinery air intakes.
 - (e) The number of joints in piping systems shall be kept to a minimum.
- (9)
- (a) The arrangements for the storage, distribution and use of oil employed in pressure lubrication shall be to the satisfaction of the Director.
 - (b) Such arrangements, wherever practicable, in machinery spaces shall at least comply with the provisions of subparagraphs (1), (3), (6) and (8), and in so far as it may be considered necessary, with subparagraphs (2) and (4).

10. Bilge Pumping arrangements

- (1) An efficient bilge pumping plant shall be provided which under all practical conditions shall be capable of pumping from and draining any watertight compartment which is neither a permanent oil tank nor a permanent water tank whether the vessel is upright or listed.
- (2)
 - (a) At least two independently driven power bilge pumps shall be provided, one of which may be driven by the main engine.
 - (b) A ballast pump or other general service pump of sufficient capacity may be used as power driven bilge pump.
- (3)
 - (a) Subject to subparagraph (b), each of the bilge pumps shall be provided with a direct bilge suction, one of these suctions drawing from the port side of the machinery space and the other from starboard side.
 - (b) In case of a vessel of less than 75 meters in length only one bilge pump need be provided with direct bilge suctions.
- (4) In vessels where fish handling or processing may cause quantities of water to accumulate in enclosed spaces, adequate drainage shall be provided.
- (5) Bilge pipe shall not be led through fuel oil, ballast or double bottom tanks, unless the pipes are of heavy gauge steel construction.
- (6)
 - (a) Bilge pumping system shall be arranged to prevent passing from the sea into machinery spaces or from one watertight compartment to another.

- (b) The bilge suction to any pump drawing from the sea shall be fitted with either a non-return valve or cock which cannot be opened simultaneously either to the bilge or to the sea.

11. Protection against flooding

- (1) (a) Bilge in machinery spaces shall be provided with a high level alarm system which will detect accumulation of liquids at normal angles of trim and heel.
- (b) The detection system shall initiate an audible and visual alarm in places where continuous watch is maintained.
- (2) The controls of any valve serving a sea inlet, a discharge below the waterline or a bilge injection system shall be so sited as to allow adequate time for operation in case of influx of water to the space.

12. Steering gear

- (1) (a) A fishing vessel shall be provided with a main steering gear and an auxiliary means of actuating the rudder to the satisfaction of the Director.
- (b) The main steering gear and the auxiliary means of actuating the rudder shall be arranged so that so far as is reasonable and practicable a single failure in one of them will not render the other one inoperative.
- (2) (a) Where the main steering gear comprises two or more identical power units an auxiliary gear need not be fitted if the main steering gear is capable of operating the rudder when any one of the units is out of operation.
- (b) Each of the power units shall be operated from a separate circuit.
- (3) (a) The position of the rudder, if power operated,, shall be indicated in the wheelhouse.
- (b) The rudder angle indication for power operated steering gear shall be independent of the steering gear control system.
- (4) (a) In case of failure of any of the steering gear units, an alarm shall be given in the wheelhouse.
- (b) Indicators for running indication of the motors of electric and electrohydraulic steering gear shall be installed in the wheelhouse.
- (5) (a) The main steering gear shall be of adequate strength and capable to steer the vessel at maximum service speed.
- (b) The main steering gear and rudderstock shall be designed that they will not be damaged at maximum speed astern or by maneuvering during fishing operations.

- (6) (a) The main steering gear shall, with the vessel at maximum permissible draught, be capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the vessel running at maximum service speed.
- (b) The rudder shall be capable of being put over from 35 degrees on either side to 30 degrees on the other side in not more than 28 seconds, under the same conditions.
- (c) Short circuit protection, an overload alarm and no voltage alarm shall be provided for circuits and motor of steering system.
- (7) The auxiliary means for actuating the rudder shall be of adequate strength and sufficient to steer the vessel at navigable speed and capable of being brought speedily into action in an emergency.
- (8) The auxiliary means for actuating the rudder shall be capable of putting the rudder over from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the vessel running at one half of its maximum service speed ahead or 7 knots whichever is the greater.
- (9) Guidance for safe operation and emergency procedures for the steering system to be provided by suitable notices displayed in the Steering Gear Compartment.

13. Communication Between Bridge and Steering Compartment

Two-way communication system between steering flat and bridge independent of main supply of power shall be provided.

14. Refrigeration Systems for Preservation of the Catch

- (1) Refrigeration systems shall be designed, constructed, tested and installed so as to take account of the safety of the systems considering the degree of possible harm to persons from the refrigerant used and shall be to the satisfaction of the Director.
- (2) (a) Subject to subparagraph (b), refrigerants to be used in refrigeration systems shall be to the satisfaction of the Director.
- (b) Methyl chloride shall not be used as a refrigerant.
- (3) Refrigerating installations shall be-
 - (a) adequately protected against vibration, shock, expansion, shrinkage; and
 - (b) provided with automatic safety control device to prevent a dangerous rise in temperature and pressure.
- (4) Refrigeration systems in which toxic or inflammable refrigerants are used shall be provided with drainage devices leading to a place where the refrigerant presents no danger to the vessel or to persons on board.

- (5) (a) Any space containing refrigerating machinery including condensers and gas tanks utilizing toxic refrigerants shall be separated from any adjacent space by gas tight bulkheads.
- (b) Where such containment is not practicable, due to the size of the vessel, the refrigeration system may be installed in the machinery space provided that the quantity of refrigerant used does not cause danger to persons in the machinery space, should all the gas escape.
- (6) Where any refrigerant harmful to person is used in a refrigeration system, at least two sets of breathing apparatus shall be provided, one of which shall be placed in a position not likely to become inaccessible in the event of leakage of refrigerant.
- (7) Adequate guidance for the safe operation and emergency procedures for the refrigeration system shall be provided by suitable notices displayed on board the vessel.

Chapter III-Electrical Installation

15. The design and construction of electrical installations shall be such as to provide-

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

16. Main Source of Electrical Power

- (1) Where electrical power constitutes the only means of maintaining auxiliary services essential for the propulsion and the safety of the vessel, a main source of electrical power shall be provided which shall include two generating sets, one of which may be driven by the main engine.
- (2) The power of these sets shall be such as to ensure the functioning of the services necessary to maintain the vessel in normal operating conditions, excluding the power required in fishing activities, processing and preservation of the catch, in the event of any one of these generating sets being stopped.
- (3) The arrangement of the vessel's main source of electrical power shall be such that all the essential services can be maintained regardless of the number of revolutions and direction of the main propelling engines or shafting.
- (4) Where transformers constitute an essential part of the supply system, the system shall be so arranged as to ensure the continuity of supply.

- (5) The arrangement of the main lighting system shall be such that a fire or other casualty in the space or spaces containing the main source of electrical power, including transformers, if any, does not render the emergency lighting system inoperative.

17. Emergency Source of Electrical Power

- (1) A self contained emergency source of electrical power located, to the satisfaction of the Director, outside the machinery spaces shall be provided and so arranged as to ensure its functioning in the event of fire or other cause of failure of the main electrical installations.
- (2) The emergency source of electrical power shall be capable, having regard to starting current and the transitory nature of certain loads, of serving simultaneously for a period of at least three hours-
 - (a) two independent and separate means of communications as per paragraph 29 of Chapter III of this Schedule to initiate transmission of distance distress alerts;
 - (b) internal communication equipment, fire detecting systems and signals which may be required in an emergency;
 - (c) the navigation lights where such lights are solely electrical;
 - (d) the emergency lights-
 - (i) of launching stations and overside of the vessel;
 - (ii) in all alleyways, stairways and exits;
 - (iii) in spaces containing machinery or the emergency source of power;
 - (iv) in control stations; and
 - (v) in fish handling and fish processing spaces;
 - (e) the operation of the emergency fire pump, if any.
- (3) Where the emergency supply of power to the emergency fire pump is not practicable, a portable self-driven fire pump shall be provided.
- (4) (a) The emergency source of electrical power may be either a generator or an accumulator battery.
 - (b) In the event of failure of the main power supply the accumulator battery shall be automatically connected to the emergency switchboard and shall immediately supply at least those services specified in subparagraphs (2) (b) and (2) (c).
 - (c) The emergency switchboard shall be provided with an auxiliary switch allowing the battery to be connected manually, in case of failure of the automatic connection system.

- (d) An accumulator battery fitted in accordance with this paragraph shall be installed in a well ventilated space which shall not be, the space containing the emergency switchboard.
- (e) An indicator shall be mounted in a suitable place on the main switchboard or in the machinery control room to indicate when the battery constituting the emergency source of power is being discharged.
- (f) The emergency switchboard shall be supplied in normal operation from the main switchboard by an inter-connector feeder, which shall be protected at the main switchboard against overload and short circuit.
- (g) The arrangement at the emergency switchboard shall be such that in the event of a failure of the main power supply an automatic connection of the emergency supply shall be provided.
- (h) The emergency supply battery shall be so arranged as to ensure that they function at full rated power when the vessel is upright and when rolling up to an angle of 22.5* either way and simultaneously pitching 10* by bow or stern, or is in any combination of angles within those limits.
- (i) The emergency source of electrical power and automatic starting equipment shall be so constructed and arranged as to enable adequate testing to be carried out by the crew while the vessel is in operating condition.
- (j) Main and emergency switchboards shall be so arranged as to give easy access as may be needed to apparatus and equipment, without danger to attendants.
- (k) The sides and back and, where necessary, the fronts of switchboards, shall be suitably guarded.
- (l) There shall be non-conducting mats or gratings at the front and rear, where necessary.
- (m) Where cables which are installed in spaces where the risk of fire or explosion exists in the event of an electrical fault, special precautions against such risks shall be taken to the satisfaction of the Director.
- (n) Lighting or power circuits terminating in a space where the risk of fire or explosion exists shall be provided with isolating switches outside the space.
- (o) The housing of an accumulator battery shall be constructed and ventilated to the satisfaction of the Director.
- (p) Electrical and other equipment which may constitute a source of ignition of flammable vapours shall not be permitted in these compartments except as permitted under paragraph 18.

(q) An accumulator battery shall not be located in accommodation spaces unless installed in a hermetically sealed container.

18. In spaces where flammable mixtures are liable to collect and in any compartment assigned principally to the containment of an accumulator battery, no electrical equipment shall be installed unless the Director is satisfied that it is-

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

THIRD SCHEDULE
(regulation 6(b))

ORIGINAL

Certificate No.

REPUBLIC OF MAURITIUS

FISHING VESSEL SAFETY EQUIPMENT CERTIFICATE ISSUED UNDER REGULATIONS
MADE PURSUANT TO THE MERCHANT SHIPPING ACT 1986

Name of Vessel	Off. No./Call Sign	Gross Tonnage	Date Keel Laid

This is to certify-

1. That the vessel has been surveyed in accordance with the regulations made pursuant to the
Merchant Shipping Act 1986

2. That the inspection showed that the life saving appliances are provided for a total number of persons and no more,

This certificate is issued under the authority Of the Republic of Mauritius.

It will remain in force until

Issued at.....the.....

.....
Surveyor

(verso of Certificate)

Condition 1	
Date	Signature.....

Condition 2	
Date	Signature.....

Condition 3	
Date	Signature.....

Condition 4	
Date	Signature.....

FOURTH SCHEDULE

(regulation 6(b))

CHAPTER I - LIFE SAVING APPLIANCES

1. Compliance

Every fishing vessel shall comply with the requirements established under the following paragraphs regarding life-saving appliances such as survival craft, rescue boat, inflatable liferafts, lifebuoys, lifejackets, line-throwing appliances and pyrotechnics.

2. Survival Craft

- (1) Every fishing vessel shall be provided with two survival crafts.
- (2) Survival crafts of sufficient aggregate capacity to accommodate at least the total number of persons on board, of which at least one shall be motor propelled, shall be provided on both sides of the vessel.
- (3) "Survival craft" and "rescue boat" shall include dories carried in a fishing vessel involved in bank fishing.
- (4) A survival craft shall-
 - (a) be readily available in cases of emergency;
 - (b) be capable of being launched safely and rapidly even under unfavourable conditions of trim and against 15 degrees of list;
 - (c) be capable of rapid recovery.
- (5) A survival craft shall be stowed in such a manner that -
 - (a) the marshalling of persons at the embarkation deck is not impeded;
 - (b) its prompt handling is not impeded;
 - (c) embarkation thereon can be effected rapidly and in good order;
 - (d) the operation of any other survival craft is not interfered with.

3. Rescue Boat

- (1) Subject to subparagraph (2), a motor rescue boat shall be provided unless the vessel is provided with a suitable survival craft, which fulfils the requirements for a motor rescue boat.
- (2) The fishing vessels involved in Bank Fishing need not comply with subparagraph (1) where one of the fishing boats on board these vessels shall be utilised as a rescue boat.

4. Inflatable Life Rafts

- (1) (a) Each fishing vessel shall be provided with at least two life crafts, one on each side of the vessel.

- (b) Life rafts shall have the aggregate capacity to accommodate the total number persons on board.
- (2) The construction of inflatable life raft shall comply with paragraph I of the Appendix to this Schedule
- (3) (a) Every inflatable life raft shall be so constructed that, when fully inflated and floating with canopy uppermost, it is stable in a seaway.
 - (b) The stability of the life raft when in the inverted position shall be such that it can be righted in a sea way and in calm water by one-person.
 - (c) The stability of the life raft when loaded with its full complement of persons and equipment shall be such that it can be towed at speeds up to 3 knots in calm water.
- (4) No inflatable life raft which has carrying capacity of less than 6 persons or more than 25 persons shall be approved.
- (5) Each inflatable life raft shall be equipped with a all the equipments listed at paragraph 6 of the Appendix to this Schedule.
- (6) The life raft shall be packed in a container that is -
 - (a) so constructed as to withstand hard wear under conditions encountered at sea;
 - (b) of sufficient inherent buoyancy, when packed with the life raft and its equipment, to pull the painter from within and to operate the inflation mechanism should the vessel sink, be automatically released and not be dragged by the sinking vessel;
 - (c) as far as practicable watertight, except for drain holes in the container bottom.
- (7) The details of markings that shall be provided on containers and life rafts are indicated in paragraph 7 of the Appendix to this Schedule.

5. Life buoys

- (1) Every vessel of 75 meters or over in length shall be provided with at least 8 life buoys.
- (2) Every vessel with less than 75 meters in length shall be provided with 6 life buoys.

6. Life buoy specification

- (1) Every life buoy shall-
 - (a) have an outer diameter of not more than 800 millimeters and an inner diameter of not less than 400 millimeters;

- (b) be constructed of inherently buoyant material;
 - (c) be capable of supporting not less than 14.5 kilograms of iron in fresh water for a period of 24 hours;
 - (d) have a mass of not less than 2.5 kilograms;
 - (e) not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 seconds;
 - (f) be constructed to withstand a drop into the water from the height at which it is stowed above the water line in the lightest seagoing condition or 30 meters whichever is the greater;
 - (g) be fitted with a grabline not less than 9.5 millimeters in diameter and not less than 4 times the outside diameter of the body of the buoy in length, secured at 4 equidistant points around the circumference of the buoy to form four equal loops.
- (2) Two of the life buoys shall be provided with self-igniting lights, which shall -
- (a) be such that they cannot be extinguished by water;
 - (b) be capable of burning continuously or flashing at a rate of not less than 50 flashes per minute;
 - (c) be provided with a source of energy capable of meeting the requirement for a period of at least 2 hours.
- (3) At least one life buoy on each side of the vessel shall be fitted with a buoyant lifeline of 30 metres in length and shall be of those which do not have the self-igniting lights.

7. Life Jackets

- (1) (a) One approved type of life jacket for each person shall be carried on board.
- (b) Each life jacket shall carry suitable markings indicating its approval by the Director.
- (2) A life jacket shall not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 seconds.
- (3) Every life jacket shall be so constructed that-
- (a) after demonstration, a person can correctly don it within a period of one minute without assistance;
 - (b) it is comfortable to wear;

- (c) it allows the wearer to jump from a height of at least 4.5 meters into the water without injury and without dislodging or damaging the life jacket.
- (4) Every life jacket shall have buoyancy, which is not reduced by more than 5 per cent after 24 hours' submersion in freshwater.
- (5) Every life jacket shall allow the person wearing it to swim a short distance and to board a survival craft.
- (6) Every life jacket shall be fitted with a whistle firmly secured by a cord.
- (7) Every life jacket shall have a light, which shall-
 - (a) have a luminous intensity of not less than 0.75 candella;
 - (b) have a source of energy capable of providing a luminous intensity of 0.7 5 candella for a period of at least 8 hours;
 - (c) be visible over as great a segment of the upper hemisphere as is practicable when attached to a lifejacket.

8. Inflatable Life Jackets

- (1) (a) A life jacket, which has to be inflated for buoyancy, shall have not less than two separate compartments and comply with the requirements of paragraph 7 of this Schedule.
 - (b) It shall inflate automatically on immersion, be provided with a device to permit inflation by a single manual motion and be capable of being inflated by mouth.
- (2) All life jackets shall to be fitted with Retro Reflective tapes.

9. Line throwing appliances

- (1) Every fishing vessel shall carry one line-throwing appliance.
- (2) Every line throwing appliance shall-
 - (a) be capable of throwing a line with reasonable accuracy;
 - (b) include not less than two projectiles each capable of carrying the line at least 230 meters in calm weather;
 - (c) have brief instructions or diagrams clearly illustrating the use of the line throwing appliance.
- (3) The rocket, in the case of a pistol-fired rocket or the assembly in the case of an integral rocket and line, shall be contained in a water-resistant casing.

10. Rocket Parachute Signals

- (1) Every fishing vessel shall carry 12 parachute signals.

- (2) The rocket parachute shall -
 - (a) be contained in a water-resistant casing;
 - (b) have brief instructions or diagrams clearly illustrating the use of parachute flare printed on its casing;
 - (c) have integral means of ignition.
- (3) The rocket shall, when fired vertically, reach an altitude of not less than 300 meters.
- (4) Each parachute flare shall -
 - (a) burn with a bright red colour;
 - (b) have a burning period of not less than 40 seconds;
 - (c) have a rate of descent of not more than 5 meters per second.

11. Hand Flares

- (1) Each vessel shall have 6 hand flares.
- (2) Each hand flare shall-
 - (a) be contained in water-resistant casing;
 - (b) carry brief instructions or diagrams clearly illustrating the use of hand flare printed on its casing;
 - (c) have self-contained means of ignition.
- (3) Each hand flare shall-
 - (a) burn with a bright red colour;
 - (b) have a burning period of not less than 1 minute;
 - (c) continue to burn after having been immersed for a period of 10 seconds in 100 millimeters of water.

12. Portable Radio Equipment

An Emergency Position Indicating Radio Beacon (E.P.I.R.B), of an approved type, shall be carried and located to the satisfaction of the Director so as to be readily accessible and its position shall be plainly indicated.

Chapter II - Fire Protection and Fire Fighting

13. General Precautionary Measures

- (1) The following surfaces of the fishing vessel shall have low-flame characteristics-

- (a) surfaces in corridors and stairway enclosures;
 - (b) surfaces including grounds in concealed or in accessible spaces in accommodation services; and
 - (c) spaces and control stations.
- (2) Any paint, varnish and other finish used on exposed interior surfaces shall-
- (a) not be capable of producing excessive quantities of smoke or toxic gases or vapours; and
 - (b) satisfy the Surveyor that they are not of a nature to offer an undue fire hazard.
- (3) All waste receptacles other than those used in fish processing shall be constructed of non-combustible materials with no openings in the sides or bottom.
- (4) Any machinery driving fuel oil transfer pumps, fuel oil unit pumps and others in similar fuel pumps shall be fitted with remote controls situated outside the space concerned so that they can be stopped in the event of a fire arising in the space in which they are located.
- (5) Drip trays shall be fitted where necessary to prevent oil leaking into bilges.

14. Storage of Gas Cylinders and Dangerous Materials

- (1) Cylinders for compressed liquefied or dissolved gases shall-
- (a) be clearly marked by means of prescribed identifying colours;
 - (b) have a clearly legible identification of the name and chemical formula of their contents; and
 - (c) be properly secured.
- (2) Cylinders containing flammable or other dangerous gases and expended cylinders shall be stored, properly secured on open decks and all valves, pressure regulators and pipes leading from such cylinders shall be protected against damage.
- (3) Spaces containing highly flammable liquids, such as volatile paints, paraffin, etc., and, where permitted, liquefied gas, shall have direct access from open decks only and shall be adequately ventilated.
- (4) Areas or spaces containing petrol for outboard motors should have a fixed installation capable of projecting a spray of water over all the tanks.

15. Means of Escape

- (1) Stairways and ladders leading to and from all accommodation spaces and in spaces in which the crew is normally employed, other than machinery spaces, shall be, so arranged as to provide ready means of escape to the open deck and thence to the survival craft.
- (2) Two means of escape shall be provided from every machinery the space, adequacy of escape routes in all machinery spaces being evaluated by the Director.
- (3) Lifts shall not be considered as forming one of the required means of escape.

16. Automatic sprinkler and Fire Alarm and Fire Detection systems

In vessels over 75 meters in length, an automatic sprinkler and fire alarm system of an approved type shall be installed and so arranged as to protect accommodation spaces and service spaces except spaces which afford no substantial fire risks such as void spaces and sanitary spaces.

17. Fire-Pumps

- (1) At least 2 fire-pumps shall be provided.
- (2) (a) Where a fire in any one compartment could put all the fire-pumps out of action, there shall be alternative means of providing water for fire fighting.
(b) In vessels of 75 meters in length and over, independent-driven emergency fire-pump shall be installed.
- (3) (a) The fire-pump shall be capable of supplying the fire-main systems, sanitary, bilge, ballast, general service.
(b) Any other pumps may be used as fire-pumps so long as they do not affect the ability to cope with pumping of the bilges.
- (4) Centrifugal pumps or other pumps connected to the fire-main through which back flow could occur shall be fitted with non-return valves.
- (5) Every vessel shall be equipped with one emergency fire-pump.
- (6) (a) Emergency power operated fire pumps shall be independently driven self-contained pumps with their own diesel engines or be driven by self-contained generator.
(b) The emergency fire pump shall be capable of operating for a period of at least 3 hours.

18. Fire-Mains

- (1) Where more than one hydrant is required to provide at least one jet, which can be directed into any part of the vessel, a fire-main shall be provided.
- (2) Materials readily rendered ineffective by heat shall not be used for fire-mains, unless adequately protected.

- (3) Where fire-pump delivery pressure can exceed the designed working pressure of fire-mains, relief valves shall be fitted.

19. Fire-hydrants, fire-hoses and nozzles

- (1) (a) The number of fire-hoses provided shall be equal to the number of fire-hydrants and one spare hose.
(b) The Director may increase the number of fire-hoses required to ensure that hoses in sufficient number are available and accessible to all, having regard to the size of vessel.
- (2) (a) Fire-hoses shall be of approved material and sufficient in length to project a jet of water to any of the spaces in which they may be used.
(b) The maximum length of every fire hose shall be 20 metres.
(c) Every fire-hose shall be provided with a nozzle and necessary couplings.
- (3) The number and position of the hydrants shall be such that at least two jets of water not emanating from the same hydrant may reach any part of the vessel normally accessible to the crew, while the vessel is being navigated.

20. Fire Extinguishers

- (1) (a) Fire Extinguishers shall be of approved types.
(b) The capacity of required portable fluid extinguishers shall be not more than 14 litres.
(c) The Director shall determine the equivalent of fire extinguishers.
- (2) Fire Extinguishers shall be periodically examined and subjected to tests specified by the Director.
- (3) Spare charges shall be provided to the satisfaction of the Director.
- (4) (a) Fire Extinguishers, of approved type, sufficient in number shall be provided in accommodation spaces.
(b) The total number of extinguishers in these spaces, however, shall not be less than five.
- (5) One receptacle containing sand shall be provided in the machinery space.
- (6) In all machinery spaces, which has a total power output of not less than 250 kilowatts, at least five foam extinguishers shall be provided.

21. Fireman's Outfit

- (1) Adequate number of approved fireman's outfits complete with Self Contained Breathing Apparatus (S.C.B.A) shall be provided on each vessel.
- (2) Each vessel shall be provided with at least 2 fire axes.

22. Fire Control Plan

- (1) There shall be a permanently exhibited fire control plan to the satisfaction of the Director.
- (2) In vessels less than 5 metres, the Director may dispense with the requirement.

Chapter III - Shipborne Navigational Equipment and Arrangements

23. Shipborne navigational equipment

- (a) Vessels of 24 metres in length and over shall be fitted with -
 - (i) a standard magnetic compass, except as provided in paragraph(d);
 - (ii) a steering magnetic compass, unless heading information provided by the standard compass required under (i) is made available and is clearly readable by the helmsman at the main steering position;
 - (iii) adequate means of communication between the standard compass position and the normal navigation control position to the satisfaction of the Director; and
 - (iv) means for taking beatings as nearly as practicable over an arc of the horizon of 360*.
 - (b) Each magnetic compass referred to in subparagraph (a) shall be properly adjusted and its table or curve of residual deviations shall be available at all times.
 - (c) A spare magnetic compass, interchangeable with the standard compass, shall be carried, unless the steering compass mentioned in subparagraph (a)(ii) or a gyro-compass is fitted.
 - (d) The Director, if he considers it unreasonable or unnecessary to require a standard magnetic compass, may exempt individual vessels or classes of vessels from these requirements if the nature of the voyage, the vessel's proximity to land or the type of vessel does not warrant a standard compass, provided that a suitable steering compass is in all cases carried.
- (2) Vessels of less than 14 metres in length shall, as far as the Director considers it reasonable and practicable, be fitted with a steering compass and have means for taking bearings.

- (3) Vessels of 45 metres in length and over constructed on or after 1 September 1984 shall be fitted with a gyrocompass complying with the following requirements-
 - (a) the master gyro-compass or a gyro-repeater shall be clearly readable by the helmsman at the main steering position;
 - (b) on vessels of 75 metres in length and over, a gyro-repeater or gyro-repeaters shall be provided and shall be suitably placed for taking bearings as nearly as practicable over an arc of the horizon of 360*.
- (4) Vessels of 75 metres in length and over constructed before 1 September 1984 shall be fitted with a gyrocompass complying with the requirements of subparagraph (3).
- (5) (a) Vessels with emergency steering positions shall at least be provided with a telephone or other means of communication for relaying heading information to such positions.
 - (b) In addition, vessels of 45 metres in length and over constructed on or after 1 February 1992 shall be provided with arrangements for supplying visual compass readings to the emergency steering position.
- (6) (a) Vessels of 35 metres in length and over, shall be fitted with a radar installation.
 - (b) The radar installation shall be capable of operating in the nine GHz frequency bands.
 - (c) Vessels of 35 metres in length and over, but less than 45 metres may be exempted from compliance with the requirements of paragraph (16) at the discretion of the Director, provided that the equipment is fully compatible with the radar transponder for search and rescue.
- (7) In vessels of less than 35 metres in length where radar is fitted, the installation shall be to the satisfaction of the Director.
- (8) (a) Facilities for plotting radar readings shall be provided on the navigating bridge of vessels required by paragraph(6) to be fitted with a radar installation.
 - (b) In vessels of 75 metres in length and over, constructed on or after 1 September 1984 the plotting facilities shall be at least as effective as a reflection plotter.
- (9) Vessels of 75 metres in length and over constructed before 25 May 1980 and vessels of 45 m in length and over, constructed on or after 25 May 1990 shall be fitted with an echo-sounding device.
- (10) Vessels of less than 45 metres in length shall be provided with the suitable means to the satisfaction of the Director for determining the depth of water under the vessel -
- (11) Vessels of 45 meters in length and over, constructed on or after 1 September 1984 shall be fitted with a device, to indicate speed and

distance.

- (12) (a) Vessels of 75 metres in length and over, constructed before 1 September 1984 and all vessels of 45 metres in length and over, constructed on or after 1 September 1984 shall be fitted with indicators showing the rudder angle, the rate of revolution of each propeller and in addition, if fitted with variable pitch propellers or lateral thrust propellers, the pitch and operational mode of such propellers.
- (b) All these indicators shall be readable from the conning position.
- (13) Except as provided in subparagraphs (1) to (6), while all reasonable steps shall be taken to maintain the apparatus referred to in subparagraphs (1) to (12) in efficient working order, malfunctions of the equipment shall not be considered as making a vessel unseaworthy or as a reason for delaying the vessel in ports where repair facilities are not readily available.
- (14) (a) Vessels of 75 metres in length and over shall be fitted with a radio direction-finding apparatus .
- (b) The Director may exempt a vessel from this requirement if he considers it unreasonable or unnecessary for such apparatus to be carried or if the vessel is provided with other radio navigation equipment suitable for use throughout its intended voyages.
- (15) Until 1 February 2000, vessels of 75 m in length and over constructed on or after 25 May 1980 and before 1 February 1995 shall be fitted with radio equipment for homing on the radiotelephone distress frequency.
- (16) (a) All equipments fitted in compliance with this regulation shall be of a type approved by the Director. Equipment installed on board vessels on or after 1 September 1984 shall conform to appropriate performance standards not inferior to those adopted by the Organization.
- (b) Any equipment fitted prior to the adoption of related performance standards may be exempted from full compliance with those standards at the discretion of the Director, having due regard to the recommended criteria which the Organization might adopt in connection with the standards concerned.

24. Exemptions

The Minister may exempt any vessel from any of the requirements of paragraph 23 where it considers that the nature of the voyage or the vessel's proximity does not warrant such requirements.

25. Nautical instruments and publications

Suitable nautical instruments, adequate and up-to-date charts, sailing, directions, lists of lights, notices to mariners, tide tables and all other nautical publication is necessary for the intended voyage, to the satisfaction of the Director, shall be carried on board.

26. Signaling equipment

- (1) A daylight-signaling lamp shall be provided, the operation of which is not solely dependent upon the main source of electrical power. The power supply shall in any case include a portable battery.
- (2) Vessels of 45 metres in length and over shall be provided with a full complement of flags and pennants to enable communications to be sent using the International Code of Signals.

27. Navigating bridge visibility

- (1) New vessels of 45 metres in length and over shall meet the following requirements-
 - (a) the view of the sea surface from the coming position shall not be obscured by more than two vessel lengths, or 500in, whichever is less, forward of the bow to 100 on either side irrespective of the vessel's draught and trim;
 - (b) no blind sector caused by fishing gear or other obstructions outside of the wheelhouse forward of the beam, which obstructs the view of the sea surface as seen from the conning position, shall exceed 10*;
 - (c) the total arc of blind sectors shall not exceed 201, and the clear sectors between blind sectors shall be at least 5", each individual blind sector not exceeding 51, in the view described in subparagraph (a);
 - (d) the height of the lower edge of the navigating bridge front windows above the bridge deck shall be kept as low as possible, the lower edge in no case presenting an obstruction to the forward view as described in this paragraph;
 - (e) the upper edge of the navigating bridge front windows shall allow a forward view of the horizon for a person with a height of eye of -
 - (i) 1,800 millimeters above the bridge deck; or
 - (ii) not less than 1,600 millimetres where the Director is satisfied that the height of eyes is unreasonable and impractical,at the conning position when the vessel is pitching in heavy seas,
 - (f) the horizontal field of the vision from the conning position shall extend over an arc of not less than 225*, that is from right ahead to not less than 22.50 abaft the beam on either side of the vessel;
 - (g) from each bridge wing the horizontal field of vision shall extend over an arc of at least 225*, that is from at least 45*, on the opposite wing through right ahead and then from

right ahead to right astern through 180* on the same side of the vessel;

- (h) from the main steering position the horizontal field of vision shall extend over an arc from right ahead to at least 60* on each side of the vessel;
 - (i) the vessel's side shall be visible from the bridge wing;
 - (j) windows shall meet the following requirements-
 - (i) framing between navigating bridge windows shall be kept to a minimum and not be installed immediately forward of any workstation;
 - (ii) to help avoid reflections, the bridge front windows may be inclined from the vertical plane top out, at an angle of not less than 10* and not more than 25*;
 - (iii) polarized and tinted windows shall not be fitted; and
 - (iv) a clear view through at least two of the navigating bridge front windows and depending on the bridge configuration, an additional number of clear view windows shall be provided at all times regardless of weather conditions.
- (2) Existing vessels shall, where practicable, meet the requirements of subparagraphs (1) (a) and (b), structural alterations or additional equipment, however, being not required.

29. Radio Communications

Every vessel, while at sea, shall be capable-

- (a) of transmitting ship to shore distress alerts by at least two separate and independent means, each using a different radio communication service;
- (b) of receiving shore-to-ship distress alerts;
- (c) of transmitting and receiving ship-to-ship distress alerts;
- (d) of transmitting and receiving search and rescue co-ordinating communications;
- (e) of transmitting and receiving on scene communications;
- (f) of transmitting and receiving signal for locating;
- (g) of transmitting and receiving maritime safety information;
- (h) of transmitting and receiving general radio communications to and from shore-based radio systems and networks;
- (i) of transmitting and receiving bridge-to-bridge communication.

30. Sources of Energy

- (1) There shall be at all times, while the vessel is at sea a supply of electrical energy sufficient to operate the radio installation and to charge any batteries used as part of a reserve source or sources of energy for the radio installations.

- (2) A reserve source or sources of energy shall be provided on every vessel to supply radio installations for the purpose of conducting distress and safety radio communications in the event of failure of the vessel's main sources of electrical power.

APPENDIX

1. CONSTRUCTION OF INFLATABLE LIFERAFTS

- (a) Every liferaft shall be so constructed as to be capable of withstanding exposure for 30 days afloat in sea conditions.
- (b) The liferaft shall be so constructed that when it is dropped into the water from a height of 18 metres, the liferaft and its equipment will operate satisfactorily.
- (c) Where the liferaft is to be stowed at a height of more than 18 metres above the waterline in the lightest seagoing condition, it shall be of a type which has been satisfactorily drop-tested from at least that height.
- (d) The floating liferaft shall be capable of withstanding repeated jumps on to it from a height of at least 4.5 m above its floor both with and without the canopy erected.
- (e) The liferaft and its fitting shall be so constructed as to enable it to be towed at a speed of 3 knots in calm water when loaded with its full complement of persons and equipment and with one of its sea-anchors streamed.
- (f) The liferaft shall have a canopy to protect the occupants from exposure which is automatically set in place when the liferaft is launched and waterborne.
- (g) The canopy shall comply with the following requirements -
 - (i) it shall provide insulation against heat and cold by means of either two layers of material separated by an air gap or other equally efficient means and means shall be provided to prevent accumulation of water in the air gap;
 - (ii) its interior shall be of a colour that does not cause discomfort to the occupants;
 - (iii) each entrance shall be clearly indicated and be provided with efficient adjustable closing arrangement be easily and quickly opened from inside and outside the liferaft so as to permit ventilation but exclude seawater; wind and cold, liferafts accommodating more than 8 persons having at least two diametrically opposite entrances ;
 - (iv) it shall admit sufficient air for the occupants at all times, even with the entrances closed;
 - (v) it shall be provided with at least one viewing port;

- (vi) it shall be provided with means for collecting rain-water;
- (vii) it shall have sufficient headroom for sitting occupants under all parts of the canopy.

2. MINIMUM CARRYING CAPACITY AND MASS OF LIFERAFTS

- (a) No liferaft shall be approved which has a carrying a capacity of less than 6 persons.
- (b) Unless the liferaft is to be launched by an approved launching appliance the total mass of the liferaft, its container and its equipment shall not be more than 185 kg.

3. LIFERAFT FITTINGS

- (a) Lifelines shall be securely becketed around the inside and outside of the
- (b) The liferaft shall be fitted with an efficient painter of length equal to not less than twice the distance from the stowed position to the waterline in the lightest seagoing condition or 15 metres whichever is the greater.

4. DAVIT-LAUNCHED LIFERAFTS

- (a) In addition to the above requirements, a liferaft for use with an approved launching appliance shall -
 - (i) when the liferaft is loaded with its full complement of persons and equipment, be capable of withstanding a lateral impact against the vessel's side at an impact velocity of not less than 3.5 metres per second and also a drop into the water from a height of not less than 3 metres without damage that will affect its function;
 - (ii) be provided with means for bringing the liferaft alongside the embarkation deck and holding it securely during embarkation.
- (b) Every davit-launched liferaft shall be so arranged that it can be boarded by its full complement of persons in not more than 3 minutes from the time the instruction to board is given.

5. CONSTRUCTION OF INFLATABLE LIFERAFTS

- (a) The main buoyancy chamber shall be divided into not less than two separate compartments. Each inflated through a non return inflation valve on each compartment.
- (b) The buoyancy chambers shall be so arranged that, in the event of any one of the compartments being damaged or failing to inflate, the intact compartments shall be able to support, with positive freeboard over the liferaft's entire periphery, the number of persons which the liferaft is permitted to accommodate each having a mass of 75 kg and seated in their normal positions.

- (c) The floor of the liferaft shall be waterproof and shall be capable of being sufficiently insulated against cold either-
 - (i) by means of one or more compartments that the occupants can inflate or which inflate automatically and can be deflated and reinflated by the occupants; or
 - (ii) by other equally efficient means not dependent on inflation.
- (d) The liferaft shall be inflated with a non-toxic gas, inflation being completed within a period of 1 min at an ambient temperature of between 18°C and 20°C and within a period of 3 minutes at an ambient temperature of -30°C.
- (e) After inflation the liferaft shall maintain its form when loaded with its full complement of persons and equipment.
- (f) Each inflatable compartment shall be capable of withstanding a pressure equal to at least three times the working pressure and shall be prevented from reaching a pressure exceeding twice the working pressure either by means of relief valves or by a limited gas supply.
- (g) Means shall be provided for fitting the topping-up pump or bellows required by paragraph (6) (b) (1) (ii) of this Appendix so that the working pressure can be maintained.

6. EQUIPMENT

- (a) The normal equipment of every liferaft shall consist of---
 - (i) one buoyant rescue quoit, attached to not less than 30 metres of buoyant line;
 - (ii) one safety knife of the non-folding type having a buoyant handle and lanyard attached and stowed in a pocket on the exterior of the canopy near the point at which the painter is attached to the liferaft, a liferaft accommodating 13 persons or more being provided with a second knife which need not be of the non-folding type;
 - (iii) for a liferaft which is permitted to accommodate----
 - (A) not more than 12 persons, one buoyant bailer;
 - (B) 13 persons or more, 2 buoyant bailers.
 - (iv) 2 sponges;
 - (v) 2 sea-anchors,, each with shock-resistant hawser and tripping line, one being spare and the other permanently attached to the liferaft in such way that when the liferaft inflates or is waterborne it will cause the liferaft to lie oriented to the wind in the most stable manner, the strength of each sea-anchor and its hawser and tripping line being adequate for all sea conditions and the sea-anchors being fitted with a swivel at each end of the line and being of a type which is unlikely to turn inside-out between its shroud lines;

- (vi) 2 buoyant paddles;
- (vii) 3 tin-openers; safety knives containing special tin-opener blades are satisfactory for this requirement;
- (viii) one first-aid outfit in a waterproof case capable of being closed tightly after use;
- (ix) one whistle or equivalent sound signal;
- (x) 4 approved rocket parachute flares;
- (xi) 6 approved hand flares;
- (xii) 2 approved buoyant smoke signals;
- (xiii) one water proof electric torch suitable for morse signaling together with one spare set of batteries and one spare bulb in a waterproof container;
- (xiv) an efficient radar reflector, unless a survival craft radar transponder is stowed in the liferaft;
- (xv) one daylight signaling mirror with instructions on its use for signaling to ships and aircraft;
- (xvi) one copy of the life saving signals on a waterproof card or in a waterproof container;
- (xvii) one set of fishing tackle;
- (xviii) a food ration totaling not less than 10,000 kilo joules for each person the liferaft is permitted to accommodate, the rations being kept in airtight packaging and stowed in a water tight container;
- (xix) water tight receptacles containing a total of 1.5 litres of fresh water for each person the liferaft is permitted to accommodate, of which 0.5 litre per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in two days;
- (xx) one rust proof graduated drinking vessel;
- (xxi) 6 doses of anti-seasickness medicine and one seasickness bag for each person the liferaft is permitted to accommodate;
- (xxii) instructions on how to survive;
- (xxiii) instructions for immediate action;
- (xxiv) thermal protective aids sufficient for 10% of the number of persons the liferaft is permitted to accommodate or two, whichever is the greater.

- (b) In addition to the equipment required in paragraph (a) every inflatable liferaft shall be provided with-
 - (i) one repair outfit for repairing punctures in buoyancy compartments;
 - (ii) one topping-up pump or bellows.

7. MARKINGS ON LIFERAFT CONTAINERS

- (a) The container shall be marked with:
 - (i) the maker's name or trademark;
 - (ii) the serial number;
 - (iii) the name of approving authority and the number of persons it is permitted to carry;
 - (iv) the inscription "S.O.L.A.S";
 - (v) the type of emergency pack enclosed;
 - (vi) the date when last serviced;
 - (vii) the length of Painter;
 - (viii) the maximum permitted height of stowage above waterline (depending on drop-test height and length of painter);
 - (ix) the launching instructions.
- (b) The liferaft shall be marked with-
 - (i) the maker's name or trade mark;
 - (ii) the serial number;
 - (iii) the date of manufacture (month and year);
 - (iv) the name of approving authority;
 - (v) the name and place of servicing station where it was last serviced;
 - (vi) the number of persons it is permitted to accommodate over each entrance in characters not less than 100 millimetres in height of a colour contrasting with that of the liferaft.